



THE INFLUENCE OF RETARGETED ADVERTISEMENTS AND FOMO ON YOUNG PEOPLE

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towards a Ph.D. degree in Marketing

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Co-Supervisor: Dr Jirka Konietzny

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ABSTRACT

Usage of the Internet, social networking sites, and smartphone technologies has become incessant among young people. Concurrently, the advertising industry made significant strides with the advent of programmatic advertisements, making advertisements more personalised and targeted. Billions of Euros are spent on these advertisements yearly to influence young people, among others. Hence, the pertinence to study this area has become increasingly important.

The study investigates the influence of retargeted advertisements on young people by employing the Advertising Value Model (AVM) and the Theory of Planned Behaviour (TPB). It extends the current understanding of the Fear of Missing Out (FoMO) in the form of appeals exposed by retargeted advertisements and their effect on young people. Retargeting is a highly personalised form of advertising in which individuals who have previously visited a website and viewed products are shown advertisements with visuals of the same viewed products soon after they leave the website and surf the Internet.

A systematic literature review identified the six most influencing factors affecting young people's attitudes towards online advertising, namely: entertainment, informativeness, irritation, credibility, personalisation, and interactivity. Two focus groups, each with six participants, served as a crucial exploration of FoMO in a marketing appeal framework, equipping the study with four constructs adopted from different studies, namely: scarcity, urgency, social proof, and loss aversion. Subsequently, a self-administered questionnaire collected data from 480 young people in Malta aged 13 to 24, focusing on AVM, FoMO, and TPB. Partial least squares structural equation modelling was employed to analyse the data. Using a multi-group analysis, gender and age groups (minors and young adults) were further investigated.

The results revealed that entertainment and interactivity were strongly associated with the value and attitude towards retargeted advertisements. Informativeness, personalisation, and credibility were only positively correlated with advertising value. Advertising value exhibited a fully mediated role between these three antecedents and attitudes. Irritation was

found to be negatively associated with attitude. Men were more affected by irritation than women.

A strong relationship was observed between FoMO as a higher-order construct and attitude, subjective norms, and the intention to click on retargeted advertisements. As expected, attitude, subjective norms and perceived behavioural control were all strong antecedents of the intention to click, with a significant statistical relationship between the intention and behaviour. Interestingly, men were more predisposed to FoMO influence on subjective norms and behavioural intentions than their female counterparts. Attitude was identified as the principal antecedent influencing the intention to click on advertisements among women, predominantly minors.

Hence, retargeted advertisements displaying products that have already been encountered on a retailer's website that are enjoyable, interactive, with timely information, credible, and include tailored content for young people are perceived as more valuable and useful. Such advertisements have the potential to shape young people's attitudes favourably when they are entertaining and interactive, but conversely, they might have an adverse impact if they are irritating. Additionally, a FoMO appeal in retargeted advertisements can positively influence attitudes, leverage subjective norms, and drive young people's intention to click on these advertisements.

While acknowledging the inherent caveats in each method used in this study, it still offers valuable insights for academics and suggests avenues for future studies. Additionally, this study provides practical and social implications for young people, advertisers, policymakers, and parents or guardians.

Keywords: Retargeted advertisements; fear of missing out; advertising value model; theory of planned behaviour; young people

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“Every time a message seems to grab us, and we think, ‘I just might try it,’ we are at the nexus of choice and persuasion that is advertising.”

Andrew Hacker (1929 -)

“Half the money I spend on advertising is wasted; the trouble is I don't know which half.”

John Wanamaker (1838 - 1922)

“Over the past decade, the Internet has rapidly shifted from a cool and favourable status - being the solution - to being part of the problem, incapable of reversing its own destructive trends. We may have already passed the point of return.”

Geert Lovink (1959 -)

“Aim High!”

St Francis Secondary School, Sliema Motto (ex-St Elizabeth School)

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LIST OF ABBREVIATIONS, ACRONYMS AND SYMBOLS

α	Cronbach's Alpha Coefficient
AAD	Attitude Towards (Retargeted) Advertisements
ABC	Affect, Behaviour & Cognition
AI	Artificial Intelligence
AIDA	Awareness, Interest, Desire, and Action
ALD	Average Loss Difference
APA	American Psychological Association
API	Application Programming Interface
Art.	Article (Legal)
AVE	Average Variance Extracted
AVM	Advertising Value Model
β	Path Coefficients
BEH	Behaviour
BIC	Bayesian Information Criterion
BOFU	Bottom of the Funnel
CAC	Conation, Affect and Cognition
CAP.	Chapter (Legal)
CMA	Competition and Markets Authority (UK)
CMB	Common Method Bias
CMV	Common Method Variance
Corp.	Corporation
CRE	Credibility
CVPAT	Cross-Validated Predictive Ability Test
d	Difference
df	Degree of Freedom
DMA	Digital Markets Act
DSA	Digital Services Act
DSM-5-TR	Diagnostic and Statistical Manual of Mental Disorders (5 th Ed.) Text Revision
e	Margin of Error
e.g.	For Example

EBOR	Economics, Business and Organization Research Conference
EC	European Commission
EDPS	European Data Protection Supervisor
EFA	Exploratory Factor Analysis
ELM	Elaboration Likelihood Model
ENT	Entertainment
EU	European Union
EUR-LEX	European Union Law
f^2	Measure of Effect Size
FEMA	Faculty of Economics, Management and Accountancy
Fig.	Figure
FoMO	Fear of Missing Out
FREC	Faculty Research Ethics Committee (University of Malta)
GDPR	General Data Protection Regulation
GFI	Goodness-of-Fit
HOC	Higher-Order Construct
HTMT	Heterotrait–Monotrait Ratio
HTTP	Hypertext Transport Protocol
i.e.	Id est <i>or</i> That is
IBM	International Business Machines
ID	Identifier (Mobiles)
IDFA	Identifier for Advertisers
INF	Informativeness
INT	Interactivity
iOS	iPhone Operating System
IRR	Irritation
ITC	Intention to Click
ITS	Institute of Tourism Studies
ITU	International Telecommunication Union
JWT	J. Walter Thompson (Intelligence)
KMO	Kaiser-Meyer-Olkin Test
LA	Loss Aversion
LLCI	Lower Limit Confidence Interval
LO	Learning Outcome

LOC	Lower-Order Construct
<i>M</i>	Mean
MAXQDA	Max (Weber) Qualitative Data Analysis
MCAST	Malta College of Arts, Science and Technology
MGA	Multigroup Analysis
MICOM	Measurement Invariance of Composite Models
MMS	Multimedia Messaging Service
MOFU	Middle of the Funnel
<i>n</i>	Number of
<i>N</i>	Population Size
NFI	Normed Fit Index
NSO	National Statistics Office (Malta)
OARQ	Over-Arching Research Question
<i>p</i>	p-value or Probability Value
PBC	Perceived Behavioural Control
PER	Personalisation
Ph.D.	Doctor of Philosophy
PLS-SEM	Partial Least Squares Structural Equation Modelling
pp	People Proportion
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PRQ	Preliminary Research Question
Q^2	Predictive Relevance
QCRI	Qatar Computing Research Institute
R^2	Coefficient of Determination
RAV	Retargeted Advertising Value
RQ	Research Question
SCR	Scarcity
<i>SD</i>	Standard Deviation
SDT	Self-Determination Theory
SLR	Systematic Literature Review
SN	Subjective Norms
SNS	Social Networking Sites
SMS	Short Message Service
SP	Social Proof

SPSS	Statistical Package for the Social Sciences
SRMR	Standardised Root Mean Square Residual Test
<i>T</i>	T value <i>or</i> Measure of Difference Based on Standard Error
TAM	Technology Acceptance Model
TOFU	Top of the Funnel
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
TV	Television
U&G	Uses and Gratification Theory
UK	United Kingdom
ULCI	Upper Limit Confidence Interval
UN	United Nations
UNICEF	United Nations International Children's Emergency Fund
URECA	University Research Ethics Committee Application (University of Malta)
URG	Urgency
U.S.	United States (of America)
UTAUT	Unified Theory of Acceptance and Use of Technology
vers.	Version (Software)
VIF	Variance Inflation Factor
WHO	World Health Organisation
χ^2	Chi-Squared Test
<i>z</i>	Z-Score

1. INTRODUCTION

The younger generation is growing up in a world where the Internet dominates. In 2020, 71.0% of the world's youths aged between 15 and 24 were connected to the Internet, while only 57.0% of people over 24 were hooked online (International Telecommunication Union, 2021). As a result, young people are 1.24 times more likely than the rest of the population to be connected to the Internet worldwide. The report reveals that in Europe, an overwhelming majority, 97.0% of youths access the Internet. Eurostat (2023) claims that 96.0% of young people aged between 16 and 29 in the European Union (EU) use the Internet daily. This figure contrasts with the 84.0% of adults who are similarly engaged. In Malta, all young people between 16 and 24 use the Internet daily (Misco, 2023; National Statistics Office, 2023), compared to 90.0% adult population (Eurostat, 2023).

Online advertising has become ubiquitous and synonymous with the Internet. The proliferation of marketing communication platforms, particularly social networking sites (SNSs) and interactive websites, serve as a medium to target Internet users, particularly young people. SNSs have become irresistible for young people. Pew Research Centre (2022) reports that 97.0% of United States (U.S.) teens aged between 13 and 17 use YouTube, followed by TikTok, Instagram, Snapchat, and Facebook. In Europe, the average participation of young people aged 16 to 29 on SNSs is 84.0%, with 26.0% more participation than the adult population (Eurostat, 2023). Malta registered 12.0% more participation of young people on SNSs than the EU average. Misco's (2023) study reported that the whole 16 to 24 age group in Malta access SNSs daily, particularly Facebook, YouTube, and Instagram. Moreover, compared to other older age groups, this study found that young people are considerably less prone to feel uncomfortable when targeted by online advertisements.

In this context, online advertisements have become more tailored and personalised to meet the needs of individual customers, and in the past decade, targeted and retargeted advertisements have become more frequent in the online space. Individuals who have previously browsed items on a retailer's website are shown targeted advertisements with images of the same products while surfing the Internet (Lambrecht & Tucker, 2013). This marketing technique, known as retargeting, tries to re-engage potential buyers who have expressed interest in a product but have not yet purchased it. In today's digital advertising

landscape, these personalised advertisements are transmitted programmatically. Organisations increasingly rely on digital marketing and online advertising as crucial components of their Internet marketing and communication strategies to achieve meaningful outcomes (Jung et al., 2017).

Precise targeting tools are now indispensable to most advertisers. These methods have evolved into a multi-billion-dollar industry as investment in online advertising has flourished. It is estimated that digital advertising spending worldwide will be around 700 billion U.S. dollars in 2024 (Statista, 2023). Programmatic advertising spending in Europe is expected to hit 96 billion U.S. dollars in 2023, with global spending of an estimated 558 billion U.S. dollars during the same year. Global digital advertising spending is projected to reach 836 billion U.S. dollars by 2026 (Statista, 2023).

To this effect, for advertisers, it has become increasingly essential to comprehend the impact of these influential advertising techniques on young people's attitudes, intentions, and behaviours. Advertisers often intensify this impact by embedding messages that trigger the 'fear of missing out' – an advertising appeal where the fear that one would miss out on something is blatantly stated or implied (Hodkinson, 2019). Young people are more susceptible to media influence (Aral & Walker, 2012), so they may be the most vulnerable in this context.

1.1 Motivation

For this reason, the main focus of this study since its inception has been to investigate the impact of repeated online advertisements on adolescents' attitudes and behaviour, using a multi-disciplinary approach encompassing marketing and psychology. After more than two years, the study transitioned towards a more refined focus, centring on retargeted advertisements and young people between the ages of 13 and 24. Specifically, the research evolved into a study intended to understand young people's attitudes towards retargeting, focusing on influential factors of retargeted advertisements and their impact. Moreover, the study progressed into fusing the theory of planned behaviour (TPB) in the formula and investigating the notion of fear of missing out (FoMO) in a retargeting context and its impact on young people's attitudes, subjective norms and behavioural intentions.

The urge to study the retargeted advertisement technique and FoMO phenomenon and how these affect young people stemmed from a threefold perspective. First, as I have two children who fall into the category of young people, I had the hypothesis that this marketing technique somehow affects my children in some way. Hence, I yearned to know more about it and the influence of these advertisements on young people, coupled with the FoMO phenomenon. I, too, have been chased regularly by these advertisements, and sometimes, they drive me back to the website I visited before. I also encountered numerous retargeted advertisements with a FoMO message urging me to return to the website and complete the purchase. The lack of information on the extent of influence was frustrating as it demonstrated the inability to answer numerous questions raised by parents and myself, who have observed our children connected virtually many hours a day.

Second, much information could be found from a commercial perspective but far less in academia. Different online advertising agencies instruct organisations to maximise their marketing campaigns by selling different plans, including retargeting, and claiming to influence Internet users in myriad ways. These advertising agents also urge the utilisation of FoMO appeals on organisations by pushing the idea of urgency or prompting herd behaviour amongst young people. Since many organisations widely used the retargeting technique, little tangible academic information was available to challenge or confirm the agencies' claims. Hence, the need to grasp and understand this subject was greater. Moreover, different scholars urged for more studies in retargeting (e.g., Zarouali et al., 2017) and FoMO (e.g., Hodgkinson, 2019).

Third, its massive growth in the online ecosystem made it a more urgent yet novel study. Billions of Euros are being injected into the Internet to invest in personalised advertisements to reach individuals efficiently and effectively. Therefore, the significance of every factor that may influence the advertising value and attitudes of young people was an essential aspect of understanding the effect that these retargeted advertisements might perpetuate. Moreover, I sensed the urgent need to understand how FoMO-loaded messages used in retargeted advertisements could trigger fear among young people that they might miss out on an opportunity to acquire a product or offer. Finally, it was also essential to understand how young people's attitudes towards retargeted advertisements, their social pressures, and perceived behavioural control can affect their intention and ultimately, their action to click on a retargeted advertisement, driving them to a website they have visited.

1.2 Rationale

As young people and adults spend most of their time online, advertising has shifted from traditional to digital. Due to the proliferation of online advertising, this evolution attracted researchers from different specialised fields over the past decade. Internet advertising businesses achieved momentous commercial progress with the emergence of tailored and algorithm-driven advertisements. Different advertisement techniques are used today, ranging from native advertising to retargeting to proximity marketing. However, the academic field has not kept up with the rapid pace of commercial advancements in online advertising. One of the critical advancements in online advertising is retargeted advertisements. There is a pressing need to understand which factors of these advertisements influence the perceived advertising value and young people's attitudes towards retargeted advertisements. Moreover, this study focuses on the influence of FoMO in retargeted advertisements on young people. The aim is to extend the knowledge of how this advertising technique affects young people's attitudes, the intention to click on advertisements and their behaviour, given that young people have their perceived control and are exposed to subjective norms (Ajzen, 1991).

The need arose to understand how FoMO messages within retargeted advertising can augment the intention to click on them. To the best of my knowledge, FoMO constructs in advertising messages, specifically in retargeted advertisements, have never been tested. There was a dearth of academic literature specifically addressing retargeted advertisements, their influencing factors and FoMO. Hence, it was understood that there is a growing and pressing need to focus on how these advertisements influence young people. No scale was found, to the best of my knowledge, that can measure the effect of FoMO in retargeted advertisements on young people, and so in this case, there were two options to consider; either developing a complete instrument from scratch and validating the first FoMO scale in a retargeting context, or else, adopt items used for the different constructs employed separately in different studies and adapt to the study's context. Given the lack of studies in this area, it was determined that contributing to the rapidly growing industry would be more reasonable to adopt the second option first, which could lead to future work that taps into the first option at scale.

It was envisioned that this would be a novel tool for researchers to adopt in their studies and contribute to methodology. Another reason to carry out this study was to contribute to knowledge as it extends our understanding of FoMO among young people based on the exposure to retargeted advertisements that may amplify scarcity, urgency, social proof, and loss aversion. The study intends to understand how effective the influential factors in retargeted advertising on young people are.

Young people are more susceptible to advertising influence and could potentially be most vulnerable in this advertising perspective. From the outset, it was anticipated that this would be an essential step in understanding the real effect of these advertisements on young people. Another rationale for conducting this study was to contribute to the body of knowledge by expanding on the impacts that retargeted advertisements may have on different age groups and genders.

1.3 Background to the Research

1.3.1 Young People

The United Nations International Children’s Emergency Fund (UNICEF, 2023) defines adolescents as individuals between the ages of 10 and 19. Teenagers are individuals between 13 and 19 years. The World Health Organisation (WHO, 2019) construes that youths are individuals between the ages of 15 and 24 years, and young people are between 10 and 24 years, combining adolescents and youths. When conducting initial desk research and scoping studies, all terms referring to this age group were found: adolescents, youths, young adults and teenagers, but for the sake of this study, these were grouped under one umbrella term – young people. This is typically the approach adopted in this research unless the study indicates specifically to a particular subset of the age bracket of young people.

For this study, although young people are individuals from 10 to 24 years, only individuals from 13 to 24 years were considered. This age bracket was chosen as it represents a significant portion of the population that is active on SNSs. Individuals aged 13 were chosen as the lower age range limit because this is the minimum age requirement for opening an account on the most prominent SNSs. This decision ensured that the sample was solely made up of individuals legally authorised to use these platforms and that the findings would apply to the experiences of young people who use SNSs.

For comparative purposes, young people were categorised in this study into two groups based on their age. Individuals aged 13 to 17 were referred to as minors in accordance with the Maltese Minor Protection Act (CAP. 602, 2). Individuals aged 18 to 24 were classified as young adults. The age categories will be used in Chapter 3 (Methodology) and the subsequent chapters of the study to evaluate any differences in outcomes between the two groups.

Gender was also evaluated and compared in this study. The term ‘gender’ was chosen over the word ‘sex’ as the former applies to the social and cultural constructs comprising attitudes, behaviours, and roles connected with masculinity and femininity (APA, 2012). Contrastingly, sex refers to biological differences such as reproductive organs and hormonal composition. Hence, the terms ‘men’ and ‘women’ were used for general reference of young people, who are referred to as cisgender¹. In this study, the terms ‘males’ and ‘females’ were used when they were attributing to the age group (minors or young adults) or group of individuals (e.g., participants or respondents) (APA, 2020). These terms were also used in diagrams or tables for ease of reference. The term ‘other’ was also included in the study, incorporating all other gender identities.

1.3.2 Applying the Advertising Value Model

In previous studies, the advertising value model (AVM; Ducoffe, 1995; 1996) has been applied to assess online advertising, demonstrating that the measures can be used to examine advertising in diverse contexts (e.g., Arora & Agarwal, 2019; Hamouda, 2018; Murillo, 2017; Murillo et al., 2016). Ducoffe’s (1996) AVM was used as the theoretical foundation of part of this study. This study evaluates the relative relevance of various components of advertisements and their relationship with the advertising value, as well as how these influence young people’s attitudes. It seeks to compare these factors’ impact on the value and attitudes between age groups and genders.

Many studies considered AVM a valuable tool for measuring the effectiveness of advertising (e.g., Arora & Agarwal, 2019; Murillo et al., 2016; Saxena & Khanna, 2013). Advertising value can be defined as the assessment of the overall worth or effectiveness of advertising (Ducoffe, 1996). The perceived worth or importance of advertising plays a role in shaping favourable views towards various aspects of an advertisement (Arora & Agarwal,

¹ According to the Cambridge (2023) dictionary, cisgender denotes when an individual’s gender identity corresponds with the sex and the body the individual had at birth.

2019). Ducoffe (1996) created the first model by including three main factors: informativeness, entertainment and irritation, along with value and attitude. Many scholars have tested this model but also included other factors, such as credibility (e.g., Brackett & Carr, 2001), personalisation (e.g., Arora & Agarwal, 2019) and interactivity (e.g., Ariffin et al., 2018).

To my knowledge, this study is the first to evaluate the theoretical model with all the six antecedent factors en masse in a retargeting context. Ozcelik and Varnali (2019) tested three factors; however, despite the inclusion of retargeting in the keywords, these scholars mainly focused on online behavioural targeting as a whole. Recently, two academic research studies attempted to link all the factors in exploring the attributes that impact the appeal of advertisements on an SNS (Cvirka et al., 2022; Ho Nguyen et al., 2022).

1.3.3 Including ‘Fear of Missing Out’ in the Paradigm

The study of the FoMO phenomenon gained more interest and deeper insight with Przybylski et al.’s (2013) concept, which delved into the general sensation of anxiety and fear that one will be missing out on activities with others. From there, many studies focused on FoMO that is “self-initiated” (Hodkinson, 2019, p. 65), treating it as a personality characteristic that has been related to detrimental psychological and physical impacts, as well as destructive habits of SNS involvement (Good & Hyman, 2021). On the other hand, FoMO literature examining outcomes relevant to marketing and consumer behaviour is scarce (Alfina et al., 2023; Dinh & Lee, 2022; Neumann et al., 2023). Very few studies have touched base on the externally initiated FoMO appeals that may trigger the sense of missing out in individuals (e.g., Hodkinson, 2019; Weideinger et al., 2021; Pusenius, 2023) - the FoMO messages that are being used in advertisements. No instrument was established to study this phenomenon in a commercial and marketing context using impersonal methods. Most studies adopted Przybylski et al.’s (2013) 10-item instrument or adapted it to their contexts (e.g., Saavedra & Bautista, 2020; Good & Hyman, 2020, 2021).

Retargeted advertisements serve as a compelling magnet for FoMO messages, given that their main goal is to re-engage individuals who previously visited a retailer’s website. Some fieldwork conducted before this study resulted in encountering various retargeted advertisements with FoMO-laden appeals intended to augment the anxiety to take immediate

action or else miss an opportunity. This phenomenon ignited the will to research FoMO and its inclusion in retargeted advertisements.

1.3.4 Using the Theory of Planned Behaviour

The TPB considers that individuals are rational decision-makers who contemplate various elements, including their attitudes, subjective norms, and perceived behavioural control (Ajzen, 1991). These elements, however, are not always consciously or actively examined throughout the decision-making process; instead, they may function in the background and indirectly impact the decision-making process (Ajzen, 2020). For example, an individual's prior experiences, beliefs, and encounters may alter their attitudes about a specific action, influencing their decision to partake in or avoid that conduct. Similarly, the individual's assessment of how simple or complex the activity is to accomplish, their attitudes, and their sense of social pressure to engage in or avoid the conduct may influence their decision-making process. Hence, the TPB demonstrates how elements may help in the prediction of the intention and behaviour of an individual.

When individuals visit a retailer's website and leave without taking any action or abandoning a cart, retargeted advertisements start chasing individuals. The individuals' attitudes are formed based upon the factors and value of an advertisement, added to the social pressure and the belief that individuals control their behaviour. All this might drive the intention to click on the retargeted advertisement, leading to the action itself - clicking on the advertisement.

The TPB has been used in many disciplines and various contexts. However, only a few studies included this theory's original constructs in an advertising setting (e.g., Sanne & Wiese, 2018). The TPB can aid marketers in better understanding potential individuals' decision-making processes and designing successful marketing strategies with appropriate tactics, influencing their behaviour. This was another reason why TPB was incorporated into this conceptual model.

TPB was chosen over the Theory of Reasoned Action (TRA; Fishbein & Ajzen, 1975) solely for perceived behavioural control in a retargeting context. The TRA assumes that individuals' intention to act is influenced by their attitudes towards the behaviour and perceived social pressures. These intentions are considered as the immediate antecedents of

behaviour. TRA assumes perfect volitional control without considering external controls (Ajzen, 2020). On the other hand, the perceived behavioural control construct refers to individuals' perception of how easy or difficult it is to perform a behaviour (Ajzen, 2020).

TPB was preferred to the Technology Acceptance Model (TAM; Davis, 1989) because the intent of this study was to link the AVM and the behaviour theory to the attitudes of young people. Moreover, the study sought to understand the attitude and social pressures that may be augmented by FoMO rather than how young people embrace technology and their user experience. Moreover, TAM is more aimed to inform technology on how to ameliorate their application with user's preferences and technology adoption. These factors were not within the scope of this study. The same applies to the non-adoption of the Unified Theory of Acceptance and Use of Technology (UTAUT; Venkatesh et al., 2003; UTAUT 2; Venkatesh et al., 2012); the study's scope did not incorporate the investigation of performance and effort expectancy constructs, thus rendering the usage of these models impractical within the research context. It was envisaged that their inclusion would have produced limited or irrelevant insights given the study objectives and parameters of the research.

1.4 Study Objectives, Preliminary and Research Questions

The study has five objectives. First, it aims to determine which factors affect young people's attitudes towards online advertisements in general. Second, it pursues to understand the effect of these various influencing factors on perceived advertising value and young people's attitudes towards retargeted advertisements. Third, it seeks to explore and identify the foundational constructs contributing to FoMO as a higher-order construct (HOC) elicited by retargeted advertisements. Fourth, the study aims to understand the association between retargeted advertisements and the trigger of FoMO messages on young people. Finally, the study seeks to comprehend how attitudes, social pressures and perceived behavioural control relate to the intention to click and ultimately drive young people to click on retargeted advertisements, hence fusing the AVM and TPB models together in a retargeting context.

Therefore, the over-arching research question derived from the main aims of the study is:

What is the extent of influence that retargeted advertisements and FoMO appeals exert on young people?

Due to the various studies examining the application of AVM in the context of online advertising, all of which use different factors, it was necessary to develop a preliminary research question (PRQ) to gain a comprehensive understanding of the most significant factors employed in different studies, and how they can be adapted to a retargeting context. For this study stage, a systematic literature review (SLR) was required to analyse and synthesise various academic studies and acquire a final list of the most significant factors employed by diverse scholars in different settings to address the first PRQ. The PRQ attributed to this part of the study was:

PRQ1: *Which are the most significant factors influencing young people's attitudes towards online advertising?*

As there has been limited focus on FoMO (the specific appeal being referred to) in marketing research in recent years, there was no full instrument available to examine the various components of this appeal that may contribute to anxiety among young people when they encounter retargeted advertisements containing FoMO messages. Again, an exploratory study became imperative at this research stage to address another PRQ. This necessity led to adopting a focused approach, employing a focus group study. It was crucial in this phase to identify and understand which elements of FoMO in retargeted advertisements may augment anxiety among young people, driving them to click on the advertisement. The PRQ attributed to this stage of the study was:

PRQ2: *Which elements contribute to the externally initiated FoMO caused by retargeted advertisements?*

Following the execution of studies addressing the PRQs, and an extensive examination of pertinent literature, a conceptual model was developed. This model seeks to explain the integration of AVM and TPB in the context of retargeted advertising, and the influence of FoMO in this area. This conceptualisation led the way for formulating three research questions (RQs) aimed at gaining a deeper understanding of these inter-relationships.

To investigate the influence of various antecedents on perceived retargeted advertising value and young people's attitudes towards retargeted advertisements, the following RQ was formulated:

RQ1: *What is the relationship between the six influencing factors and young people's perceived retargeted advertising value and their attitudes towards retargeted advertisements?*

The subsequent RQ was created in order to understand how the TPB fits into the equation, with attitude serving as the critical connection between the AVM and TPB models:

RQ2: *To what extent do the three primary factors (attitudes, subjective norms, and perceived behavioural control) of the TPB influence young people's intention to click, and consequently, their behaviour towards retargeted advertisements?*

Finally, to analyse the underlying attributes that contribute to the overarching FoMO construct generated by retargeted advertisements and to explore the correlation between retargeted advertisements and the trigger of FoMO messages on young people, the subsequent RQ was posed:

RQ3: *What is the relationship between externally initiated FoMO and young people's attitudes, subjective norms, and intention to click on retargeted advertisements?*

1.5 Proposed Conceptual Model

A conceptual model was projected based on the background of the research and relevant research questions explained in the previous sections. This study proposes a conceptual model to investigate young people's perceived value and attitudes towards retargeted advertisements, the effect of FoMO appeals on young people, and how attitudes, including the effect of subjective norms and perceived behavioural control, can influence the intention to click on retargeted advertisements and ultimately, click on them.

To examine the influence that factors of retargeting may have on the advertising value and attitude towards these advertisements, Ducoffe's (1996) AVM was used, which

originally comprised entertainment, informativeness, and irritation as antecedent factors of advertising value and the attitude towards online advertising. Three other components were added to the original model based on an SLR that scanned various academic studies (De Battista et al., 2021a). This was further confirmed by a meta-analysis conducted by Lütjens et al. (2022). The added influencing factors were credibility, personalisation, and interactivity. In this area of study, researchers mainly employed three different models to explain how the various factors can affect the consumer's attitudes towards advertising. Some studies have proposed a direct link between the determinants and advertising value, which, in turn, affects the attitude towards it (e.g., Arora & Agarwal, 2019; Hamouda, 2018). Few studies have included advertising value as a mediator for one or more constructs, suggesting that it plays a critical role in shaping consumers' attitudes towards advertising (e.g., Murillo, 2017; Murillo et al., 2016). Finally, certain studies have established a direct association between the factors and the attitude without considering the intermediary role of advertising value (e.g., Ariffin et al., 2018; Arora & Agarwal, 2020).

Hence, the proposed AVM was constructed with the flow of antecedent factors towards advertising value and the attitude towards advertisements, as adopted by Arora and Agarwal (2019), Arora et al. (2020), Gaber (2019), Haghirian et al. (2008), Murillo (2017) and Saxena and Khanna (2013), among others.

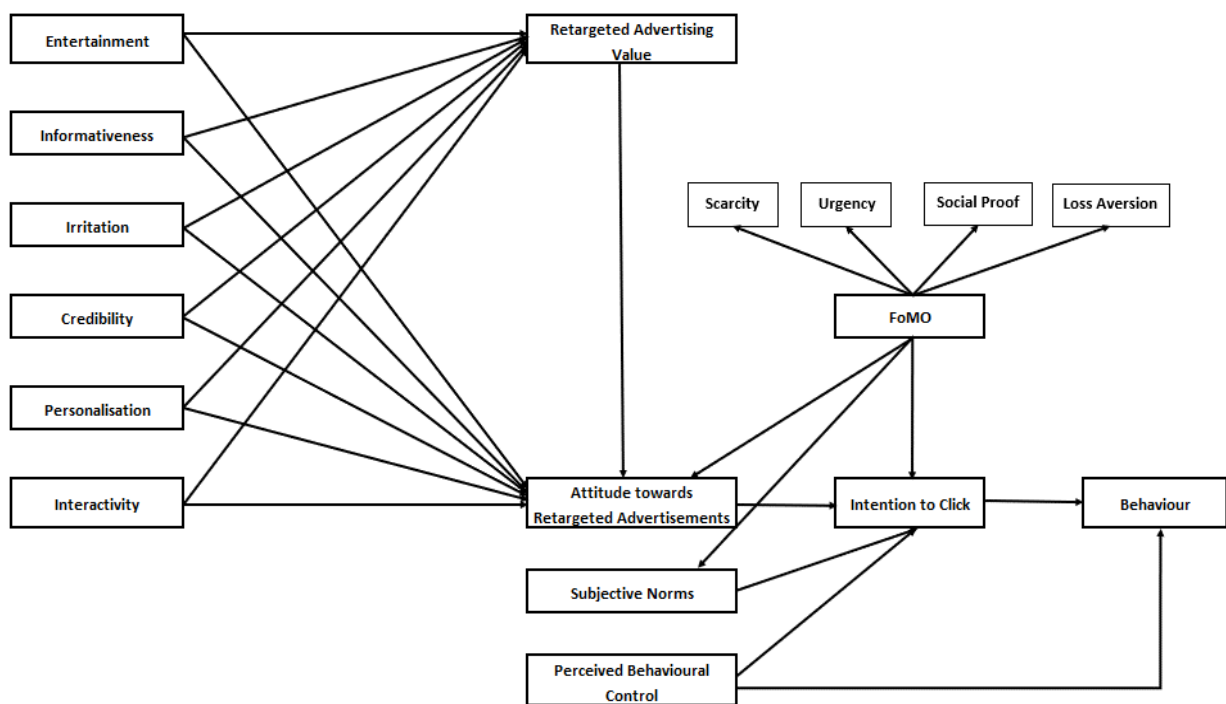


Figure 1.1: The conceptual model of the extended AVM, FoMO (as an HOC) and TPB

In this study, four constructs depicting externally initiated FoMO were established, based upon the two focus groups conducted purposefully for this research, and verified with other studies (e.g., Argan et al., 2023; Lamba, 2021). These are scarcity, urgency, social proof, and loss aversion. Self-initiated FoMO-driven behaviours as tagged by Hodgkinson (2019) were tested by Saavedra and Bautista (2020) using Przybylski et al. (2013) items, linking it with the TPB constructs. Other studies adopted Przybylski et al. (2013) and adapted them to test FoMO-laden appeals on purchase intentions (e.g., Dinh & Lee, 2022; Good & Hyman, 2020; 2021). Scholars also included one or two constructs of this FoMO and tested its effect on TPB constructs (e.g., Jang et al., 2015; Ku et al., 2012; Moore & Craciun, 2021).

The original TPB framework was incorporated as proposed by Ajzen (1991). According to the degree of study, the behavioural intention was translated into the intention to click. Various scholars tested behavioural intention as the intention to click on advertisements (e.g., Bleier & Eisenbeiss, 2015b; Cho & Cheon, 2004; White et al., 2008). Attitude is the common denominator of AVM and TPB, acting as a conduit between the two models. The study seeks to explain the effect of retargeted advertisements when using AVM and TPB by linking these models and integrating FoMO as an external construct while also studying how externally initiated FoMO appeals may contribute to this combination. Figure 1.1 illustrates the proposed conceptual model.

1.6 Methodology and Design

Answering the PRQs and RQs involved a meticulous design and execution of a mixed-method approach. Apart from the scoping study and SLR, an exploratory sequential mixed method was employed, commencing with a qualitative study that leads to a quantitative study (Creswell & Creswell, 2018).

To cover the first PRQ regarding the factors involved in the AVM, a scoping study was conducted based on Arksey and O'Malley's (2005) five-stage framework, eventually leading to an SLR. Moher et al.'s (2009) Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 27-item checklist was employed for the SLR. The PRISMA flowchart included four stages: identification, screening, eligibility, and inclusion. Academic literature was collected from four established databases covering the period from January 1994 until December 2020. Initially, 16,298 records were collected using the database

research, and an additional 22 papers were identified using other sources. After the duplicates and records not in the scope of the study were removed, 501 were left to assess for eligibility. These were fully read, and 468 were removed for various reasons of exclusion, leaving 33 studies for synthesis. According to the findings of this study, six key antecedents were found that influence people's attitudes about advertising; almost all the chosen academic studies found a connection between the factors and attitude (De Battista et al., 2021a).

For the FoMO construct, and thus, to answer the second PRQ formulated in this study, two focus groups were conducted. These focus groups were crucial in constructing the FoMO constructs and items required for the quantitative study. Age groups separated the two focus groups, one dedicated to minors from 13 to 17 years and the other for young adults from 18 to 24 years. A non-probability purposive sampling approach was adopted to collect evidence from various sources (Morgan, 1997). The groups comprised six mixed-gender participants, and the sessions were held online using Microsoft Teams. The participants in both focus groups were Internet users who used diverse SNS platforms and encountered various advertisements. An interview guide was prepared a priori for both sessions (Then et al., 2014). Both focus group sessions were audio-recorded and took almost 90 minutes each. Ethical considerations were involved, relevant principles were addressed, and approval was sought and granted. After transcribing the focus groups, the analysis was conducted using NVivoTM v.12 Pro (QSR, 2020). An in-depth thematic analysis was undertaken.

The SLR and focus groups, along with extensive desk research for the TPB constructs, culminated in the final phase of the study, the quantitative part of the research – the questionnaire. This phase was the most prolonged and laborious process in the study. Apart from the consent and information page and the general demographic area, all the individual constructs pertaining to the three main components of the conceptual model, namely, AVM, FoMO and TPB, had designated items. The battery of items comprised 56 indicators, using a 7-point agreement Likert scale format. Items were adopted from various studies and adapted for the retargeting context. Google Forms was used, and the questionnaire was conducted in Malta. Various pre-test exercises and a pilot study were conducted for best comprehension and rigour.

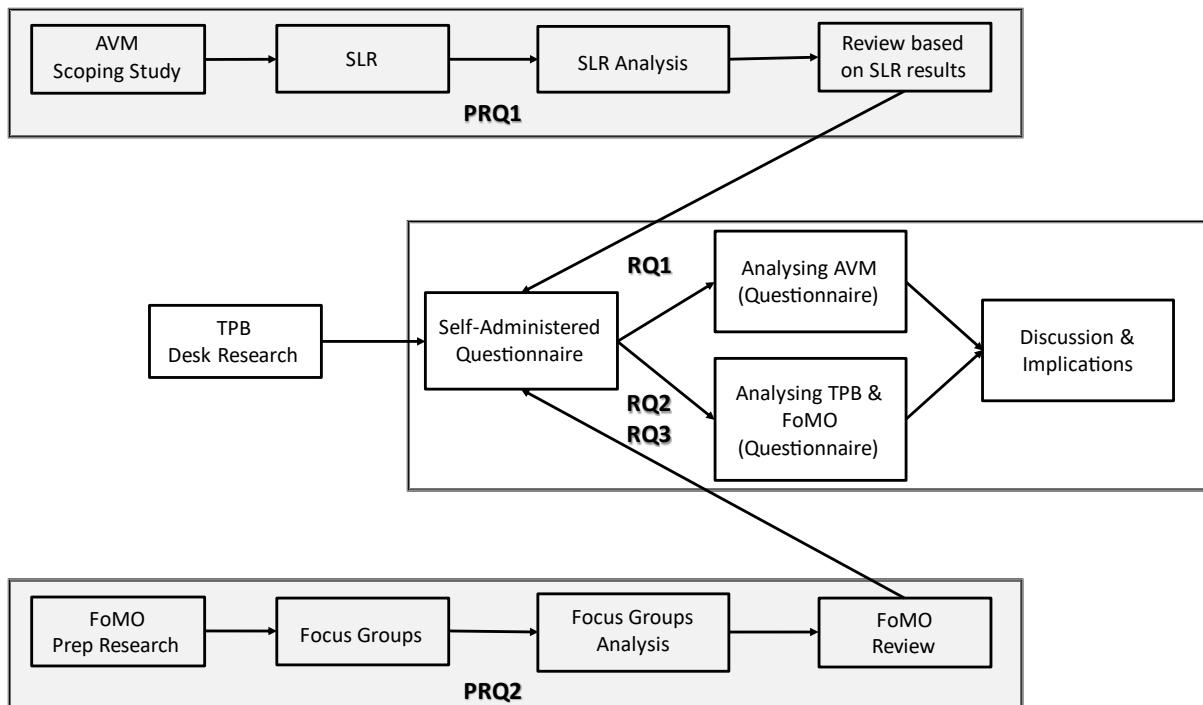


Figure 1.2: The research flow of this study according to the respective research questions.

The most challenging phase of this method was ethical clearance, given that minors under the age of consent were involved. Nonetheless, the study was approved and launched after predetermined conditions were agreed upon and an active consent procedure was established (Blom-Hoffman et al., 2009). Two identical surveys were produced; one targeted 13- to 15-year-olds, and thus, parental consent was required, and another targeted respondents between 16 and 24 years. The online questionnaire was available for 50 days, spanning from May to July 2022. A total of 521 respondents actively participated in both surveys, out of which 480 responses were valid, ensuring a robust confidence level of 4.5%. To facilitate the analysis process, the conceptual model was split into two parts, AVM, and FoMO and TPB together, for more manageable analysis, with a more structured and organised approach. For the initial testing, IBM Statistical Package for the Social Sciences (SPSS) Statistics vers. 28.0.1.0 (142) (IBM Corp., 2021) was employed. To evaluate the measurement and structural models of the study (Chin, 2010), Partial Least Squares Structural Equation Modelling (PLS-SEM) was used, employing SmartPLS vers. 4.0.9.4 (Ringle et al., 2022). This software was also utilised to conduct the Measurement Invariance of Composite Models (MICOM) procedure and PLS-SEM multigroup analysis (PLS-MGA) for gender- and age-based differences.

Figure 1.2 shows the whole methodological research flow employed in this study. In addition to using qualitative and quantitative methods to collect data and solidify the study's validity, the research design included several other measures along the different phases to mitigate potential biases that could compromise the study's quality and power. The philosophical perspective, theory development process, methodological orientations, and overall research plan, along with these measures, are discussed in Chapter 3.

1.7 Summary of Research Findings

For the PRQs, the SLR and focus groups provided relevant information for constructing the questionnaire. The SLR found that the most significant determinants influencing young people's attitudes towards online advertising are entertainment, informativeness, irritation, credibility, personalisation, and interactivity. On the other hand, from the thematic analysis conducted for the focus groups, four FoMO constructs were elicited: scarcity, urgency, social proof, and loss aversion.

For the first RQ, the findings suggest that entertainment, interactivity, and personalisation are the most significant antecedents of retargeted advertising value. The strongest influencing factors of young people's attitudes towards retargeted advertisements are entertainment, interactivity, irritation, and value. A parsimonious model for this specific section of the conceptual model further affirms these findings. Hence, the perceived value and usefulness of retargeted advertisements increase when they show products already searched for on a website by young people, providing an enjoyable, interactive, and personalised experience. Furthermore, if they are entertaining and interactive, retargeting may influence young people's attitudes, and adversely, if they are annoying and irritating. Nevertheless, the results strongly indicate that young people feel that retargeted advertisements are not much amusing, informative, credible, and interactive, yet they feel that they are more customised to them. Value fully mediated the relationship between informativeness, credibility and personalisation with attitude. Differences between age subsets and genders were recorded. Men, particularly young adults, were more affected by irritation than women. The investigation indicated that value exerts a strong influence on the attitudes of young female adults when compared to young female minors. Additionally, a significant influence was recorded, showing that the impact of value on attitudes is also prominent among young female adults as opposed to young male adults.

For the second RQ, the research findings indicate that FoMO messages in retargeted advertisements significantly influence young people's attitudes, amplify social pressures, and impact their intention to click on these advertisements. Interestingly, social proof was found to be the sole element within the FoMO HOC to impact the three TPB constructs significantly. Attitude and subjective norms partially mediated the relationship of FoMO with the intention to click. Surprisingly, the research findings suggest that men are more predisposed to the FoMO influence on subjective norms and behavioural intentions than their female counterparts. Additionally, this variance between genders becomes more prominent during the adult stage rather than the early developmental stages.

Finally, the findings indicate that the three precursors of behavioural intention are positively and significantly related to the intent to click on retargeted advertisements. Moreover, perceived behavioural control and intention to click significantly influence young people's behaviour towards retargeted advertisements. It was found that behavioural intention partially mediated the relationship between perceived behavioural control and behaviour. Significant differences between genders and age subsets were also noticed, with attitude being the predominant antecedent of the intention to click on advertisements among female minors. This further stands in contrast to the broader male demographics when including both minors and young adults together. Additionally, the influence of social pressure was found to exert a more significant impact on the intentions to click among male minors in comparison with female minors.

1.8 Contributions to Theory and Implications to Practice

This section provides a concise overview of the theoretical contributions, and practical implications that have emerged from the study's findings.

1.8.1 Contributions to Theory

To the best of my knowledge, there has never been an attempt to collect all the academic literature that involved factors that affect attitudes towards online advertising, focusing specifically on young people. This study offers the first SLR that focuses on the influencing antecedents of young people's attitudes towards online advertising. It was a challenging feat because while all the research included in the SLR study involved young people, none of them was expressly aimed solely at this whole demographic, the one being

focused on in this study. None of the research included young people with the exact bracket from 13 to 24. Furthermore, the minor cohort of young people was the least represented in the research, potentially due to ethical concerns, the requirement for parental approval, and access issues. These findings revealed a lacuna in the literature addressing young people's attitudes towards advertising and emphasised the need for more study in this area (De Battista et al., 2021a). Hence, focusing this research solely on young people aged 13 to 24, particularly minors from 13 to 17, was pivotal and contributory. Six constructs emerged from this SLR, which were confirmed by Lütjens et al. (2022). Although the focus group was designed for the FoMO objective, an additional question was specifically included regarding the influencing factors of retargeted advertising. This strategic addition aimed to acquire complementary insights, while facilitating confirmation of data.

In their study, Zarouali et al. (2017) lamented the need for more research on retargeted advertisements. They recommended that academics concentrate more on this phenomenon that has proliferated rapidly in the online environment, with researchers ought to keep abreast with this reality. Retargeting continues to evolve commercially, and it is essentially complex but remains relatively novel and unexplored (Bleier & Eisenbeiss, 2015b). Studies have stirred up in the retargeting scene in the past few years. However, to my knowledge, no study specifically tested all the six precursors of advertising value and attitude in a retargeting context.

Previous studies have investigated the four different constructs attributed to FoMO in this study separately. Generally, urgency and scarcity were tested together, either in tandem or separately (e.g., Akram et al., 2018; Jang et al., 2015). Other studies focused on social proof and herd behaviour (e.g., Shusha & Touny, 2016; Stibe & Cugelman, 2019), social proof and loss aversion (e.g., Gupta & Shrivastava, 2022), scarcity and social proof (e.g., Koch, 2017; Teubner & Graul, 2020; Zhang et al., 2022). Studies that examined panic and impulsive purchasing linked perceived scarcity with FoMO, with the latter being a mediating variable (e.g., Cengiz & Şenel, 2023; Parveen et al., 2022; Zhang et al., 2021, 2022). As a result, while the items of the FoMO scale were drawn from various studies, they were never combined into a unified scale, with FoMO as an HOC. In his book, Lamba (2021) mentions the four distinct constructs as part of the marketing messages embedded in advertisements, yet no empirical data was collected to substantiate these constructs. Cialdini (2021) discusses the four constructs but does not draw any correlation between these factors and FoMO.

Instead, he confines his analysis of these elements within the realm of persuasion. Argan et al. (2023) refer to the elements in a financial investment context but uses a generic FoMO self-initiated scale to test it. Hence, to my knowledge, this is the first time that scarcity, urgency, social proof, and loss aversion have been studied in combination in an advertising context so far.

Another significant contribution to theory and knowledge is developing and deploying the conceptual model as fused with the relevant battery of items. Figure 1.1 shows the complex model that has been presented for this study. It connected AVM with TPB, with the attitude construct acting as a conduit between the two models and FoMO as another construct that may affect the attitude, subjective norms, and the intention to click. It is the first time to fuse the conceptual model as is, and even more so in a retargeting context.

Using the statistical software for the complexity of the conceptual model provided granularity in the model. This analytical exercise aided in testing the reliability and validity of the model, using evaluation criteria of the measurement and structural model (Chin, 2010) and comparing and analysing data between age groups and genders. This study presents differences between minors and young adults, men and women. The MICOM procedure (Henseler et al., 2016) and PLS-MGA (Hair et al., 2018) were conducted in this regard.

1.8.2 Implications to Practice

This study aimed to contribute to practice by targeting young people, advertisers, policymakers, and parents or guardians. This section will be further elaborated in the discussion chapter.

Young people are advised to be vigilant about their online behaviour, especially when accepting cookies, as their actions contribute directly to the frequency of retargeted advertisements. Extreme use of SNSs can lead to harmful consequences (Zheng & Lee, 2016). Hence, more attention should be given to what is encountered online and how this is translated.

Advertisers are advised to treat young people's data carefully while respecting their privacy concerns and refraining from the repetitive and frequent display of advertisements

shortly after an action. The appeal for advertisers to be more credible, informative, and less irritant while being more careful in FoMO usage is persistent.

On the other hand, policymakers can empower young people through increased education on advertising influences and FoMO while including media literacy earlier in the education system. They should equip young people with the tools to develop the necessary skills to become resilient and navigate the media landscape with confidence and informed decisions. The study suggests action by policymakers to enhance the ethical frameworks when the basic emotions are intentionally tapped using FoMO methods in advertisements and to improve the current policies for retargeted advertisements aimed at young people.

Finally, parents or guardians are advised to keep abreast of their children's experiences on the Internet. Observing and spot-checking the instructions given by children on SNSs is essential, primarily due to altered age issues. Although FoMO impacts attitude and intention positively, it also alters the social pressures associated with products and services offered on retargeted advertisements. This factor facilitates pestering power among children.

1.9 List of Publications and Poster Presentations

Following is a list of peer-reviewed conference papers that originated from this thesis:

De Battista, I., Curmi, F., & Konietzny, J. (2023). FoMO in a digital revolution. In F. Kerrigan (Ed.), *Proceedings of Academy of Marketing 2023 Annual Conference and Doctoral Colloquium: From Revolution to Revolutions, University of Birmingham* (pp. 101 – 102). Academy of Marketing. ISBN: 978-1-3999-58042

De Battista, I., Curmi, F., & Konietzny, J. (2022). “Ads are chasing me!”: Applying the advertising value model and the theory of planned behaviour to retargeted advertisements. In S. Roper, & C. McCamley (Eds.), *Proceedings of Academy of Marketing 2022 annual conference: The fabric of life* (p. 38). Academy of Marketing. ISBN: 978-1-86218-212-7.

De Battista, I., Curmi, F., & Said, E. (2021b). Examining FoMO triggered by retargeted advertisements on young people. In A. Przegalinska, S. Kalkan, E. Aydin, & M. Gokerik (Eds.), *Proceedings of the Fourth Economics, Business and Organization Research (EBOR) Conference* (pp. 218-233). EBOR Publication Group.
https://www.eborconference.com/downloads/poland/full_text_book.pdf

De Battista, I., Curmi, F., & Said, E. (2021c). Retargeted advertisements' influential factors and fear of missing out on young peoples' attitude. In A. M. Doherty, F. Kerrigan & L. O'Malley (Eds.), *Proceedings of Academy of Marketing 2021 annual conference:*

Reframing marketing priorities (pp. 79-80). Academy of Marketing. ISBN: 978-1-9196473-0-2.

De Battista, I., Curmi, F., & Said, E. (2020a). Towards the development of fear of missing out scale: The case of retargeted advertising among young people. Abstract. *The Third Economics, Business and Organization Research (EBOR) Conference*, 45. <https://www.eborconference.com/downloads/rome/abstract.pdf>

De Battista, I., Curmi, F., & Said, E. (2020b) Retargeted advertising and fear of missing out in young people: Towards the development of a scale. *Economics Business and Organization Research, Proceedings of the Third Economics, Business and Organization Research (EBOR) Conference*, 278-294. <https://dergipark.org.tr/en/pub/ebor/issue/58610/848952>

Journal publication:

De Battista, I., Curmi, F., & Said, E. (2021a). Influencing factors affecting young people's attitude towards online advertising: A systematic literature review. *International Review of Management and Marketing*, 11(3), 58-72. <http://dx.doi.org/10.32479/irmm.11398>

Poster presentations:

“Retargeted advertisements and young people” – First FEMA Symposium 2023, held at the University Campus on Friday, 05th May 2023.

“Unveiling the impact of retargeted advertisements in the digital age” – First Research Expo 2023, held at Valletta Campus on Wednesday, 17th May 2023.

1.10 Thesis Structure

Chapter 2 provides a critical analysis of the existing literature on the topic and outlines the theoretical framework used in the study. This chapter focuses on the AVM, particularly the factors that influence the attitude towards online advertising, which then shifts to retargeted advertisements, the FoMO phenomenon, and the TPB. Finally, this chapter presents the pertinent RQs with a list of hypotheses deduced from the study.

Chapter 3 is dedicated to the methodology, describing the research design, methods, and procedures used to collect and analyse data. This chapter is split into five sections; the first section provides an overview of the considerations taken for the study. The second section focuses on the scoping study and the SLR. The third section concentrates on the focus groups conducted for the study. The fourth section delves into the survey research conducted

in Malta. The closing section is dedicated to the analytical tools and techniques used to examine the results.

The analysis of findings collected from the research follows suit in Chapter 4. This chapter is split into six sections. Following an introductory section for this chapter, the second section zooms in on the SLR and delves into the methodical rigour employed to analyse such a study. The third section presents a thematic analysis of the findings emanating from the focus groups. The fourth and fifth sections focus on the survey, with the former section homing in on the AVM part of the study while the latter section analyses the FoMO and TPB sections of the model. Finally, the sixth section is dedicated to analysing the whole model.

Chapter 5 delves into the interpretation of the research findings, presenting a comprehensive analysis of all the research questions and hypotheses. This chapter is divided according to the conceptual model defined in the study. Theoretical, practical, and social implications are provided at the end of this chapter. A summary of the main study findings of the research and contributions stemming from the study are discussed in Chapter 6. This closing chapter presents study limitations and offers avenues for future research. The thesis concludes with a closing message.

2. LITERATURE REVIEW

2.1 Introduction

Now that the whole study has been introduced, a theoretical background is required to understand the four key pillars on which this research is constructed. This study focuses on retargeted advertisements and how these influence young people. The initial section of this chapter reviews the study's first pillar: the factors that affect individuals' perceived online advertising value and their attitudes towards online advertising. The advertising value topic has been the subject of several studies, incorporating the attitude towards advertising, in which relatively few studies focused exclusively on young people, especially early teens, in an online setting. Ducoffe (1995) initiated the study on advertising value and how three main factors could affect attitudes (1996). Later research identified additional predictors, particularly three significant factors, that mutually affect individuals' attitudes towards advertising. For this section, a systematic literature review (SLR) was conducted, covering studies mainly conducted in the past 25 years (De Battista et al., 2021a) to extrapolate the significant factors. Nonetheless, as the SLR was conducted until December 2020, other papers published either during that same year or the following years (2021-2024) were included in the review. In addition, articles not initially included in the SLR because they did not form part of the selected databases but were deemed relevant to the essence of the study were also included in this study for reference purposes. The six main identified factors through the SLR are entertainment, informativeness, irritation, credibility, personalisation, and interactivity.

The second pillar of this research is retargeted advertisements, on which this section will focus and attempt to comprehend this online marketing technique from several perspectives. Unfortunately, academic literature on retargeting is scarce, even though marketers heavily seek this instrument to reach previous website visitors (Farman et al., 2020). The scarcity arises from the fact that retargeting is still in its infancy; nevertheless, it is heavily employed commercially. There are numerous studies on behavioural advertising, but few zoom in on retargeting and its influences. To the best of my knowledge, previous studies did not consider understanding the relationship between advertising value factors and the attitude towards retargeted advertisements. A literature review will explore the types of retargeted advertisements, their function and mechanisms, challenges, and contributions

towards the purchase funnel. The literature search for this section and the remaining sections covered mainly recent studies. Peer-reviewed journal articles, textbook chapters, conference papers, and postgraduate research dissertations in the analysed domains, covering all ages, were all included in the literature examination.

The third pillar of the study is the fear of missing out (FoMO) phenomenon. The dedicated section commences by comprehending this type of anxiety and how it builds up and affects individuals. The section proceeds to understand two facets of this phenomenon - the sense of deprivation or missing out from the social environment, mostly regarded as a personality trait and FoMO that is externally triggered, particularly by marketing messages that have the potential to induce FoMO. Almost all FoMO-related studies endeavoured to understand how FoMO affects young people and their strong desire to stay connected within their social circles - the urge to keep 'in the know' of what their peers are doing. This facet is known as the "self-initiated FOMO-driven behaviours" (Hodkinson, 2019, p. 65). However, a notable gap exists in the current body of research, as there is a scarcity of studies that examine the FoMO outcomes pertinent to marketing and consumer behaviour (Alfina et al., 2023; Dinh & Lee, 2022; Neumann et al., 2023). Few studies were found tackling FoMO as exerted from marketing appeals and advertisements, also known as "externally initiated FOMO", with Hodkinson (2019, p. 65) pioneering the study. To my knowledge, no past studies investigated if a relationship exists between FoMO and retargeting. Only one study linked the four critical constructs (scarcity, urgency, social proof, and loss aversion) with FoMO in a marketing context for Generation Y (Lamba, 2021). However, no empirical data were collected for this purpose.

The fourth section tackles the final pillar of this study – the theory of planned behaviour (TPB; Ajzen, 1991). It connects with the advertising value model (AVM), having the attitude construct as a common denominator and FoMO as the fear counterpart. Attitude, subjective norms, and perceived behavioural control are the three factors that determine behavioural intentions, which in turn drive behaviours.

This study concentrates on the influence of retargeted advertisements and FoMO appeals on young people. As mentioned in the previous chapter, for clarity purposes, adolescents, youths, young adults, and teenagers were grouped under one term – young people. These were split again in the subsequent chapters according to their age bracket

(minors and young adults). Young people's perspectives and gender differences are crucial to the study as they should underlie the main areas of study. However, academic literature was primarily generic to date, with little focus on these demographics in a retargeting context. Ultimately, on these four pillars lie the foundations of this study, with an underlying effort to interlink their relationship.

This chapter is divided into six sections. The first section introduced the literature review and how all the pillars contribute to the study. The second section will focus on the AVM, particularly the factors influencing the advertising value and attitude towards online advertising. The third section will highlight the emerging marketing instrument that is part of the online advertising family - retargeted advertisements - and homing in on this advertising technique's types, mechanisms, functions, challenges, and contributions. Subsequently, the fourth section will concentrate on FoMO and all the attributes and characteristics that feature within its realm. The penultimate section will focus on the TPB, where all the constructs that make up this model are examined. It will analyse previous studies that attempted to fuse FoMO with TPB. Finally, in conclusion, this chapter highlights the research gaps and underlines the study's main aims, research questions, respective objectives, and hypotheses.

2.2 The Advertising Value Model

2.2.1 Introduction

This second section of the chapter reviews the Advertising Value Model (AVM) and the factors that influence the perceived value and attitude towards online advertising. It commences by introducing online advertising and its function in the Internet environment, predominantly in a social networking sites (SNSs) context, being the ubiquitous platforms available for today's marketers. It elaborates on the attitude towards online advertising, including Pollay and Mittal's (1993) Belief Factor Model. This section expands on Ducoffe's (1995, 1996) AVM with an analysis of the Uses and Gratification (U&G) Theory (Katz et al., 1973). Subsequently, the six influencing factors extrapolated from various studies will be reviewed. Lastly, this section focuses on young people and explores the disparities between age subsets and genders in relation to their attitudes towards online advertising.

2.2.2 Online Advertising

The first Internet banner advertisement appeared on HotWired.com in October 1994 (Adams, 1995; Hollis, 2005). A new marketing avenue emerged with the advent of online advertising. From then onwards, this tool revolutionised the marketing concept, shifting the paradigm away from traditional advertising towards the online realm. Traditional advertising had several drawbacks, primarily the lack of targeting specific customers according to their tastes, needs and wants (Gupta, 2019) and the advertisers' incapacity to track individuals' digital footprints (Ghose & Todri-Adamopoulos, 2016), thus regressing and becoming obsolete (Sriram et al., 2021). Online advertising satisfied those needs with various technological advancements. The proliferation of online advertising is a living testimony of its progress and the results it is garnering. Investment in online advertising increased substantially. According to Statista (2023), it is estimated that digital advertising spending worldwide will exceed 625 billion U.S. dollars in 2023. Global digital advertising spending is projected to reach 836 billion U.S. dollars by 2026.

In this evolving epoch, the convenience of the Internet has made online advertising a vital tool for many marketers to generate awareness, instil desire, provide information, and influence customer attitudes (Duffett, 2017). From its inception, online advertising has been the subject of academic research. Many research studies were conducted to understand and frame the online advertising concept and its underlying theory. Advertising has been defined

by Givon and Horsky (1990) as “a vehicle by which producers inform consumers of the existence and attributes of their brands” (p. 171). Another definition of advertising was coined by Bovée and Arens (1992), where they described it as “the non-personal communication of information usually paid for and usually persuasive in nature about products, services or ideas by identified sponsors through the various media” (p. 7). Advertising is a form of communication where a sponsor pays to publicly deliver a persuasive message that promotes a product or service; it is a non-personal presentation or promotion of a company’s offerings to its potential and existing customers (Kotler & Keller, 2016).

A more comprehensive interpretation of “advertising” emerged with the transition from traditional to online advertising. Ha (2008) defines online advertising as “deliberate messages placed on third party websites including search engines and directories available through Internet access” (p. 31). Online advertising is an excellent strategic tool that expressively expands and enhances the perception and vision of a product and its brand and can positively impact sales (Ahmed et al., 2019). As a form of mass communication, it develops strategies based on new technologies and various media and platforms (Kotler & Keller, 2016). Online advertisements have acquired mobility, using the Internet as a vehicle to reach broader audiences and markets while equipping organisations with the advantage of cost-effectiveness, unlike traditional advertisement tools (McCarthy, 2013, as cited by Ariffin et al., 2018).

During the last three decades, online advertising has been referred to by different names. Researchers coined it primarily web advertising (e.g., Ducoffe, 1996; Rossiter & Bellman, 1999), Internet advertising (e.g., Drèze & Hussherr, 2003; Schlosser et al., 1999), digital advertising (e.g., Aydin, 2016; Chi, 2011) and interactive advertising (e.g., Cheng et al. 2009; Taylor, 2009). As smartphones were developed and introduced into the market, online advertising was translated into a variety of interchangeable terms, such as wireless advertising (e.g., Okazaki, 2004; Peters et al., 2007), smartphone advertising (e.g., Kim & Han, 2014; Lee et al., 2017), and mobile advertising (e.g., Ardelet, 2020; Smith, 2019). A plethora of studies have been conducted on the phenomenon of online advertising; from measuring the efficiency and effectiveness of online advertising (e.g., Pergelova et al., 2010; Rzemieniak, 2015); to analysing online advertising effects using different theories, approaches, and analysis (e.g., Lin & Fu, 2018; Shyam Sundar et al., 2017); to the economic

analysis of online advertising (e.g., Chen & Stallaert, 2014; Dinner et al., 2014). Numerous studies have examined how online advertising affects individuals' attitudes (e.g., Gaber et al., 2019; Murillo, 2017).

Due to Internet users' growing use of time-consuming media, online advertising has become an increasingly important part of the advertising market (Goldfarb, 2013). With billions of Internet users, advertisers have the capacity to engage and impact numerous targeted users at a notably reduced marketing expense, rendering this tool among the most potent and compelling of all advertising forms. All marketing messages displayed via or on the Internet, whether through search engines, SNSs, mobile devices or email, are collectively considered online advertising.

Advertisers increasingly turn to online advertising to generate awareness, yield enough interest, and influence customer attitudes due to its amenity (Duffett, 2017). Online advertising is different from any other source of advertisement. For example, banner advertising is flexible, and can target a specific demographic, based on gender, age, and geography (Sajjacholapunt & Ball, 2014). Online advertisements are also interactive, and thus, connect with the Internet users by urging to click on them, and they drive users to a website (Zarouali et al., 2017). Nonetheless, like traditional advertising, if an online advertisement does not grasp the Internet user's attention, it may imbue an unfavourable attitude towards it, with an ineffective effort to raise awareness and shape the perception (Maughan et al., 2007). From an organisation perspective, online advertising reaches out to existing and new consumers and locates them, while offering information and insights to channel advertisers to acquire more knowledge and expand their customer base (Ariffin et al., 2018).

According to Booth and Koberg (2012), early online advertising used text, logos, videos, music, animations, photography, and other graphics to communicate a commercial message. Online advertising is now available in a variety of formats. The main formats are:

- a) Native advertising - an advertisement that is congruent and consistent with the website that it is shown on and blends into its reporting content (Bang & Lee, 2016);
- b) Email marketing - advertisement and content adapted to the targeted individual and sent via an email shot; regarded as one of the most personal kinds of marketing, and as a result, it aids in establishing relationships (Sigurdsson et al., 2013);

- c) Search engine marketing - online marketing where marketers employ a variety of tools to guarantee that their website is placed in an advantageous place within a search engine's results list (Paraskevas et al., 2011);
- d) SNS advertising - the use of social media platforms based on connection, conversation, and interaction between people online to raise awareness and increase commercial interest (Charlesworth, 2018);
- e) Digital content marketing - it is the management process of profitably identifying, anticipating, and fulfilling customer needs in the realm of digital content and through electronic channels; it is a process that involves leveraging digital technologies to connect with and engage potential and existing customers, and ultimately drive profitable business outcomes (Rowley, 2008);
- f) Mobile advertising - it entails transmitting or disseminating advertising through a smartphone via mobile applications, banner advertisements embedded on mobile websites, Short Message Service (SMS)/text messages, push notifications and Multimedia Messaging Service (MMS) (Tripathi & Siddiqui, 2008); and,
- g) Retargeting - when individuals visit a company's site, they are tracked and start coming across advertisements of the same company once they visit other sites (Lambrecht & Tucker, 2013).

The conventional media channels marketers previously employed for advertising mostly gave way to SNS (Lee & Hong, 2016). As a result, the need for more research on this approach increased, and this field of study is evolving quickly. Studies have focused on several topics, but one integral aspect that most studies focused upon was the attitude that one may have towards advertising, particularly online advertising.

2.2.3 Attitude Towards Online Advertising

Numerous studies have demonstrated that the attitude towards online advertising plays a pivotal role in determining advertising effectiveness; consumers' cognitive responses are reflected in their thoughts and feelings, shaping their overall attitude towards advertising (Nagar, 2015), which may ultimately lead to purchase intention (e.g., Ariffin et al., 2018; Ho Nguyen et al., 2022). Mitchell and Olson (1981) argue that individuals' attitudes towards advertising influence their responses to the advertisement. When individuals are involved in the central processing of advertising material, consisting of more thought and effort, as opposed to periphery processing, comprising less energy and thought, their belief is more

significant in establishing their attitudes towards advertising (Petty & Cacioppo, 1986). But, what is attitude? And could this be mixed with belief?

In the human cognition realm, a critical division exists between beliefs and attitudes. According to Pollay and Mittal (1993), “beliefs are descriptive statements about object attributes (e.g., advertising is truthful) or consequences (e.g., advertising lowers prices), whereas attitudes are summary evaluations of objects (e.g., advertising is a good/bad thing)” (p. 101). Petty and Cacioppo (1986) define attitudes as “general evaluations that people hold in regard to themselves, other people, objects and issues” (p. 127). Attitude aids people in evaluating and making choices in life. There is a learning process for attitude, and not inherently instinctive (Sethna, 2023).

Jung (1971) argues that there are two psychologies of attitude – the attitude of conscious and unconscious. These make up the readiness of the mind to act and react in different ways. While implicit attitudes are unconscious or automatic, explicit attitudes are consciously held (Ajzen & Dasgupta, 2015). Conscious attitudes are those an individual is aware of and can easily communicate, such as opinions about personal preferences for music, food, or fashion. These attitudes are founded on deliberate cognitive processes and are easily changeable by persuasion or instruction. On the other hand, unconscious attitudes exist outside of a person’s awareness and are frequently formed by prior experiences and socialisation. Implicit metrics, such as response times, can show these sentiments, which may or may not be congruent with a person’s conscious attitudes. Unconscious attitudes are thought to be more challenging to change.

Eagly and Chaiken (1998) state that an attitude is made of three interrelated gears and constitutes what is known as the ABC model of attitudes (or the CAC). These gears are:

- a) Affect - defines the feelings and emotions of consumers towards an attitude object, hence the emotional aspect of attitude.
- b) Conation/Behaviour - refers to the individuals’ behavioural intentions to act driven by attitudes (Sethna, 2023; Solomon, 2017). Behavioural intention not always result into action (Solomon, 2017); and,
- c) Cognition - denotes the mental belief or disbelief and evaluation of the attitude object (Eagly & Chaiken, 1998).

Past research has shown that attitude towards online advertising has both affective and cognitive precursors (Ducoffe, 1996; Shimp, 1981). Consequently, cognitive is believed to be tied to the central processing assessments, whilst those of the affective are regarded to originate from the peripheral processing (Ducoffe, 1996; Petty & Cacioppo, 1986). According to Bruner and Kumar (2000), individuals first learn about a product and retain it; then, in the second stage, they feel either favourable or unfavourable about it, thus forming an attitude; and finally, in the third stage, they take action constructed upon their knowledge and attitude.

Research has shown the explanatory power of attitudes towards advertising, classifying it as a pivotal mediator of advertising response (MacKenzie & Lutz, 1989). Therefore, in a marketing context, an attitude can be described as the tendency to behave positively or negatively in evaluating products, brands, and advertisements (Solomon, 2017). It is the motor in which purchase intentions are motivated and actions are taken (Dabholkar, 1994). Attitude is not behaviour but an inclination towards a behaviour (Sethna, 2023).

MacKenzie and Lutz (1989) contend that the attitude of the marketer towards advertising is a strong determinant of a consumer's attitude towards advertising. Petrovici and Marinov (2007) highlighted the critical aspect of attitude in the evaluation judgement and purchase intention, as these affect consumer preferences and choices. Hence, attitude is the path individuals choose to take to react to their environment (Ajzen & Fishbein, 1980).

The attitude towards advertising has been defined as “a learned predisposition to respond in a consistently favourable or unfavourable manner to advertising in general” (Lutz, 1985, p. 53). Onkvisit and Shaw (1994) added the ‘learned tendency’ in the definition of attitude. Moreover, MacKenzie and Lutz (1989) suggest that the attitude employs a significant stimulus along with four variables – credibility, perception, attitude towards the advertiser and attitude towards advertising. Although the researchers based their study on traditional advertising, these constructs have been related to online advertising. Attitude towards advertising comprises two assessments: personal and general. Personal assessment refers to an individual's experience with an advertisement, while general assessment regards advertising as an institution (Shavitt et al., 1998).

In their study about attitudes towards advertising, Pollay and Mittal (1993) emphasised the importance of comprehension of consumers' beliefs in advertising, as beliefs significantly influence consumers' attitudes towards advertising. In the same study, they constructed a Belief Factor Model to assess the causes of consumers' attitudes towards advertising.

2.2.3.1 Belief Factor Model

Pollay and Mittal (1993) formulated the Belief Factor Model, classifying seven distinct beliefs influencing attitudes. These beliefs are categorised into two groups: personal utility and socio-economic effects (Fig. 2.1). Personal utility is made up of three factors which are: "product information", "social image information", and "hedonic amusement" (Pollay & Mittal, 1993, p. 99).

- a) Product information – information is provided to individuals to help them in their choices and update them about the availability in the market (Pollay & Mittal, 1993).
- b) Social image information – it is the social role, imagery and rewards that influence the lifestyle of individuals through advertisements (Ariffin et al., 2018; Pollay & Mittal, 1993).
- c) Hedonic amusement – the fun element of advertising; being pleasurable to watch, entertaining, empathising, funny or inspiring (Pollay & Mittal, 1993).

The societal effects are based on four factors, comprising "good for the economy", "fostering materialism", "value corruption", and "falsity/no-sense" (Pollay & Mittal, 1993, p. 99).

- d) Good for the economy – advertising provides healthy competition and helps products sell, becoming a positive aspect of the economic wheel (Pollay & Mittal, 1993; Saadeghvaziri et al., 2013).
- e) Materialism – advertising can foster consumerism and may preoccupy individuals with harming their social and cultural environments (Pollay & Mittal, 1993).
- f) Value corruption – it is the belief that advertising may distort values by producing dishonest, immoral, and depraved images and messages.
- g) Falsity/no-sense – it occurs when individuals perceive advertising as "purposefully misleading" (Pollay & Mittal, 1993, p. 102) and not credible.

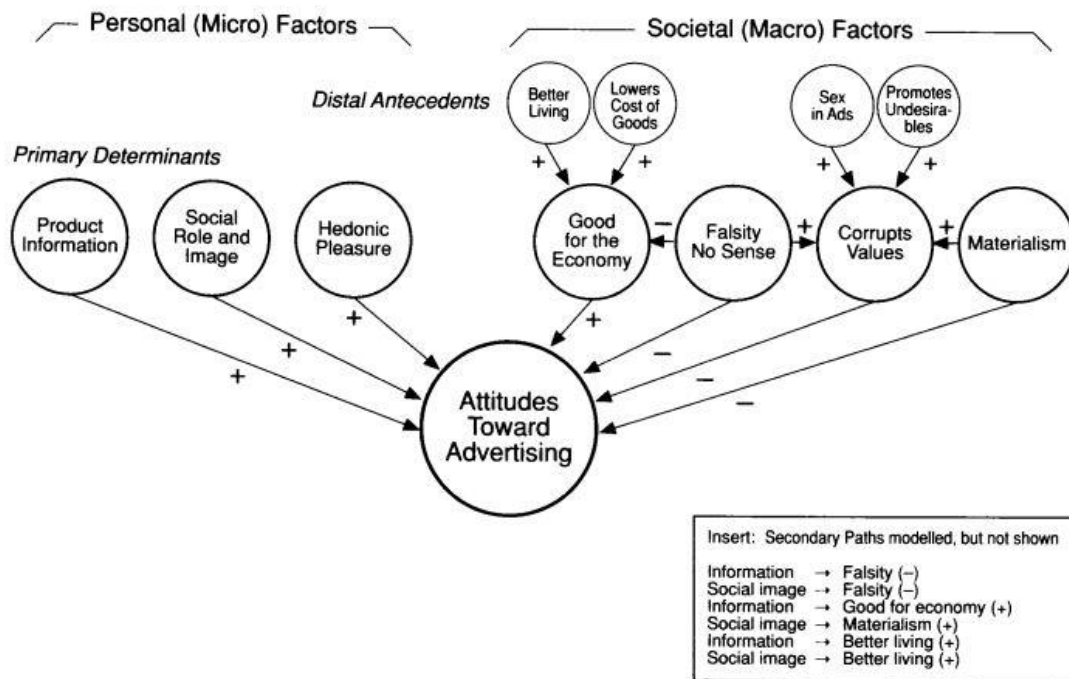


Figure 2.1: The Belief Factor Model (Source: Pollay & Mittal, 1993)

Pollay and Mittal's (1993) research supported the notion that advertising had a favourable impact on customer perceptions. In addition to the entertaining notion and the significance of honesty in advertising, they also pioneered the ideas of attitudes and informativeness of messages. According to Laforet and Limahelu (2009), some factors depicted in Pollay and Mittal (1993), for example, the good for the economy, value corruption and materialism from the societal effects are "predictive tools for the future" (p. 168). These can be difficult for the collection of information.

Two years after Pollay and Mittal's (1993) Belief Factor Model, which stipulated seven primary precursors, Ducoffe (1995) established the AVM. The first study focused on advertisement in general and not online; despite this factor, this seminal work was still included in this study as it served as a flagship for the AVM. A year after this study, Ducoffe's (1996) modified model included the 'attitude' construct. It has been widely accepted as a measure accentuating the construction of how the attitude towards advertising is established (Zha et al., 2015).

2.2.4 The Model

Ducoffe (1995) defined advertising value as "a subjective evaluation of the relative worth or utility of advertising to consumers" (p. 1). In this context, Ducoffe (1995) created a

model where the role of advertising value is underlined, and its determinants are acknowledged. As a result, it was suggested that advertising value is a cognitive antecedent of attitude towards advertising (Ducoffe, 1996; Logan, 2013). Initially, the advertising value measurement model had five constructs: apart from the advertising value, Ducoffe included four influencing factors; informativeness, irritation, and entertainment were the main three starting-point factors defining how consumers value advertising, including deceptiveness (1995), which was then removed from his subsequent study and included the attitude towards an advertisement construct (1996). These three influencing factors were recognised as the precursors of advertising value. Figure 2.2 shows the first version of the advertising value model presented by Ducoffe (1996).

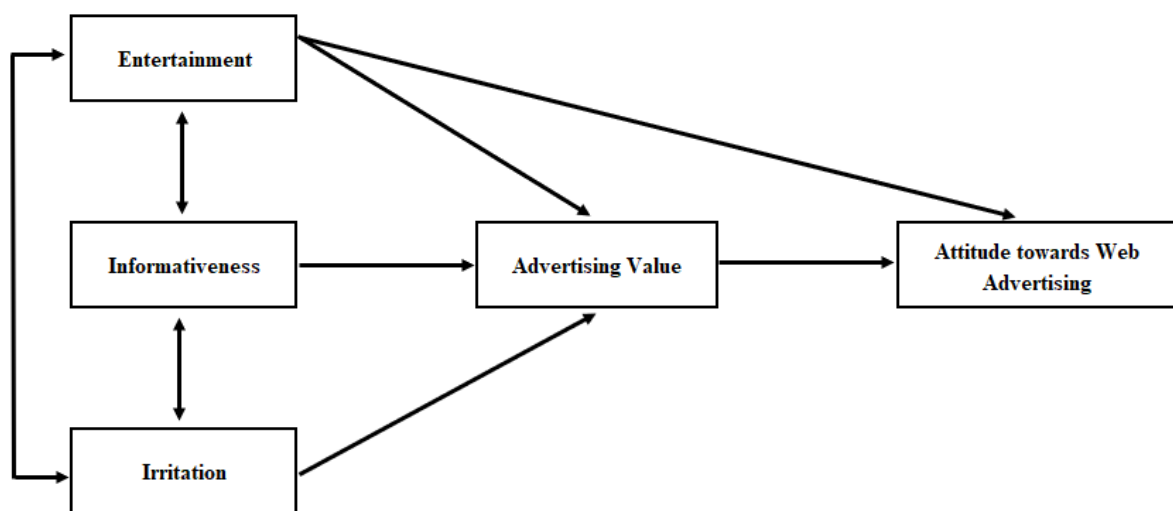


Figure 2.2: The original Advertising Value Model (Source: Ducoffe, 1996)

Interestingly, although Pollay and Mittal (1993) developed the belief factor model two years before, no reference was made to their study by Ducoffe (1995; 1996) and Ducoffe and Curlo (2000). Most researchers based their studies on Ducoffe's model rather than Pollay and Mittal's factor model; Ducoffe's model has been regarded as the most successful and commonly used model to understand the value and attitudes of consumers towards an advertisement (Murillo et al., 2016).

Ducoffe's study came amidst a wave of negative articles placing advertising in a bad light (e.g., Alwitt & Prabhaker, 1992; Zanot, 1984). Ducoffe (1996) stated that if an advertisement features when the consumer does not require a product, it would be a wasted exposed advertisement. According to Ducoffe (1995), advertising value is a gauge of

advertising efficacy, and it “may serve as an index of customer satisfaction with the communication products of organisations” (p. 1). In Ducoffe's (1996) second investigation, it was revealed that while Internet advertising is valuable, respondents perceived it to be more informative yet less entertaining in comparison. At that time, survey participants did not regard advertising as irritating, maintaining a neutral stance regarding the beneficial aspects of Internet advertising.

As already established, Ducoffe (1995) introduced deception as the fourth component in addition to these three variables. According to Ducoffe's model, deceptiveness refers to whether a message in an advertisement is false, misleading, or omits crucial information about a product. This construct was absent from his 1996 study, leaving only the primary three constructs of Ducoffe's (1995) model. Ducoffe felt that the three core constructs were more robust than the ‘deceptive’ factor. However, deceptiveness served as the foundation for Brackett and Carr's (2001) study, which, five years after, worked on the study initiated by Ducoffe (1996) and established credibility with the primary three factors. It is important to note that MacKenzie and Lutz (1989) and Pollay and Mittal (1993) explicitly incorporated the credibility factor as a precursor of attitude in their study. Pollay and Mittal (1993) referred to credibility as the false/no sense factor.

Contrary to Ducoffe's (1996) study, Brackett and Carr (2001) found that their surveyed college students perceived Internet advertising as irritating and annoying, and felt that advertisements treated them as stupid. Moreover, they noticed an overall lower rate than Ducoffe's study. Still, they confirmed that an advertisement's perceived informativeness, entertainment, irritation and credibility affect the consumer's attitudes towards it. The credibility variable added supremacy to Ducoffe's (1995) model and was subsequently established as one of the main factors that affect attitude.

It is interesting to note that scholars in this field moulded three distinct models based on Ducoffe's (1996) advertising model to examine how various factors affect consumer attitudes towards online advertising. Some studies linked the determinants to advertising value and then connected the latter to the attitude (e.g., Arora & Agarwal, 2019; Hamouda, 2018); in other few studies, advertising value was presented as a mediator, to establish an association between one or more influencing factors with attitude (e.g., Ducoffe, 1996; Murillo, 2017);

and in the remaining studies, the factors were associated directly to the attitude (e.g., Ariffin et al., 2018; Arora & Agarwal, 2020).

Okazaki (2004) combined information and entertainment, testing the infotainment factor, while Wang et al. (2009) tested value corruption instead of irritation. In a study by Logan et al. (2012), the advertising value model for SNS proved to be a poor fit, signifying that the advertising value, as a collective construct, was not a significant antecedent of the attitude towards advertising. However, entertainment was valued more and informativeness was valued less in SNS than in traditional advertising.

Baek and Morimoto (2012) and Samanta and Papadopoulos (2012) were among the first two groups of researchers who introduced personalisation as another factor that can influence the attitude in their study. In both studies, personalisation was found to be positive and can alter the credibility of an advertisement. Other researchers then used personalisation as part of the factors along with Brackett and Carr's (2001) established four antecedents (e.g., Kim & Han, 2014; Sigurdsson et al., 2018).

Ching et al. (2013) were among the first to add another factor – interactivity. They tested this on the Taiwanese online platform, using an online questionnaire and confirmed that the higher level of interactivity in online narrative advertisements led to more positive attitudes towards a product. Islam (2017) also tested this factor on mobile advertising to compare results between Indian, South Korean, and Chinese consumers.

Until the SLR conducted by De Battista et al. (2021a), no studies tested the six most influential antecedents of advertising value and attitude towards online advertising en masse. Later, Ho Nguyen et al. (2022) conducted an empirical study using a structural model that included the six factors and privacy concerns as another precursor but omitted the advertising value construct and included the purchase intention instead. Cvirka et al. (2022) tested the six factors of SNS advertising as were reflected in the SLR, including the advertising value.

Initially, Ducoffe (1995) formulated a comprehensive model of advertising value based on the Uses and Gratifications (U&G) Theory. He declared that his study extended this theory, which was initially applied in mass communication research, emphasising the

importance of media to deliver information to satisfy individuals' needs (McQuail & Deuze, 2020).

2.2.4.1 Uses and Gratification Theory

The U&G Theory is an approach to understanding mass communication and places the individual in the spotlight rather than the media; thus, what an individual does to the media rather than the contrary (Katz et al., 1973). Hence, individuals are assumed to actively select the media that would best serve their requirements and are aware of the factors influencing their media decisions (Ruggiero, 2000). Hence, with the U&G theory, one can demonstrate how individuals consume media to satisfy their needs while analysing the rationale behind their behaviour and determining the processes resulting from it (Katz et al., 1973). The exposure of media to individuals on a media platform, based on their needs and gratification-seeking motivations, can fulfil their utilitarian (cognitive) and hedonic (affective) needs (McQuail & Deuze, 2020). In this model, cognitive, affective, personal, and social needs serve as the needs and gratification factors. Building upon this concept, Ducoffe (1995) developed the advertising value model, categorising informativeness within the cognitive domain and irritation and entertainment constructs within the affective group. Drawing from the notion proposed by Houston and Gassenheimer (1987), the concept of value in marketing is constructed on the principle that something valuable and worthy can be exchanged between two entities. It is derived from the belief and perception formed about the offering based on the experiences accompanying the exchange and the behavioural engagement required to obtain it (Ducoffe, 1996). The U&G theory was employed to understand the psychological motives for accepting the online environment (Luo, 2002) while offering a framework for delineating individuals' motivation for media adoption and usage (Kim et al., 2015).

Therefore, entertainment and informativeness can motivate individuals' attitudes towards advertisements, instilling the interest to know more, augmenting the desire to click on an advertisement and consequently, driving them to the website to know more and eventually, purchasing. Irritation, though, can push individuals away from an advertisement, a product, or a website as individuals can feel annoyed by an advertisement's exposure, frequency, invasiveness, and intrusiveness. In several studies, information, entertainment, and credibility have consistently been found to be the most critical positive determinants of young people's advertising value and attitudes towards online advertising (De Battista et al., 2021a). At the same time, it was determined that irritation has a considerable detrimental impact.

Besides these four constructs, scholars added other factors to ameliorate and redefine Ducoffe's (1996) model. Moreover, technological advancements and Internet proliferation required novel precursors in the advertising value model (Lütjens et al., 2022). The two additional factors are personalisation and interactivity. These six factors will now be analysed individually, and respective hypotheses are presented.

2.2.5 Entertainment

When an advertisement satisfies the individuals' desires to escape, distract themselves, for gratification purposes, or act as stress relief, it would have successfully entertained them (McQuail & Deuze, 2020). The U&G theory model has shown that the value of entertainment is in accordance with the ability to fulfil audience needs. Entertainment is the form of an advertisement (Aaker et al., 1992). Ducoffe (1996) emphasised how crucial it is for advertising to be entertaining for its audience. In the same year, Hoffman and Novak (1996) predicted that the future of Internet advertising would be characterised by the innovative, humorous, and interactive presentation of messages embedded in various websites. Wolin et al. (2002) anticipated a significant change in attitudes about advertising if they are engaging, inspiring, and enshrined with appealing designs that entertain and encourage customers. The 'ability' to entertain and offer pleasure to quench the hedonic needs of the audience can elevate their experience when encountering advertisements (Zha et al., 2015). Creating an enjoyable environment can bring satisfaction and connect with individuals, thus attracting the audience's attention. Advertisers always strive to be more original and adventurous to stand out from the Internet clutter and attract relevant customers. In their study with students, Saxena and Khanna (2013) agreed with the statements raised by the latter researchers. They argued that an advertisement loses its worthiness when it is inundated with information and lacks entertainment. The fun factor in an advertisement can be beneficial in attracting individuals' attention (Ducoffe, 1996).

In their research, Taylor et al. (2011) suggest that entertainment has four times more influence and impact on consumers' attitudes towards advertising than information. Ching et al. (2013), in their study about online narrative advertisements, suggest that entertainment appeases and enhances a consumer's emotions. Entertainment in an advertisement can shape consumer loyalty and adds value to the marketed products or services; its role in advertising is paramount as it plays a critical part in influencing the effectiveness of advertising as it

helps establish an emotional connection between consumers and a brand message, which is vital for successful marketing outcomes (Wang & Sun, 2010).

In a world where everyone is busy running against time, advertisements should be highly valuable to interrupt individuals and capture their attention (Islam, 2017). In his study, Islam (2017) surprisingly found that mobile advertising was not entertaining. He suggested that individuals using smartphones would be occupied and more challenging to engage them than someone passively watching television or on a desktop computer. Contrastingly, Kim and Han (2014) state that the advertising value can be positively influenced by the entertainment factor of an advertisement on a smartphone. Ariffin et al. (2018) claim that entertainment positively influences attitudes towards online advertising. The same study suggests that consumers enjoy watching an online advertisement that offers a happy experience more because the advertisement can be highly entertaining compared to the website lodged on it and its content.

Logan et al. (2012) suggest that the entertainment factor is more valued in advertising on SNSs than in traditional media, thus amplifying the message's efficacy. Contrastingly, on television, informativeness would be more beneficial. Dehghani et al. (2016) claim that perceived enjoyment is the most important antecedent of YouTube advertising value. However, the same survey discovered that 73.0% of YouTube video viewers avoid bumper or skippable advertisements. In order to heighten and attract attention, the scholars accentuated the significance of having an entertaining component in such advertisements. In their Malaysian study, Hussain et al. (2022) urge advertisers to create humorous and entertaining advertisements to intrigue consumers, as these are more well-received in an SNS environment.

Few studies claim that entertainment was not an essential antecedent of value and attitudes among young people (e.g., Ho Nguyen et al., 2022; Islam, 2017; Wang et al., 2009). On the other hand, numerous studies found that entertainment is a strong positive precursor of advertising value and attitude towards online advertising (e.g., Arora et al., 2020; Celebi, 2015; Dao et al., 2014; Ozcelik & Varnali, 2019; Saxena & Khanna, 2013; Tsang et al., 2004; Wang & Sun, 2010). Lütjens et al. (2022) confirmed in their meta-analytic comparative study that entertainment is a significant determinant that strongly influences attitudes towards digital advertising.

Overall, the literature on entertainment shows a favourable relationship between the perception of advertising entertainment, its advertising value, and the attitude towards online advertisements. As a result, the following hypotheses were proposed:

H1(a): The entertainment factor of retargeted advertisements positively influences young people's perceived value of retargeted advertisements.

H1(b): The entertainment factor of retargeted advertisements positively influences young people's attitudes towards retargeted advertisements.

2.2.6 Informativeness

Informativeness refers to the ability of advertisements to convey adequate information about products or services to consumers. In their study on the characteristics of television advertisements, Aaker and Norris (1982) state that informativeness in an advertisement would reach its objective if the advertising message contained enlightening and descriptive content. When discussing the advertising value construct, Aaker et al. (1992) state that informativeness is the content part of the advertisement, which is an essential determinant of the effectiveness of advertising. Ducoffe (1996) argues that advertisements should provide enough information about the product or service efficiently and effectively. Hence, individuals should receive current and pertinent information from advertisements when most require them.

This construct is one of the main factors of the AVM introduced by Ducoffe, and it is engrained in the U&G theory (Aydin, 2016). It satisfies a need within the model. According to Ha and James (1998), this factor is the most extensively employed in online marketing functions because websites and advertisements are inundated with information that helps furnish consumers with material and evidence, aiding them in better decision-making. Moreover, in their definition of online advertising, Wang and Sun (2010) state that it is a form of infotainment, blending information with entertainment. In addition to the typical clutter that infests SNSs, advertisers use the chance provided by SNS to attempt to spread their message by utilising the notion of infotainment.

Schlosser et al. (1999) argue that the primary function of an advertisement is to convey information about marketable items for the consumers to form the best purchase intention

and, ultimately, call to action. The SNS's prime motivators and essential elements of usage are the searching for information before purchasing, the stimulant of inspiration, the acquisition and consumption of information and the constant updating with the surroundings (Muntinga et al., 2011).

Ducoffe (1996) found a significant association between informativeness and online advertising value. It is suggested by Brackett and Carr (2001) that advertisements should always be valuable sources of appropriate product information, with a distinctive difference making the customer's purchase decision easier. When appropriate product information is provided to individuals in a timely fashion, advertisements may imbue a good perception in individuals (Kim & Han, 2014). Based on this argument, Murillo et al. (2016) emphasise that if consumers are presented with adequate and helpful information, they are more likely to perceive the advertisement as valuable. There should be a sense of prioritisation in the advertiser's camp to supply adequate and enough information in advertisements (Petrovici & Marinov, 2007).

According to Saxena and Khanna (2013), the information contained in advertisements has a natural tendency to spread due to online activity because users can share the message and learn more about a product or service by reading the comments and reviews posted by other users in response to an advertisement. Online advertising is a more informational vehicle than just product placement (Gangadharbatla & Daugherty, 2013). Information will affect advertising value and consumer attention (Kim & Han, 2014).

According to Lee and Hong (2016), along with the creative element of an advertisement, the information delivered by the message is pivotal to positive responses to SNS advertisements. Duffett (2020) agrees with this statement and asserts that if the information is relevant to consumers in an SNS context, the attitude would be favourable and heighten the purchase intentions.

The informativeness of online advertisements has been found to affect the value and young people's attitudes significantly (e.g., Aktan et al., 2016; Arora et al., 2020; Dao et al., 2014; Hamouda, 2018; Ho Nguyen, 2022; Murillo et al., 2016; Mustafi & Hosain, 2020; Ozelik & Varnali, 2019; Saadeghvaziri et al., 2013; Wang et al., 2009). Few studies found informativeness less valuable or unimportant than other factors (e.g., Aydin, 2016; Lin &

Hung, 2009; Logan et al., 2012). The recent study by Cvirka et al. (2022), which was not specifically targeted to young people, found that informativeness has a positive relationship to advertising value but not to the attitude towards SNS advertisements. Along with entertainment, Lütjens et al. (2022) confirmed informativeness as another determinant that highly influences attitudes towards digital advertising.

As part of this study's investigation, the informativeness of advertisements will be assessed to determine whether it is positively associated with the perceived advertising value and attitudes towards retargeted advertisements among young people. Hence, the following hypotheses were formulated:

H2(a): The informativeness factor of retargeted advertisements positively influences young people's perceived value of retargeted advertisements.

H2(b): The informativeness factor of retargeted advertisements positively influences young people's attitudes towards retargeted advertisements.

2.2.7 Irritation

The previous two constructs focused on the benefits that a consumer can acquire when encountering an online advertisement. Ducoffe (1996) argues that, on the other hand, irritation relates to adverse attitudes towards advertising. In his opinion, advertisements are perceived as irritable when, for example, they treat individuals as foolish with misleading messaging, or there is an overabundance of advertisements on the Internet (Ducoffe, 1996) or frequency of advertisements (Ducoffe & Curlo, 2000). Aaker and Bruzzone (1985) suggest that an advertisement is related to a brand in such a manner that if customers enjoy the advertisement, it is likely that they would also enjoy the product or service. Conversely, an advertisement can irritate consumers and hinder the brand's perception. Advertisements that overemphasise a product or use puffery will appear deceiving; actors or spokespersons in advertisements that overstate a product will look unrealistic; advertisements that are not entertaining and lack information can hinder the message, resulting in an irritable advertisement (Aaker & Bruzzone, 1985). Therefore, an advertisement's lack of informativeness and entertainment can render it irritable.

In their meta-analysis of the mobile advertising study, Maseeh et al. (2021) admit that irritation has become a critical concern for marketers because the various techniques employed today, such as behavioural targeting, may upset individuals. Individuals surfing the Internet might feel that advertisements are “creepy” (Moore et al., 2015, p. 13) and are literally “chasing” them (De Battista et al., 2022, p. 38). An and Kim (2008) posit that advertisements can be non-intrusive and valuable, but when consumers feel that their ‘virtual’ space is invaded, they will feel uncomfortable.

Saxena and Khanna (2013) were more explicit in their argument, declaring that the irritation construct derives from the distress consumers feel when encountering an advertisement. It is derived not only through invasion but for any personal or social reason. Irritation can be a factor that arises from an interruption in media content (Logan, 2013) or a ‘phoney’ feeling about the content (Saxena & Khanna, 2013) or being invaded with intrusive SNS advertisements (Celebi, 2015) or crowding a small mobile phone screen (Murillo, 2016) or over-manipulative feel in the message itself (Ducoffe, 1996). Intrusion can initiate privacy concerns. Li et al. (2002) define intrusiveness as “a perception or psychological consequence that occurs when an audience’s cognitive processes are interrupted” (p. 39). The intrusiveness of online advertising can manifest in irritation and frustration among individuals, as an advertisement may disrupt or interfere with a person’s everyday activities. An intrusive advertisement may be perceived as interfering, irritating, or disruptive (Celebi, 2015), harming the individual’s perception of the advertised organisation or product.

Privacy concerns can also be detrimental to the audience, leading to irritation, discomfort, and fear (Frik & Mittone, 2019). Lütjens et al. (2022) included privacy concerns as a separate element in their study. Privacy concerns are manifested in the fear among individuals when they feel themselves being watched, tracked, and losing control over their personal information (Farman et al., 2020; Zarouali et al., 2017). In a recent study by Arora et al. (2020), the researchers omitted irritation as a factor and tested privacy concerns instead; they found that this factor is a negative determinant of Generation Y attitudes towards SNS advertising. The researchers listed irritation, among other factors, as part of the considerations when testing SNS advertising in their limitations section.

According to Aktan et al. (2016), more characteristics such as inappropriate audience targeting, deceptive messaging, inapt placements, and repeated and somewhat exaggerated

advertising placements might annoy individuals. The medium can make a real difference in this construct. Islam (2017) argues that irritation resulting from mobile advertising has no significant association with the attitude towards mobile advertisements. In a smartphone environment, advertisements may pop up when individuals are doing something different, and although they are inevitable, they simply ignore it. Linked to this, past studies showed that individuals watching TV either disregarded advertisements or engaged with other chores to ignore them (e.g., Speck & Elliott, 1997; Wilbur, 2016).

Advertisement clutter can be another significant determinant of irritation (Murillo et al., 2016). The perceptions of consumers formed by advertising clutter can reflect negatively on the overall assessment of an annoying advertisement, thus, influencing both the cognitive and affective aspects of the U&G theory (Li et al., 2002).

Numerous studies showed that irritation is a negative determinant of value and attitude (e.g., Aktan et al., 2016; Ariffin et al., 2018; Arora & Agarwal, 2019; Aydin, 2016; Cardoso & Cardoso, 2012; Dehghani et al., 2016; Saxena & Khanna, 2013). However, Kim and Han (2014) found that annoyance and irritation alone have no effect on customer perception of advertising value. Cvirka et al. (2022) did not test irritation as a precursor of attitude but only as a determinant of perceived SNS advertising value. They did not find any association.

Lastly, Aaker and Bruzzone (1985) offer advice on reducing irritation in advertising; by providing good entertaining material with a positive and happy mood but not too amusing, a credible actor or spokesperson who can radiate honesty and accurate information dissemination.

This study predicts that young people will have an adverse attitude towards retargeted advertisements if they find this marketing tool annoying; irritation is perceived as a negative determinant of value and attitude. Hence, the following hypotheses were posited:

H3(a): The irritation factor of retargeted advertisements negatively impacts young people's perceived value of retargeted advertisements.

H3(b): The irritation factor of retargeted advertisements negatively impacts young people's attitudes towards retargeted advertisements.

2.2.8 Credibility

Credibility has been referred to by many different researchers in their studies (e.g., Brackett & Carr, 2001; Dao et al., 2014). MacKenzie and Lutz (1989) provide an accurate definition of credibility, stating that it is “the extent to which the consumer perceives claims made about the brand in the advertisement to be truthful and believable” (p. 51). They argue that credibility is represented by candour and trustworthiness. They also recognise that credibility emanates from the advertiser and the advertisement viewpoints. Pollay and Mittal (1993) implicitly included credibility under the falsity/no sense factor by using honest and believable items. In most cases, individuals perceive credibility as a quality based on their cognitive capacities, which are insufficient to distinguish true from false information (Viviani & Pasi, 2017).

Brackett and Carr (2001) propose that credibility would be the fourth construct in the model that Ducoffe (1995) introduced, shadowing the deceptiveness construct that Ducoffe employed in his first study but discarded in his second study (1996). Brackett and Carr (2001) believed that credibility was a significant factor within the advertising value construct of online advertising and could positively influence consumers’ attitudes. Darke and Ritchie (2007) assert that advertising that carries deceptive messages harbours false propositions and generates mistrust and scepticism.

Although almost a decade has passed since Darke and Ritchie’s claim, Aydin (2016) argues that trust in the organisational environment is fading. For many advertisers, it may be challenging to persuade customers of online advertising’s credibility (Aktan et al., 2016). Hence, credibility has become a critical factor affecting consumers’ attitudes towards advertising. Nonetheless, Aydin (2016) admits that credibility is difficult to establish in online advertising, even more so than in traditional advertising, due to deceptive information, fewer regulatory parameters involved, and a lack of ethical and aesthetic considerations.

In their studies, An and Kim (2008) and Kim and Han (2014) confirm that credibility is another prominent factor affecting young people’s attitudes towards online and smartphone advertising, respectively. An and Kim (2008) also connect the credibility aspect of advertising with the advertisement’s information. On the other hand, other scholars found credibility either not significant or the least significant determinant. For instance, Wang et al.

(2009) found that credibility was not a significant antecedent of attitudes towards online advertising in China. Ho Nguyen et al. (2022) found that credibility does not influence Generation Z's attitudes towards SNS advertising.

Even the platform or medium where an advertisement is shown is crucial. The SNS platforms are not highly ranked in the credibility rating; various studies found that they are least credible when compared to other online areas or traditional platforms due to various issues (i.e., fake news, misleading information, spamming) (e.g., Johnson & Kaye, 2014; Viviani & Pasi, 2017). On the other hand, according to Moore and Rodgers (2005), online advertisements are perceived by consumers as the least credible of the five different media they studied, except for those advertisements produced by trusted and reliable brand advertisers.

Chowdhury et al. (2006) posit that credibility comprises a consumer's confidence in the 'truth' behind the advertising message and its believability. Another essential factor in credibility is the organisation's trustworthiness and believability through the advertisements, as it might initiate a "culture of uncertainty" (Dao et al., 2014, p. 288). Logan et al. (2012) suggest that SNSs can be perceived as a reliable platform for advertisement. Samanta and Papadopoulos (2012) posit that advertising messages' credibility influences consumer attitudes in a mobile advertising environment.

Ultimately, as Sigurdsson et al. (2018) stated in their research on in-app mobile advertisements, credibility has become a key trait in an advertisement that consumers can circumvent or disregard due to mistrust. Consumers must perceive the credibility of information, as this enhances advertising value and boosts their attitudes towards advertising (Flanagin et al., 2014).

Several studies positioned credibility as a strong predictor of advertising value and the attitude towards online advertising (e.g., Ariffin et al., 2018; Arora & Agarwal, 2019; Arora et al., 2020; Murillo et al., 2016). Wang et al. (2009) and Ho Nguyen et al. (2022) found that credibility did not influence attitudes towards online advertising. Chen et al. (2023) identified that advertising credibility exerts a higher influence on attitude when compared to informativeness and irritation. On the other hand, Cvirka et al. (2022) found that credibility is

positively associated with advertising value but not with the attitude towards SNS advertisements.

Drawing from the literature on credibility and scholarly studies, this study hypothesised the following:

H4(a): The credibility factor of retargeted advertisements positively influences young people's perceived value of retargeted advertisements.

H4(b): The credibility factor of retargeted advertisements positively influences young people's attitudes towards retargeted advertisements.

2.2.9 Personalisation

Another construct that can affect the attitude towards advertising is personalisation. Peppers and Rogers (1999) define personalisation as the process of acquiring information about customers in order to deliver a customer-specific solution. Chaffey (2011) and Yuan and Cheng (2004) elaborate on the personalisation of an advertising message by emphasising the information transferred from the advertiser directly to consumers individually, which is customised to satisfy their needs and wants. Advertisers can track individuals based on their online behaviour and place appropriate and relevant advertisements online efficiently and effectively via different channels (Xu, 2006).

In general, personalisation can take two different forms; it can be either low or high (Zarouali et al., 2019). The low personalised form is the kind of advertising targeted to individuals' general attention. In contrast, highly personalised advertising is more specific and demographical, including age, gender, education and location.

Kim and Han (2014) posit that customers are receptive to personalised online advertisements relevant to their needs. Nevertheless, they registered a change in attitude towards advertisement, from a negative to a more positive perception. According to Kim and Han, when consumers encounter a personalised advertisement, the message will most likely echo the customer's needs. The advertisement will be accepted as both enjoyable and informative. Their study also shows that consumers appreciate personalised advertising as it aligns with their purchasing behaviour, tastes, and needs. The appreciation is based on the

premise that an advertising message refers to customised information sent according to consumers' needs and wants (Chaffey, 2011). Customers favour personalised advertisements with customised content deemed appropriate and relatable to them and their needs (Gaber et al., 2019). Through personalised advertisement, an organisation can reach out to more prospective clients and ameliorate the loyalty of existing consumers to a more personal relationship.

Although Baek and Morimoto (2012) argue that personalised advertisements are predominantly treated as undesirable and intrusive, they discovered that a higher perception of personalisation correlated directly with a reduction in avoiding advertisements. Nonetheless, it is evident that an increasing number of individuals are opting for advertisement blockers, driven by the increasing information about them, aiming to block and evade advertisements. As advertisements become more frequent and pervasive, they contribute to negative perceptions and encourage further adoption of these blockers (Redondo & Aznar, 2018). An intrusive advertisement can end up annoying consumers, and they disregard that kind of advertising completely (Morimoto, 2021). Individuals can withstand advertisements by ignoring them, disputing them or through their assertiveness (Fransen et al., 2015).

The advertising message can be personalised with targeted advertisements based on past online behaviour, past purchasing habits, and information provided by individuals. According to Bleier and Eisenbeiss (2015b), the click-through rate among consumers contemplating making a purchase is increased when trustworthy retailers deliver personalised advertisements with a combination of "high depth" (close to individuals' interest) and "narrow breadth" (a complete echo of individuals' interests) (pp. 393-394).

Scholarly perspectives on this factor vary. Individuals may find personalisation intrusive and pushy; hence, it is not a significant precursor of value and attitude (e.g., Arora & Agarwal, 2019; Kim et al., 2016). Gaber et al. (2019) mainly examined personalisation as an antecedent of the attitude towards Instagram advertising but not as part of the advertising value composite. They concluded that the customisation issue is unimportant in SNS marketing, particularly when advertisers do not help consumers feel the advertisements are catered to their tastes. Similarly, Ho Nguyen et al. (2022) found no significance in the influence of personalisation on customers' attitudes towards SNS advertisements.

Nonetheless, in their comparative study, Lütjens et al. (2022) reiterate that personalisation is essential and has an overall significant favourable influence on attitudes.

Therefore, the existing literature on the perceived personalisation factor in the online advertisement environment presents mixed views and opinions. However, it has an impact on value and attitude. Based on this assumption, the following hypotheses were formulated:

H5(a): The personalisation factor of retargeted advertisements influences young people's perceived value of retargeted advertisements.

H5(b): The personalisation factor of retargeted advertisements influences young people's attitudes towards retargeted advertisements.

2.2.10 Interactivity

Interactivity is the establishment of online communication between an individual accessing an online platform and the platform itself (Guräu, 2008). According to Florenthal and Shoham (2010), interactivity is “the degree to which one or more individuals can act on and react to a particular source” (p. 30). “Act on and react to” is further clarified by the authors by directing the concept to how individuals may influence or sources impact individuals.

Liu (2003) developed a scale to measure the interactivity of websites in general. In his study, he defines two conditions that should be satisfied by interactive communication. These are the flow of communication and the rapid efficacy of information. In the same year, Lohtia et al. (2003) also directed their attention towards websites and highlighted the importance of utilising interactivity in addition to colour and animation to increase viewer engagement by facilitating two-way communication. They stressed the significance of ensuring that interactivity is not superficial or unnecessary, as it may undermine the website's overall effectiveness.

Some early papers presented in conferences included interactivity as a factor (e.g., Wang et al., 2002; Zhang, 2011; Zhang & Wang, 2005) followed by Choi et al. (2008)'s study testing it in a mobile advertising context. Ching et al. (2013) translated this flow of communication and rapidness of information in research on online narrative advertising.

Their study suggests that interactivity can strongly influence the attitude towards a product used in an online narrative advertisement. Nevertheless, this influence depends upon the cognitive involvement that a consumer has with the advertisement. They also postulate that when advertisers empower the consumers to regulate and participate in interactive online advertisements, they will instil retention in the consumers' minds, driving them to make easier associations and helping them to identify themselves with the product during purchase. Therefore, interactive advertising encourages direct experience and is accompanied by alluring effects to assist the consumer in learning about and comprehending a product's traits and diverse ways of use (Hazlett, 2008). Interactivity has a positive relationship with the value of advertising (Choi et al., 2008; Wu & Hsiao, 2017). Interestingly, Cvirka et al. (2022) found no association between interactivity and the attitude towards SNS advertisements; the association between interactivity and perceived value was not tested.

Deighton (1996) defines three extents of interactivity: two-way communication, active control, and synchronisation. Two-way communication occurs when there is dialogue and engagement between two parties, in this case, between the marketer and the consumer. Active control is a step forward over traditional two-way communication. It allows the consumer to influence communication (Siemens et al., 2015). Interactivity is parallel to personalisation, where both these factors can lead to motivating consumers to click or heightening entertainment. Finally, synchronisation is defined as consumers' readiness for communication; from when it appears on screen to their reaction (Siemens et al., 2015). The efficacy has changed from traditional marketing instruments to an online environment. When there is a mutual relationship in the communication between a company and an individual, then the optimal purpose of interactivity has been reached (Lütjens et al., 2022).

In a study conducted by Bao et al. (2016) on repurchase intent, the significance of effectively managing interactivity in e-commerce platforms was highlighted. Interactivity is a relatively nascent concept that is being integrated with advertising value and attitude. Although Bao et al. (2016)'s study did not include advertising value, it provided a diverse range of constructs on which interactivity can be built, such as "active control, two-way communication, and synchronicity" (p. 1771).

Islam (2017) employs the interactivity construct in his model and identifies proximity to prospective consumers as being a significant role of this factor. Interactivity in advertising

is a leap forward from conventional advertising, where consumers have to see, read, record, and remember the two-way communication between the advertiser/brand and consumer (Ariffin et al., 2018). The same study confirms that consumers' attitudes towards advertising are positively linked with interactivity.

In her review study, Karimova (2011, p. 160) mentions seven dimensions of interactive advertising, which are:

- a) Active engagement and reaction - when individuals are prepared to interact, communicate, connect, learn and have a positive attitude in the face of difficult situations.
- b) Physical action - when individuals perform actual bodily efforts, such as mouse clicking;
- c) Flow - when individuals are so immersed in what they are doing and deeply involved in the action they are experiencing. The 'flow' concept was conceived from the ideas discussed by Csíkszentmihályi (2000).
- d) Involvement - the personal or emotional connection with others (Karimova, 2011).
- e) Control of consumers - giving more control to individuals over their information environment.
- f) Two-way communication - the mutual communication between the advertiser and the individual.
- g) Feedback - the information provided as a response to a product utilised as a foundation for improvement.

In a cross-cultural qualitative study by Deraz (2019), interactivity was found to be more associated with value with the Indians rather than the Swedish. Hussain et al. (2022) reported that interactivity significantly influences SNS advertising value. Recently, Kim et al. (2023) conducted a study to investigate the association of interactivity with value, specifically brand value, which includes utilitarian, hedonic and social value. They found that, indeed, the interactivity in SNS advertisements, when compared to those that are traditionally less interactive offers more value to young female adults.

These essential dimensions require more consideration as they can be used adequately or abused. For instance, with the advancement in algorithmic technology, the control of consumers is shrinking. On the other hand, interactivity is still an emerging factor and hence,

is the least tested element using the extended Ducoffe's model involving the advertising value construct (Lütjens et al., 2022). Consequently, Deraz (2019) shed light on the absence of this factor, while Arora and Agarwal (2019) urged researchers to include interactivity in AVM to test for its influence.

Given that most of the research on interactivity in advertisements is favourable when associated with both the value and the attitude, it is argued that the interactivity of a retargeted advertisement may positively affect the perceived value and young people's attitudes towards retargeted advertisements. Hence, the following hypotheses were considered:

H6(a): The interactivity factor of retargeted advertisements positively influences young people's perceived value of retargeted advertisements.

H6(b): The interactivity factor of retargeted advertisements positively influences young people's attitudes towards retargeted advertisements.

Since online advertising has become integral to young people's daily digital lives, these six antecedents of advertising value and their attitudes towards online advertising must be tested. Advertising value has already been discussed. Marketers must create an advertisement that is perceived as valuable, as it influences and shapes individuals' impressions of brands and products, the propensity to engage with advertisements, and the desire to click on them. Different studies showed that it is a significant precursor of the attitude towards online advertising (e.g., Arora & Agarwal, 2019; Cvirka et al., 2022; Ducoffe, 1996; Logan et al., 2012; Murillo, 2017; Murillo et al., 2016). Therefore, the following hypothesis proposed that:

H7: The perceived value of retargeted advertisements positively impacts young people's attitudes towards retargeted advertisements.

Different studies have tested the determinants of value that directly influence attitude as an outcome variable (e.g., Hassan et al., 2013; Logan et al., 2012; Murillo, 2017). Some studies that used value as a mediator between a factor/s and attitude did not always report it (e.g., Lin & Hung, 2009; Murillo et al., 2016; Murillo, 2017). Two studies investigated advertising value as a mediator between factors and attitude (Hassan et al., 2013; Logan et

al., 2012). In Logan et al.'s (2012) study, it was found that value mediated the relationship between informativeness, entertainment and attitude towards SNS advertisements, but not irritation. On the other hand, Hassan et al. (2013) reported that value mediated the relationship between infotainment, credibility, irritation, and students' attitudes towards SNS advertisements, but not personalised content. With these mixed results, it is essential to understand if perceived advertising value mediates the relationship between the six factors and attitude in a retargeting context. Thus, the following hypothesis was considered:

H8: The effect of a) entertainment, b) informativeness, c) irritation, d) credibility, e) personalisation, and f) interactivity on young people's attitudes towards retargeted advertisements is mediated by retargeted advertising value.

These advertisements can act as a vehicle to present timely, personalised information about products and services and as an essential tool to form young people's attitudes. The following section focuses on young people and their attitudes towards online advertising.

2.2.11 Young People and Their Attitudes Towards Online Advertising

As young people's judgemental and rational abilities, especially the younger ones, are still at a developmental stage, their capability to discern and assess advertising techniques and persuasion strategies is not fully matured (Zarouali et al., 2017). Young people are likely to spend their money rapidly (Schiffman et al., 2012), as they are more susceptible to impulsive purchasing than older people (Kacen & Lee, 2002). Indeed, maturity plays an essential role in advertisements' influence, effect, and impact on young people (Kuppuswamy & Shankar Narayan, 2010). Generation Z youths are the Internet generation and are getting information and news primarily from the Internet. Valkenburg and Piotrowski (2017) call this generation – Generation Digital. A study by van der Goot et al. (2018) found that the Internet generation, mostly young adults, have a more positive attitude towards advertising than the older generation. Young people watching an advertisement on TV can take it passively, resorting to zipping and zapping capabilities that can overcome such infiltration. However, as Cai and Zhao (2013) argue, budding young people can be immersed in a fully branded Internet atmosphere for an extended period, with the fine line between real content and advertising becoming blurry. Young people, the early adopters of new media technology, are being

targeted aggressively by advertisers using different online advertising techniques (Cardoso & Cardoso, 2012). Common Sense Media (2021) reports that US teens (13 - 18 years old) spend approximately eight and a half hours of screen media use daily. In 2021, around 88.0% of teens owned a smartphone. Fifty-four per cent of young people admitted that they spend many hours on their smartphones, while more than 40.0% said they waste several hours on SNSs (Jiang, 2018). Young people are more susceptible to smartphone addiction; they are more likely to display behavioural and mental problems such as anxiety, distress, mental distraction, and insomnia (Abi-Jaoude et al., 2020). According to a study by Youn and Shin (2019), young people between the ages of 13 and 19 are more likely to interact with personalised SNS advertising if the perceived benefits or value outweigh the perceived risks (e.g., deception or intrusion).

Only a few studies extracted from the SLR were dedicated exclusively to children under 17 when tackling the advertising model or parts thereof (e.g., Daems et al., 2019). Else, studies that involved minors were incorporated with young adults (e.g., Cardoso & Cardoso, 2012; Duffett, 2020; Logan et al., 2012; Taylor et al., 2011). Otherwise, past studies focused on young people aged 16 or 18 and over. For instance, more than two-thirds of Gaber et al.'s (2019) sample were aged between 15 and 28 years; a study that emphasised the significance of SNS advertisements in enriching the relationship between attitude and brands. Arora and Agarwal (2019) and Arora et al. (2020) targeted millennials; for the former, two-thirds of the respondents were between 18 and 23 years, whereas in the latter, 59.3% were between 18 and 24 years. They both found that the constructs were significantly associated with attitude, while for Arora et al. (2020), the attitude elicited positive behavioural responses such as clicking on an advertisement.

Advertising appeal plays an essential role in these purchasing paths. The decision-making of individuals can be both rational and irrational (Aydin et al., 2021). Studies show that adolescents and youths are more susceptible to irrational than rational purchasing, which can be the result of interpersonal influence and fear (Lin & Chen, 2012). In a recent study by Misco (2023), when young people in Malta aged between 16 and 24 were asked how they feel about being exposed to advertisements, only 46.0% admitted feeling comfortable. Nonetheless, this was still higher when compared to older age groups. Hence, the study revealed that young people show substantially lower susceptibility to experiencing discomfort

when subjected to online advertisements. The aggregates for the ‘comfortable’ semantic differential scale for men and women for all age groups were equal.

When it comes to gender and advertising, Sun et al. (2010) conducted an empirical study to understand if men and women have the same perception in an online advertising context. In a lab experiment with students, they discovered that although informativeness can aid men in forming a more positive attitude than women, entertainment may cause women to have a more positive attitude than men. Taylor et al. (2011) suggested that women perceive SNS advertisements more entertaining and informative than men, although the latter still considered them both informative and enjoyable. Cardoso and Cardoso (2012) claim in their study that even though there is a consensus between young men and women on entertainment and credibility in advertising, women regard online advertising as more informative and irritating. Murillo (2017) partially agrees with Cardoso and Cardoso’s (2012) study, as he argues that both genders of young people are strongly affected by entertainment in the assessment of advertising value. However, the irritation does not affect women and negatively impacts the perceived advertising value among male respondents. Logan et al. (2012) devoted their study only to women. They found that SNS advertisements should be more entertaining than informational for women. Murillo et al. (2016) claimed that credibility in advertising demonstrated effects on gender, as it was more important for young women than men.

These studies suggest that there may be differences between genders. There is a dearth of studies on age-based differences in AVM, which makes it more intriguing to investigate whether there are any variances in a retargeting context. Hence, the following two hypotheses were formulated:

H9: There is a gender-based difference in the influence of a) entertainment, b) informativeness, c) irritation, d) credibility, e) personalisation, and f) interactivity on young people’s i) perceived retargeted advertising value and ii) attitudes towards retargeted advertisements; and a gender-based difference in the influence of g) perceived retargeted advertising value on attitudes towards retargeted advertisements.

H10: There is an age-based difference in the influence of a) entertainment, b) informativeness, c) irritation, d) credibility, e) personalisation, and f) interactivity on

people's i) perceived retargeted advertising value and ii) attitudes towards retargeted advertisements; and an age-based difference in the influence of g) perceived retargeted advertising value on attitudes towards retargeted advertisements.

2.2.12 Summary

In this section, a comprehensive review of the six primary factors chosen for this study that influence consumer attitudes towards advertising were presented. While few studies included only young people, the others have focused on other segments of the population including young people as well. First, this section delved into online advertising to understand the permutations of this marketing tool and its characteristics. Then, the section focused on the general attitude towards advertising by debating it and discussing Pollay and Mittal's (1993) belief factor model. The study shifted to Ducoffe's (1995, 1996) AVM, which was examined in detail and backed up by the U&G theory (Katz et al., 1973). Six main factors were extrapolated from different studies using Ducoffe's model and other constructs used by different researchers over time. These were analysed individually. These factors are the entertainment that an advertisement generates, the informativeness of its message, the potential irritability caused by the intrusiveness or make-up of an advertisement, its trustworthiness and believability, the customisation to target specific consumers, and the interactive nature of an advertisement. As the study intends to analyse the four pillars mentioned in the introduction from the perspective of young people, the final part of this section was dedicated to their attitudes towards online advertising, including the gender perspective. The following section of this chapter will focus on one technique of online advertising to which the study is dedicated to: Retargeting.

2.3 Retargeted Advertisements

2.3.1 Introduction

Retargeting is an emerging advertising technique widely used online. This section introduces retargeted advertisements, highlighting their variety and distinct contrasts. The focus will then shift to cookies and how these contribute to the operation and success of retargeting. It proceeds with elaborating on the function of frequency and the temporal aspect of this technique. It expands on the artificial intelligence (AI) aspect, focusing on advertising optimisation and the fusion of the six factors discussed in the previous section, with its concerns and downsides. Next, the purchase funnel is analysed, which is vital for retargeting to understand its value towards the different conversion stages. Some related theories are discussed to help in understanding this technique more deeply. The final part of this section concentrates on the ongoing discussion around legislation, directives and relevant actions on issues being addressed.

2.3.2 Retargeting

Technology-enabled and data-driven programmatic advertising allows online marketers to reach targeted audiences at a reasonable cost and in real time (Samuel et al., 2021). Programmatic advertising is a powerful and effective technique for marketing products and brands online (Gonzalvez-Cabañas & Mochón, 2016). The mantra of this technique is to communicate with the most relevant consumers in real-time, at the optimal time and place, and present the most suitable message to achieve marketing goals. Individuals are offered personalised advertisements showing products according to their needs and elicit immediate feedback from them (Lee & Shin, 2020). According to Samuel et al. (2021), programmatic advertising is defined as “an automated big data system that allows organisations (predominantly retailers) to bid for the privilege to publish personalised online advertising in the right place, to the right people, at the right time” (p. 2). Unlike the traditional ways, where advertisers used to purchase a package of advertisements from publishers, in a programmatic advertising context, the advertisers purchase “impressions from advertising networks”, but by using programmatic (automated) technology (Shehu et al., 2021, p. 665). This programmatic technique has shifted the paradigm of costs in the advertising ecosystem as it became less expensive due to a lack of reckless use in advertising (Samuel et al., 2021).

Dynamic retargeting has been defined as a potential benefit of programmatic advertising (Lambrecht & Tucker, 2013; Samuel et al., 2021). Gertz and McGlashan (2016) argue that conventional simple retargeting has developed into the programmatic advertising encountered today, embracing more customer-centric marketing. Groth and Zawadzki (2016) state that the most valuable data in programmatic advertising is the advertiser's data - "the 1st party data", which is the basis of the classical retargeted campaigns (p. 91). On a different note, in 2016, although still in its infancy, Gazagne and Gösswein urged to redefine classical retargeting as it was already becoming obsolete, unappealing, and non-practical. This 'need for change' is mostly due to the rapid technological advancements and the optimisation of artificial intelligence (AI) that proliferated across the Internet. Gazagne and Gösswein primarily suggested that user engagement is provided on multiple devices worldwide, including smartphones. Today, dynamic retargeting has cultivated these functions and has been optimised accordingly.

In the commercial world, retargeting is promoted as one of advertisers' principal vital advertising tactics. Cybba.com (2021) tagged retargeting as a type of programmatic targeting in their "2021 Guide to Programmatic Advertising". Advertising companies like Shoelace.com are using their online websites to offer information and guidelines for different types of retargeting for organisations to scale their advertising and optimise their marketing campaigns. They are promoting the idea of audience targeting through retargeted advertising by claiming that businesses that are not using this tool are "missing out" on a variety of opportunities to improve their footprint, broaden their marketing campaigns, increase their click-through rate, and ultimately, increase in conversion to the business's website or e-store. For instance, ReTargeter.com offers retargeting products to customers, boasting of a high click rate, conversions, and cost per acquisition. Agnitas.de provides retargeting packages to advertisers for increased contacts. The Meta platform has been offering retargeting options for years, pushing forward the concept of the Facebook pixel with proper segmentation, targeting and positioning, advertisement optimisation and dedicated analytics reports (Widmer, 2020). Hamman and Plomion (2013) argue that advertisers implemented this revolutionary technique on Facebook a few years after its introduction in the online environment. Google, via their site <https://ads.google.com/>, help advertisers and customers formulate a campaign by creating an account, establishing a proper budget, devising an advertisement, and setting the specifications of viewing.

But what is retargeting?

Retargeting is an enhancement and advancement of simple online advertising. The simple definition of retargeting is the connection with individuals by means of customised advertisements as soon they have accessed a retailer's website and left without making any purchase. Hence, the retargeted advertisements' primary purpose is to convince or sway existing website visitors to click on the advertisement, eventually bringing them back to the website where they can make a purchase (Goldfarb, 2013; Lambrecht & Tucker, 2013). Retargeting is a repeated exposure of an online advertisement showing a product of which the retailer's website was visited at least once before and then shown on different areas of the Internet browser, including SNS, search engines and websites (Fig. 2.3).

When individuals view a product on the website of an e-retailer, advertisements of the same organisation start to appear as they surf the Internet. According to Zarouali et al. (2017), retargeting is the capacity of marketers to "target advertising to those consumers that are most likely to be interested based on personal information" (p. 158). Lambrecht and Tucker (2013) suggest that retargeting takes the form of a "recommendation" that the organisations provide personally to consumers via the Internet by using the consumers' browsing history (p. 561). It is a function of providing advertisements based on previous encounters.

Upon visiting a website, a unique profile is built and associated with a tracking cookie, which is then embedded on individuals' devices being used so that a trail of behaviour and subsequent site visits can be tracked (Bleier & Eisenbeiss, 2015a). Dynamic retargeting engines use machine learning algorithms to learn from previous successful or unsuccessful retargeting campaigns (Johansson & Wengberg, 2017).

Uninformed online users can feel a cumbersome invasion of their privacy, intrusiveness and deception when repeatedly facing the same advertisements since advertisers can use their browsing history for retargeting using cookies (Boerman et al., 2017; Johansson & Wengberg, 2017). Individuals can perceive retargeted advertisements as attractive, appealing, personalised, and relevant to their needs. They can also find them intrusive, invading their Internet proximity and creepy (Moore et al., 2015; Zarouali et al., 2017). Tucker (2014) insists that individuals will receive a personalised advertisement favourably if they believe that no covert information was taken from them for targeting purposes.

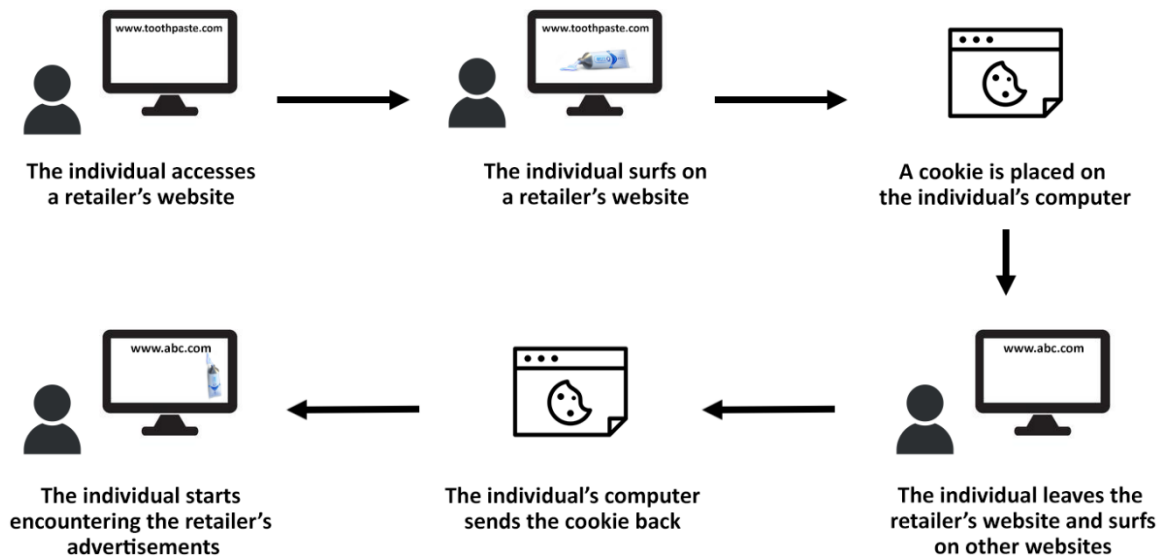


Figure 2.3: Simple overview of a type of retargeted advertisement journey

There seems to be a consensus between various search engine marketers that this technique still needs to be employed at its maximum capability; this should be fully utilised as some organisations have yet to fuse this marketing technique in their campaign strategies. SNSs, mostly Facebook, along with Amazon.com and Google, are the leaders in pushing forward the idea of retargeting. In the commercial field, retargeting is the tactic most discussed between advertisers and organisations, but academic study on this marketing tool still needs to be made available (Zarouali et al., 2017). Moriguchi et al. (2016) lament the dearth of research on retargeted advertisements and sales vis-à-vis the purchase funnel stages. There is a lacuna of information because academic literature is lacking, but many companies use commercial information on the Internet. Zarouali et al. (2017) reiterate that other studies of similar techniques can provide insight into the study of retargeting, and more focus should be given to young people's attitudes and behaviours towards retargeting. They quote Taylor (2013) by stating that besides the term targeting, there are "customisation, tailoring personalisation and online behavioural advertising" (Zarouali et al., 2017, p. 158). Retargeting has been dubbed 'unique' since it focuses on those individuals who are most likely to be familiar with the products the marketer wants to promote (Sahni et al., 2019).

2.3.3 Types of Retargeting

The online environment offers advertising companies and organisations a constant analysis of individuals' online behaviour and helps them to understand their queries, website visits, clicks on advertisements, and online shopping (Dwivedi et al., 2021). The marketer

then chooses the ideal personalised advertisement for the individual and in which space to place it, with the aid of algorithms (Parra-Arnau et al., 2017). A marketer can select different types of retargeting tools to be close to the individuals interested in the product or service.

One of the first articles addressing this tool was by Lambrecht and Tucker (2013), who mention four types of online targeted advertising methods that are at the marketer's disposal. These tools are:

- a) Contextual targeting - this is also known as semantic advertising (Parra Arnau et al., 2017). Companies place their generic advertisements on a website congruent with their content (Lambrecht & Tucker, 2013). For example, an individual visits a forum site about smartphones and comes across a Samsung Galaxy advertisement placed on the site. No previous visit to the smartphone company is required here.
- b) Behavioural targeting - this kind of advertisement is generic in nature, and it is directed to individuals who previously visited any particular site based on the same genre; for example, if individuals visit a specific perfume website (e.g., Dolce e Gabbana), they will encounter advertisements of other perfumes (e.g., Paco Rabanne).
- c) Generic retargeting - visitors come across standard, basic, or generic advertisements on other websites after visiting a particular retailer's website (Lambrecht & Tucker, 2013). Hence, the retargeting provider targets all the individuals who visited their website in the past, using the same retargeted advertisement blanketly. Mainly, this is done after the individual leaves the website or e-store. This retargeting tool serves static advertisements. These are predominantly generalised and serve as a magnet for the individual; they are advertisements for everyone, not positioned according to the individual's and target segments' demographics. This retargeting technique employs a 'one size fits all' approach.
- d) Dynamic retargeting - it occurs when individuals come across a creative personalised online advertisement of a particular product, they have browsed on a retailer's website beforehand (Lambrecht & Tucker, 2013). In this scenario, every advertisement impression is customised to individuals who have browsed the website before. It is done in the background by pulling data, such as images, brand name, prices, availability, and messages, from the feed that is provided by the Internet cookies, based on the individuals' behaviour and, hence, personalising the impression according to their choices (Zarouali et al., 2017).

With this technique, the retargeting provider designs the advertisement to show the same product that an individual came around or looked for before, and occasionally, showing similar products that the organisation sells (Lambrecht & Tucker, 2013). Surprisingly, Lambrecht and Tucker (2013) found that as consumers initially have broad preferences for products before gradually narrowing them throughout the browsing experience, generic retargeted advertisements are more successful than dynamic retargeted advertisements. In contrast, Bleier and Eisenbeiss (2015a) found that click-through rates increase more with personalised (dynamic) advertisements. Another study indicated that retargeted advertisements are more effective at prompting individuals that advertisers are tracking them to gather data when compared to other general advertisements, resulting in negative impacts on attitudes and intentions (Farman et al., 2020).

It is essential to accentuate the distinction between behavioural targeting and retargeting. There are a few number of studies that focused on behavioural targeting and examined online behavioural advertising. Other studies used the terms ‘behavioural targeting’ and ‘retargeting’ interchangeably (e.g., Farman et al., 2020; Ozcelik & Varnali, 2019). Although both tactics utilise the same third-party tracking technologies (Mayer & Mitchell, 2012), they still differ in their strategy. Behavioural targeting is a non-specific advertisement that appears on individuals’ screens after they visit any website other than a specific retailer’s website that offers the same products or operates within the same genre (Kagan & Bekkerman, 2018). The customisation of online advertising is built on the erratic behaviour of an individual and the cookies embedded in the individual’s system. The data used to identify individuals for behavioural purposes differs from retargeting – it is more based on inference than facts (Ozcelik & Varnali, 2019). The individual’s past behaviour, including online browsing and shopping behaviour, is collected using different digital tags to strengthen an advertising campaign for an organisation.

Another type of online creative targeting is sequential advertising, which Peng et al. (2020a) put forward in their ongoing empirical study. Their study uses sequential targeting in the context of e-commerce platforms. Before individuals make their final purchase, online advertising campaigns are often initiated over multi-touch points, so an advertising strategy is developed based on a platform that considers the behavioural patterns of consumers derived from previous scenarios (Peng et al., 2020b). It can be shaped according to the purchase

funnel stage of an individual; hence, a variety of advertisements (a sequence) for every stage of the funnel (Berke et al., 2014).

Berke et al. (2014) categorise other types of retargeting techniques in their book, 'The Retargeting Playbook'. Initially, they make a firm premise for these tactics; site retargeting is the fundamental technique Lambrecht and Tucker (2013) attribute to dynamic and generic retargeting. The other tactics are:

- a) Search retargeting - this tactic banks upon a list of keywords that individuals key in to search for anything on search engines such as Google, Bing, Yahoo! and Baidu (Berke et al., 2014). Based on this list, the provider channels advertisements according to the searched terms with the aid of algorithms. The keywords are always related to the campaigns organised by the company to maximise user response. This method captures the data of a landing page sent by the provider. When an individual inputs a target search term, this is matched with referral data pre-set by the provider, and the advertisement will appear on the page. Berke et al. (2014) argue that this tactic is more of a targeting method than retargeting due to its simplicity in technology.
- b) Email retargeting - this is another powerful technique. Commercial websites and some academic studies refer to this tactic as remarketing (Sahni et al., 2019), although the word is interchangeable with retargeting. Email retargeting is mainly employed when individuals abandon a shopping cart halfway, and the company needs to encourage them to take up from where they left off by offering something in return (Berke et al., 2014). Organisations use remarketing as well for up-selling or cross-selling purposes. According to Berke et al., email retargeting is alternatively considered to occur when a company sends an email and may choose to incorporate a pixel so that they may target their advertisements based on whether an individual opened the email or not.
- c) Social retargeting - this tactic involves targeting individuals based on their behaviour on SNSs (Berke et al., 2014). Retargeting on SNS serves as a conduit between individuals liking or visiting a page, the social followers, and the organisation. Again, Berke et al. emphasise the substantial difference between social retargeting, which uses SNS as the main point of departure and site retargeting.

Site retargeting is the general term used to consolidate generic, dynamic and sequential retargeting together, as it occurs when individuals hit a retailer's website. With the power of

cookies, that website identifies the individuals, follows them on the Internet, and advertises to them on other sites (Berke et al., 2014; Kagan & Bekkerman, 2018; Lambrecht & Tucker, 2013). Although retargeting falls under the umbrella of behavioural targeting, its approach is ingrained in comprehending the various stages of individual engagement within a website leading up to the point of making a purchase. It must be made clear that site retargeting is the exclusive subject of this study.

2.3.4 Cookies

The concept behind ‘Persistent Client State’, Hypertext Transport Protocol (HTTP) cookies, text files, ‘magic cookies’, or cookies as they are known, was first created by Lou Montulli, a programmer for Netscape Communications Corporation in 1994 (Mellet & Beauvisage, 2020; Pantelic et al., 2022; Schwartz, 2001). Montulli wanted to solve a substantial problem that the Internet was facing at that time. No recording of visits was placed in the history list, and cookies were the solution to this matter. He created this cookie to enable information collection by embedding a tiny file on an individual’s computer so website monitoring could be performed (Pantelic et al., 2022).

Cookies are tiny parts of coded information placed and deposited on Internet browsers by respective websites while an individual is surfing the Internet (Mellet & Beauvisage, 2020). This small, harmless code is being used by retargeting providers or “ad networks” (Bleier & Eisenbeiss, 2015a, p. 672) when employing retargeting as it has the capability of translating an individual’s online behaviour information to code, and this code can give the potential to personalise and customise advertisements to individuals (Bashir, 2019). Cookies provide restricted but widespread information about Internet browsing (Mellet & Beauvisage, 2020). These have been primarily used for behavioural targeting and online targeting advertising as well.

When individuals land on a website, a cookie is released and stored; although individuals leave the website, the cookie is kept. This piece of code then informs the retargeting provider about the individuals’ behaviour from there onwards; the marketer would know that individuals who visited the website accessed another website (Mellet & Beauvisage, 2020). When individuals access the subsequent website, the retargeting providers will search for any available space on that website. If there is, they will start a bid with other competing providers to take up that space (Bashir, 2019). The higher bidder will

take the space and place the retargeted advertisement in that space (Mellet & Beauvisage, 2020). This process is fully automated and materialises in a few milliseconds (Parra-Arnau et al., 2017). The second the individual shifts from one website to another, the advertisement-space sale would already be executed. This “auctioning of online advertising space in real time” activity is called Real-Time Bidding (Bleier & Eisenbeiss, 2015a, p. 671).

Schwartz (2001) stated that Montulli solved a puzzle by creating cookies but generated another problem. The “cookification” process, as Mellet and Beauvisage (2020, p. 2) put it, evolved slowly but steadily. Initially, it used traditional purchase methods but then evolved into how it is being exploited today (Mellet & Beauvisage, 2020; Pantelic et al., 2022). Cookies can have different operations and facets; for example, a session cookie is transient, that aids during the session, and is deleted the minute a browser is closed; a supercookie is mostly used to monitor traits and behavioural patterns; and a persistent cookie is predominantly dedicated to online marketing optimisation (Pantelic et al., 2022). They all serve a purpose but may seem like a deterrent to individuals encountering activity resulting from these cookies.

Cookies can be classified as either first-party or third-party. First-party cookies are placed on an individual’s device directly by the website being visited (GDPR.EU, 2022; Mellet & Beauvisage, 2020; Pantelic et al., 2022). These can only be employed by the domain that has lodged the cookie - the visiting website. Contrastingly, cookies placed on an individual’s device by a third party, such as an advertiser or any other system, and not by the visiting website are called third-party cookies (GDPR.EU, 2022; Mellet & Beauvisage, 2020; Pantelic et al., 2022). In this case, websites that operate third-party cookies can have access.

Initially, individuals accessing the Internet were unaware that cookies were being stored, recording their online behaviour (Miyazaki, 2008). These cookies can be planned to be lodged on an individual’s computer system for days, months, years or even indefinitely. Hence, individuals felt they were being tracked and deceived, and the mistrust grew. By default, cookies do not tamper with individuals’ data or invade their privacy; a cookie cannot result in the disclosure of personal information. Miyazaki (2008) emphasised that these adverse reactions could be mitigated and reduced by informing individuals before accessing the website that a cookie will be used.

In a smartphone environment, cookies tend to be more challenging as these devices are incompatible with such activity. Hence, the smartphone operating systems developers had to find a solution; they developed a substitute for the cookie called an identifier, with IDFA (Identifier for Advertisers) dedicated to Apple devices and Advertising ID for Android mobiles (Mellet & Beauvisage, 2020). These identifiers are sublime for retargeted advertisements in a smartphone context. Nonetheless, Safari, for example, which is the primary Internet browser found on the Apple Operating System (iOS), blocks third-party cookies by default. Some platforms like Meta have implemented an Application Programming Interface (API) version of the pixel where the client browser sends behavioural information to the website server, and it is the server that sends this (or part of) information to the third-party advertising platform, like Meta.

Pixels are mostly used by major online organisations, such as Meta. These pixels, or tracking pixels or web beacons, are a piece of coding or a “web bug” which is implanted in a website by the advertisers, and when individuals visit the website, this pixel sends a request to a server to retrieve the pixel image (Ruohonen & Leppänen, 2018, p. 28). Advertisers embed a Facebook pixel on their webpages, so when individuals land on their website, this will send detailed user events and event-specific custom data to Facebook (Meta, 2023). It will furnish the advertisers with important details; to track the individuals’ exchanges and collect vital information such as their engagement and conversions (Ruohonen & Leppänen, 2018). Meta pixel, also known as the Facebook Retargeting pixel, helps advertisers in many ways, such as conversion tracking, building lookalike audiences (i.e., a group of SNS users with homogenous traits as another group of users), and optimisation.

One of the main goals of cookies in retargeting technology is to eliminate the time difference between the stage when an individual leaves the website of an organisation without a purchase or visiting solely for browsing to the commencement of a series of targeted advertising based on the tastes of the individual (Helft & Vega, 2010). The profiling tools that cookies provide to retargeting providers are built upon knowledge from data collected from databases that amass a list of all the clicks performed by an individual. This mechanism helps fetch advertising space via pre-set algorithms, reaching individuals immediately and furnishing them with the correct information to drive them to conversion (Försch & de Haan, 2018). It would only need enough immediacy and an adequate succession

rate to determine the effectiveness of this instrument and how impactful it would be on an individual (Sahni et al., 2019).

2.3.5 The Function of Frequency and Recency

Cookies provide the functionality of real-time bidding for advertising slots on websites and the occurrence of advertising impressions to different individuals. With this function, two decisions should be taken. These decisions are pre-set by the retargeting provider but taken automatically with every real-time bid. The two decisions are an advertisement's frequency and time intervals, also known as recency. Försch and de Haan (2018) describe advertising frequency as the number of times an advertisement impression must occur to an individual based on a whole day period. On the other hand, advertisement recency or "recency bump" is the waiting time that should be set for an advertisement to show up on a website after the previous advertisement appeared on screen - the succession rate of the advertisements from one to another (Li et al., 2021b, p. 123; Sahni et al., 2019).

In their investigation on the role and effects of frequency and recency of retargeting on individuals, Sahni et al. (2019) found that retargeted advertising is most effective on the first day of the first week, with one-third of the effect. On the other hand, the same study did not find any evidence that the effect of retargeted advertising diminishes with frequency. Li et al. (2021b) extended Sahni et al.'s study by focusing on hourly stages of retargeting those individuals who visited a website and abandoned a cart. Contrastingly, they found that early retargeted advertisements had an adverse effect on an individual's purchasing behaviour. Interestingly, later encounters with these advertisements had a more positive effect on individuals.

Frequency is calculated using a frequency cap. The frequency cap is the determined amount of advertisement impressions pre-set for individuals that would probably encounter during a whole day in a specific campaign (Berke et al., 2014; Sahni et al., 2019). These are set for an organisation to be visible to the online audience and to avoid overexposing a brand. When individuals access a website and activate the retargeting campaign, they are allocated to a schedule using the three pre-set frequency cap levels (Sahni et al., 2019). In their study, Sahni et al. (2019) used these frequency caps; a tool that can be predetermined using three possible levels: zero, low, or high. Hence, some individuals would be placed on the zero-frequency cap level, others on the high-frequency cap level to receive a high number of

impressions per day, and others placed on the low-frequency cap level, with advertisement impressions fluctuating in occurrences on the individual's screen. Concurrently, frequency caps can be based on a metric system, using the hourly schedule, e.g., 3/24 hours for an advertisement, meaning that the advertisement would appear three times in 24 hours (Rosa, 2018). The frequency cap schedule will limit how much the advertisement will appear on the individual's screen. Overexposure can ruin a campaign as the prospects may find it intrusive and creepy, ignoring the advertisements completely, becoming annoyed or banner blind (Berke et al., 2014; Todri et al., 2019). These researchers suggest that new compelling creative impressions must be created and alternated to reduce advertising blindness and irritation. These should contain short and straightforward messages, preferably animated and not static, that include clear call-to-action. Ongoing testing is suggested to analyse which advertisements work (Berke et al., 2014).

Few studies focused on frequency in a retargeting context (Sahni et al., 2019). Other studies on frequency were mostly mentioned in terms of media use (e.g., Aktan et al., 2016), online buying (e.g., Amjad et al., 2015), reading or viewing advertisements on a mobile phone (e.g., Kim & Han, 2014), response (e.g., Murillo, 2017) mobile advertisement reach (e.g., Samanta & Papadopoulos, 2012), and in-app usage (e.g., Sigurdsson et al., 2018).

Timing is crucial for retargeting. The interval of the occurrences of one impression from the other can boost the conversion rate or tarnish the campaign and brand (Försch & de Haan, 2018). Sahni (2015) argues that the shorter the interval of advertisement occurrence, the smaller the probability of an individual clicking on the retargeted advertisement. He states that "the spacing between past advertising exposures matters, as it can strongly influence the value of subsequent advertising" (p. 240). Nevertheless, Försch and de Haan (2018) reiterate that this adverse effect diminishes by personalising and diversifying the advertisement impressions. Advertisement optimisation can make a difference, as it may have a significant impact on the effectiveness of advertising. Nonetheless, there are privacy concerns and potential downsides.

2.3.6 Influencing Factors and Concerns

Besides advertisement frequency and recency, a retargeted advertisement is declared successful if the individuals at the receiving end construe it as reliable and pertaining to their needs (Berke et al., 2014). Advertising can achieve the best results by placing all the factors

and values at the centre (Ducoffe, 1995). As with online advertising, Ducoffe (1996) emphasises that informativeness, entertainment and irritation are critical predictors of value and attitude towards advertising; even credibility was repeatedly confirmed that it has the same influence (Aktan et al., 2016; Arora & Agarwal, 2019; Zha et al., 2015). Ducoffe argues that informativeness is imperative to advertising as it can advise individuals and furnish them with product alternatives so that they can make an ‘informed’ purchase decision leading to great post-purchase satisfaction. The entertainment factor of an advertisement can render individuals delighted and engaged at the moment of contact, eventually aiding them to convert to the website and proceed with the purchase. Credibility in an advertisement is critical, as individuals would ignore advertisements if mistrust were infused (Sigurdsson et al., 2018). When advertisements seem credible and trustworthy, the objectives are met. However, if advertisements are not trusted because marketers altered the expectations levels too high and individuals perceive that truth and facts were tweaked, then every effort would be useless. Ducoffe and Curlo (2000) included frequency and exposure of advertisements in their study and proposed that when these are increased, irritation would surge while informative and entertaining values would decrease.

Kim and Han (2014) argue that a personalised smartphone advertisement is a strong predictor of informativeness, entertainment and credibility, as it delivers a message to individuals at the right place and when it is most required. When an advertisement is personalised to individuals, they perceive it as more informative than those that are not personalised (Bleier & Eisenbeiss, 2015a). Personalisation may not impact the value directly but manifest itself in augmenting the informativeness, credibility and entertainment factors. Baek and Morimoto (2012) suggest that marketers would reduce intrusiveness, irritation, and creepiness by customising an advertisement.

Interactivity is the fruition of a marketer’s creativity to engage individuals and to compel the activity from immersion into an advertisement to moving to the retailer’s website call-to-action (Papagiannidis et al., 2017). It converts an advertisement into an experiential activity that encourages the individual to participate and convert to the retailer’s website. Finally, irritation, the only negative construct in AVM, can be encountered if the advertisement is not changed and keeps running for a month or more (Berke et al., 2014). Advertising can turn irritating if it baffles individuals, inundates them with information, distracts them from other online chores, or disturbs them (Stewart & Pavlou, 2002). If a

marketer employs an advertising campaign perceived as annoying, offensive, insulting, or excessively manipulative, consumers tend to regard it as an intrusive and vexatious form of persuasion (Ducoffe, 1996).

Ducoffe was not focusing on retargeted advertisements then, and even many studies that were conducted afterwards. Ozelik and Varnali (2019) were among the first scholars to investigate the effectiveness of online behavioural targeting young people from a psychological perspective. They used Ducoffe's main three factors of advertising value to test this behavioural targeting, in which they found that entertainment and information significantly affect consumers' perception positively. In contrast, irritation has a directly inverse effect and can be caused by perceived security risks. No other research was found that can corroborate the results of this study and use the other factors concerning retargeting. In this study, the researchers included retargeting as part of their keywords, which was used interchangeably with online behavioural targeting.

Privacy concerns are manifested in the fear among individuals when they feel themselves being watched, tracked, and losing control over their personal information (Zarouali et al., 2017). These concerns can translate into different forms; individuals feel that their personal information is seen and exposed, or even worse, identity theft takes place with personal details being shared with third parties (Hille et al., 2015). Moreover, the sentiment that someone may be watching one's movements and behaviour virtually all the time is disturbing. In this section of the study, the individual's privacy concerns are segmented into trivium layers: the use of cookies for retargeting techniques, the intrusiveness of online advertising and the personalisation of advertisements.

Individuals continue to be wary of cookies because they believe they violate their privacy, stalk them, and record all their browsing activity (Amarasekara et al., 2021). Although cookies do not collect any personal information that can be used to identify an individual (Lavin, 2006), their covertness, invisibility to an individual, and the disclosure of information they pass on to third parties are their main drawbacks (Zarouali et al., 2017). Nonetheless, these factors are essential for retargeted advertising to be successful. The tracking of movement of individuals from one website to another is an invasion of privacy. Murgia (2019) reported that Google was accused of supplying advertisers with user data

without prior consent, by operating secret web pages. This activity went against their policies and obligations while sidestepping the EU General Data Protection Regulation (GDPR).

The intrusiveness of online advertising can manifest in irritation and frustration among individuals. Li et al. (2002) refer to intrusiveness as a psychological experience or perception that occurs when the cognitive processes of an audience are disrupted. According to Lavy et al. (2009), intrusiveness is characterised by “creating an imbalance between closeness and autonomy” in a relationship (p. 990), where closeness can also be referred to the connection between an individual and an advertisement, and autonomy is the freedom to act as an individual. Bamfo et al. (2019) argue that intrusiveness is the central negative aspect that individuals may feel against advertisements, to the extent that all forms of advertising are perceived as invasive and obstructive.

An advertisement’s intrusiveness is often determined by its context (Hamby & Ilyuk, 2019). According to research by Hamby and Ilyuk, retargeted advertisements that are congruent with social presence are perceived as being more invasive. However, Bleier and Eisenbeiss (2015a) found that personalised advertisements are perceived as less intrusive on websites with similar content. Even Yoon et al. (2023) found that individuals in a news environment perceived greater congruency when a retargeted advertisement followed a ‘green’ website, leading to a favourable attitude.

The format and frequency of an advertisement can enable intrusiveness. In a study with Turkish students, Celebi (2015) found that SNS advertisements can be perceived as intrusive and negatively affect their attitudes and behaviours. The perceived intrusiveness may also rise with frequent repetition of advertisements (Ducoffe & Curlo, 2000; Ying et al., 2009). Berke et al. (2014) accentuate the importance of incorporating frequency caps in retargeted advertisement campaigns to reduce the intrusiveness and waste of advertising costs.

Personalised advertisements may be simply not customised according to the needs of the individuals receiving them (Arora & Agarwal, 2019). Nonetheless, personalised advertisements in general might raise alarms and cause privacy concerns due to their customisation and the variable feelings of the individuals. As retargeted advertising may be used differently according to the stages of the purchase funnel for conversion purposes, they can be perceived as over-watching individuals’ movements and online behaviour. Tucker

(2014) suggests that personalised advertisements in which individuals perceive that no personal information was taken from their digital accounts, personal computers, or smartphones, are more positively regarded, and accepted. Gaber et al. (2019) argue that if personalisation is perceived as beneficial to individuals, it affects them positively and improves their attitudes towards advertising and user engagement.

Studies show that young people do not worry about the security of their personal information and are not highly concerned about their privacy (Zarouali et al., 2017). Walrave et al. (2018) posit a positive association between personalised advertisement and the brand engagement among young people. They also state that young people do not have many privacy concerns about the effects of personalised advertising; this can be due to the marketers' credibility and advertisement. There is also the personalisation paradox, where personalisation can be perceived as suitable for an individual and even engaging on the one hand and a lack of privacy and exposure on the other (Aguirre et al., 2015) - a metaphorical tug-of-war between a company's hunger for more user information and an individual's need for privacy.

Retargeted advertisements in an SNS ecosystem can also strongly resonate in an echo chamber. According to Cambridge (2023) dictionary, an echo chamber is defined as a scenario where individuals solely encounter viewpoints of a particular kind or views that are comparable to their own. SNS have already been associated with the echo chamber effect (e.g., Cinelli et al., 2021) and predominantly linked to a political context (e.g., Levy & Razin, 2019). An echo chamber in an SNS context has the potential to curtail the encounter with differing viewpoints and encourage the creation of clusters of users who hold similar beliefs and perspectives, which can lead to the development and reinforcement of a common narrative (Cinelli et al., 2021). Given that retargeted advertisements target individuals that have already encountered a product on a website previously visited, it may create an environment in an SNS context where it reinforces pre-existing attitudes, while limiting space for exposure to diverse perspectives.

Understanding an individual's buying behaviour and decision-making journey is paramount. Hence, retargeting providers must analyse and understand this journey meticulously to enhance advertisement optimisation for the individuals' benefit. Lately, advertisers are using the purchase funnel concept more to identify the essential stages of an

individual's journey towards purchasing and adapting different advertisements according to the different stages to convert individuals back to a website (Ghose & Todri-Adamopoulos, 2016; Hoban & Bucklin, 2015).

2.3.7 The Purchase Funnel

The marketing funnel concept stemmed from the "AIDA" model established by St. Elmo Lewis in 1898 (Strong, 1925). AIDA is an acronym for Awareness or Attention, Interest, Desire, and Action. This model shows the journey of an individual from a mere prospect to a consumer that is informed and ready to purchase (Kotler & Keller, 2016). Individuals are initially made aware of the products that are available in the market that can fit the purpose of their needs. Then interest is instilled in them and alters the urge to know more about the brand and the product. Individuals begin to evaluate and consider purchasing the product, leading to the decision to purchase it. Kotler and Keller (2016) evolved this model into a marketing funnel, depicting the stages in a consumer-centred perspective, from awareness to purchase and even returning consumers becoming loyal. This model was translated into a purchase (conversion or digital marketing) funnel, which was interpreted into four stages (de Haan et al., 2016).

Berke et al. (2014) and de Haan et al. (2016) argue that the first stage of the purchase funnel is the creativity and attraction of the receiving website, hence the homepage, which leads to the second stage of the process - the exploration of various web pages showcasing different products. When individuals become interested in a product, their desire to own it matures to such an extent that they pass to the third phase of the process, placing a product in a shopping cart. The fourth and final stage would be the checkout, where the individual would confirm the details and purchase the product.

Similarly, the marketing funnel has different stages, from the upper/top to the lower/bottom phases (Moriguchi et al., 2016). Each stage is delicate and needs appropriate attention (de Haan et al., 2016). The AIDA model is translated into four stages in the marketing funnel: the awareness stage, the evaluation/consideration stage, the conversion/decision/purchase intent stage and satisfaction (Berke et al., 2014; Colicev et al., 2019). Satisfaction addresses the post-purchase behaviour, which can either trigger loyalty or perfidiousness. Hence, the first three stages are the ones that advertisers tackle to drive individuals to purchase. The intention of retargeted advertising should be primarily to convert

individuals left at any stage of the funnel and channel them back to the website or to complete the purchase (Moriguchi et al., 2016). The conversion rate is essential; it is the percentage of individuals passing from one stage to the next (Berke et al., 2014). As Kotler and Keller (2016) point out, each stage of the process is more difficult than its predecessor, which is why it is modelled as a funnel. As the funnel goes deeper, fewer people will be receptive to surf pages, use purchasing carts and ultimately buy.

Advertising can be essential to the conversion process that produces a website's traffic. This traffic can proceed according to the stages in which and in what way the individuals have left the website. Suppose individuals leave the minute they encounter a website. In that case, the top of the funnel or TOFU retargeting is triggered, so individuals are ushered back to the same website and are exposed to other product-laden web pages of the same website to enhance their interest (de Haan et al., 2016; Moriguchi et al., 2016). This funnel phase is more of an awareness stage, where information is generated for new prospects to understand the product even better. Personalised advertising is more successful at this early point of the funnel since it facilitates decision-making (Bleier & Eisenbeiss, 2015a).

The subsequent stage of this marketing funnel is the middle stage; the middle of funnel or MOFU, where prospects that access several products on a website are provided with retargeted advertisements, such as a carousel, to manage prospects and drive people to the website (Widmer, 2020). Advertising can also attract prospective individuals who are likely to browse diverse product categories over several web pages, which leads them to add the object to the shopping cart and ultimately purchase (Berke et al., 2014).

The bottom of the funnel, or BOFU, is tackled with retargeted advertising, sending personalised offers to individuals who added products to their shopping carts on a particular website and abandoned it (Moriguchi et al., 2016). Li et al. (2021b) reported that cart abandonment is practically high, with over 69.0% abandonment totalling over 4.6 trillion U.S. dollars in 2019. Baymard Institute (2023) analysed 49 different statistical studies performed over the last 17 years on online cart abandonment and reported an average of 70.2%. The retargeted advertisements to the BOFU stage should have a relevant and fitting message directed to the individual abandoning the cart and sent at the right time for efficacy (Moriguchi et al., 2016). Nonetheless, Li et al. (2021b) and Todri et al. (2019) were very cautious about the immediacy of retargeted advertisements after abandoning a cart, as they

might be perceived as invasive, pestering and may trigger irritation and annoyance. Figure 2.4 provides a visual layout of the different processes simultaneously.

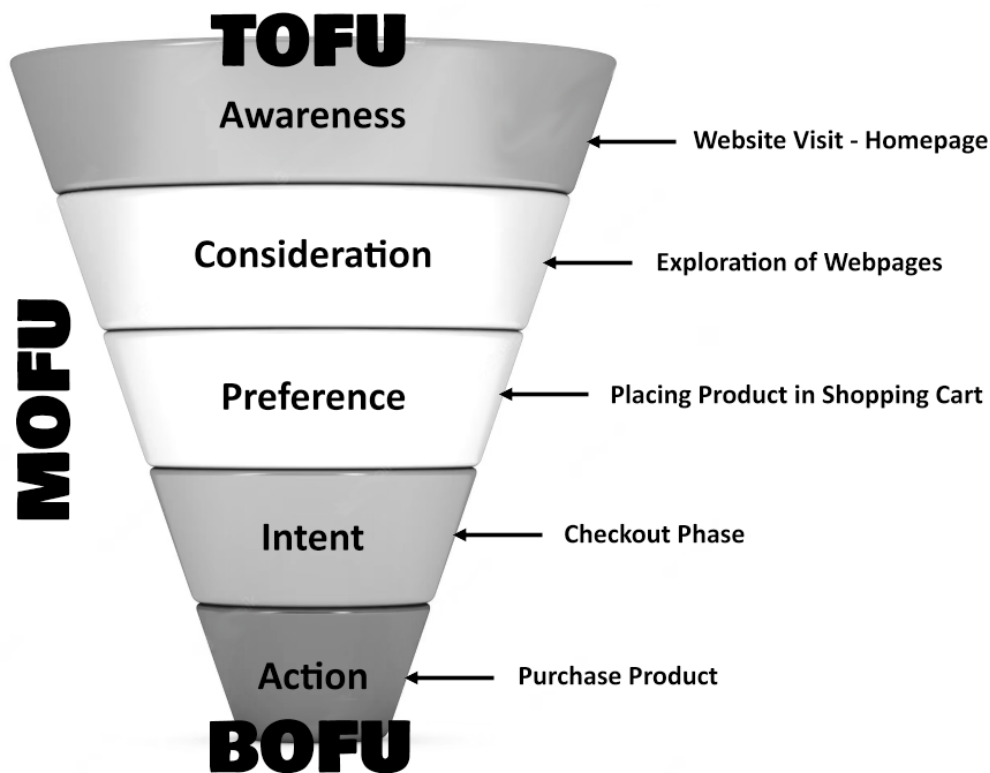


Figure 2.4: The different layers of a purchase funnel (Source: Moriguchi et al., 2016)

Optimised retargeted advertising can also affect the total amount spent on every shopping cart (de Haan et al., 2016). Targeting different individuals at different stages of the purchase funnel may improve the chances of a conversion occurring and/or increase the revenue generated from each conversion (de Haan et al., 2016). Dynamic retargeting does not always work; it requires specific information on the customers' behaviour and the individual's readiness to purchase (Lambrecht & Tucker, 2013). However, the click-through rate of personalised advertisements exhibiting products encountered beforehand is notably higher (Bleier & Eisenbeiss, 2015a). When customers purchase, advertisers should be careful with retargeted advertisements. Usually, retargeted advertisements disappear after a purchase (Lambrecht & Tucker, 2013). If personalised advertisements are placed after purchase, the effective rate is diminished drastically (Bleier & Eisenbeiss, 2015a).

The conversion rates from an advertising campaign within a purchase funnel make the campaign strategy the best fit. Hence, advertising is powerful and critical to create awareness, generate interest, instil a desire and ultimately, inform the individual to call to action. Based

on the power of advertising in the information and imagery it carries, apart from the repeated exposure to advertising, the practical methods it can have, and the reactance of individuals towards advertisements, three theories and a model will be presented next. First, Brehm's (1966) Reactance Theory, Brown's (1958) Memory Decay Theory, and Zajonc's (1968) Mere Exposure Effect Theory will be analysed, followed by the Elaboration Likelihood Model (Petty & Cacioppo, 1986).

2.3.8 The Reactance Theory

As mentioned earlier, irritation can negatively influence the attitude towards advertising and even obscure the perception of a product (Ducoffe, 1996). Hence, intrusiveness and the personalisation of an advertisement can create a reaction in individuals. Li et al. (2002) argue that if individuals feel threatened or their freedom is hindered by anything, their attitudes towards something changes significantly. In his book, 'A Theory of Psychological Reactance', Brehm (1966) defines this reaction as the psychological reactance theory, where individuals feel that their freedom is endangered - they struggle with any change they perceive as a hindrance to their self-determination. The more freedom is negated to an individual, the more the individual will react and struggle to counterattack it. Hence, the reaction would be that in the face of the threat of loss of freedom, an individual is motivated to restore freedom and jump back against it. Miron and Brehm (2006) argue that "reactance is a motivational state, which possesses energising properties that drive individuals to engage in freedom-restoration behaviours" (p. 10). Individuals may attempt to restore freedom by eliminating the threat or by witnessing other individuals reinstate endangered freedom.

In the online advertising context, Baek and Morimoto (2012) argue that the reactance theory applies when individuals are inundated with the clutter of information and advertising, that their sole intention is to control their choices. Moreover, when personalised factors are fused, like retargeted advertisements, individuals may perceive a violation of their proximal space, due to tracking; consequently, reacting to an advertisement by either resisting it, ignoring it, or developing a negative attitude towards it, resulting in adverse behavioural intention (Farman et al., 2020). Individuals struggle for continuous 'autonomy' in life, and advertising messages that seem 'persuasive' can be perceived by individuals as threatening their 'autonomy' (Rosenberg & Siegel, 2018). Advertisements may also criticise individuals for their inaction. Brehm (1966) posits that the perception of a threatening 'agent' trying to persuade individuals will stimulate the reactance response. Individuals can perceive

advertisements as threatening agents trying to persuade or impede their online activity blatantly or irritating them. Thus, the reactance is stimulated in them to either block the advertisement, go banner blind, feel frustrated, or cultivate a negative attitude towards both the advertisement and the object being marketed.

2.3.9 Memory Decay Theory

Advertisers place a product at the top of the customer's mind by repeating the advertisement. The theory of memory decay suggests that memories fade over time if not used or retrieved (Brown, 1958). Hence, as time passes by and the strength of the memory fades, it becomes increasingly challenging to retrieve information that was previously stored, resulting in less accessibility of information (Berman et al., 2009). As a result of repeated exposure to advertising, consumers are more likely to remember a product when they have encountered it before and/or are ready to purchase it. One of the main purposes of retargeted advertisements is to refresh the individuals' memory and not to let interest fade away. Repeating information can lead to the formation of long-term memories by triggering or facilitating strong chemical interactions at the synapses of neurons. Research findings examining memory and gender differences suggest that in verbal material, women demonstrate augmented episodic memory capabilities compared to men (e.g., Herlitz et al., 1997; Weideinger et al., 2021).

Several studies have explored the relationship between repeated advertising and memory decay. For example, repeated exposure to advertisements increases memory trace strength, improving recall and recognition (Ambler & Burne, 1999). Other studies have indicated that the efficacy of frequent advertising might be influenced by variables such as the advertisement's content and message, the consumer's level of attention and motivation, and the competitive landscape in which the advertisement is viewed (Heath & Nairn, 2005).

However, this theory is not always accepted. Adverse debates exist on how memories decay over time (Nairne, 2002). Memories can persist for extended periods, and forgetting is more probable due to interference from other memories rather than a simple decay (Lavie, 2005). Bahrck and Hall (2005) suggest that forgetting may not necessarily be caused by the gradual decay of memories over time but instead by the incapacity to retrieve them. Additionally, the spacing effect (i.e., the idea that spaced repetitions result in better memory retention) might be due to the heightened prominence of retrieval cues.

2.3.10 Mere Exposure Effect Theory

In his book, 'Persuasion in Society', Simons et al. (2001) define persuasion as the "human communication designed to influence the autonomous judgments and actions of others" (p. 7). They emphasise that it is an effort exerted to influence individuals in a way that can vary or change their feelings, thoughts, and attitudes towards something.

Persuasion requires at least two parties – the sender and the receiver, where the sender encodes a message to inform and influence the receiver (O'Shaughnessy, 2000). It begins with a strategy and a specific goal, with advertising serving as a tactical tool to persuade and convince individuals towards conversion. Then, it needs a medium to send the communication on for the receiver to decode it. Ultimately, the receiver is free to accept the message or not. Communication is intrinsically at the core of persuasion, as it is neither forcible nor unintentional (Dainton & Zelle, 2022).

A psychological phenomenon called the mere exposure effect states that the more individuals see or hear something, the more they become attached to it (Zajonc, 1968). Miller (1976) confirmed Zajonc's study by stating that repeated exposure to a persuasive message boosts an individual's attitude towards that message. The mere exposure effect may reduce the perceived risk related to an object, creating preferences, forming attitudes, and establishing brand choices (Baker, 1999). Hence, when individuals are repeatedly exposed to advertising and messages, familiarity could be formed, and individuals may eventually become attached to it. Studies on this theory state that repeated exposure to a product to individuals leads to a positive attitude and diminishes the adverse effects towards the product (e.g., Harmon-Jones & Allen, 2001).

In the advertising arena, there are contrasting views. Some studies towed the same line, placing mere exposure effect as the result of the persuasion effects of banner advertising, which leads to a positive attitude (e.g., Fang et al., 2007; Ghose & Todri-Adamopoulos, 2016). Mere exposure effects can influence children more than adults in an advertising context (Yildirim & Milla, 2019). Contrastingly, Schmidt and Eisend (2015) argue that excessively repeated advertisements can negatively affect individuals' attitudes. They indicate that maximum attitude can be reached if individuals are exposed to ten exposures,

and the repetition effects may then decline over a stretch of time, for both the individuals' attitudes and memory.

2.3.11 Elaboration Likelihood Model

Another persuasion model, the Elaboration Likelihood Model (ELM), was developed by Petty and Cacioppo (1986). This model lies in the two-factor process of persuasion: the central and peripheral routes. Individuals are motivated to process information according to their needs when it is of personal relevance. This notion is the central route of persuasion. Individuals are active participants in persuasion, inclined to search for information themselves, sensibly analysing the advertising message and processing it (Briñol et al., 2017). The cognitive state would be heightened; hence, they are persuaded as the object is required to mitigate their needs but put effort into evaluating and analysing the message. The only downside of the central route would be that if individuals are not influenced directly by the advertising message, they will disregard it (Kitchen et al., 2014).

On the other hand, the peripheral route is weak, and the individuals are not involved as much (Petty & Cacioppo, 1986). It occurs when individuals discern whether to agree with or disregard the message. This decision is constructed on other cues besides the strength of the arguments or ideas in the message. As individuals are not always predisposed to waste time thinking and analysing messages, they shop around and seek other advertisements or products that might persuade them (Briñol et al., 2017). Ultimately, the elaboration likelihood model predicts that the attitudes enhanced using the central route will have different effects from attitudes changed via the peripheral route (Cyr et al., 2018).

In an advertisement context, the elaboration likelihood model works via the factors explored in the previous section. An advertisement's appeal and affective cues are enticed by the peripheral route, while the central route manifests itself in the informativeness that an advertisement provides (Kitchen et al., 2014). Hence, if an advertisement has no message but is appealing and entertaining, then the peripheral process is activated. On the other hand, if the advertisement has a message that can stop individuals from browsing and engaging them, then the central route is processed (Darley & Smith, 1993). Studies have annotated differences in the attitudes and elaboration likelihood between men and women (e.g., Darley & Smith 1993, 1995; Kempf et al., 2006). Darley and Smith (1995) suggest that women

process information thoroughly by evaluating subjective and objective product features; alternatively, men tend to overlook subtle indications and interpret information selectively.

Finally, on the elaboration likelihood model and attitude, Petty and Cacioppo (1986) state that:

“attitude changes that result mostly from processing issue-relevant arguments (central route) will show greater temporal persistence, greater prediction of behaviour, and greater resistance to counter persuasion, than attitude changes that result mostly from peripheral cues” (p. 175).

2.3.12 Legislation, Directives, and User Actions

As discussed in this study, online advertising has expanded across the Internet, permeating SNSs and websites. The development of technology made it possible to collect information and make more profits. With the advent of targeted advertising and the underlying processes, advertisers are now better able to target consumers who are more likely to make a purchase and decrease the number of unsuccessful advertisements that may have a significant negative impact on their budgets. Cookies and pixels were the pivotal points of this factor. Originally, their purpose was not to screen users and help advertisers target them appropriately. It was a solution for an issue related to recording the items placed in a cart by individuals - initially, the system did not record what items were placed. Cookies, however, enabled the browser to record the list of items in the cart and purchase information for the following session (Mellet & Beauvisage, 2020). It gradually became a sizable component of the advertising machine, giving rise to several disputes and challenges to its validity. Policies and legislation were required to restrict and control the use of these cookies and the individuals' awareness when these are operating covertly. Nowadays, websites have become more dependent on tracking and profiling as a fundamental aspect of their business model. However, there remains a necessity to ascertain the legal parameters governing these practices.

The idea of regulating cookies commenced a few years after the first online advertisement featured on screen. In 2002, the EU passed the E-Privacy Directive (Directive 2002/58/EC). This directive was then amended in 2009 (Directive 2009/136/EC) and came into effect in May 2011 (EUR-LEX, 2002; 2009). Initially, this directive was issued in 2002 due to the development of online communication and the exchange of information, as it was believed that the Internet required specific rules and safeguards to protect its users' privacy

and confidentiality (EUR-LEX, 2002). This directive was intended to put in place assurances that personal information is treated with strict confidentiality by authorised personnel and that individuals are informed of any violations.

Due to the development of Internet technology, the 2009 amendment was required. The processing of personal data, such as access to information, location information, the secrecy of communications and the barrier to unsolicited emails, were given particular attention (European Data Protection Supervisor (EDPS), 2022; EUR-LEX, 2009). Hence, this directive improved the preceding one, providing greater control over the value of information.

The EU passed the data protection law in May 2018, better known as General Data Protection Regulation (GDPR) to fortify data privacy. This regulation imposed stricter rules on collecting, processing, and using personal data. It highlighted the importance of transparency and user rights on personal data while making it obligatory to obtain consent before the collection and processing of individuals' data (GDPR.EU, 2022). It obliged marketers and advertisers to acquire consent prior to the placement of cookies for targeted advertisements.

In November 2022, two new EU acts came into force: the Digital Services Act (DSA, 2022) (Regulation 2022/2065) and the Digital Markets Act (DMA, 2022) (Regulation 2022/1925). The former act was applied as the EU felt that rules were required to foster a secure and safer area where individuals can surf freely on the Internet without their rights being hindered (EC, 2022). With the DMA, the EU sensed that these new rules would establish a conducive environment that fosters innovation, propels growth, and boosts competitiveness, both in the European Single Market and worldwide (EC, 2022). Hence, with these two new laws, the EU is driving for more safety to individuals surfing the Internet and fairness between companies. The mantra of these laws is: "what is illegal offline should be illegal online" (EuroParliament, 2022, par. 3). With the DSA, large online companies and platforms, such as the major e-retailers, search engines and SNSs, are expected to crack down on fake news, hate speech, illegal products or services, and derogatory content, among other obligations. Regarding online advertisements, online organisations and SNSs are required to enhance the transparency on how information is collected from individuals and how algorithms are employed (DSA, 2022). When Internet platform providers are aware that their services are particularly aimed at minors, they are prohibited from profiling using their

personal data to target them with advertisements (DSA, 2022: 71, p. L277/19). Moreover, a ban will be imposed on targeted advertisements that profile individuals based on sensitive characteristics such as sexual orientation, political and religious affiliations, race, and ethnicity (DSA, 2022: 69, p. L277/19; GDPR, 2016: Art. 9, 1, p. L119/38).

On the other hand, the DMA will ensure that the “gatekeepers” or the most prominent online platforms will not have a competitive advantage on other platforms that are smaller in size. In this regulation, various requirements exist, particularly for targeted advertising. Individuals may only be targeted with advertisements in the case when prior consent is given through an opt-in option for data processing (DMA, 2022: 36, p. L265/9).

In mid-2019, Google proposed an initiative called the Privacy Sandbox. This initiative aims to develop Internet standards that let websites access individuals’ data without jeopardising their privacy, enabling online advertising without using cookies from third parties (Google, 2022). Hence, to protect the individuals’ privacy, they proposed shifting information sharing from an individual paradigm to a more segmental topical activity (Google, 2022). This initiative will be available on Android platforms as well. The initiative has faced harsh criticism, being called anti-competitive (EC, 2021; UK-CMA, 2022) due to Google’s footprint in the Internet sphere and being hit by various antitrust complaints (e.g., EC, 2021).

During the last quarter of 2023, Meta, the organisation behind Facebook and Instagram, informed EU users that it would start charging a subscription fee for advertisement-free SNSs (Espinoza & Murphy, 2023). This action was taken to comply with the new EU regulations imposed on organisations (DMA). The charge would differ between desktop users (9.99 Euros) and smartphone users (12.99 Euros). Moreover, from the beginning of March 2024, an additional monthly fee of six Euros and eight Euros for desktop versions and smartphone access, respectively, will apply for any further accounts (Satariano & Hauser, 2023).

Apple platforms were always conscious of personalised advertising and targeting. Their operating systems were constructed in order to contain these advertisements and put individuals in control of what they receive. For instance, the latest iOS 16 stipulates that personalised advertisements can be turned on or off using the privacy and security function on the device, and it ensures that no personal information is shared with third parties (Apple,

2022). The only places where advertisements appear on Apple devices are in the Apps Store, Apple News and Stocks (Apple, 2022).

Every website is obliged to show its privacy policy, demonstrating the beneficial outcome that an individual may obtain from accepting their cookies, with very few exceptions (Europa.eu, 2022). Most companies offer benefits to individuals who accept their cookies by either providing them with the best browsing experience or informing them that the website would furnish them with personalised and targeted advertisements to ‘keep them informed’ with any updates that the companies might offer or to analyse their traffic. Nevertheless, some websites either bypass this briefing method by not providing it or by not offering the faculty of choosing the ‘opt-out’ for cookies. Instead, many websites provide a cookie policy informing individuals of how organisations utilise cookies and disseminate the tracking information to third parties. Some websites do not function properly or show no content if individuals attempt to bypass or press ‘no’ to cookies. Some individuals press ‘ok’ without reading the terms and conditions to pass through the website gate. This privacy concern is driving individuals to take different measures to block cookies from following them, rendering cookies unreliable. It is done by either using cookie blocker applications, which are available for desktops and smartphones or setting browsers to sweep out cookies upon closing a tab. Moreover, individuals are given the option a priori to stop the setting of a cookie while visiting a website.

Alternatively, today, individuals use blockers that help stop advertisements from showing (Redondo & Aznar, 2018). A U.S. survey found that 81.0% use advertisement blockers to avoid intrusive or irritating advertisements, while 58.0% use them for privacy protection (Insider Intelligence, 2022). In another survey, 60.0% of young U.S. people aged 18 to 24 admitted that they installed an advertisement blocker on their desktop or laptop devices, while 18.0% use it on their smartphones.

On a positive note, the new Year 7 Ethics syllabus issued by the Ministry for Education, Sport, Youth, Research, and Innovation and launched in August 2023 included a learning outcome (LO 8) that aids the students in exploring and discussing the utilisation of algorithms in online advertising, expounding on the ethical consequences encompassing privacy, data manipulation, persuasion, and the misuse of personal data. This is an optimistic stride in the right direction.

2.3.13 Summary

This section delved into retargeted advertisements and how these are being exploited. Studies about retargeting are still scarce, and even more so where young people are involved. First, the review provided an overall understanding of retargeting and the types that are available in the market. Then, it moved on to discussing cookies and how these contribute to the mechanism of retargeting and the digital strategising efforts that retargeting providers are employing. The study focused on the number of times individuals are exposed to advertisements in a given day and the intervals between impressions. Hence, the roles of frequency and recency were explored. Next, advertisement optimisation was analysed, where the six factors explored in the previous section were fused with retargeted advertising. Privacy concerns and potential downsides were also discussed, focusing on three strata: cookie usage in retargeted advertising, the invasiveness of online advertising and the personalisation of advertisement. The purchase funnel is imperative in the retargeting scenario; hence, this was discussed in light of St. Elmo Lewis' AIDA model (Strong, 1925) and the marketing funnel (Kotler & Keller, 2016). Three theories and a model were explored to understand the effect of retargeting from different viewpoints. These were the reactance theory (Brehm, 1966), the memory decay theory (Brown, 1958), and the mere exposure effect theory (Zajonc, 1968). The elaboration likelihood model (Petty & Cacioppo, 1986) was also discussed. Finally, directives and legislation were tackled - the significant factors regulating advertisements that are shifting the advertising paradigm. The next section of this chapter will zoom in on a construct that retargeted advertisements may elicit in individuals, particularly among young people - the Fear of Missing Out.

2.4 Fear of Missing Out

2.4.1 Introduction

This section will focus on another pillar that will be tested in this study – the Fear of Missing Out (FoMO). It begins by exploring the early research on FoMO, seeking to understand this type of anxiety, and examining its build-up and effects on individuals. The study will also concentrate on anxiety and the research conducted on FoMO. It proceeds to understand two facets of this anxiety - the “self-initiated FoMO-driven behaviour” and the “externally initiated FoMO appeals” (Hodkinson, 2019, p. 65). In line with these facets, the power of influence is examined to understand the perspectives of FoMO better. Then the focus shifts to the four crucial constructs inferred from two focus groups and even backed up by literature: scarcity - where individuals come across messages showing limited stock; urgency - where individuals are presented with messages showing limited time available to make avail of an offer; social proof – it occurs when messages, imagery or situations are presented to individuals showing the actions taken by others to instigate imitating behaviour; and loss aversion – it occurs when individuals favour avoiding losses to obtaining the corresponding gains.

2.4.2 Early Studies of FoMO

Patrick J. McGinnis coined the acronym FoMO and Fear of Missing out in the early 2000s (McGinnis, 2020); he admits it in his book carrying the same name of being the first “FoMO Sapiens” (p. ix). Nonetheless, FoMO is not a concept that was initiated in the 2000s, as even before, researchers have acknowledged that individuals may experience anxiety when missing out on something (Franchina et al., 2018), mostly in the context of romantic relationships (Simon, 1982). The FoMO phenomenon garnered widespread recognition as SNSs and the Internet became prominent (Dempsey et al., 2019). The abundance of available information and the perceived ability to analyse all sources exhaustively has made individuals concerned about missing out on valuable information (Larkin & Fink, 2016).

FoMO is defined as “a pervasive apprehension that others might be having rewarding experiences from which one is absent” (Przybylski et al., 2013, p. 1841). This definition is the most over-used, cited from one of the first studies that connected FoMO with the online environment. Two years before this study, JWT Intelligence (2011) defined FoMO as “the uneasy and sometimes all-consuming feeling that you are missing out—that your peers are

doing, in the know about or in possession of more or something better than you” (p. 4). The continuous online presence that individuals may live, connected to different SNSs, and viewing what others are doing and what they are not may trigger anxiety and excite the sensation of envy, discontent, and worthlessness (Przybylski et al., 2013). Dossey (2014) states that FoMO is social anxiety triggered by the worry that others are enjoying their lives more than themselves. Przybylski et al. (2013) reflect that it is often prompted by posts encountered on SNSs, where individuals worry about missing a chance for social contact or an enjoyable experience.

Przybylski et al. (2013) employed the self-determination theory (SDT) (Deci & Ryan, 1985; Ryan & Deci, 2002) as the underlying framework for their study. In their paper, ‘Motivational, emotional, and behavioural correlates of fear of missing out’, Przybylski et al. (2013) conducted three studies targeting adults and young adults. The first goal of this study was to create an instrument to measure FoMO. They established a ten-item measurement. The scale contains statements to understand how other individuals have more rewarding experiences than oneself and to comprehend the priorities in the ‘online’ life. The second objective of the study was to test this instrument in society. The internal consistency of this study, the Cronbach’s alpha coefficient, was high ($\alpha = .90$). In this part of the study, their target was to understand the influence of demographic factors and SNS engagement; an adult sample completed an online survey. The final objective was targeted at young adults, where Przybylski et al. (2013) researched the affective and behavioural correlates of FoMO, mostly feelings towards SNSs and checking of messages during driving. A higher level of FoMO was found among young adults, particularly men. Additionally, the researchers discovered a negative relationship between FoMO and individuals’ mood and life satisfaction stemming from the incessant SNS usage.

In 2016, Abel et al. developed and tested a scale specifically for SNS and FoMO. This instrument focused more on FoMO from a psychological angle, whereas Przybylski et al. (2013) developed a more situation-based scale. Abel et al. (2016) proposed a ten-item scale comprising anxiety, irritability, inadequacy, and self-esteem. Other researchers employed this scale along with Przybylski et al.’s (2013) scale (e.g., Flecha Ortiz et al., 2024; Neumann et al., 2023). Metin et al. (2017) constructed a battery of 22 items on FoMO but presented it in Turkish. Riordan et al. (2020) developed a single-item FoMO measurement, called the Fear of Missing Out short form.

FoMO is still a novel construct that is currently under the spotlight in various recent studies exploring the different aspects of the online environment (Dempsey et al., 2019). Numerous research studies were dedicated to examining the escalating prevalence of problematic Internet use and online FoMO across different demographics, particularly young people (e.g., Stead & Bibby, 2017; Wegmann et al., 2017). Along with excessive Internet use, there is also SNS addiction, the compulsive desire to stay connected on SNS platforms without the temptation to leave. Studies tried to understand the correlation between this SNS addiction and FoMO, where young people are constantly online without quitting or obsessively checking on SNSs (e.g., Aygar et al., 2019; Franchina et al., 2018). Emerging studies connect FoMO with smartphone dependency and its association with increased anxiety (e.g., Upreti & Musalay, 2018). Phubbing, a portmanteau of the words phone and snubbing, occurs when individuals indulge in SNS while conversing with others in person and snubbing them (Chotpitayasunondh & Douglas, 2016). This phenomenon is common among young people, and studies correlated this phenomenon with FoMO as well (e.g., Chotpitayasunondh & Douglas, 2016; Franchina et al., 2018; Karadağ et al., 2015). The need to belong, which refers to the concept that individuals are motivated to be accepted and be part of a community or society, has been researched, and strong links were found between this belongingness need and social anxiety (e.g., Wang et al., 2018). Another stream of research was dedicated to understanding the correlation between FoMO and lack of sleep among young people (e.g., Gezgin, 2018; Tandon et al., 2020) and mental exhaustion, fatigue, and comparisons (e.g., Dhir et al., 2018; Tandon et al., 2021). FoMO was also related to digital dementia (e.g., Dossey, 2014) and mental health, particularly primary comorbidities with depression (e.g., Hunt, 2018). In 2018, Bright and Logan investigated how self-initiated FoMO relates to the attitude towards SNS advertising, brands, and fatigue.

FoMO is not considered a mental health disorder yet, although it is recognised as social anxiety (Dossey, 2014). It is related to depression, as FoMO can facilitate comorbidity, putting individuals into a problematic mental state (Hunt, 2018). The next part of this section focuses on anxiety, particularly from a social perspective, followed by the self-determination theory (SDT).

2.4.3 Anxiety

Kessler (2003) argues that individuals who suffer from an anxiety disorder are attributed with a low quality of life and dissatisfaction towards it. Sometimes, anxiety is triggered in individuals when they go through a period, which then turns out to be part of a baggage of interrelated symptoms and disorders, resulting in confusion between the trigger and its response (Stockings et al., 2016). Anxiety, which is often comorbid with depression, is an internalising disorder and affects primarily young people, particularly women (Stockings et al., 2016). According to Brody (1999), women report more adverse emotions, particularly sadness and fear, and with greater severity than men.

The UK Mental Health Foundation (2014), in their report ‘Living with Anxiety: Understanding the Role and Impact of Anxiety in our Lives’, states that in the UK, anxiety levels among young people are reported low compared to adults. On the other hand, the same report shows that young people are twice as apprehensive as adults when they find themselves alone. Moreover, young people, especially women, openly say that their lives are affected by anxiety. In the COVID-19 crisis, Racine et al. (2021) conducted a meta-analytical investigation of 29 studies about depression and anxiety among children and adolescents worldwide. Their findings were alarming; depression was prevalent among a quarter of young people, while anxiety was among 20.5%. Minors exhibit heightened fear generalisation compared to adults (Schiele et al., 2016). Past studies showed differences in FoMO in an SNS context among different age groups (Beyens et al., 2016; Przybylski et al., 2013; Tandon et al., 2021).

Anxiety is a significant element of the FoMO definition in the literature; “the fears, worries, and anxieties people may have in relation to being in (or out of) touch with the events, experiences, and conversations happening across their extended social circles” (Przybylski et al., 2013, p. 1842). For some researchers, fear and anxiety are two interchangeable words; for others, they are two different phenomena (Steimer, 2002). The Diagnostic and Statistical Manual of Mental Disorders – Text Revision (DSM-5-TR; APA, 2022) defines anxiety disorders as “disorders that share features of excessive fear and anxiety and related behavioural disturbances” (p. 189). They define fear as “the emotional response to real or perceived imminent threat, whereas anxiety is the anticipation of future threat” (p. 189). Anxiety is tied with tension and disturbing thoughts and can even affect an individual’s

physiological aspects, such as increased heartbeat and blood pressure, perspiration, nausea, and quivering. These can either be individualised or else co-related with each other. Hence, the anxiety and fear that are intrinsically together under a disorder can apply simultaneously, overlap, or differ (APA, 2022). The association of these constructs can reflect the difference. The amygdala in the brain triggers fear, and it activates the sympathetic nervous system, originating from the spinal cord, which initiates fight or flight activities. Anxiety, which is tied to a prolonged effect, more physical preparation for future perils and contemplation to circumvent the problems, also starts from the amygdala and epitomises different manifestations. Therefore, as argued by Steimer (2002), fear and anxiety serve a function by inducing stress and tension while triggering appropriate ‘adaptive responses’. SNSs may instigate FoMO, and in response, individuals consistently engage and attach themselves to their online environment as part of these adaptive responses. On the other hand, a message containing FoMO that instils a “fear-arousing recommendation” tends to make individuals fearful of “missing out” on products (Good & Hyman, 2021, p. 568).

Albert (2015) claims that depression is prevalent in women and reflects anxiety. In their studies, Lewinsohn et al. (1993; 1998) postulate that anxiety is prevalent in women, and it can start as early as childhood. Depression is also higher in women than men and commences in adolescence. Bahrami and Yousefi (2011) conducted a metacognitive study on young people between 15 and 18 and found that anxiety is stronger among women than men. DSM-5-TR (APA, 2022) states that anxiety and its persistence are likely to occur twice in women more than in men.

2.4.4 Self-Determination Theory

The self-determination theory (SDT; Deci & Ryan, 1985; Ryan & Deci, 2002) was used by Przybylski et al. (2013) as the foundation to understand what motivates FoMO. Ryan and Deci (2002) declare that self-determination ensues when “people have a primary propensity to forge interconnections among aspects of their psyches as well as with other individuals and groups in their social worlds” (p. 5). It refers to reference groups to which individuals pertain. Individuals are motivated by the immediate group and feel they have a place within the group, a sense of belonging within a team, and a broader cultural community (Conlin et al., 2016). This theory differentiates between autonomous or self-determined motivation and controlled or non-self-determined motivation (Saavedra & Bautista, 2020; Deci & Ryan, 2008; Hodkinson, 2019). Autonomous motivations distinguish between intrinsic motivations

or enjoyment and extrinsic motivations or usefulness (Feng et al., 2016), while controlled motivation comprises external principles and internal elements, encompassing self-esteem, reward and avoiding retribution and shame (Saavedra & Bautista, 2020; Hodkinson, 2019).

Ryan and Deci (2002) based their theory on three needs:

- a) Competence - the ability and effectiveness in one's action;
- b) Autonomy - the ability to self-direction; and
- c) Relatedness - the need to belong and connect with others.

Intrinsic motivation involves the performance of an activity for its own pleasure and personal reward (Aronson et al., 2019; Tranquillo & Stecker, 2016). Intrinsic motivation arises from within. This is imperative to mental stability, where individuals encounter new ventures and involve in rewarding activities by only participating and not expecting any external reward (Di Domenico & Ryan, 2017). Hence, intrinsic motivation refers to the internal drive or desire to engage in an activity for its own sake, without the need for external rewards or incentives. It is enhanced by individuals' feelings that they are connected and related to a group (Ryan & Deci, 2000). When individuals indulge in an action that satisfies them and find fun and excitement, that action triggers their intrinsic motivation. According to Elhai et al. (2020), when the "social relatedness needs" are not fulfilled, negative feelings are generated in individuals in a self-determination dimension (p. 298). According to Baumeister and Leary (1995), individuals are intrinsically concerned about the actions of others; hence, FoMO has intrinsic motives.

Extrinsic motivation involves the behaviour that ultimately earns one a reward or avoids punishment (Ryan & Deci, 2000). In this case, individuals engage in activities not to attain a reward directly from the activity or to feel the pleasure of their behaviour in that activity but rather to obtain a reward or avoid a negative outcome or external pressure (Aronson et al., 2019; Kim et al., 2020). Many examples show extrinsic motivation; students study hard to achieve excellent marks, athletes train hard to get medals, and children help their parents with the daily house chores to avoid being admonished. The difference is noticeable – on one side, students are intrinsically motivated to work hard on a subject because they find it exciting and pleasurable to study it. In contrast, an extrinsically motivated student would study hard to avoid failure or to get good marks.

In an advertising scenario, intrinsic and extrinsic motivational constructs are found to positively mediate the influences of message traits on the individuals' attitudes towards advertising (Kusumawati, 2017). The advertisement can work as a bridge for the individual to purchase the product and feel satisfied with the results, or else, it can serve as a threat for an individual to instantly purchase as few stocks are left, or an offer would be off in a few hours. FoMO in advertising can serve as an extrinsic motivator, triggering a behaviour to evade unsatisfying needs (Hodkinson, 2019; Kang et al., 2019).

The antecedents of attitude can be identified as partaking in the motivational constructs' baggage. Feng et al. (2016) identified factors that were precursors to extrinsic or intrinsic motivations. Personalisation was found to be a determinant of extrinsic motivation, while entertainment was determined as a precursor of intrinsic motivation.

One facet has been classified as self-initiated in a social context and has been widely studied. The other facet, the one that is externally initiated, is still under-studied, particularly the impersonal commercial. The next part of this section will focus on the second facet of FoMO.

2.4.5 The Second Facet of FoMO

Przybylski et al. (2013) put forward one facet of FoMO, in which most studies follow suit. FoMO occurs when individuals feel that they need to stay connected, not lose anything from what is happening around them, not detach themselves from what their friends are doing and not keep themselves in the dark about the happy lives their peers are living. In all these circumstances, FoMO is triggered, rendering individuals unhappy, tense, and worried. According to Good and Hyman (2021), Przybylski et al. (2013) evaluates FoMO as a “non-context-specific personal characteristic” (p. 570). Hodkinson (2019) classifies this phenomenon as “self-initiated” (p. 65). This is one facet of FoMO.

The other facet of FoMO is the least studied. Although marketers have widely exploited FoMO appeals, it still needs to be given the proper attention that it requires by academics. Hodkinson (2019) claims that his study was the first to investigate individuals and their responses to marketing appeals. His study is substantial as it developed the classifications of FoMO appeals, formulated a map of response elements, constructed a theory relevant to individuals' reactions and created an operational response model. The second classification

that Hodkinson (2019) formulated was the "externally initiated FoMO appeals" (p. 67), which is a phenomenon that is triggered externally. He defines externally initiated FoMO appeals as "any initiating appeal, whether in-person or impersonal, in which FoMO or 'missing out' is mentioned or specifically implied" (p. 67). Hodkinson connects this classification with the commercial aspect - with marketing appeals. He defines the commercial perspective as;

"any initiating appeal, whether in person or impersonal, originating from an organisation, in which FoMO or 'missing out' is mentioned or specifically implied and the context of which is the stimulation of demand, usage or purchase of a product" (p. 67).

FoMO-motivated appeals can be executed in commercial or non-commercial settings and in person or impersonally (Hodkinson, 2019). Hence, four combinations are outlined by Hodkinson, which are:

- a) In-person non-commercial - this is initiated by, for example, having close friends, including FoMO appeals stating that their peers would undoubtedly miss out on an opportunity if they do not join their company.
- b) Impersonal non-commercial - this is initiated by, for example, people placing an invitation to an event that incorporates FoMO appeals, enticing others to join or else miss out.
- c) In-person commercial - this is initiated by salespeople when they strategically include FoMO appeals into their sales tactics to stimulate purchases.
- d) Impersonal commercial - this refers to paid advertisements that include a FoMO appeal.

This study focuses on the fourth combination - the impersonal commercial externally initiated FoMO appeals. Hodkinson (2019) uses the word appeals, where other studies refer to these as either cues or digital nudges (Koch, 2017). Marketers use FoMO as a strategic motivation in their communication initiatives to drive and improve online purchase behaviour (Aydin et al., 2021). When individuals come across an advertisement that initiates a sense of worry or fear, that a product will be missed if action is not taken immediately, then that is the form of commercial external initiated FoMO that Hodkinson (2019) is alluding to. In a focus group that was conducted by Hodkinson (2019) on students, when he asked the participants whether FoMO responses of an externally initiated nature included 'fear', some participants replied that it was a 'real' fear, with some anxiety. Others stated that fear would not be the

proper word for this phenomenon; more of an emotion or a “sinking feeling” (p. 72). Hodkinson records an overall adverse emotional feeling regarding choices, which was amplified as fear among individuals in certain circumstances.

Hodkinson (2019) identified relevant ideas that may be utilised to construct a conceptual model of the FoMO response mechanism. These were:

- a) Cognitive appraisal theory - where individuals perceived and respond to situations based on their subjective perceptions which in return, influence their emotional and behavioural responses;
- b) Agency theory - which focuses on the conflicts of interest and resolving of issues in relationships between business principals and agents;
- c) Opportunity cost - where the value of the next best alternative is sacrificed for a decision being made;
- d) Regret and anticipated regret - the feeling of dissatisfaction for a choice made in the past, and concerns for future choices; and,
- e) Scarcity - a degree of shortage in a product in contrast with the demand to acquire it.

Apart from scarcity, the ideas put forward by Hodkinson (2019) are better described as elements experienced or elicited by individuals encountering FoMO appeals, rather than actual elements of externally initiated FoMO that motivates individuals to act in a certain way.

Recently, Alfina et al. (2023) conducted an SLR on consumer behaviour that is influenced by FoMO but within a marketing context. Most studies reported in their SLR applied Przybylski et al.’s (2013) instrument to test their works. Interestingly, the results suggest that FoMO is frequently associated with negative psychological situations. However, when FoMO is examined in a marketing context, it appears to elicit a response that generally has a positive influence on consumer behaviour. These studies indicate a growing interest in FoMO in the broad consumer sphere. However, the current research lacks insights about how FoMO, particularly stemming from advertisements, influences attitudes towards them, and the intention to click on them.

In his study on FoMO propensity in a luxury branding context, Lim (2016) developed a new scale based on Przybylski et al. (2013), focusing mainly on scarcity and urgency. Lim

referred to loss aversion but did not include relevant indicators in the FoMO construct. Hodkinson did not make any reference to this study.

In their study, Weideinger et al. (2021) found that when men and women were presented with advertisements containing FoMO appeals, memory and recognition were affected. In both FoMO and non-FoMO conditions, women were better than men in memory and recognition of information in advertisements. However, men showed better memory and recognition of advertisement information when exposed to FoMO-laden appeals. In his Master's study approved recently, Pusenius (2023) found no relationship between personal and social FoMO marketing appeals and likelihood of impulse purchasing.

Examples of FoMO-laden appeals can vary, but scarcity and urgency are the most employed methods. These can put individuals into situations where choices must be taken immediately. Messages can be either time-bound – a limited-time offer, or quantity-bound – the last few items in stock (Jang et al., 2015). In this context, individuals must make decisions that exploit benefits while reducing the attributes of the risks that are enticed with them (Kotler & Keller, 2016). Individuals do not always decide rationally; there are many instances that they act instinctively, on impulse, and irrationally (Grigaliunaite & Pileliene, 2016). Individuals act rationally or irrationally when coming across an advertisement, according to the attitude and emotions triggered.

Using the social comparison theory (Festinger, 1954), Cialdini et al. (1999) originated the concept of social proof, which holds that people base their decisions on collectively shared knowledge and experiences. Social proof is another factor that may trigger FoMO. It is a psychological phenomenon where individuals assume the actions of others are the correct behaviours to follow. This psychological phenomenon, also termed “informational social cue” refers to the act when individuals assume the collective behaviour of others as correct (Abdul Talib & Mat Saat, 2017, p. 3).

Another factor that triggers FoMO is loss aversion. The concept of this phenomenon is simple - Losses are stronger than gains. Lamba (2021) fused this concept with FoMO as well. Individuals would try to avoid losses because they are perceived as more painful than profit-making. The advertisement can instigate loss aversion. Kahneman and Tversky (1979) initially proposed this psychological phenomenon based on prospect theory. The fear of

losing an opportunity would be much greater than acquiring the opportunity (Kahneman & Tversky, 1979; Lamba, 2021; Schmidt & Zank, 2005; Tversky & Kahneman, 1991).

Cialdini (2021) covers the four variables outlined above in his updated version of the book, 'Influence - The Psychology of Persuasion'. He makes no connection between these and FoMO, though; he keeps all of these in the context of persuasion. He presents seven 'levers of influence' that can be used by individuals as persuasive tactics. Two of these mechanisms are scarcity and social proof. Surprisingly, he blends urgency, loss aversion, and scarcity into a single component. Lamba (2021), on the other hand, separates loss aversion from scarcity while linking urgency to scarcity. Some studies include urgency and scarcity together as one construct (e.g., Akram et al., 2018; Jang et al., 2015).

No studies were found that were conducted to examine the relationship between the influence of FoMO in a retargeting context and its responses. Hodkinson (2019) was possibly the first academic researcher to correlate FoMO with marketing appeals. Only two other studies known by the researcher were conducted after Hodkinson's study, focusing on FoMO in advertising (Pusenius, 2023; Weideinger et al., 2021). Another two studies endeavoured to include FoMO-laden appeals but still in a non-commercial setting, conducting vignette-based experimentations on SNSs by Good and Hyman (2020, 2021). Other studies incorporated one or more constructs of FoMO and tested them in isolation (e.g., Jang et al., 2015; Ku et al., 2012). Other studies then focused on impulsive buying or purchase intent and linked FoMO with them (Cengiz & Şenel, 2023; Dinh & Lee, 2022; Flecha Ortiz et al., 2024; Zhang et al., 2021, 2022).

Hence, during the last five years, soon after Hodkinson (2019) published his work, various studies on FoMO and how it affects the buying behaviour started to emerge slowly. Alfina et al. (2023) conducted an SLR on FOMO in a marketing context and identified and reported 42 empirical studies. These studies tackled various factors including psychosocial, usage-related, physiological, and external-related factors.

Kang et al. (2019) concentrated their study on FoMO and consumption behaviour and amalgamated the fear of being isolated and sense of belonging as the main concepts of FoMO. They found that anxiety that stems from FoMO and heightened stability correlate with consumer consumption. A year later, Kang et al. (2020) distinguished between high and

low FoMO groups, particularly focusing on herd behaviour, with the high FoMO group demonstrating more loyalty to luxurious products than others. During the same year, Kang and Ma (2020) confirmed their previous comparison between high and low FoMO groups, where their study established once again that luxury products consumption is increased among the high FoMO group and when herd behaviour festers.

Zhang et al. (2020) suggested that FoMO can be split into two dimensions, first, the social FoMO, where individuals fear that they are missing the experience that their peers are enjoying, and second, the personal FoMO, individuals' apprehension of missing out on experiences that there was a personal desire for them. They found that product scarcity leads to FoMO as it affects individuals' decisions.

Gupta and Shrivastava (2022) investigated FoMO as a mediator in a retail investors context. Interestingly, they examined loss aversion and herd behaviour as the precursors of FoMO and investment section. In their study, they found that the decision is affected by the antecedents, and FoMO partially mediates their relationship. Another similar study was conducted by Zhang et al. (2022) where they focused on scarcity as a precursor of FoMO, with the latter having a positive mediating role between scarcity and impulse purchasing. Additionally, the bandwagon effect (herd behaviour) was found to be moderating the relationship between scarcity and impulse purchasing. Likewise, in their respective studies, Parveen et al. (2022) and Cengiz and Şenel (2023) employed FoMO as a mediating variable between perceived scarcity and impulsive or panic purchasing, and both identifying significant effects. Gupta and Mukherjee (2022) tested FoMO and loss aversion as two separate precursors of herd behaviour in their exploratory qualitative study and found that both FoMO and loss aversion augment herd behaviour.

FoMO was related to scarcity, loss aversion and herd behaviour in a financial investment context (Argan et al., 2023). They tested FoMO based on Przybylski et al.'s (2013) self-initiated model and found that FoMO is positively correlated to investment engagement and commitment. Abbott et al. (2023) aggregated scarcity, social proof, and high demand as the main elements of a "dark pattern stimuli" that affects impulsive behaviour (p. 1). Chetioui and El Bouzidi (2023) found that FoMO influences online impulsive purchasing and is moderated by female Generation Z shoppers.

Even though these four constructs are associated with the second facet of the FoMO, some aspects where self-initiation is also present, may still exist. Hence, these facets can somehow seem intertwined; sometimes, the distinction is blurry. While advertisements carrying FoMO messages can extrinsically motivate individuals by fuelling fear that they might miss a product or service and prompt quick attention to grasp the ‘reward’, intrinsic motivation also arises from innate gratification of such actions.

Next, the study will delve deeper into the four identified constructs, namely scarcity, urgency, social proof and loss aversion. The rational choice theory (Becker, 1976) will be included to reinforce the understanding of the scarcity and urgency principles, followed by the social proof and social comparison theory (Festinger, 1954), and finally, loss aversion, supported by a knowledge of the prospect theory (Kahneman & Tversky, 1979).

2.4.6 The Scarcity and Urgency Principles

Online advertising and its information can invoke the assertion that the promoted products are scarce and less accessible. This idea of promotion, where a lack of products is advertised or a date or deadline is tagged to an offer, can create the idea that the item might disappear or the offer could finish soon, and the individual might lose the opportunity to own. This idea stems from Brock’s (1968) study on the commodity theory, where scarcity is defined as the lack of products or a short time of obtainability. He defines a commodity as “anything which has usefulness to its possessor, and which can be conveyed from person to person” (p. 246). Based on this study, Worchel et al. (1975) conducted experiments to understand how the shortage of products can affect the perception of individuals towards that product. They found that there are objects that can become more appreciated when they are perceived to be scarce. This concept became known as the Scarcity Principle. Scarcity is one of the seven principles of influence that Cialdini (2021) depicted in his work. He stated that scarcity creates the perception of attractiveness in objects with limited availability. Hence, scarcity leads to inflated value.

Karapinar Çelik et al. (2019) employed this principle in their study and proposed that when an object becomes less accessible, it will be perceived as more beneficial and valuable. Scarcity messages in advertisements generate the idea that objects are due to finish up or have a limited edition, rendering in more positive consumer's attitudes towards conspicuous goods when the goods are scarce (Gierl & Huettl, 2010). Hodkinson (2019) refers to scarcity

as the lack of available products, where the individuals' perception of scarcity prevails the 'real' scarcity. There are instances where individuals find satisfaction in distinguishing themselves from others around them; hence, the availability of scarce goods leads to a pleasurable sense of uniqueness and distinctiveness (Snyder, 1992).

Jang et al. (2015) state that two types of messages can be employed to stimulate the 'scarcity' feeling among individuals. These are limited-time scarcity and limited-quantity scarcity.

- a) Limited-time scarcity - it occurs when marketers urge individuals to purchase and bind them with a time bracket. This time-based strategy generates a feeling of urgency to purchase and imbues in the individuals a sense of fear that they will miss out on the promoted product. This fear drives individuals to click on the advertisement and proceed to the website to purchase the product (Hodkinson, 2019). This limited-time scarcity technique motivates individuals to purchase because they perceive that others are doing so and can lose on offers. Urgency can amplify the power of FoMO.
- b) Limited-quantity scarcity - it occurs when marketers utilise online advertising to send the message that few items of a particular product are left (Jang et al., 2015). Again, like the limited-time scarcity technique, this creates a sense of urgency to purchase. It can induce the 'want' to have, which leads to the fear of missing out among individuals as others can snatch this product, and an opportunity is lost forever. This technique drives an individual from wish-to-have to call-to-action and can initiate regret (Hodkinson, 2019). However, limited-quantity scarcity has its downside, as it can impose aggression in an individual due to the perceived idea that an object is not available to fulfil a need (Kristofferson et al., 2017).

Another scarcity concept is the recipient-limited offer, where an offer is presented to a selected number of people (Barone & Roy, 2010). According to this theory, perceived equity can influence an individual's motivation and satisfaction - when individuals feel they have been under or over-rewarded compared to others, and they tend to compare themselves socially (Kim & Lee, 2022). For example, individuals can receive a customised advertisement with a special offer for their wedding anniversary. Kim and Lee (2022) proposed that when an advertisement is presented after an individual places an item in the cart, a recipient-limited offer would be less effective when compared to a limited-time

scarcity message. The recipient-limited offer would be more effective only before the individual lands on the website.

The effects of scarcity can differ on the basis of low- or high-involvement of products. In their meta-analysis of the scarcity techniques and effects in marketing, Barton et al. (2022) found that limited-quantity scarcity is more effective on the purchase intentions of hedonic experiences, while limited-time scarcity is more impactful with high-involvement products.

Aydın et al. (2021) confirm that the perception of scarcity can augment FoMO and lead individuals to impulse purchasing. Online advertising can uplift individuals and drive them to bounce from prospects directly to consumers. According to Akram et al. (2018), scarcity plays a vital role in motivating online impulse purchase behaviour in social commerce contexts. This study suggests that the perceived scarcity of a product might stimulate people, predominantly young adults, to make online purchases since it gives them a sense of excitement and joy. Moreover, individuals unaware that products are available may depend on the actions of other individuals to take actions (Castro et al., 2013). Hence, they feel they are missing out on products others have an advantage on due to more knowledge and understanding of their availability.

When individuals make decisions, these are not always built rationally; they can also be taken irrationally. Nonetheless, a set of behaviours and actions should align with an individual's personal preference. Logan et al. (2018) fused the rational choice theory with SNS fatigue to understand how consumers are surviving in this environment. Becker (1976) put forward the Rational Choice Theory, stating that individuals make decisions that fulfil their needs while mitigating associated risks. This theory was initially attributed to economics but can be translated to an online marketing environment to support the argument about decisions taken in a FoMO context.

When individuals act rationally and calculate the benefits and risks of a decision, they base their actions on personal preferences with calculated measures. However, when individuals act on impulse and behave irrationally without calculating the benefits and consequences of their actions, they may face both benefits and risks. Ramanathan and Menon (2006), as cited in Chen et al. (2019), argue that a stimulus such as a “trait tendency” or a “normative judgment” stimulates impulsivity in an individual's behaviour (p. 54). It is a

natural balance between benefits and costs, which individuals strive to find in every decision they make (Chen et al., 2019). The customer-perceived value, as described by Kotler and Keller (2016), marks the difference between the beneficial part of a decision and the cost that it entails; the difference would be the valuable part that an individual perceives. Logan et al. (2018) state that as SNSs are becoming a part of the individuals' lives, the alertness of personalised advertisements may have been heightened and accepted that their personal information could have been used for these purposes. Nonetheless, these scholars argue that individuals would appreciate SNSs more when there is trust and confidence of use. John et al. (2018) posit that the inclination for scarce goods increases as humans develop. Their study tested scarcity among children and found that the older they got, the more inclined they were to scarce products.

In their study about the reactance of consumers towards online personalised advertising, Chen et al. (2019) focus on rational choice but from a negative angle. They combine the reactance of individuals with a rational choice. They postulate that privacy concerns and non-personalisation of advertisements can result in reactance and rational choice partially or fully facilitate the impact of affection.

This theory has limitations. Costs and rewards are on the balance for individuals; the decision would be taken in comparison with what is beneficial and best for a particular situation. According to Favereau (2005), the individualisation that is portrayed in this theory goes against the natural human habitat, that of pertaining to a social group. In the New York Times, McCumber (2011) challenges the concept by stating that it is "ethically neutral", and the theory focuses on how individuals pursue to enhance their preferences and not just enquiring about them. Nonetheless, it was included in this study as it offers an understanding of rationality and how individuals base their choices on coherence or impulsivity.

2.4.7 Social Proof

Individuals evaluate themselves with others. They can assess others' characteristics, assets, chances, strengths, and flaws (Festinger, 1954). According to Festinger's (1954) classical social comparison theory, the informal social communication idea first promotes group unanimity and works for uniformity of view. This uniformity encourages the necessity of group members having similar viewpoints and the significance of consensus about social reality. Individuals generate views and make social comparisons based on this. The findings

suggest that if individuals have hesitations or uncertainties, they may self-evaluate and compare themselves to others (Festinger, 1954). Self-evaluation drives individuals - the desire to validate their beliefs and fully comprehend their capabilities.

Lamba (2021) defines it as a phenomenon in which individuals “replicate others’ behaviour in a particular situation to achieve similar objectives” (p. 57). Individuals establish what is correct by gauging with what others believe it is correct (Cialdini, 2021). Social proof can be presented in different formats and platforms. In an SNS environment, comments and likes may alter the social proof phenomenon (Kim et al., 2021). Nowadays, individuals accessing SNSs are becoming trigger-happy commenting, liking and sharing. Commenting can have some challenges, as users can downplay the advertisement, a product or service. Advertisers can use hashtags, recommendation areas, photos and images for virality to amplify the importance of a product (Lamba, 2021). User testimonials and reviews can successfully harness this phenomenon, although it may also have its downsides, as negative testimonies can harm a brand’s reputation and create dissidents (Lamba, 2021). When people are unsure of what to do or are stuck between two or more products, they are more likely to follow the attitudes and behaviours of reference groups; they may also refer to celebrity endorsements or influencers, for example (Rohde & Mau, 2021).

Stibe and Cugelman (2019) refer to social proof as social norms, which they define as a phenomenon where people mimic the conduct of others in order to be liked and accepted. According to Stibe and Cugelman (2019), social norms encompass the notion that actions and reactions adopted by individuals may gain popularity among others, which potentially might foster the development of herd behaviour.

Herd behaviour is a phenomenon where individuals follow others and imitate group behaviours instead of making independent and autonomous decisions based on their own personal information (Shusha & Touny, 2016). Shusha and Touny (2016) study focused on stocks and investments, but nonetheless, incorporated other concepts apart from herd behaviour, such as overconfidence, impulse and accurate decisions and mood. These precursors may all foster a sense of herd mentality. Bandwagon effect is another terminology used in this context, where individuals tend to embrace certain behaviours, or follow trends simply because they perceive that a sizeable number of other individuals are doing so.

Social proof can be initiated by using messages in advertisements showing that many people are interested in or purchasing a product, using the collective wisdom or “wisdom of the crowd” (Bernazzani, 2021). By showing the social share count or explicitly incorporating social proof in the advertisement, the collective wisdom of the crowd, particularly of friends, is emphasised and augmented (Bernazzani, 2021; Surowiecki, 2004). As Cialdini (2021) notes, if marketers incorporate messages in their advertisements such as “fastest growing” or “largest selling”, they would be sowing the seed of proof in the individuals’ minds (p. 130).

It is important to note, though, that surprisingly, there is a paucity of studies about social proof augmented in advertising messages, considering that this is widely utilised. Little is known about the effects of social proof on the attitudes, subjective norms, and intentions, for example.

2.4.8 Loss Aversion

When individuals respond to a loss more strongly than something gained, it is called Loss Aversion (Kahneman, 2013). It is a heuristic bias that helps researchers understand human behaviour and the formation of attitudes and feelings. This concept is based on the law of nature that states that those “organisms that treat threats as more urgent than opportunities have a better chance to survive and reproduce” (Kahneman, 2013, p. 282). It resembles the scarcity principle, in which the latter articulates that opportunities in life seem more meaningful and appreciated when they are scarce (Cialdini, 1984). Hence, individuals tend to strongly prefer to avoid threats in life rather than clinging to opportunities, even if this leads to a decline in utility (Collins, 2017; Kahneman, 2013). As Lamba (2021) puts it, individuals “tend to be more concerned with the prospect of losing out on something if they do not act, rather than gaining something by taking timely and desirable action” (p. 64). Collins (2017) fuses together loss aversion bias with FoMO and alludes that compensation from loss may lead to heuristic bias - the tendency to make rapid assessments of a situation with whatever comes to mind - which may ultimately aid individuals to find a solution by preventing from missing out on an item in the future.

Kahneman and Tversky (1979) based this phenomenon on the prospect theory framework. The prospect theory concerns individuals’ decisions when at risk (McDermott, 2001). Originally, this theory was developed for basic financial purposes, but it can be applied also to other intricate situations (Kahneman & Tversky, 1979). Initially, the concept

was named risk aversion, based on the certainty and uncertainty levels. In the economics dictionary, risk aversion is defined as the propensity for individuals to favour outcomes with low uncertainty over those with high uncertainty, even when the latter's average outcome has a more significant or equivalent financial worth than the former (Werner, 2008).

Based on Kahneman's (2013) study, the concept can be translated and used in an online marketing context. Advertisements can pose the same situation to individuals when they come across them or when they are targeted at them. Messages can inform individuals of the risk of loss if they miss the opportunity to own or the benefits of gain if they click and are converted to the website to activate the purchase. A 'Do not miss out on this deal' message is more effective and generates more attention than 'Take advantage of this deal' message (Lamba, 2021, p. 64).

Both scarcity and urgency can incite and help in forming loss aversion; for urgency, if a timer is set on an advertisement or date is given, or a flash sale is presented, the message that is being transmitted to the individuals is that if the date or time are surpassed, they would not avail themselves from that benefit. Likewise, for scarcity, individuals must take rapid action to purchase the limited product, else it would disappear and the opportunity to acquire would be lost. Loss aversion can take different forms in retargeted advertisements, for example, freebies, free trials, flash sales or discounts.

Loss aversion is very sensitive in marketing, and there can be instances that would obscure the idea. If credibility is lacking in advertising, messages are repeated incessantly, or marketers stretch the exclusive limited-time offer into a never-ending story, it would kill the 'marketing' behind it (Elias, 2018). Loss aversion can have a significant impact on the way people make decisions and can lead to poor financial decisions. In a study by Muralidharan and Sheehan (2016), shoppers were presented with advertising messages related to reusable bags of either "avoiding a fee" (gain aspect) or "paying a tax" (loss aspect) if they ask for a plastic bag (p. 200). The word 'tax' posed a loss, hence the propensity to bring their reusable bags was much more than the gain. Kahneman (2013) emphasises the need to examine the loss aversion ratio and advises that caution must be taken, focusing on the impact of the probable loss endured and the counterweighed gains.

Li et al. (2021a) recognised the necessity of creating a loss aversion scale, given its widespread prevalence and the absence of an established scale to measure it accurately. As a result, they developed a 7-item scale that was validated by examining its correlation with risk aversion and risk propensity. The scale was then tested successfully on a sample of individuals from the U.S.

The hypotheses concerning the concept of externally initiated FoMO will be presented in the concluding part of the subsequent section. This is where the investigation into the relationship between FoMO and the theory of planned behaviour (TPB) is expounded.

2.4.9 Summary

This section focused on FoMO and all its psychological perspectives. It started by analysing the phenomenon, its definitions, and the evolution of studies about it. As FoMO is a social anxiety phenomenon, anxiety was analysed and discussed in light of fear. Then, the study shifted to analyse the SDT (Deci & Ryan, 1985) and determine two facets of FoMO, the self-initiated FoMO-driven behaviours and externally initiated FoMO appeals (Hodkinson, 2019). Four constructs were discussed to solidify the second facet, being the scarcity and urgency principles, with some emphasis on rational choice theory (Becker, 1976), social proof, with a highlight of the classical social comparison theory (Festinger, 1954), and loss aversion, backed up by the prospect theory (Kahneman & Tversky, 1979). The penultimate section will zoom in on the final theory of this study's conceptual model; Ajzen's (1991) theory of planned behaviour (TPB).

2.5 The Theory of Planned Behaviour

2.5.1 Introduction

This section will focus on the TPB. First, the evolution of this theory is discussed, including the early theory of reasoned action (TRA) (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980). The review will focus on each construct that makes up the TPB, namely, attitude, subjective norms, perceived behavioural control, behavioural intention, and behaviour. Finally, this section will explore the studies that investigated the relationship between FoMO and TPB, followed by gender and age differences in FoMO and TPB.

2.5.2 Theory of Reasoned Action and Theory of Planned Behaviour

Martin Fishbein and Icek Ajzen developed the Theory of Reasoned Action (TRA) in 1975, a theory which has been one of the most effective methods for forecasting and understanding intentional behaviour (Fig. 2.5). The central aim of TRA is to predict the motivational influences that lead to actions among individuals. Both internal elements, or the individuals' perceptions of an object, and external elements, or social pressures, influence individuals' behavioural intentions to act (Ajzen & Fishbein, 1980). Hence, individuals assess the outcomes of various behaviours and opt for the most favourable one (Sethna, 2023). TRA concentrates solely on volitional or deliberate behaviour.

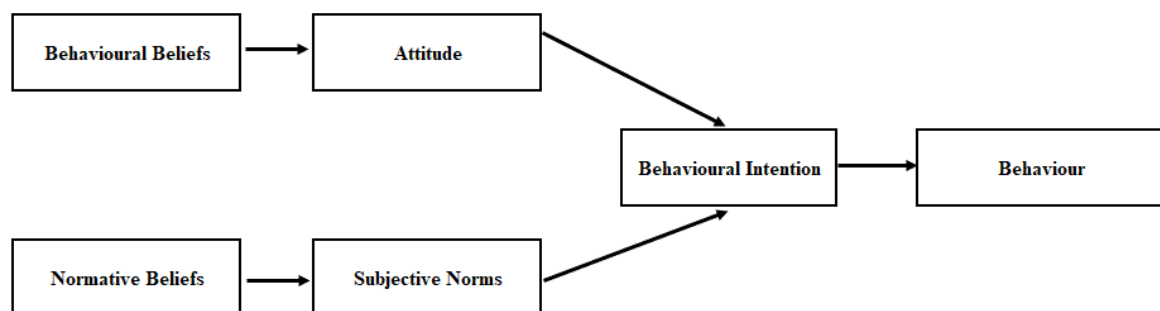


Figure 2.5: The Theory of Reasoned Action (Source: Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980)

Ten years later, the same researchers developed another theory from the fundamental theory called the Theory of Planned Behaviour (TPB) (Ajzen, 1985; Ajzen, 1991) (Fig. 2.6). These theories were employed in the marketing environment, but even, for example, in sustainability research (e.g., Nguyen et al., 2017), counselling psychology (e.g., Romano & Netland, 2008), and health studies (e.g., Arevalo & Brown, 2019).

TPB is mainly used as an intra-personal model that aids organisations in predicting behavioural intention and behaviour in general (Ajzen, 1991). TPB extends the TRA, by considering the individuals' perception of voluntary control over their actions (Chu et al., 2015). This theory extension added the perceived behavioural control construct to the original model. The four common constructs of these theories are attitude, subjective norms, intention, and behaviour. In Ajzen (1991) words,

“intentions are assumed to capture the motivational factors that influence a behaviour; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behaviour. As a general rule, the stronger the intention to engage in a behaviour, the more likely should be its performance” (p. 181).

Hence, intention becomes the focal point of this theory as it is the most crucial motivational construct affecting behaviour (Hagger, 2019). Ajzen (2016) provides the rule of thumb of TPB, which states that,

“the more favourable the attitude and subjective norm with respect to engaging in the behaviour, and the greater the perceived control, the more likely it is that a person will form an intention to perform the behaviour in question” (p. 125).

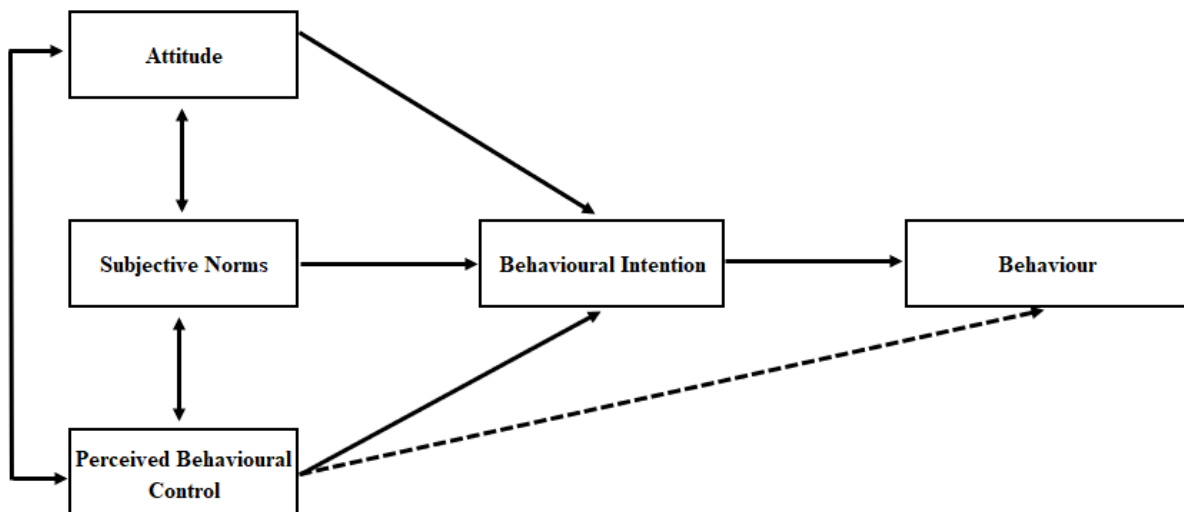


Figure 2.6: The Theory of Planned Behaviour (Source: Ajzen, 1991)

These are required for persuasive communication. The culmination of attitude towards the behaviour is the general assessment of a behaviour performance, and subjective norms are the apparent pressure, for example, from pertinent peers on SNSs. Hence, if individuals have positive attitudes towards an object, perceive social pressure and a motivation to conform with others' views, and yet, perceive that they are in control of their actions, they form a strong behavioural intention which will most likely proceed to execute a behaviour. For

example, in health, the effectiveness of TRA is greater when individuals have “voluntary control” over their actions and behaviours; in contrast, TPB would be appropriate when researchers need to predict behaviours in which individuals have “incomplete voluntary control” (Shaw, 2016, p. 4).

Hence, in an online environment, the attitude towards the behaviour refers to the favourable or unfavourable views that individuals hold about online advertising. Both theories state that the behavioural intention to perform or act upon something is a substitute measure for actions that may be affected later (Ajzen, 1991). Further research has shown that attitudes towards behaviour, and subjective norms influence the intentions to perform online behaviours later. For example, in a study on SNS advertisements, Sanne and Wiese (2018) stated that the attitude to engage with SNS advertising predicts the intention of engagement with these advertisements, followed by subjective norms. This study found that perceived behavioural control is not a significant precursor of intention.

TPB aids the researcher in better understanding the attitude towards advertising and the predicted intentions to engage with the advertisements and, ultimately, the retailer’s website. Meta-analysis reviews were conducted to examine the efficacy of this theory and its implementation in the multi-disciplinary studies (Armitage & Conner, 2001; McEachan et al, 2011; Ravis & Sheeran, 2003). Nonetheless, like every other theory, it has its limitations. First, this theory does not factor in extraneous elements and variables like fear and anxiety. Hence, this is a principal aspect of why this study included the FoMO phenomenon for more completeness. Studies tested and extended the role of fear or anxiety in TPB (e.g., Liu et al., 2021; Saavedra & Bautista, 2020; Ullah et al., 2021). Second, past studies showed that individuals might not adhere to their attitudes and behavioural intentions (Elliott & Jankel-Elliott, 2003). Individuals might have different perspectives and attitudes towards the same object, in this case an advertisement, also known as dual attitudes (Wilson et al., 2000). The evaluation of the same object might be: “an automatic, implicit attitude and an explicit attitude” (Wilson et al., 2000, p. 101). Third, the theory does not cater for the lapse of time between the formation of behavioural intention and the behaviour itself - there are still elements that may perturb the link between these two constructs (van Hooft et al., 2005). Another limitation is the decision-making process; Ajzen (1985) called the theory ‘planned behaviour’, but it does not assume rationality (Göncz & Tian, 2020). This stems from the motivations influencing the main three constructs: attitudes, subjective norms, and perceived

behavioural control; incoherence, unconscious biases, or extraneous emotions may shape motivations differently. Hence, there can be instances where although the behaviour is involuntary, it may be structured in a way that is not parallel with what the individual intended to do.

In follow up to reviewing TPB, the lens will now focus on each and every construct of the theory.

2.5.3 Attitude

Much has been said about attitude in the second section of this chapter. Nonetheless, some attention is required on how this construct fits the TPB. First, attitude is a precursor of behavioural intention in theory (Ajzen, 1991). Attitude is the degree to which a person has a favourable or unfavourable evaluation of the behaviour of interest; it requires taking into account how the conduct will affect the results (Ajzen, 1991). Therefore, attitude is an individual's overall evaluation of executing an action.

There has been a variety of approaches to measuring attitude. Yzer (2017) referred to the semantic differential, but Pollay and Mittal (1993) and other researchers (e.g., An and Kim, 2008) took a different approach by taking into account the general opinion of the object - whether it is favourable or unfavourable (positive or negative), the likeableness towards an object, and the favourable and essential considerations.

Previous studies found a strong association between attitude and intention in different contexts (e.g., Heirman & Walrave, 2012; Wang & Zhang, 2016; Wang et al, 2020). For marketing, some studies focused on the personal advertising, particularly electronic word-of-mouth (e.g., Reza Jalilvand & Samiei, 2012; Fu et al., 2015). Various studies in the marketing context used only the connection between attitude and intention without including all the TPB constructs (e.g., Akdoğan & Durmaz, 2023; Arora & Agarwal, 2020; Sigurdsson et al., 2018; Wahid & Ahmed, 2011). For example, in a study conducted by Farman et al. (2020), the impact of attitudes towards retargeted advertisements on purchase intentions were examined. The results showed that individuals who were aware of being surveilled by advertisers developed negative attitudes, which consequently had an adverse effect on their intention. Hasri et al.'s (2021) study found that the attitude towards programmatic advertising positively correlates with click-through intentions. Saadeghvaziri et al. (2013) found a strong

favourable relationship between attitude and purchase intention. Other studies linked attitude directly with behaviour. For example, Wang et al. (2009) and Wolin et al. (2002) found that individuals with a positive attitude towards online advertising significantly influenced their online behaviour, such as clicking online advertisements.

To my knowledge, only very few studies analysed the attitude towards impersonal advertising as a central construct using the whole TPB model. For example, Cheung and To (2017) tested the whole TPB model for in-app advertisements. They found a strong connection between attitude and intention to watch advertisements. Likewise, Sanne and Wiese (2018) state that attitude is the strongest determinant of intention in an SNS advertising context. Therefore, the following hypothesis was formulated:

H11: The attitude towards retargeted advertisements positively influences young people's intention to click on these advertisements.

2.5.4 Subjective Norms

The subjective norms construct was another element in the original TRA, along with the attitudes, an antecedent of behavioural intention. In social psychology, social norms are defined as the pressure an individual feels to perform a particular action (Ajzen, 1991). An important person or reference group might exert pressure to approve or disapprove of an action or behaviour (Ham et al., 2015). Social pressure impinges on an individual to comply in a way that is in harmony and syncs with the reference groups' ideas, attitudes, and beliefs. Subjective norms can be split into two channels, descriptive and social norms (Ham et al., 2015). With descriptive norms, individuals are expected to behave in accordance with typical patterns of behaviour. Contrastingly, social norms are people's perceptions of what the individual should do based on the opinions of others. Normative beliefs are the foundation of the development of these norms. Individuals' normative beliefs are determined by how influential people or reference groups expect them to behave; hence, individuals are motivated to follow the expectations based on the perceived social pressure and readiness to follow them (Ajzen, 1991). For example, if an individual's colleagues are all eager and waiting for Sony's PS5 to hit the market so they will purchase it, then the individual will be more predisposed to purchase it. Hence if they come across a retargeted advertisement showing that the PS5 is soon arriving, the individual would be keen to click on the advertisement to inform oneself and keep up to date. Sanne and Wiese (2018) highlight the

facets that subjective norms may have; the pressure can stem from personal motivation (e.g., family or friends) or societal motivation (e.g., advertising or SNS media).

In their study, Sanne and Wiese found that subjective norms have a strong positive relationship with the behavioural intention of SNS advertisement engagement. Other studies, not necessarily marketing-related, have shown a strong correlation between subjective norms and intention (e.g., Bamberg, 2003; Ham et al., 2015). Others found negligible antecedence to no influence at all (e.g., Göncz & Tian, 2020; Ming-Shen et al., 2007). In Han et al.'s (2010) study about green hotels, subjective norms were found to be less effective than attitude on the intention.

The effect of social influence diminishes slowly from minors to young adults (Knoll et al., 2017). This was even tested when perceived risk was involved in the formula. Studies showed that not only this gradual decrease but also the peer influence; young adults are more influenced by adults, whereas minors are more influenced by same age peers (Knoll et al., 2015; 2017).

In our study, subjective norms are very important given that young people encounter retargeted advertisements in areas where there are their peers and all the influences that may trigger actions. SNS is a hub where friends meet and actively engage in actions such as liking, commenting, sharing, and using hashtags (Logan, 2014). Furthermore, subjective norms can be paralleled with the social proof construct in FoMO, as social proof is manifested by individuals copying others' actions, so they emulate the behaviour in a given circumstance (Cialdini, 1984), whereas subjective norms represent the beliefs regarding whether other people approve or disapprove of their behaviour (Ajzen, 1991). This will be further tested in this study with the fusion of FoMO and TPB. Thus, it was hypothesised that:

H12: Subjective norms positively influence young people's intention to click on retargeted advertisements.

2.5.5 Perceived Behavioural Control

Ajzen (1985) extended the scope of the TRA by including perceived behavioural control over one's behaviour as the third precursor of intention. This construct is the autonomy element of the theory, where it understands the extent to which people feel they

have the skills or capacity and autonomy or freedom to assume a particular behaviour. Various factors influence the necessary resources and chances for a specific behaviour, such as past experiences related to retargeted advertisements, perceptions of other hindrances and obstacles, and additional factors that are perceived to augment or diminish the perceived viability level of this behaviour (Ajzen, 1991; Ham et al., 2015; Sanne & Wiese, 2018).

Perceived behavioural control comprises two elements: internal factors, self-efficacy or perceived difficulty and external factors or controllability (Ajzen, 2002; Terry & O’Leary, 1995). According to Bandura (1991), as cited by Ajzen (2002), perceived self-efficacy refers to the belief that individuals have in their skills and capabilities to achieve their goals. Hence, the individual can produce essential outcomes (Flammer, 2001). Individuals that believe and are aware that they can decide and are able to take action, feel empowered and succeed. Conversely, individuals who lack self-confidence and regard themselves as weak, feel demotivated and inactive (Flammer, 2001). Controllability is defined as the assessment of extent that others can control the behaviours, thoughts, and feelings of individuals, impeding their behavioural performance (Terry & O’Leary, 1995). Hence, it refers to the control that individuals should have against any external forces that may hamper their behavioural intent and performance. Therefore, perceived behavioural control reflects individuals’ beliefs in their ability to successfully carry out a specific action.

Tommasetti et al. (2018) found that perceived behavioural control is a critical aspect that should be examined in their restaurant management research since it may considerably alter an individual's intention. People are more inclined to pick alternatives over which they believe they have control because they have the appropriate resources. Likewise, by creating the impression that individuals have all the resources they need to click on an advertisement, retailers can increase the likelihood of individuals revisiting their website.

Perceived behavioural control can influence both the behavioural intention and the behaviour. Nonetheless, an external factor beyond the individuals’ control may hinder the actual behaviour (Sanne & Wiese, 2018). Various studies, even non-marketing-related, have shown a strong correlation between perceived behavioural control and intention (e.g., Cheung & To, 2017; Reza Jalilvand & Samiei, 2012; Pundir et al., 2021; Ullah et al., 2021). On the other hand, Sanne and Wiese (2018) found no relationship at all. Other scholars also revealed that intention mediates the relationship between perceived behavioural control and behaviour

in various fields of study (e.g., Mafabi et al., 2017; Qalati et al., 2022; Thorhauge et al., 2019).

For the purpose of this study, perceived behavioural control will be interpreted as the young people's perceptions of their capacity to engage with and click on retargeted advertisements. This will still be tested in connection with intention and behaviour, even though past research found that perceived behavioural control does not always affect behaviour in the SNS and other contexts (e.g., physical activity) that includes young people (e.g., Hamilton & White, 2008). This decision was made based on the following three factors: first, in the original model, perceived behavioural control accurately predicts actual behaviour; second, many studies that were found where tackling other sectors, not necessarily advertising; and third, to determine if there were any potential variances in a retargeting context, its nature, and among young people. This study will also investigate the intention to click as a mediating factor between perceived behavioural control and behaviour. Therefore, the following three hypotheses were devised:

H13(a): Perceived behavioural control positively influences young people's intention to click on retargeted advertisements.

H13(b): Perceived behavioural control positively influences young people's behaviour.

H13(c): The effect of perceived behavioural control on behaviour is mediated by young people's intention to click on retargeted advertisements.

2.5.6 Intention and Behaviour

The stronger the volition to perform a behaviour, the more likely the behaviour will be performed - this is called behavioural intention. Behavioural intention is a strong surrogate for the subsequent behaviour construct; a pivotal point of the TPB, as it lies in the middle of the model. Ajzen (1991) stated that intention is the individual's willingness to wield an amount of effort to act. He proposed that behavioural intention is affected not only by the attitudes formed favourably or unfavourably towards an object, in this case, an advertisement but also by the power of subjective norms and the perceived behaviour control of an individual. On the other hand, behavioural intention is regarded as a direct precursor of behaviour and thus included in the TPB to predict an individual's behaviour. It is a crucial construct to drive an individual to a behavioural decision. Individuals do not intend to click

on an advertisement only because they feel they can do so, but through the culmination of its three antecedents – attitude, subjective norms, and perceived behavioural control.

Behaviour is the way an individual acts. It is the ultimate construct, which results from the fulfilment of the other constructs, particularly intention as its principal precursor, along with perceived behavioural control. To assess this construct effectively, one must gauge the measure of behaviour to be predicted at the same levels as the variables used to predict it (Yzer, 2017).

Online advertisements have a role in consumer decision-making and a strong relationship with behaviour. At all the different decision-making stages, advertising plays a distinctive role in aiding the consumer to pass from one stage to another by exposing to the consumer different messages on products or services from organisations (Kotler & Keller, 2016). Various studies found a strong connection between behavioural intention and behaviour (e.g., Sanne & Weise, 2018; Wang et al., 2020). Other studies proposed extended frameworks or concepts to fortify the relationship between intention and behaviour (e.g., Göncz & Tian, 2020; Tommasetti et al., 2018; Wang & Zhang, 2016).

With the advent of targeting, advertisements have become more specific and aimed at the proper individual. Retargeted advertisements are based upon earlier encounters and hence, prior awareness of a product. Notwithstanding, the impact of prior knowledge on Internet searching indicates that consumer scepticism and resistance to advertising may be intensified (Gauzente, 2010). Gauzente (2010) further argues that individuals with negative attitudes towards advertisements are more likely to avoid them if they are aware of the content they are being exposed to.

A positive attitude towards an advertisement can lead to favourable behavioural outcomes such as clicking advertisements and intending to buy the advertised product (Arora et al., 2020). Conversely, a negative attitude towards the advertisement can result in negative intentions and behaviours, such as leaving the website or avoiding advertisements (Arora et al., 2020).

This study will interpret the intention as the young people's intention to click on retargeted advertisements. At the same time, behaviour will be covered more on past

encounters with retargeted advertisements, such as likeability, clicking and engagement. The intention to click was researched in different studies that consistently showed that advertisements that are relevant and targeted to the viewer are more likely to be clicked on when the personalisation is justified (e.g., Bleier & Eisenbeiss, 2015b; Cho & Cheon, 2004; White et al., 2008). Research suggests that the congruity between the advertisement and the consumer's needs, their attitudes towards the advertisement, and motivation to consume the advertised product are essential factors that can increase the likelihood of clicking on an advertisement. Therefore, it was hypothesised that:

H14: The intention to click on retargeted advertisements positively affects young people's behaviour.

2.5.7 FoMO and the Theory of Planned Behaviour

FoMO has been widely tested in diverse fields, but surprisingly, the least tested was in the impersonal advertising environment. Very few papers fused FoMO and TPB. To the best of my knowledge, when FoMO was tested as a construct, it was mainly based on Przybylski et al.'s (2013) 10-item instrument, which does not cover the different elements envisaged to be tested in this study, namely scarcity, urgency, social proof, and loss aversion. Otherwise, past studies used the four constructs independently in different contexts (e.g., Abdul Talib & Mat Saat, 2017; Jang et al., 2015; Ku et al., 2012)

In their paper, conducted with young Filipino adults, Saavedra and Bautista (2020) connected Przybylski et al.'s (2013) FoMO instrument, and separately included intrinsic motivations, identified introjected and external regulations items under the 'motivation' higher-order construct, with TPB. FoMO was found to positively affect subjective norms and intentions, while negatively affecting attitude. No relationship was found with perceived behavioural control and behaviour. Kim et al. (2020) conducted a study and used FoMO as a direct predictor of intention and acting as a moderator between constraints and intention. FoMO was found as a booster of behavioural intention. Pundir et al. (2021) tested the effect of FoMO on the intention to verify if news is fake or not before sharing on SNS. They found a significant negative relationship between FoMO and intention. Recently, Flecha Ortiz et al. (2024) found that FoMO strongly influence the consumer purchase intention.

Good and Hyman (2021) tested the direct and indirect effects of FoMO appeals on purchase likelihood (intention). The scale used in the study was a modified version of Przybylski et al. (2013), widely used for self-initiated FoMO-driven behaviours (Hodkinson, 2019). The study revealed a strong relationship between FoMO and purchase likelihood because the higher FoMO impacts self-gratification in acquiring something, the more it augments the purchase probability. These results validated the outcomes of an earlier investigation by Good and Hyman (2020). In their experimental study, Johnson et al. (2022) found that higher purchase intention was most affected by star rating (social proof), great discounts and time pressure (urgency). In a study about influencers and product placements, Dinh and Lee (2022) proposed a new model in which they tried to connect FoMO with purchase intention. They found a positive relationship between FoMO related to endorsed products and the intention to purchase them.

Jang et al. (2015) and Ku et al. (2012) tested scarcity and urgency on attitude and intention, respectively. These researchers conducted several studies. They found that scarcity appeals do impact attitude and intention. Lim (2016) discovered a strong and positive relationship between scarcity and urgency, conceptualised FoMO as a higher-order construct, and individuals' attitudes towards an advertisement and their purchase intentions. In Moore and Craciun's (2021) study, FoMO was used as a predictor of the attitude towards SNS. A significant relationship was found between these constructs. Fogel and Setton's (2022) study about the connection between scarcity, urgency, and attitude found partial support when it comes to luxurious goods. According to the researchers, this pioneering study included the countdown timer, and scarcity and urgency test in the field.

In an experimental design, Abdul Talib and Mat Saat (2017) tested social proof association with purchase intention. They confirmed that social proof techniques help alter the intention to purchase among individuals. In Bhattacharyya and Rose's (2020) study about the influence of SNS likes on purchases, it was found that social proof is vital to the attitude and intention of an individual. This study highlights the diverse gaps in the literature, particularly the effect of social proof, in general, on an individual. In their study on envy and clicking on likes in an SNS environment, Kim et al. (2021) urge researchers to further study social comparisons and social proof by linking these to attitudes and behavioural intentions.

Cvirka et al. (2022) included perceived risk (risk/loss aversion) with behavioural intention in their study of SNS advertisements. It was not found to be significant and removed from the parsimonious model produced in their study. Risk aversion was studied by Zhang and Cain (2017) as a direct predictor of both attitude and intention and acting as a mediating role of the constructs of TPB. It was found that risk aversion is not a precursor of intention but holds a negative association with attitude. Contrastingly, Muralidharan and Sheehan (2016) found that the idea of loss, symbolised as tax in their study, impacted all the TPB precursors of intention and the behavioural intention itself. Perceived risk was found to be predicting male purchase intention more than females, while informational influence or social proof predicts females' purchase intention.

An idiosyncratic association arises between social proof and subjective norms, especially when the latter is dependent upon the approval or disapproval of an individuals' actions by their peers. Deutsch and Gerard (1955) made the distinction between normative and informational social influences. Normative influence occurs when "the influence of other people leads us to conform in order to be liked and accepted" (subjective norms) (Aronson et al., 2019, p. 230). Informational social influence occurs when individuals "rely on other people as a source of information to guide our behaviour, which leads to conformity because individuals believe that others' interpretation of an ambiguous situation is correct" (social proof) (Aronson et al., 2019, p. 221). Since this study is focusing on FoMO in retargeted advertisements, social proof as a motivation is exerted from the message or the visual cues. Most of the studies conducted on FoMO tested the intrinsic motivation or the uneasiness individuals experience due to the inherent sense of fear that arises when they perceive that their peers are encountering fulfilling experiences when there are disconnected (Przybylski et al., 2013). As subjective norms are formed by perceived social pressures influencing behaviour, FoMO can influence an individual's perception of subjective norms concerning disclosure (Beyens et al., 2016). Thus, FoMO may augment individuals' vulnerability to conform to the social pressures determined by their peers. All the scholarly studies that were found regarding the relationship between FoMO and subjective norms consistently showed FoMO as a precursor of subjective norms (Parker & Flowerday, 2021; Radic et al., 2022; Saavedra & Bautista, 2020). One particular study investigated the influence of perceived herd behaviour on subjective norms and found a positive relationship between them (Lee & Hong, 2016). In other studies that tested extrinsic motivations or external influences, these factors

were constantly regarded as antecedents of subjective norms (Chen et al., 2016; Kesgin et al., 2022; Ruiz-Mafe et al., 2016).

In this study, FoMO was primarily linked with attitude, subjective norms, and intention to click. Very few studies examined FoMO and perceived behavioural control or behaviour with a TPB context; for example, Saavedra and Bautista (2020) found no direct relationship between both. Other studies ignored the link at all (Pundir et al., 2021; Radic et al., 2022). Hence, these were excluded from the model. FoMO's influence was intentionally kept neutral on attitude due to the inconsistent findings in various studies regarding the associations between the effect and attitude.

In this study, akin to Saadevra and Bautista (2020), the primary TPB constructs; attitudes towards retargeted advertisements and subjective norms will be investigated to determine if they mediate the influence of FoMO on the intention to click on these advertisements.

Hence, three hypotheses were framed to provide a basis for testing the relationships between FoMO elements and the TPB factors. Another hypothesis was formulated to test if attitudes towards retargeted advertisements and subjective norms mediated the influence of FoMO on the intention to click. According to Weideinger et al. (2021), in their novel study, men are more influenced when encountering FoMO-stimulated content in SNS advertisements when compared to women. On the other hand, studies found that anxiety is more prevalent among women (Bahrami & Yousefi, 2011; Lewinsohn et al., 1993; 1998). Various studies found that fear affects age groups differently (Beyens et al., 2016; Przybylski et al., 2013; Schiele et al., 2016; Tandon et al., 2021). Hence, two hypotheses were proposed to examine if there are any gender- and age-based differences in the influence of FoMO on attitude, subjective norms, and the intention to click. The outcome of these hypotheses would contribute to extending the current knowledge of the impacts of FoMO. The hypotheses were structured as follows:

H15: FoMO affects young people's attitudes towards retargeted advertisements.

H16: FoMO positively affects young people's subjective norms.

H17: FoMO positively affects young people's intention to click on retargeted advertisements.

H18: The effect of FoMO on young people's intention to click on retargeted advertisements is mediated by a) their attitudes towards retargeted advertisements and b) subjective norms.

H19: There is a gender-based difference in the influence of FoMO on young people's a) attitudes towards retargeted advertisements, b) subjective norms, and c) intention to click on retargeted advertisements.

H20: There is an age-based difference in the influence of FoMO on young people's a) attitudes towards retargeted advertisements, b) subjective norms, and c) intention to click on retargeted advertisements.

2.5.8 Gender and Age Differences

The study intends to investigate if there are any gender- and age-based differences in the influence of attitude, subjective norms, and perceived behavioural control on the intention to click and in the influence of perceived behavioural control and intention to click on the behaviour.

Both men and women can be attracted to an advertisement for various reasons, stemming mostly from determinants of value and attitude. The formation of a favourable or unfavourable attitude can affect the intention to click on the advertisement, and ultimately driving to the behaviour. Wang (2010) tested the association between perceived behavioural control and intention to visit online retailers and found that it is more impactful among women than men. The study by López-Mosquera (2016) on the intention to pay found that gender differences do exist in the context of TPB. Her results revealed that women have a stronger subjective norm, perceived behavioural control and intention. Zhan (2022) found that men that have affective and positive attitude were less willingly to purchase a new energy vehicle. A study about sustainable consumer behaviour showed that women and young consumers (age < 30) are significantly different from men and adults on the influence of subjective norms and perceived behavioural control on intention (Sheoran & Kumar, 2022). In light of these studies, gender- and age-based hypotheses were formulated as follows:

H21: There is a gender-based difference in the influence of a) attitude towards retargeted advertisements, b) subjective norms, and c) perceived behavioural control on young people's intention to click on retargeted advertisements.

H22: There is an age-based difference in the influence of a) attitude towards retargeted advertisements, b) subjective norms, and c) perceived behavioural control on young people's intention to click on retargeted advertisements.

H23: There is a gender-based difference in the influence of a) the intention to click on retargeted advertisements, and b) perceived behavioural control on young people's behaviour.

H24: There is an age-based difference in the influence of a) the intention to click on retargeted advertisements, and b) perceived behavioural control on young people's behaviour.

2.5.9 Summary

This section focused on the TPB (Ajzen, 1991). First, the evolution of this theory, including the early TRA (Fishbein & Ajzen, 1975) were discussed. The study examined all the constructs pertaining to the TPB; attitude, subjective norms, perceived behavioural control, behavioural intention, and behaviour. This section explored the studies that tested the connection between FoMO and TPB. Finally, gender and age differences were briefly discussed for both FoMO and TPB

The final section of this paper will define the study's aims and purposes, present the research questions and respective objectives, and collate the list of hypotheses based on the literature review.

2.6 Conclusion

This chapter has comprehensively reviewed the factors affecting individuals' perceived advertising value and how they influence their attitudes towards online advertising. Six factors were deduced from the studies and discussed. From this review, it was concluded that these six influential factors affect the attitude towards advertising. Two recent academic studies linked all the factors in one study (Cvirka et al., 2022; Ho Nguyen et al., 2022), while others incorporated five factors out of the selected six (e.g., Arora & Agarwal, 2019; Islam, 2017). In their majority, the studies showed that if entertainment, informativeness, credibility, and interactivity are present, the more favourable the attitude towards advertising is. The personalisation factor was found to encompass two-pronged perspectives; it was either identified as a critical factor or, in other studies, deemed as insignificant.

On the other hand, the more irritative the advertisement is, the more a negative attitude is present. The study focused on young people and their attitudes, with particular attention to any age or gender differences. Nonetheless, few studies were exclusively conducted with young people within the studies age bracket or presented gender differences.

To the extent of my current understanding, information about the influencing factors of retargeted advertisements does not exist. Ozcelik and Varnali (2019) tested three factors but focused on the online behavioural targeting. Retargeted advertisements have been found exercised abundantly in a commercial perspective. This chapter has provided an understanding of how retargeted advertisements are being used by the providers and the mechanism that works behind the scenes.

Academic literature on FoMO is abundant only on one facet depicted in this study – the self-initiated FoMO. This area was discussed but focused more on the purpose of this study – the second facet of FoMO - the externally initiated FoMO appeals (Hodkinson, 2019). Anxiety was also investigated to understand this phenomenon.

The TPB was reviewed in this chapter as a cardinal section of the study. Various studies have tested this theory and even extended it, albeit very few studies, to the best of my knowledge, which used the whole model in an advertising context. Few studies have integrated FoMO and TPB together, predominantly the self-initiated type (e.g., Saadevra &

Bautista, 2020). No study was found that tested the four constructs altogether, depicted in this study as a FoMO construct, in a TPB context.

Little is known about the factors and how they specifically influence the minor cohort (13-17) of young people's attitudes towards online advertising. Moreover, compared to other online advertising techniques, a limited number of articles have focused on retargeted advertising in general, and although it has been widely employed commercially, it is still scarce in academic literature (Zarouali et al., 2017). No studies were found that tested the link between FoMO and retargeting. Zarouali et al. (2017) urged academics to focus more on this phenomenon that has spread rapidly in the online environment, with researchers not keeping abreast with this reality. For every pillar in this background literature review, theories, models and principles were explored respectively, to generate more information to equip the research and help describe and explain the mechanisms and methods of each pillar.

Hence, the study has five main aims:

- a) It seeks to determine which factors affect the attitudes of young people towards online advertisements in general.
- b) It aims to understand the influence that different factors have on the perceived value of retargeted advertising and on the attitudes of young people towards retargeted advertisements.
- c) It intends to explore and identify the primary constructs that formulate FoMO as a higher-order construct that emanates from retargeted advertisements.
- d) It seeks to understand the relationship between retargeted advertisements and the trigger of FoMO messages on young people's attitudes, subjective norms and intentions to click.
- e) It pursues to understand how the TPB constructs benefits the retargeting paradigm, with attitude being the crucial construct that fuses AVM and TPB.

Underlying these aims, the interest in the diversities that may exist between the two different age subsets (minors from 13 to 17 years and young adults from 18 to 24 years) and genders is integral in this study. This investigation will seek to determine if the six antecedents influence the perceived value of retargeted advertisements and the attitudes of young people differently between genders and age groups. This study will also pursue to indicate if FoMO influences the attitudes, subjective norms, and behavioural intention

differently between men and women, minors and young adults. It also investigates if retargeted advertisements may impact the TPB constructs differently between age subsets and genders, leading to action.

Hence, a combination of the findings is intended to provide insights to address an overarching research question (OARQ):

OARQ: *What is the extent of influence that retargeted advertisements and FoMO appeals exert on young people?*

In all, five research questions were developed to answer the overarching question and to investigate these research gaps. These questions will aid in defining the research parameters, outlining the major goals of the investigation, and clearly demonstrating what the study seeks to explore and identify (Saunders et al., 2019). Two preliminary research questions (PRQ) were required to equip the study with data:

PRQ1: *Which are the most significant factors influencing young people's attitudes towards online advertising?*

An SLR was set to answer the first PRQ. This was imperative as myriad studies were conducted in this field, but fewer targeted exclusively young people or part of, and were aimed to online advertising. The scoping study conducted as a preliminary study, followed by an SLR are discussed in Chapter 3 and its analysis in Chapter 4.

PRQ2: *Which elements contribute to the externally initiated FoMO caused by retargeted advertisements?*

A qualitative study was required to acquire the knowledge about the factors that emanate FoMO when used in retargeted advertisements, and thus, answer the second PRQ of the study. Two focus groups were held, and the method used in this study is reviewed in Chapter 3, while the thematic analysis of the findings is discussed in Chapter 4.

Following the preliminary investigation and a comprehensive literature analysis, a conceptual model was developed to comprehend how AVM and TPB are employed in a

retargeted advertisement context, as well as the role of FoMO in this setting. As a result, three research questions (RQs) were developed to better understand these relationships.

RQ1: *What is the relationship between the six influencing factors and young people's perceived retargeted advertising value and their attitudes towards retargeted advertisements?*

The first RQ is intended to explore how the six constructs of the AVM could affect the retargeted advertising value and the attitudes of young people towards retargeted advertisements. It will provide insight into which factors positively or negatively influence value and attitudes and if any correlation exists between them. This study intends to understand how young people react and how their attitudes are impacted when they encounter a retargeted advertisement of a retailer they have visited. This RQ aims to understand the most persuasive factors that entice young people. Moreover, special attention will be given to any gender and age differences in young people. Additionally, the role of value will be investigated to ascertain its potential mediation in the relationship between the six factors and attitude. The formulated list of hypotheses for this section of this study can be found in Table 2.1.

RQ2: *To what extent do the three primary factors (attitudes, subjective norms, and perceived behavioural control) of the TPB influence young people's intention to click, and consequently, their behaviour towards retargeted advertisements?*

The second RQ seeks to understand how retargeted advertising is affecting not only the attitude, but the intention and behaviour by means of subjective norms and perceived behavioural control. Thus, as young people's attitudes toward retargeted advertising become more favourable, their friends support their behaviour, and their behavioural control on engaging with retargeted advertising becomes more optimistic, they are more likely to click on a retargeted advertisement to revisit the retail site and purchase previously seen products. The objective of this RQ and pertinent hypotheses are set to understand the correlation between the constructs of TPB and retargeted advertisements. Like the previous RQs, gender and age will be analysed as well. The ten hypotheses (H11 – H14 & H21 – H24) are provided in Table 2.2 and shown in the conceptual model depicted in Figure 2.7.

Table 2.1: List of hypotheses for RQ1

Hypothesis	Hypothesis Description
H1(a)	The entertainment factor of retargeted advertisements positively influences young people's perceived value of retargeted advertisements.
H1(b)	The entertainment factor of retargeted advertisements positively influences young people's attitudes towards retargeted advertisements.
H2(a)	The informativeness factor of retargeted advertisements positively influences young people's perceived value of retargeted advertisements.
H2(b)	The informativeness factor of retargeted advertisements positively influences young people's attitudes towards retargeted advertisements.
H3(a)	The irritation factor of retargeted advertisements negatively impacts young people's perceived value of retargeted advertisements.
H3(b)	The irritation factor of retargeted advertisements negatively impacts young people's attitudes towards retargeted advertisements.
H4(a)	The credibility factor of retargeted advertisements positively influences young people's perceived value of retargeted advertisements.
H4(b)	The credibility factor of retargeted advertisements positively influences young people's attitudes towards retargeted advertisements.
H5(a)	The personalisation factor of retargeted advertisements influences young people's perceived value of retargeted advertisements.
H5(b)	The personalisation factor of retargeted advertisements influences young people's attitudes towards retargeted advertisements.
H6(a)	The interactivity factor of retargeted advertisements positively influences young people's perceived value of retargeted advertisements.
H6(b)	The interactivity factor of retargeted advertisements positively influences young people's attitudes towards retargeted advertisements.
H7	The perceived value of retargeted advertising value positively impacts young people's attitudes towards retargeted advertisements.
H8	The effect of a) entertainment, b) informativeness, c) irritation, d) credibility, e) personalisation, and f) interactivity on young people's attitudes towards retargeted advertisements is mediated by retargeted advertising value.
H9	There is a gender-based difference in the influence of a) entertainment, b) informativeness, c) irritation, d) credibility, e) personalisation, and f) interactivity on young people's <i>i</i>) perceived retargeted advertising value and <i>ii</i>) attitudes towards retargeted advertisements; and a gender-based difference in the influence of g) perceived retargeted advertising value on attitudes towards retargeted advertisements.
H10	There is an age-based difference in the influence of a) entertainment, b) informativeness, c) irritation, d) credibility, e) personalisation, and f) interactivity on people's <i>i</i>) perceived retargeted advertising value and <i>ii</i>) attitudes towards retargeted advertisements; and an age-based difference in the influence of g) perceived retargeted advertising value on attitudes towards retargeted advertisements.

RQ3: *What is the relationship between externally initiated FoMO and young people's attitudes, subjective norms, and intention to click on retargeted advertisements?*

The third and final RQ pursues to understand if any relationship exists between FoMO appeals in retargeted advertisements and TPB constructs. Specifically, it aims to establish whether retargeting amplifies FoMO among young people. It proposes identifying the effect of scarcity, urgency, social proof and loss aversion messages in retargeted advertisements and

the drive to reduce the fear inflicted by FoMO in young people. The objective of this RQ and relevant hypotheses is to understand if any association exists between FoMO as a higher-order construct and attitude towards retargeted advertisements, subjective norms, and the intention to click. Gender and age will be explored to understand if FoMO inflicts them differently when exposed to retargeting. As young people's brains transform and evolve progressively, this can affect their rationality and emotions differently. The six hypotheses tied to this RQ (H15 – H20) are shown in Table 2.2 and visually presented in the conceptual model illustrated in Figure 2.7.

Table 2.2: List of hypotheses for RQ2 and RQ3

Hypothesis	Hypothesis Description
H11	The attitude towards retargeted advertisements positively influences young people's intention to click on these advertisements.
H12	Subjective norms positively influence young people's intention to click on retargeted advertisements.
H13(a)	Perceived behavioural control positively influences young people's intention to click on retargeted advertisements.
H13(b)	Perceived behavioural control positively influences young people's behaviour.
H13(c)	The effect of perceived behavioural control on behaviour is mediated by young people's intention to click on retargeted advertisements.
H14	The intentions to click on retargeted advertisements positively affects young people's behaviour.
H15	FoMO affects young people's attitudes towards retargeted advertisements.
H16	FoMO positively affects young people's subjective norms.
H17	FoMO positively affects young people's intention to click on retargeted advertisements.
H18	The effect of FoMO on young people's intention to click on retargeted advertisements is mediated by a) their attitudes towards retargeted advertisements and b) subjective norms.
H19	There is a gender-based difference in the influence of FoMO on young people's a) attitudes towards retargeted advertisements, b) subjective norms, and c) intention to click on retargeted advertisements.
H20	There is an age-based difference in the influence of FoMO on young people's a) attitudes towards retargeted advertisements, b) subjective norms, and c) intention to click on retargeted advertisements.
H21	There is a gender-based difference in the influence of a) attitude towards retargeted advertisements, b) subjective norms, and c) perceived behavioural control on young people's intention to click on retargeted advertisements.
H22	There is an age-based difference in the influence of a) attitude towards retargeted advertisements, b) subjective norms, and c) perceived behavioural control on young people's intention to click on retargeted advertisements.
H23	There is a gender-based difference in the influence of a) the intention to click on retargeted advertisements, and b) perceived behavioural control on young people's behaviour.
H24	There is an age-based difference in the influence of a) the intention to click on retargeted advertisements, and b) perceived behavioural control on young people's behaviour.

To address these RQs, a variety of methods were utilised to obtain pertinent answers. The forthcoming chapter, Methodology, will elaborate on the three principal methods

adopted in this study. Firstly, it will provide an overview of the considerations taken into account. Subsequently, it will describe the relevant scoping study and SLR, followed by the focus groups conducted to prepare for the final quantitative method, the questionnaire. The chapter closes with a focus on the data analysis procedures undertaken for this study.

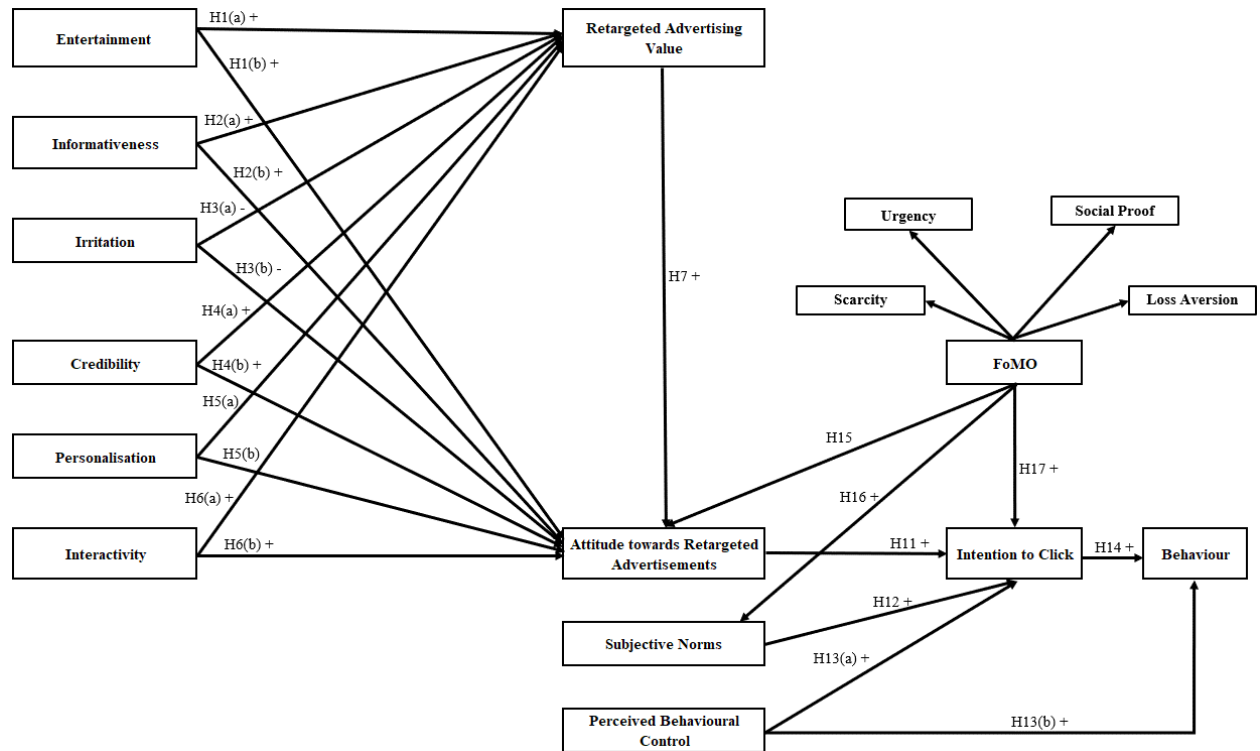


Figure 2.7: The conceptual model including the hypotheses

Note: Mediation hypotheses: H8, H13(c) & H18; Gender-based difference hypotheses: H9, H19, H21 & H23; Age-based difference hypotheses: H10, H20, H22 & H24.

3. METHODOLOGY

3.1 Considerations

3.1.1 Overview

Data collection is an integral part of the research. Most research is based on primary data collected throughout the study's trajectory. Researchers can use different methodological approaches subject to the research's scope, the research questions that are asked in the study, the list of formulated hypotheses and their challenges, and ultimately, the accessibility of resources (Dillman et al., 2014). Despite the differences in methodologies, every study depends on high-quality data that is analysed and interpreted. The research and its evolution, from an idea to its design, up to the collection of information and analysis, are essential. The assurance of acquiring the correct information is vital in every process stage. Rigour in every approach is crucial, and tests and pilot studies are paramount for such research to make it more precise and credible.

This chapter is split into five sections. The first section is dedicated to the considerations of the methodology, where the philosophical lens, approach to theory development, methodological stance, and overall research strategy are discussed. The second section focuses on the systematic literature review (SLR), which laid the foundations for all the items required for the advertising value model (AVM) part of the study. This section discusses the scoping study, the purpose and procedure of the SLR, and bias prevention. The third section zooms in on the two focus groups that were conducted, which aided in exploring FoMO in a marketing appeal context. It equipped the FoMO section of the model with an aggregation of items adopted and adapted from other studies. This section examines the data collection method, the purpose of the focus groups, the interview guide assembled for the study, the respective pilot study, ethical considerations and approval, and sampling and procedure. The fourth chapter concentrates on the quantitative part of the study, where the questionnaire is discussed, focusing on the data collection method, the questionnaire framework, the pre-test phase, the pilot study, ethical considerations and relevant approvals, the target, sampling, and the entire survey procedure. Special attention is given to assembling the whole conceptual model of the AVM, the FoMO scale and the TPB. For the SLR, focus groups and questionnaire sections, limitations and avenues for future opportunities are

discussed, where applicable. The final section introduces the data analysis performed in this study, including the qualitative and the quantitative methods.

In summary, in this chapter, the following contributions are made:

- a) An SLR focusing on the attributing factors that affect young people's attitudes towards online advertising (De Battista et al., 2021a).
- b) Although the items of the FoMO scale were adopted from different studies, these were never aggregated together as one whole scale. This is the first time that scarcity, urgency, social proof, and loss aversion have been tested together in a study, with the help of an exploratory phase in this study (De Battista et al., 2023).
- c) A conceptual model where Ducoffe's (1995, 1996) AVM is connected with TPB, which includes a formulated FoMO scale (De Battista et al., 2022). This model was constructed to understand:
 - i. if the six factors originated from the SLR and confirmed by other studies (e.g., Lütjens et al., 2022) are related to the retargeted advertising value and if this value, along with the six antecedents predict the young people's attitudes towards retargeted advertisements;
 - ii. if the FoMO scale comprising four constructs – scarcity, urgency, social proof, and loss aversion – affects the attitude towards retargeted advertisements, subjective norms, and intentions to click; and,
 - iii. if young people have a positive attitude towards retargeted advertisements, perceive societal expectations, and have a positive opinion of their capacity to control their behaviour while engaging with these advertisements, they are more likely to click on them. This increased behavioural intention is associated with revisiting the retail website and purchasing a previously seen product.
- d) To test the theoretical models and analyse the complex relationships between the variables, Partial Least Squares Structural Equation Modelling (PLS-SEM) is employed.
- e) A new model that concentrates exclusively on retargeting and young people, including minors aged 13 to 17 years. More research on this advertising technique was sought in different studies before, notably by Zarouali et al. (2017), where they appealed for new studies to focus on retargeted advertising, particularly advertisements residing on social networking sites (SNSs), and targeting specifically adolescents, as studies in this field are few. Although recently, the spotlight was

shifted to the apex of the hierarchical beam, with studies focusing on programmatic advertising and marketing, the retargeted advertisement ecosystem still needs to be suitably investigated.

- f) Testing any differences within the proposed conceptual model between minors and young adults, men and women.

3.1.2 Philosophical Lens

When fusing two established models into one fit and blending another construct (as a higher-order construct) that was never established in its entirety, the design would become tricky. Items for models tested repeatedly in the past can be deduced from studies. Although these might have never been placed in the context where this study is pointing, items would be adapted to it to entertain the study. On the other hand, a construct that was never tested in its entirety and whenever items of such construct were only tested sparsely would create a vacuum; hence, an ‘instrument’ must be developed to be tested.

Given the diversity of this study, a partial exploratory design was required to identify the key FoMO constructs and develop an instrument. Ultimately, the intention was that the newly constructed instrument and the deduced items from established studies, adapted to the context, are adjoined together, formulating one whole instrument testing AVM and TPB, along with FoMO. The qualitative findings acquired from the FoMO study were included in a quantitative study along with AVM and TPB items (Edmonds & Kennedy, 2017). When a mixed method approach is used, employing both qualitative and quantitative methods, extreme philosophical assumptions must be regarded, as they would be beneficial for the study to reap the most out of them with the correct logical lenses. A spectrum of various beliefs on the nature of reality can be summarised by two extreme philosophical paradigms: positivist and constructivist (Weber, 2004).

Positivism assumes that the world exists externally from oneself. As it is external, it is objective and accurate, independent of oneself, and provides pure data measured using objective methods rather than subjective ones (Weber, 2004). For positivism, quantitative findings are what they are, as they give researchers information about a representative population sample, with their traits and predilections. Hence, a realist hypothesis would quench an ontological question because regardless of how complicated a subject is, the reality was there before the researchers tried to unfold it, utterly unrelated to them and may be

comprehensible when seen in terms of unchanging and consistent rules (Figueiredo & Cunha, 2007). From an epistemological perspective, positivists posit a deterministic hypothesis, as knowledge is acquired with absolute certainty by investigating the root causes of all the issues encountered (Easterby-Smith et al., 2015).

Constructivists explore how individuals understand their social environment and construct knowledge based on their empirical research; they do not passively ingest information (Cunliffe, 2010). They believe that 'construction' is a socially affected, personal cognitive process, which is subjective in nature. Qualitative findings are useful for constructivism because researchers would explore an area in which theories are either unknown or obscure. Based on the findings, researchers would expand the knowledge that was not previously accessible and test it with other methods to understand a phenomenon (Easterby-Smith et al., 2015). Therefore, a phenomenological hypothesis is proposed for an ontological question, as for constructivists, knowledge is continuously being modified and enriched due to the flow of information acquired through communication with various subjects (Figueiredo & Cunha, 2007), the notion of anti-realism or relativism. This knowledge then carves the way to a final cause or desired outcome, where, from an epistemological perspective, this is recognised as a teleological perspective (Figueiredo & Cunha, 2007).

For this study, a constructivist approach was employed for the qualitative part of the study, where the collection of pieces was required to construct a reality using a set of items for the FoMO instrument. This instrument was placed along with AVM and TPB constructs. For AVM, in the pre-questionnaire phase, an expedition for the key influencing factors of advertising value and attitude using an SLR resulted in a list of constructs and respective items. The TPB constructs resulted from desk research provided an abundance of studies applying this theory.

The quantitative part of this study - running a questionnaire in Malta - takes a more positivist approach. The questionnaire was rolled out nationally and was open to all residents in Malta. Hence, using a questionnaire, the researcher acts like a fly on the wall, observing and analysing the population's perspectives and views on a particular subject. Using this philosophy, a study adopts items from other literature and adapts them to its context, rendering the study deductive (Crowther & Lancaster, 2008).

Given that the study commenced with a constructivist process, where a qualitative method was employed to help in assembling the constructs of the FoMO part, and then moved on to test not only the items of this construct but also the other items of the AVM and TPB models, Creswell and Plano Clark (2018) suggest that such a study then shifts to a post-positivist approach and not a positivist approach for the quantitative phase.

Krauss (2005) argues that post-positivism has the rudiments of constructivism and positivism. He argues that the post-positivist philosophy constitutes that not everything is entirely knowable. He classifies post-positivism as realism, critical realism, and neo-post-positivism. This philosophy seeks to resolve the two extremities – interpretivism/constructivism and positivism by retaining some of their strengths and diluting their limitations (Howell, 2013). Post-positivism accepts the objective reality of positivists, but unlike positivism, it acknowledges that science has mistakes; it is not perfect, as positivists insist (Krauss, 2005). Research confirming a theory does not necessarily prove it but only adds to the evidence supporting it (Willis, 2007). Therefore, all theories are revisable; they reject absolute truth.

Hence, ontologically, reality is out there, but the researcher's ability to capture it accurately may have limits (Howell, 2013). On the other hand, epistemologically, a researcher constructs an approximation of the subject of study yet never achieves a complete and absolute depiction of all its aspects (Howell, 2013). The researcher serves as a tool for data collection rather than possessing omniscient knowledge of the subject. Post-positivism was selected over the pragmatic approach, as the latter may not always be considered suitable due to its emphasis on practicality and utility over theoretical considerations. Mixed methods research often involves integrating qualitative and quantitative methods to understand a phenomenon comprehensively (Adu et al., 2022). This requires careful consideration of how different research paradigms interact and complement each other. Hence, while pragmatism may offer flexibility and adaptability in research design and methodology, a post-positivist approach is often favoured in mixed methods research due to its emphasis on systematic inquiry, rigorous methodology, empirical observation, theoretical coherence and the testing of hypotheses (Adu et al., 2022; Creswell & Plano Clark, 2018).

Hence, this study concocts these philosophies and finds the post-positivist approach to be the mid-point philosophy among them (Creswell & Plano Clark, 2018). Given the nuances

of the study and personal leanings, biases were countered from the outset. To mitigate potential biases, three approaches were adopted, employing the same methods used by Said (2014). First, the study was structured based on numerous studies that used the two main models (AVM & TPB). Items were matched with different studies to account for their validity and reliability. The items used for the FoMO construct were also selected using the same methodology as well, after undergoing a focus group and later confirmed (Lamba, 2021). Second, every stage of the study was challenged by the author and a panel of professionals for independent adjudication. In particular, FoMO items for the construct were discussed extensively using a choice mechanism. A professional panel scrutinised the established models' items. Furthermore, these were analysed by an independent translation team to challenge them even from a linguistic dimension. Third, a process of reflexivity was embraced. This process was imperative, given my beliefs in the subject and context, and having two children of the same age as the targeted participants being tested. Hence, a continuous examination of the judgements and beliefs, both interpersonal and intrapersonal, was conducted (Smith & Noble, 2014). A diary was kept to record the study flow, with all the decisions, challenges, and changes. It was done to ensure the least influence during different stages of the research process.

3.1.3 Theory Development, Methodological Stance, and Strategy

Although prior work has examined influencing factors in an advertising value and attitude context, these studies were limited to either generic or specific types of online advertising. No studies were found examining the influencing factors, specifically with retargeted advertising. This aspect posed a feat where Ducoffe's (1995, 1996) AVM was placed under the spotlight to examine it closely and understand how it has been extended in the past 25 years. To understand this novel phenomenon (retargeted advertisements) that proliferated in the online environment, a search for past studies on similar phenomena was required to analyse them and identify all the factors that influenced online advertising and how these acted as precursors to advertising value and attitude towards online advertising (Reed, 2005; Saunders et al., 2019). Hence, it was thought that the best approach to nourish the AVM part of the conceptual model was to conduct a scoping study followed by an SLR. The SLR was conducted using rigorous and appropriate measures to acquire relevant findings. A protocol was registered, where all the inclusion and exclusion criteria were

detailed; a professional reporting checklist was used (PRISMA) for transparency; additional records from other sources were collected; and bias prevention was fortified in all stages of the SLR (Drucker et al., 2016). From this SLR, it was envisaged that factors would be extrapolated so these will be used as the influencing constructs of retargeted advertising value and as a predictor of young people's attitudes towards retargeted advertisements. After conducting this SLR, it transpired that a critical lacuna in the knowledge exists vis-à-vis the academic literature on retargeted advertisements.

A major area of the model that has never been tested together was the FoMO section. Only a few studies have tapped into the intersection of the marketing and psychological sphere; sporadic studies were found where they focused only on specific areas rather than tackling FoMO as a whole construct with various branches (e.g., Jang et al., 2015; Ku et al., 2012). Hence, a qualitative approach was needed to examine this phenomenon, and themes extracted from the study could be further explored through other studies. A focus group was chosen as a research tool, being mostly used to generate items and construct a scale (Nassar-McMillan et al., 2010). In this part of the study, the requirements were overt and specified directly to retargeted advertisements and FoMO appeals. Hence, to develop items for this part of the model, various questions were asked to decipher a thematic approach. The main interests were about the customisation of advertisements, the drive to click on retargeted advertisements; young people's feelings about scarcity and urgency messages in marketing and their reactions when their peers buy products before them and brag about the purchase (De Battista et al., 2020b). The themes drawn from two focus group discussions conducted among young people aged between 13 and 24 were analysed and dissected into smaller parts to examine them scrupulously. The four themes were corroborated with Lamba's (2021) study at a later stage. It was found that these FoMO themes, namely scarcity, urgency, social proof, and loss aversion, were used in separate studies focusing on diverse parameters, not necessarily pronounced as FoMO, and in isolation. Therefore, items were adopted from these studies and adapted to benefit the respective constructs within the model. Rather than developing a scale from scratch, with high stakes in validity and reliability, a model was structured by tested items, adapted in accordance with retargeted advertisements, and addressed to the young generation.

Given the numerous studies applying the TPB in different contexts, this part of the model was the smoothest to infuse into the conceptual model. Extensive desk research was

sufficient in facilitating the review of relevant academic literature that helped understand the present depth of the field. A comprehensive collection of peer-reviewed studies was compiled, employing a snowball technique by exploring references to extend studies. This approach aimed to grasp the myriad permutations of the TPB and its application across diverse contexts. However, very few studies were found that were specifically used in an impersonal advertising context with all the TPB constructs involved (e.g., Cheung & To, 2017; Sanne & Wiese, 2018). This section employed a deductive approach, where literature was investigated, and items were adopted from various studies (e.g., Han et al., 2010; Ullah et al., 2021). When the items were compared with others in various studies in the broader spectrum, almost all the studies adopted the same items for their scales and modified them according to their respective subjects. Particular attention was given to the use of intention in this field of study. Past research used intention for various scopes, particularly for purchasing (e.g., Akar & Dalgic, 2018), whereas in this study, the intention was aimed at the behavioural intention of engaging and click-through (e.g., Aiolfi et al., 2021; Gauzente, 2010) on retargeted advertisements. Various studies for both FoMO and TPB were not specifically investigating young people, yet these were still included for a more holistic approach in these fields.

A 'partial' exploratory sequential mixed method was used for this study. This technique commences with a qualitative research phase, where researchers investigate the viewpoints and standpoints of participants towards a subject (Creswell & Creswell, 2018). The knowledge gleaned from the data is then utilised to construct a quantitative model. In this stage, an instrument is developed that befits the studied sample, including all the necessary variables. A qualitative method was conducted for the FoMO part of the model. On the other hand, the SLR led to identify the key influencing factors that the items from their instruments were used for AVM. Furthermore, the items for all the TPB constructs were deduced from the literature. Additionally, the items for the themes that were derived from the focus groups were adopted from existing academic literature. Hence, this study required a multi-step process (Creswell & Creswell, 2018).

All this preparation culminated in a survey design, as with a quantitative approach, it was pivotal to lay the foundations for the compound research and gather information not collected in this field of study and with the spectrum that ensued. The accuracy and validity of the survey research were vital, and it took several months to design, test and modify the

instrument and ultimately confirm the correct survey version for the study. The instrument was built on existing scales created or used by different researchers in their studies but swayed according to the research subject, the target audience, and the required information. It was also established that relevant and suitable inferences could be concluded from the data of instruments, with adequate reliability (Creswell & Creswell, 2018). Figure 1.2 illustrates the complete methodological research flow employed in this study.

3.1.4 Strengths and Challenges

A major strength, but yet a challenge, of an exploratory sequential design stems from the sequence of the method itself. When there is no precise study for a particular construct, then the assembly of that construct is imperative to test it quantitatively. Hence, the study requires a stretch of time to prepare and implement, but on the other hand, it is very straightforward in its design, reporting and analysis (McBride et al., 2019). In this study, the focus group, from planning to execution, and the analysis spanned almost ten months, while the questionnaire extended to more than 15 months.

The emergent part of the research is another strength, where, in the case of this study, it is the FoMO section for an externally initiated context. These were never assembled and tested together, and by means of the focus group, part of the survey could be constructed (Creswell & Plano Clark, 2018). A challenge attributed to this part is the validity and reliability of the items used in the instrument (McBride et al., 2019). In this study, the items already existed and were mostly tested before, but not en masse as they have been applied in this study. Hence, the validity and reliability were factored in.

On the other hand, the ethics part of the process posed a major challenge, given that this was required twice (for the focus group and questionnaire). In this study, it was even arduous considering that young people, especially minors, were involved, as these are perceived as vulnerable in such studies. The ethical procedures of these studies will be discussed in their respective sections of this chapter.

3.1.5 Conclusion

This introductory section provided an overview of the methodology, including the philosophical lens, theory development, methodological stance, strategy and respective strengths and challenges. The SLR will be discussed in the next section, with a particular note

on the scoping study executed at the outset, the purpose and the whole SLR procedure and how bias was consistently tackled for prevention with the respective limitations.

3.2 Scoping Study and Systematic Literature Review

3.2.1 Introduction

As the study is multi-disciplinary, predominantly in the marketing and psychology fields, a scoping study was conducted to comprehensively understand and identify the key concepts in the area and the theories that can aid in the research of the study area and map out the literature. This preliminary study led to a systematic literature review (SLR). It explored the influencing advertising factors that may affect young people's attitudes towards online advertising in general. This SLR was published in May 2021 in the *International Review of Management and Marketing* journal (De Battista et al., 2021a).

In this section, the preliminary scoping study is discussed. Following this, an analysis of the purpose and importance of the SLR is conducted. Then, the SLR procedure will be reviewed in detail, followed by the limitations of the method and a conclusion.

3.2.2 Scoping Study

Scoping studies have become a critical feature of research and an approach for different fields and disciplines. Sucharew and Macaluso (2019) state that the objective of scoping studies is to be flexible, with a broad research question, where the outcome should be a solid overview with a narrative that one could identify the fundamental concepts that form the foundation of the SLR. This step is generally required before performing an SLR to understand the breadth of the field better.

For this study, the Arksey and O'Malley (2005) framework was followed, with five different stages:

- a) A research question was identified - from the outset, a question was set, and this was the point of departure in this study. Relevant objectives were extrapolated to ease the strategy path taken in this study;
- b) The pertinent studies were identified - in this phase, a thorough search was done in different electronic databases, including the University of Malta's online library - HyDi, Google Scholar, EBSCO, ProQuest, Elsevier, and Taylor and Francis. Reference lists of academic research were scanned to have more expanding research;
- c) Choosing relevant studies - a selection process was conducted to remove the studies that were not relevant or did not match the criteria of the respective objectives;

- d) Data charting - the papers were sorted in a way that could be “charted”; placed in an order where themes could be deduced. Using spreadsheets, the papers were plotted into columns, providing a global study picture;
- e) Reporting the results - Finally, after collating all the relevant papers of the study, where final key strings were elicited, these were reported as a result and used as the foundation for the SLR.

The scoping study was conducted to explore and identify the influencing factors. As myriad academic studies tested different factors in different contexts with diverse populations, an SLR was required to be performed for the influencing factors. After exploring and outlining the research area, categorising the search strings and keywords, and creating a series of categories, the preliminary research question for the influencing factors was refined and embarked on an SLR.

3.2.3 Systematic Literature Review Purpose and Procedure

An SLR is essential as it assists the researcher in responding to critical questions rigorously and orderly (Davis et al., 2009). It is also essential as it augments the validity, reliability, and quality of the reviews while making the review replicable as it is conducted systematically. According to Xiao and Watson (2019), a research question should be set so that the whole SLR process encompasses the literature search, data extraction, synthesis, analysis, and reporting. Therefore, SLRs seek to identify pertinent academic papers, extract the required information, analyse, and synthesise the results to acquire a deeper understanding of the subject matter (van Dinter et al., 2021).

This SLR aimed to explore the influencing advertising factors that may affect young people’s attitudes towards online advertising in preparation for constructing part of the theoretical framework, the extended version of the AVM.

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist was used (Moher et al., 2009) as the backbone of the SLR. PRISMA comprises four major stages: the identification, screening, eligibility, and inclusion phases (Fig. 3.1). It also includes a 27-item checklist. This approach was selected as it is one of the most cited

guidelines across all academia. Most of today's SLRs are adhering to such reporting guidelines. It also contributes to the optimal transparency required for the study and boosts the scientific and systematic approach of the review.

During the first stage, the works eligible for this review were identified and determined. The academic papers for this study were collected from scholarly articles published between January 1994 and December 2020. It was decided to include papers published from 1994 as the first online advertisement featured during the same year. Academic literature was collected till December 2020. The time span was long enough to notice changes, monitor any paradigm shifts from the beginning to the end, and recognise how online advertisements influenced young people for almost two and a half decades.

At first, when the search strings were run using the primary terms in the research question 'attitude', 'advertising' and 'adolescents', it was observed that there were studies that were not detected; hence, they were left entirely out. Consequently, an open-string strategy was employed to capture all papers and minimise the risk of leaving anything out. Furthermore, different terms symbolising young people were used, including "young adult/s, adolescent/s, teen/s and teenager/s". The keywords used in the search were set in eight batches (Table 3.1).

The search for papers was conducted using four leading online databases that house different journals (Xiao & Watson, 2019). Filters were used to search everywhere (not only the titles and abstracts) and interested only in peer-reviewed articles in English. The four databases were:

- a) Taylor and Francis Social Science, and Humanities Library with one database, where 2,848 articles were collected;
- b) EBSCO with 21 different databases, in which 2,252 articles were accessed;
- c) ProQuest with 34 different databases and 7,245 articles were collected, and;
- d) SpringerLink with one database and 3,953 articles were collected.

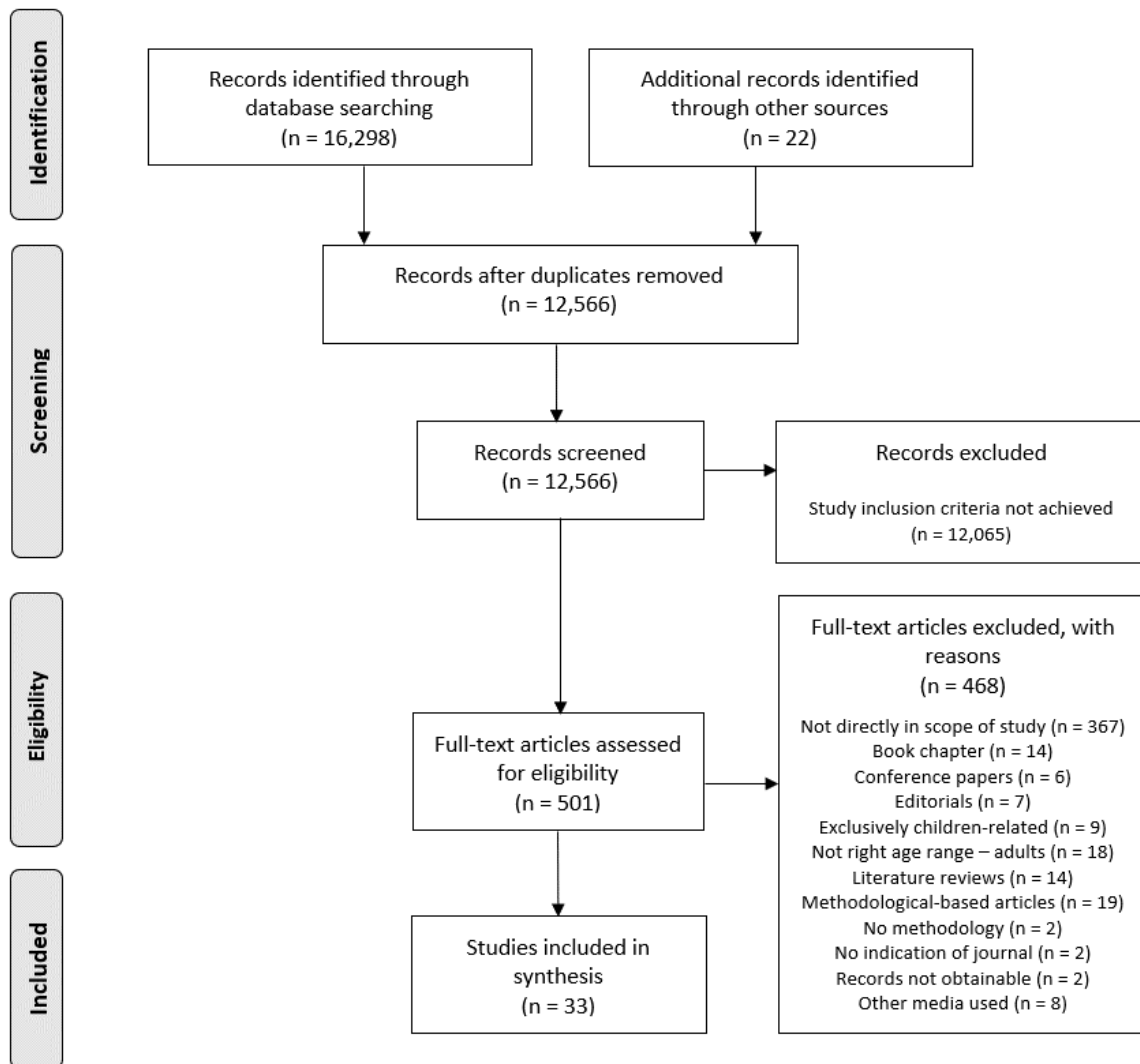


Figure 3.1: PRISMA flowchart for SLR (Source: De Battista et al., 2021a; Moher et al., 2009)

An additional 22 articles were included, using online prompts set in scholar.google.com, academia.edu and researchgate.net. A notification was received anytime an academic paper of interest was submitted or published in any of these databases during the SLR execution.

After collecting all the articles, the second stage involved uploading these articles onto a system that assists in conducting an SLR. Rayyan - Qatar Computing Research Institute (QCRI) system, designed by Ouzzani et al. (2016), was employed to screen the articles in detail. First, all the articles were placed in this system, and then the titles of articles and abstracts were screened to check their validity and relevance. This task was laborious, where 16,320 articles were filtered, of which 3,754 were duplicates. Many studies were medical-related, written in a foreign language, editorials, or focused on other areas not aligned with

the study. When all the wrong study area papers were excluded, 501 articles were classified as relevant to the study and passed on for eligibility screening.

Table 3.1: List of search strings

Search Strings
(retargeting OR retargeted) AND (ad OR ads OR advertisement OR advertisements OR advertising OR advert OR adverts) AND (adolescent OR adolescents OR teen OR teens OR teenager OR teenagers OR "young adult" OR "young adults" OR "young people")
(remarketing OR targeted) AND (ad OR ads OR advertisement OR advertisements OR advertising OR advert OR adverts) AND (adolescent OR adolescents OR teen OR teens OR teenager OR teenagers OR "young adult" OR "young adults" OR "young people")
("optimi?ed ad" OR "optimi?ed ads" OR "optimi?ed advertisement" OR "optimi?ed advertisements" OR "optimi?ed advertising" OR "optimi?ed advert" OR "optimi?ed adverts" OR "ad optimi?ation" OR "advert optimi?ation" OR "advertisement optimi?ation" OR "advertising optimi?ation") AND (adolescent OR adolescents OR teen OR teens OR teenager OR teenagers OR "young adult" OR "young adults" OR "young people")
("repeated ad" OR "repeated ads" OR "repeated advertisement" OR "repeated advertisements" OR "repeated advertising" OR "repeated advert" OR "repeated adverts") AND (adolescent OR adolescents OR teen OR teens OR teenager OR teenagers OR "young adult" OR "young adults" OR "young people")
("internet ad" OR "internet ads" OR "internet advertisement" OR "internet advertisements" OR "internet advertising" OR "internet advert" OR "internet adverts") AND (adolescent OR adolescents OR teen OR teens OR teenager OR teenagers OR "young adult" OR "young adults" OR "young people")
("digital ad" OR "digital ads" OR "digital advertisement" OR "digital advertisements" OR "digital advertising" OR "digital advert" OR "digital adverts" OR "digital marketing") AND (adolescent OR adolescents OR teen OR teens OR teenager OR teenagers OR "young adult" OR "young adults" OR "young people")
("online ad" OR "online ads" OR "online advertisement" OR "online advertisements" OR "online advertising" OR "online advert" OR "online adverts" OR "online marketing") AND (adolescent OR adolescents OR teen OR teens OR teenager OR teenagers OR "young adult" OR "young adults" OR "young people")
("social media ad" OR "social media ads" OR "social media advertisement" OR "social media advertisements" OR "social media advertising" OR "social media advert" OR "social media adverts" OR "social media marketing" OR "social media marketing" OR "social network ad" OR "social network ads" OR "social network advertisement" OR "social network advertisements" OR "social network advertising" OR "social network advert" OR "social network adverts" OR "social network marketing") AND (adolescent OR adolescents OR teen OR teens OR teenager OR teenagers OR "young adult" OR "young adults" OR "young people")

All eligible articles (n = 501) were read and analysed during the third stage. This was another massive task, where, using an exclusion criterion shown in Figure 3.1, 468 articles were excluded. Apart from 367 studies that were removed from the list as they were not directly in the scope of the study, other papers were excluded; book chapters and literature reviews (n = 14), conference papers (n = 6), editorial columns (n = 7), adult-centred studies (n = 18) and children-related studies (n = 9), literature reviews and meta-analysis studies (n = 14), methodological-based papers (n = 19) or papers with no methodology or no data

collection included (n = 2), articles without any journal or publisher indication (n = 2), and papers which focused on other platforms than online (n = 8). Two other articles were omitted as these were not available and the respective authors did not reply after several attempts.

Hence, 33 studies were selected as they met the inclusion criteria (Table 3.2) and examined using Mendeley Desktop vers. 1.19.4, as a reference management software. Ducoffe's (1995; 1996) AVM was applied as a theoretical foundation, and all chosen articles had to have at least two factors for comparison purposes. Most of the studies established their foundation on Ducoffe's AVM. Since several articles did not focus only on young people, these were included only on the basis that they accounted for the young people bracket for more than 60.0% of the sample in the whole study, with the parameter stretched to include individuals younger than 35 years as the maximum age accepted by the United Nations (UN; 2013) and referred to as youth, and according to early adulthood as depicted by Medley (1980). No article involved exclusively the exact whole age bracket of young people. This specific inclusion criteria were used only for the SLR.

The final stage of the process was the data extraction and synthesis of all selected articles, including the writing part of the SLR. The qualitative analytical instrument NVivo™ v.12 Pro (QSR, 2020) was used for this part, as it is a sublime tool for managing, organising, and analysing documents. Studies were analysed rigorously and tagged according to factor, gender and age, and type of advertisements. Although the academic studies that were searched for dated back to 1994, Ducoffe (1995) was the first valid study that was included. This study focused on advertisements in general, and not online advertising in particular; this was obviously included in the study, given that it was the pioneering study that initiated the AVM.

These studies were collected from 26 different journals. As expected, the journals pertain to different disciplines since the study is multidisciplinary and subsets marketing, psychology, computer sciences, and social behaviour (Table 3.3). There were four journals from which two papers were retrieved, and one journal with four peer-reviewed articles was included in the study. The journals included in this study ranged from the International Review of Management and Marketing to Computers in Human Behaviour Journal. The inclusion phase used articles from Sustainability, Social Behaviour and Personality, Vision, and an English-written study from a Portuguese journal.

Table 3.2: List of selected academic studies (Source: De Battista et al., 2021a)

Author(s)	Study Title	Country	Researched Platform	Research Method	Sample Size	Age (Sample)	Gender (Female %age)	Factors Affecting Attitude
Ducoffe (1995)	How Consumers Assess the Value of Advertising	USA	Advertisement	Mall-Intercept Survey	477	General	N/A	Informativeness / Deceptiveness / Entertainment / Irritation
Ducoffe (1996)	Advertising Value and Advertising on the Web	USA	Web Advertising	Survey	318	Mage = 32	29%	Informativeness / Entertainment / Irritation
Brackett and Carr (2001)	Cyberspace Advertising vs. Other Media Consumer vs. Mature Student Attitudes	USA	Web Advertising	Survey	421	Students	47%	Informativeness / Entertainment / Irritation / Credibility
An and Kim (2008)	A First Investigation into the Cross-Cultural Perceptions of Internet Advertising: A Comparison of Korean and American Attitudes	South Korea / USA	Internet Advertising	Self-Administered Survey	200 (Korea) 218 (USA)	Mage = 21	54% / 59%	Informativeness / Entertainment / Irritation (Offensiveness) / Trustworthiness
Wang et al. (2009)	Examining Beliefs and Attitudes Toward Online Advertising Among Chinese Consumers	China	Online Advertising	Questionnaire	202	18 - 25	78%	Entertainment / Information Seeking / Credibility / Value Corruption / Economy
Wang and Sun (2010)	Examining the Role of Beliefs and Attitudes in Online Advertising: A Comparison Between the USA and Romania	USA / Romania	Online Advertising	Questionnaire	196 (USA) 381 (Romania)	Students	45% / 50%	Entertainment / Information / Credibility / Value Corruption / Economy
Baek and Morimoto (2012)	Stay Away from Me: Examining the Determinants of Consumer Avoidance of Personalized Advertising	USA	Personalised Advertising (Email)	Self-Administered Survey	442	Mage = 20	73%	Irritation / Personalisation

Cardoso and Cardoso (2012)	Adolescents' Attitudes Toward Internet Advertising	Portugal	Internet Advertising	Self-Administered Survey	220	13 - 17	62%	Information / Entertainment / Trustworthiness / Irritation
Logan et al. (2012)	Facebook Versus Television: Advertising Value Perceptions Among Females	USA	Facebook & TV Advertising	Online Questionnaire	259	12 - 30	100%	Entertainment / Informativeness / Irritation
Ching et al. (2013)	Narrative Online Advertising: Identification and Its Effects on Attitude Toward a Product	Taiwan	Online Advertising	Online Questionnaire	816	<20 - 30 (92%)	53%	Interactivity / Vividness / Entertainment / Self-referencing
Saadeghvaziri et al. (2013)	Web Advertising: Assessing Beliefs, Attitudes, Purchase Intention and Behavioral Responses	Iran	Web Advertising	Questionnaire	416	< 25 (83%)	53%	Informative / Hedonic (Entertaining) / Falsity (Misleading) / Irritation / Value Corruption / Materialism / Social Role
Saxena and Khanna (2013)	Advertising on Social Network Sites: A Structural Equation Modelling Approach	India	Social Media Advertising	Online Questionnaire	189	Students	29%	Information / Entertainment / Irritation
Dao et al. (2014)	Social Media Advertising Value: The Case of Transitional Economies in Southeast Asia	Vietnam	Social Media Advertising	Questionnaire x 2	295 (Both studies)	18 - 22	70% / 60%	Informativeness / Entertainment / Credibility
Kim and Han (2014)	Why Smartphone Advertising Attracts Customers: A Model of Web Advertising, Flow, And Personalization	South Korea	Mobile Advertising	Survey	256	<20 - 30 (82%)	71%	Information / Entertainment / Credibility / Incentives / Irritation / Personalisation
Amjad et al. (2015)	Examining Attitudes and Beliefs towards Online Advertising in Pakistan	Pakistan	Online Advertising	Questionnaire	280	18 - 40 (Predominantly 18-29)	35%	Entertainment / Information / Credibility / Economy / Value Corruption / Cultural Aspect / Ad Clutter Belief (Irritation) / Goal Impediment Belief

Celebi (2015)	How Do Motives Affect Attitudes and Behaviors Toward Internet Advertising and Facebook Advertising?	Turkey	Internet Advertising / Social Media Advertising	Questionnaire	140	21 - 23 (60%)	62%	Information / Entertainment / Interpersonal Utility / Invasiveness
Zha et al. (2015)	Advertising Value and Credibility Transfer: Attitude Toward Web Advertising and Online Information Acquisition	China	Web Advertising	Questionnaire	331	18 - 30 (85%)	48%	Informativeness / Entertainment / Credibility
Aktan et al. (2016)	Web Advertising Value and Students' Attitude Towards Web Advertising	Turkey	Web Advertising	Survey	413	18 - 22 (80%)	54%	Entertainment / Informativeness / Irritation / Credibility
Aydin (2016)	Attitudes Towards Digital Advertisements: Testing Differences Between Social Media Ads and Mobile Ads	Turkey	Social Media Advertising / Mobile Advertising	2 Questionnaires	489 / 281	1) <19 - 24 (88%) 2) <19 - 24 (74%)	59% / 51%	Informativeness / Entertainment / Credibility / Irritation
Dehghani et al. (2016)	Evaluating the Influence of YouTube Advertising for Attraction of Young Customers	Italy	Social Media Advertising	Questionnaire	315	Mage = 23	55%	Entertainment / Informativeness / Customisation (Personalisation) / Irritation
Kim et al. (2016)	To Click or Not to Click? Investigating Antecedents of Advertisement Clicking on Facebook	USA	Facebook Advertising	Online Survey	758	Mage = 21	64%	Informativeness / Irritation / Entertainment / Intensity of Usage
Lee and Hong (2016)	Predicting Positive User Responses to Social Media Advertising: The Roles of Emotional Appeal, Informativeness, and Creativity	South Korea	Social Media Advertising	Questionnaire	415	Mage = 24	37%	Emotional Appeal (Entertainment) / Informativeness / Creativity
Murillo et al. (2016)	The Advertising Value of Twitter Ads: A Study Among Mexican Millennials	Mexico	Social Media Advertising	Online Survey	630	15 - 24 (95%)	55%	Informativeness / Entertainment / Irritation / Credibility

Murillo (2017)	Attitudes Toward Mobile Search Ads: A Study Among Mexican Millennials	Mexico	Mobile Search Advertising	Paper Survey with Scenario Question	1215 / 315	17 - 24 (95%)	37%	Informativeness / Entertainment / Irritation / Credibility
Islam (2017)	Capturing Consumer Attitude Toward Mobile Advertising: An Empirical Investigation Among Different National Cultures	India / Korea / China	Mobile Advertising	Online / Offline Surveys	330	16 - 24 (60%)	38%	Entertainment / Informativeness / Credibility / Interactivity / Irritation / Cultural influences
Ariffin et al. (2018)	How Personal Beliefs Influence Consumer Attitude towards Online Advertising in Malaysia: To Trust or Not to Trust?	Malaysia	Online Advertising	Questionnaire	250	18 - 35 (83%)	52%	Interactivity / Entertainment / Informativeness / Irritation / Social Image / Trust
van der Goot et al. (2018)	Media Generations and Their Advertising Attitudes and Avoidance: A Six-Country Comparison	Germany / Spain / UK / USA / France / Netherlands	Various Advertisement modes incl. Online	Cross-National Survey	5784	17 - 81 (High %age 17-34 Net Generation)	43%	Informativeness / Entertainment / Trustworthiness / Intrusiveness / Irritation
Arora and Agarwal (2019)	Empirical Study on Perceived Value and Attitude of Millennials Towards Social Media Advertising: A Structural Equation Modelling Approach	India	Social Media Advertising	Self-Administered Questionnaire	478	18 - 23 (67%)	44%	Informativeness / Entertainment / Credibility / Incentives / Irritation / Personalisation
Daems et al. (2019)	The Effect of Ad Integration and Interactivity on Young Teenagers' Memory, Brand Attitude and Personal Data Sharing	Belgium	Online Advertising	Experiment / Questionnaire	576	11 - 14	47%	Integrated (Informative & Entertaining) / Interactivity
Deraz (2019)	Factors Contributing to Consumers' Assessment of Advertisement Value on Social Networking Sites: A Cross-Cultural Focus Group Study	India / Sweden	Social Media Advertising	Two Focus Groups	11	Mage = 29	33%/60 %	Informativeness / Entertainment / Credibility / Interactivity / Irritation / Motivation / Social Influence / Culture

Gaber et al. (2019)	Consumer Attitudes Towards Instagram Advertisements in Egypt: The Role of The Perceived Advertising Value and Personalization	Egypt	Instagram Advertising	Self-Administered Questionnaire	412	15 - 28 (67%)	63%	Informativeness / Entertainment / Credibility / Personalisation / Irritation
Duffett (2020)	The YouTube Marketing Communication Effect on Cognitive, Affective and Behavioural Attitudes among Generation Z Consumers	South Africa	YouTube Advertising	Self-Administered Questionnaire	3750	13 - 18	51%	Knowledge (Information) / Liking (Entertaining)
Mustafi and Hosain (2020)	The Role of Online Advertising on Purchase Intention of Smartphones: Mediating Effects of Flow Experience and Advertising Value	Bangladesh	Online Advertising	Questionnaire	281	<20 - 24 (95%)	25%	Informativeness / Irritation / Entertainment / Credibility / Incentives

Table 3.3: Number of articles per journal (Source: De Battista et al., 2021a)

Journal Name	Articles
Behaviour & Information Technology	1
Cogent Business & Management	1
Computers in Human Behavior	4
Direct Marketing: An International Journal	1
European Journal of Business and Management	1
Global Business and Management Research: An International Journal	1
International Journal of Advertising	2
International Journal of Information Management	1
International Journal of Research in Business Studies and Management	1
International Journal of Scientific & Engineering Research	1
International Marketing Review	1
International Review of Management and Marketing	1
Internet Research	1
Journal of Advertising	1
Journal of Advertising Research	2
Journal of Contemporary Marketing Science	1
Journal of Current Issues & Research in Advertising	1
Journal of Economic and Administrative Sciences	1
Journal of International Consumer Marketing	1
Journal of Internet Banking and Commerce	1
Journal of Research in Interactive Marketing	2
Review of Business Management	1
Revista Portuguesa de Marketing	1
Social Behavior and Personality	1
Sustainability	1
Vision	2

The studies included in the SLR were conducted globally. Asia accounted for 45.0% of the studies, with North America having 18.0%. Two investigations were undertaken with African customers and two with South American consumers. There were three unique research throughout Europe. Five transnational investigations were included, with four involving two continents: one in Asia and North America (An & Kim, 2008), another in Europe and North America (van der Goot et al., 2018), and two in Asia and Europe (Deraz, 2019; Wang & Sun, 2010). Another research was undertaken in Asia, but this time in India, South Korea, and China (Islam, 2017).

3.2.4 Bias Prevention

Rigour was an essential virtue during the execution of all SLR steps, besides the consistency in the construction and reporting of the evaluating criteria, to ensure the reliability and validity of the findings (Denyer & Tranfield, 2009). A significant trait of an SLR is that the set of objectives and criteria make this methodology “explicit” and “reproducible” (Higgins & Green, 2008, p. 6). All the studies were chosen from established

platforms containing peer-reviewed journals, which included all studies; therefore, the randomisation and objectivity in the study helped to avoid selection bias, as this would have hampered the whole process. The inclusion and exclusion criteria were deliberated with both supervisors to confirm that they were appropriately construed to reduce inclusion criteria bias (Drucker et al., 2016).

Another bias which is pervasive in an SLR environment is language bias. It occurs when studies published in a foreign language are placed in the exclusion criteria. This bias was difficult to prevent as papers that were not in the native language were omitted due to translation errors or oversights. This factor has been included in the method limitations. Nonetheless, a Portuguese paper was included in the SLR as it was written in English.

Different researchers have diverse definitions and perspectives of grey literature, although according to Higgins and Green (2008), it mainly refers to studies not published in academic journals or books. Although studies suggest that researchers examine grey literature for necessary information, these may be the subject of bias (McDonagh et al., 2013). For this SLR, all literature considered 'grey' was read but not included to keep the study sound (Adams et al., 2017).

Furthermore, as this SLR was published, it underwent a blind peer-review by the journal reviewers; hence, an additional layer of scrutiny for this bias and selector bias was evoked (Durach et al., 2017). An effort was made not to fall into publication bias, as even studies with predominantly negative results were included (e.g., Aydin, 2016).

The coordination of the scoping study and use of an open-string strategy aided in collecting all relevant papers and diminishing within-study bias. For this scope, multiple terms were also utilised (e.g., teen, teens, teenager, teenagers) to detect all academic literature that may have opted for one term and not another. The scrutinisation of the journal reviewers when this SLR paper was published further helped decrease this bias (Durach et al., 2017). It is essential to mention that although a scoping study was conducted before the SLR, the independence of thought throughout the study was cultivated so as not to get entrapped in the expectancy bias. It was crucial that even though studies pointed mainly in the same direction, no pre-determined conceptions were formed, not to ignore or neglect any information that might differ from these notions.

Finally, attention was given to minimising citation bias by including all papers according to the inclusion criteria. There was no over-reliance on heavily cited articles or academic literature published in high-impact factor journals. The inclusion criteria were extended to include less cited and less well-known journals, provided they were accepted and included in one of the four chosen established databases.

3.2.5 Method Limitations

This research method comes with its limitations. First, as already mentioned in the previous section, only published peer-reviewed literature was included and examined, and this factor may lead to the exclusion of any pertinent and valuable grey literature and any other trends in an emergent, rapidly changing environment. Moreover, conference papers and chapters in edited books were not included due to the possibility of a lack of strict peer-reviewing. Hence, some publication bias may have occurred due to the over-reliance on academic journals' material.

Second, although the four databases used in this study were chosen after long considerations and discussions with the supervisors and established academics, the quality and reliability of the studies can vary. The choice of four databases could have automatically excluded papers only available on other databases. An independent search was conducted, and additional studies were found and included as potential entries for review. On the other hand, the studies needed to be peer-reviewed and predominantly target young people; therefore, if they fell within the inclusion criteria, these were considered without prejudice. This point may have posed a threat to the study due to inadequate reporting, methodological limitations, or the possibility of biases, which may have affected the overall validity of the SLR conclusions. As noted in the previous section, it was important for this SLR to reduce citation bias to a minimum. Consequently, this limitation stems from the prevention of such bias.

Third, due to the different dynamics of the studied theory, different academics employed various ways to tackle it, including some inconsistent terminology used in the topic area. Hence, some studies fused other constructs as precursors or surrogates as an extension to the theory. Other studies changed some constructs to reflect their study and context. These may have affected the homogeneity of the studies. Nonetheless, all the studies were still included in the SLR as it involved two or more factors that were included in the survey.

Fourth, while academic papers published after the cut-off date were considered and included, a complete SLR run was not conducted after the official one. The SLR procedure is a laborious and time-consuming process. Although much effort was made to acquire studies issued after the cut-off date, there might have been instances where the older or most recent papers were inadvertently excluded from this study. Throughout the study, all efforts were made to include papers published within the timeframe of the SLR that were not included and those published afterwards.

Finally, academic literature written in languages other than English was excluded. This factor could have made seminal papers in their respective languages not considered. However, papers were included if the abstract was available in both English and a foreign language, with the remaining content being in English (e.g., Portuguese study - Cardoso & Cardoso, 2012). Nonetheless, the omission of foreign academic literature could have prejudiced the findings.

Even though the SLR was conducted until December 2020, peer-reviewed articles released after that date were retrieved every six months to keep the study up to date. Moreover, any relevant papers published before and after conducting the SLR that either met the inclusion criteria or were deemed fit for this study but were not part of the selected databases were also referred to in the literature review. An exception was made for Cvirka et al.'s (2022) study, where 51.0% of the sample comprised young adults under 35. Despite this variation, the study was deemed relevant due to its novelty and proximity to my research, warranting an exception and inclusion for comparative purposes.

3.2.6 Conclusion

The SLR was necessary for this study, as apart from collecting and collating different studies depicting influencing factors, it provided a comprehensive overview of the factors and summarised and synthesised existing studies. Additionally, it assisted in making an informed decision of how the AVM for retargeted advertisements should be constructed while helping to identify research gaps in the literature. The following section focuses on the focus groups conducted for the FoMO section of the conceptual model.

3.3 Focus Groups

3.3.1 Introduction

In this methodology section, attention is shifted to the qualitative method employed in the study. Initially, the focus group will be examined as a data collection method. This part will be followed by a thorough description of the design used for this tool. The pilot study, which was conducted to refine the open-ended questions used in the interviews, will be discussed. Two critical steps in the study are the ethical considerations taken for the tool and the required approval; these two are reviewed extensively. The subsequent part of this section is the sampling method and procedure used for the focus groups, followed by the method limitations. Finally, a conclusion for this section is provided.

3.3.2 Data Collection Process: Focus Group

Focus groups have been used for different purposes in the social sciences for decades. This tool is widely employed as a formidable initial phase in an exploratory sequential mixed-method approach (Galliot & Graham, 2016). It is often used in preparation for a quantitative study, as was the case in this study. The focus group was utilised to explore a part of a research survey discussed in the following section. It is a qualitative research method, set as an interview session, where a researcher holds a moderated interaction with a group of people to elicit personal experiences, perspectives, perceptions, and diverse attitudes (Calder, 1977; Morgan, 1997). Focus groups are “in-depth group interviews employing relatively homogenous groups to provide information around topics specified by the researchers” (Hughes & DuMont, 1993, p. 776). In “The Greenwood Dictionary of Education”, Collins and O’Brien (2003) state that conducting a focus group aims to gain valuable insights and perspectives on the topic being discussed.

Focus groups were chosen over alternative qualitative methods, such as in-depth interviews or ethnographic methods, for three main reasons (Krueger & Casey, 2014). First, this was an exploratory study of young people’s beliefs, attitudes, and thoughts. A focus group is a sublime method to shed light on such social contexts because participants are interviewed within a group and share first-hand behaviours and viewpoints. Second, group interaction was integral to encouraging deeper insights and exposing a range of perspectives on a topic. Third, focus groups are the ideal method for idea generation in a relatively short period of time.

The quality and effectiveness of a focus group depend on several factors, such as the size of the group, its composition, the timing and duration of the session, the types of questions, the characteristics of the moderator, and the setting (Morgan, 1998; Then et al., 2014). If given attention, bias will be minimised, and findings will be more realistic.

Group size: Different studies suggest that a focus group should comprise six to eight interviewees (Creswell & Creswell, 2018; Júlia Leitão & Vergueiro, 2000) or up to eight (Catterall & Maclaran, 2006). Over recruitment is necessary, as encouraged by Nyumba et al. (2018). Then et al. (2014) argue that a smaller number of participants would be preferable for young people as they tend to lay back and not engage in the discussion. On the other hand, they suggest that it should not be too small, as the collected information would lack variety.

Group composition: Homogeneity is necessary (Hughes & DuMont, 1993), but it works on a case-by-case basis (Stewart & Shamdasani, 2014). In some instances, a mix of men and women would be befitting, provided that the investigative questions used in the focus group do not present any divergent beliefs or values. Age difference can hinder the process, as minors might feel pressured or intimidated by adults; hence it would be vital to group participants according to their age bracket for better chemistry and discussion (Adler et al., 2019).

Timing and duration: Timing is essential for participants, even so, when young people are involved. The time of day is crucial, as it may hinder the delivery of the focus group (Kennedy et al., 2001). For minors, the weekend would be the most befitting (Kennedy et al., 2001). For older groups, different days of the week may be appropriate as long as there is a general agreement (Adler et al., 2019). The duration is of utmost importance; given the children's short attention span, long focus group sessions may be rendered futile (Then et al., 2014). Hence, the rule of thumb is that the duration should be around one to two hours, depending on the group size, the number of questions and the subject being discussed (Nyumba et al., 2018), with 90 minutes being the best time (Catterall & Maclaran, 2006).

Type of questions: Preparing a guide for a more rigorous focus group session is recommended (Then et al., 2014). Adler et al. (2019) recommend a questioning strategy in the guide. The questions should be free from any bias, with no leading or biased wording. No questions that may elicit immediate agreement or disagreement or double-barrelled questions

should be posed - where a question addressing two or more issues is answered as one (Menold, 2020).

The moderator: This key role must be conducted with the utmost attention. According to Krueger and Casey (2014), the moderator acts as a facilitator, using the pre-defined interviewing guide to drive the session efficiently. They recommend that a moderator possess good qualities such as active listening, a friendly disposition, and an adaptable attitude throughout the whole session. A moderator probes questions to aid in focusing, encouraging participants to engage in the conversation, expand on various subjects, and discuss (Stewart & Shamdasani, 2014).

Setting: Nowadays, with the proliferation of the Internet and the upgrading of various communication platforms due to the COVID-19 pandemic, virtual scenarios have become more facilitating and comfortable. Usually, shy participants feel more engaged using an online communication platform rather than conducting a face-to-face interview in front of others (Adler et al., 2019). Nonetheless, the setup for each participant should be comfortable, away from distractions and other unnecessary disturbances (Then et al., 2014).

With focus groups, a researcher can collect a considerable amount of information within a short time (Adler et al., 2019), with participants grouped at the same time (Morgan, 1998) while allowing probing (Nyumba et al., 2018), and yielding rich information through the interaction between participants (Then et al., 2014). Like any other research tool, focus groups have their downsides. Participants can imitate another participant or be reluctant to oppose other participants' arguments; hence, social desirability bias may occur (Adler et al., 2019). Furthermore, participants may dominate the session, taking control or influencing the whole group (Then et al., 2014).

3.3.3 Focus Group Purpose

The commercial usage of FoMO in advertising and communications is continuously increasing and improving. Organisations are fusing FoMO in messages to boost their sales. Nonetheless, only very few studies ever tested FoMO for marketing appeal messages. Hence, the need to build a FoMO construct was required for this study. Initially, the first idea was to create a battery of items based on an exploratory focus group to have a solid background to generate a construct. This is widely used as a vital research technique to generate items for

scale development (Nassar-McMillan et al., 2010). The idea shifted as the study deepened, and the FoMO aspect was discussed with various researchers from the fields of psychology and sociology. It evolved from creating questionnaire items from scratch to adopting clusters of items from various studies that tested the constructs identified as part of FoMO but used in separate studies. This decision was mainly taken not to run into construct validity problems; what the instrument being created is actually measuring (Churchill, 1979), and content validity difficulties; the extent that an instrument is assessing all the facets and including a respective suitable battery of items for a construct that is being measured (Polit & Beck, 2003). Therefore, to have a more robust and suitable construct, items suggested in past studies pertaining to the respective constructs were eventually adopted and adapted after these focus groups.

Two focus groups were conducted to maximise the potential and get a broader spectrum of perspectives while adhering to age groupings. It aided in reaching the purpose of the focus groups, which was to garner more enriching information from two diverse groups of different age brackets.

3.3.4 The Interview Guide

The focus groups mainly intended to explore which areas can be part of FoMO in a marketing context. Additionally, a question was incorporated in the focus groups pertaining to the determinant factors of retargeted advertisements to collect valuable perspectives for analysis and interpretation. According to Then et al. (2014), it is imperative that researchers create a “moderator’s guide” so they can use it as a “map” during the focus group sessions (p. 18). Hence, for a more rigorous approach, a dedicated guide was developed so the moderator could have a plan for the focus group session to work seamlessly and be guided accordingly. A set of questions included in the guide was developed based on the research aims and objectives; these were set as part of a strategy (Adler et al., 2019). The purpose of the focus group was predefined. As Morgan (1998) suggests, the questions were only included as a guide and not set in stone. Nevertheless, strict considerations were respected as guided by the Faculty Research Ethics Committee (FREC) within the Faculty of Economics, Management and Accountancy (FEMA) of the University of Malta (this will be discussed in detail in the ethical considerations and approval section).

The guide was prepared in English, and composed of a welcoming part, followed by a declaration of anonymity and confidentiality. Then a brief overview of the study was provided, and ground rules were communicated to ensure smooth running sessions. The questioning part of the session kicked off with a warm-up by asking everyone to introduce themselves. Then, retargeted advertisements were defined so the participants were provided a context. This was imperative to avoid mixing retargeted advertisements with other online advertising tools. Five guiding open-ended questions were prepared for the participants, where probing could be possible to elicit more depth in answers. A concluding overarching question was placed, followed by debriefing.

3.3.5 Pilot Study

A pilot study was conducted to ensure no ambiguity exists in the list of questions and comprehensive interview guide. Questions were shared with a panel of three professionals, two from the marketing camp and one from psychology, to point out any issues of biased wording or double-barrelled bias. They were also instructed to scrutinise the whole interviewing guide and consent forms for any shortcomings or missing information. No significant issues were reported in the interview guide and questions.

Upon receiving confirmation, the guide and questions were pretested by some young people (Stewart & Shamdasani, 2014). For ethical purposes, the chosen participants were aged 16 and over. Four were invited to join a mini mock focus group session, where the interview guide was discussed with them. Afterwards, a debate was elicited on the questions posed to them by the researcher, acting as moderator. The wording and probing were analysed for any bias and ambiguity and if it triggered any interaction with the participants and elicited responses that led to a discussion (Stewart & Shamdasani, 2014).

The outcome of the mock session was satisfactory, where only minor changes were required in the interview guide that did not change any meaning or sense.

3.3.6 Ethical Considerations and Approval

A University of Malta Research Ethics Committee Application (URECA) form was duly filled out, and the relevant documents, the entire interview guide, information letter, and consent form were sent to FREC at FEMA. The committee replied with some recommendations. They requested that to maintain anonymity, cameras must be switched off

during sessions. Face-to-face interviews, potentially also on camera, could lead to other biases, for example, acquiescence bias, better known as agreement bias, where participants agree with a statement without really believing in it or a true reflection of their position, and social desirability bias, where participants hide their true opinions by providing answers that they feel will put them in good light. This was even more important in the case of minors.

The committee highlighted the words ‘fear’ and ‘anxiety’ that were included in the questions, as they felt they might influence young audiences in some way. Hence, these were changed, ensuring that the meaning of the questions was kept the same. It was pointed out that in the information letter, the parents or guardians should be given a clearer indication of what will be covered during the focus group session before they consent. A paragraph with a summarised version of the guiding questions was included. However, parents or guardians were urged not to disclose any information about the study with their children before the session (Appendix A).

Participants were notified beforehand that no incentives were given for their participation in the sessions. It was emphasised that the consent form should be collected before commencing the focus group. For the minors, the parents or guardians had to sign and consent for their children to participate (Appendix B). Young adults were provided with an information letter (Appendix C) via an email and were asked to sign a consent form before joining the session (Appendix D). FREC approved the whole interview guide (Appendix E) and green-lit the research when all changes were affected (Appendix F).

During the focus group sessions, the anonymity and confidentiality section was read; this was done before the recording started. Participants were informed that the discussion would be kept anonymous and in the strictest confidence. The recording had to be kept safely in a dedicated USB and under lock and key until transcribed. Once it was fully transcribed, the recording had to be destroyed. The transcribed file of the focus group would contain no names, details, or other information that can link the participant with any statements or declarations made during the focus group discussion. Participants were advised that for the sake of the other fellow participants and the study itself, they do not disclose what was said during the focus group with others who did not make part of the study, with the acceptance of their parents, in case of minors.

They were also informed that if they felt uncomfortable answering questions, they were free not to reply, without prejudice. Finally, they were asked if the recording could be started, and upon unanimous confirmation, the recording commenced.

No gifts were given to anyone, and so participation was strictly voluntary. Even though there was no deception involved in the study, after both group sessions, the participants were debriefed. Participants were provided with additional information about the study and given the opportunity to discuss their experiences, thoughts, and feelings related to their involvement in the study. For the debriefing part, the recording was stopped.

3.3.7 Sampling Method and Procedure

Morgan (1997) recommends that for focus groups to be effective, purposive sampling would be ideal since the interaction between the moderator and the participants is solely based on the aptitude and competence of the latter to share pertinent information related to the subject. The sampling method was blind and confidential, as the head of school selected the chosen participants in the case of minors, and pool-generated names in the case of young adults (Krueger & Casey, 2014). It was crucial for this study to eliminate any potential selection bias.

Morgan (1998) commends four main steps to be followed for a rigorous focus group tool: research design, data collection, analysis, and reporting. Stewart and Shamdasani (2014) suggest nine stages in designing and conducting the focus group. Ethical considerations and approval stages were added to these established stages. These stages were used to add rigour to the study and ensure that everything was adhered to efficiently and effectively. After formulating the research question for the focus group, the sampling frame was identified as part of the study, and the researcher acted as the moderator. A pilot study including a panel of professionals and pretesting was performed. Upon agreement, the interviewing guide was passed to FREC within FEMA for approval, participants were approached, and consent was collected. The two focus group sessions were conducted and recorded, audio clips were transcribed, the data was analysed and interpreted, and a report was compiled. Based on the report, decisions and necessary actions were taken to implement the FoMO part for the survey research.

It is important to note that the two focus group sessions were held during the COVID-19 pandemic. Based on this, a virtual approach was adopted, as there were imposed restrictions by the Maltese Health Authorities that prohibited face-to-face sessions. The two focus groups were split by age bracket; one was for minors, ages 13 to 17, and the other for young adults, ages 18 to 24. Both groups involved six participants. This focus group has already been covered in peer-reviewed conference proceedings (De Battista et al., 2020b).

In the case of minors, an email to the Head of an independent secondary school was sent to choose six participants who were IT savvy and very active at school. The focus group members were chosen independently from the researcher, where five participants were Maltese, and one was a foreigner but lived in Malta. The gender was equally split. The school's Head contacted the parents of the students, and the parents subsequently confirmed with the researcher that they had provided permission for their children to participate. A date was set that was convenient for everyone and did not disrupt the children's routine. The chosen date was Friday, 13 November 2020, at 4:00 p.m. The online session was conducted on Microsoft Teams, using the children's school email and official online platform. Participants were asked to find a space at home that was quiet and comfortable, and their mobile phones to be put on silent mode.

For young adults, students from the Institute for the Creative Arts from the Malta College of Arts, Science and Technology (MCAST) were purposely chosen after 12 students were given the opportunity to participate. Their names were placed in a pool, and seven were drawn to participate in the session, with one extra for contingency. Eventually, one confirmed her absence two days before the session due to unforeseen circumstances. Hence, six young adults participated in the focus group session: three Maltese participants and three foreigners living in Malta; two male participants. The agreed date was Tuesday, 11 November 2020, at 01:00 p.m. The online session was conducted using Microsoft Teams via the students' institute email and online platform. These participants were also asked to find a comfortable and quiet space while participating in the focus group, and they were urged to keep their mobile phones silent.

Both focus group sessions were audio recorded according to GDPR requirements for transcription. As part of the agreement with the ethics board, all participants were told not to

switch on the camera. Both sessions were in English, although everyone was allowed to express themselves in Maltese if it was required or felt more comfortable.

The multicultural, age and gender mix was an essential aspect of the study to obtain a more holistic view of the attitudes and feelings of young people. The interview guide and pre-set questions were used for both groups. In the sessions, probing was utilised to obtain more information from the participants - their perspectives, perceptions, and attitudes. The duration of the focus group sessions was approximately 90 minutes each.

3.3.8 Method Limitations

This method has its caveats, which merit a mention and present fertile grounds for future research in this area of study. First, sample homogeneity was exhibited, given that the two focus groups were conducted with students from two specific institutions. The minors came from a secondary school, while the young adults came from one educational institute. Considering the lengthy process behind the ethical considerations and clearance for the research tool and the conundrum a researcher must face to obtain approval for research from several institutions, it was decided that the most feasible option would be to select the most convenient institutions that offer sensible students familiar with the online environment and SNS. This aspect posed a limitation due to the need for a wide-spread choice of students and multiple focus groups. Future studies could explore the FoMO aspect wider, not only within the same country and among other young people from different paths of life but also from different cultural and educational backgrounds. It can also be extended to adults and conduct comparative analysis.

Second, the sample size was kept to a minimum threshold of six participants, and two were conducted. Although this is ideal for fostering detailed discussions between participants and provides adequate time for probing while keeping the session concise, this is another limitation, as the study's findings might represent the young people population. Guest et al. (2017) suggest that 80.0% of the themes would be discovered within two or three focus groups. Hence, the study was kept within the normative threshold. Nonetheless, this study may stimulate future research in Malta involving a broader range of diverse groups of all ages to establish a more generalised position.

Third, as one of the characteristics of a focus group is that the researcher is the primary medium of the research process, the researcher's subjectivity cannot be entirely eliminated. Every possible effort was made to sustain a neutral stance during the sessions, mainly engaging in active listening. Even after the sessions, during transcription, analysis and writing stages, all efforts were made not to subject the study to any leanings but to preserve the collected data in its form, without prejudice.

Fourth, the researcher's presence during the focus group could have influenced the responses. Again, much attention was given in this regard by asking questions and leaving the participants to discuss with minimum interventions. Probing was conducted but always kept minimalistic.

Finally, the focus groups were initially targeted to create a battery of items that, after conceptualisation and validation, would become an extended FoMO instrument. Hence, the questions included in the focus groups were intended to aid in constructing this tool. The idea of the battery of items was seized after a discussion with experts and contemplating various permutations. Nonetheless, the information from these sessions was extensive to the extent that this led the study to another avenue: adopting and adapting key constructs that construe FoMO.

3.3.9 Conclusion

The focus groups were required to identify the four constructs of FoMO defined in this study: urgency, scarcity, social proof, and loss aversion. These four constructs were included in the survey research as part of the study, stemming from the exploratory research executed by the focus group sessions. An additional prepared question on the influencing factors affecting young people's attitudes towards retargeted advertisements was included in both focus groups to gather more in-depth insights that complement the information obtained through the SLR. The following section focuses on the survey method conducted after the information about all the conceptual model constructs was collected.

3.4 Survey Research

3.4.1 Introduction

This section will focus on the questionnaire developed in response to insights collected from the SLR and focus groups. The data collection method will be discussed, followed by an examination of the questionnaire framework. The study's three key components will be explained, specifically delving into the items employed for the AVM, the four constructs constituting FoMO, and the TPB. A comprehensive exploration of the pre-test phase and its progression to the pilot study will be provided to underscore their importance. The critical aspects of targeting, sampling, ethical considerations, and approval, particularly addressing young people aged 13 to 24, will be detailed later in the section. The method limitations will be outlined before concluding this section.

3.4.2 Data Collection Method: Survey Research

The methodological approach used to gain a better understanding of how retargeted advertisements affect young people nowadays was the survey research. It helped construct the study's foundations and offered a clearer picture of the situation. Check and Schutt (2012) define survey research as one that "involves the collection of information from a sample of individuals through their responses to questions" (p. 160). According to the Oxford Dictionary (2022), a survey investigates individuals' opinions and behaviours, usually conducted by a group of pre-set questions. Survey research includes the content made up of questions and statements and the process of designing the content, collecting, aggregating, and investigating the responses. Self-administered online surveys are relevant for descriptive and evaluative studies and suitable for cross-sectional studies (Saunders et al., 2019).

Two criteria mainly influenced the decision to use a questionnaire over other quantitative data-gathering methods. First, three separate sessions were held in various classroom setups. Three mixed groups of young people from various age brackets were involved. These were given example questions at random and asked how they would want to participate if presented with similar topics. They were given the choice of three methods: in-depth interviews, focus groups, or surveys. The majority said that they would feel more at ease replying anonymously via a self-administered online poll. Melillo (2015) carried out a similar experiment, and her pilot research yielded the same results.

Second, this instrument was chosen among the top data collection methods for the following three main reasons:

- a) Practicality - using a questionnaire as a self-administered tool makes gathering data and getting information more accessible and feasible. As the study was targeted to a particular bracket of the population, namely young people, questionnaires could be easily and quickly sent to the required cluster via email or group forums to reach young people instantly. Besides the relatively low cost, online-based questionnaires are even more practical and efficient (Check & Schutt, 2012).
- b) Scalability - self-administered online questionnaires allow the researcher to gather data from a larger group of respondents. Sampling strategies are developed in survey research to acquire an adequate sample representative of the young population (Dillman et al., 2014). It is a fact that a larger random sample from the target audience that one requires information from can increase the probability of confidence in the responses, which accurately mirror the entire population.
- c) Actionability - An essential factor for this study is the capability of using the data to create a strategy and build other experimental designs. From survey research, a researcher can positively predict specific trends and generate statistics on the group that young people represent (Check & Schutt, 2012). Hence, a survey was employed to build a case and acquire data from different age groups. Eventually, this could be further compared with future tests carried out in other cultural contexts and with various age groups to compare with the data extrapolated from the survey.

Honest and consistent responses to a well-designed questionnaire, with the right choice of questions based on the studies and research, from a suitable sample of the target population, can reflect the opinion and be a good representation of the whole population under research (Dillman et al., 2014; Saunders et al., 2019). Hence, different conclusions can be extracted from the tool that can be confidently generalised to the targeted population. With questionnaires, disparities are diminished as all the respondents are being asked the same standardised questions. Different studies persist on the idea of objectivity and utmost care in preparing, designing, and producing the questions in a questionnaire (Boynton & Greenhalgh, 2004; Saunders et al., 2019).

Planning a survey can result in the right survey design with the proper investigative questions and statements in accordance with the research questions (Dillman et al., 2014;

Saunders et al., 2019). The research design was prepared meticulously, reflecting on the research questions that were posed in the study throughout the journey; all the objectives enticed with meeting the hypotheses satisfactorily, specifying the sources from where the data is intended to be collected, proposing the collection method, and ultimately analysing the data.

The effectiveness of the data-gathering approach hinges predominantly on its structure. Hence, the meticulous design, skilful administration of the questionnaire, and scrupulous elimination of potential biases played crucial roles in collecting reliable data.

3.4.3 Questionnaire Framework

The questionnaire refers to the content part of a survey. It comprises a structured set of pre-set questions and statements for the target respondents to answer and provide necessary information for the study. The standardised question to all the clusters of respondents minimised the problem of variations.

Following the scoping research, substantial literature analysis, SLR, and two focus groups, investigative questions were developed to identify essential aspects to be asked of young people. A crucial early step of the study design was comprehending the relationship and relevance of each question and statement to theory and the key concepts addressed in the preceding section (Saunders et al., 2019).

The questionnaire was made up of the following framework:
An introductory page welcomed the respondents and provided them with a choice to select the language of the questionnaire. They could choose to fill it out in English or Maltese. Then, a detailed information and consent page were presented to introduce the whole study and clarify that the study was targeted at young people between 13 and 24 years of age. Those respondents under the age of consent, which in Malta comprise individuals under 16, were asked for a parent or guardian consent (this will be discussed further in the ethical considerations and approval section). The questionnaire was prepared in a way that would stop those who were over 24 years old from proceeding to participate.

General demographics were requested on a separate page, comprising age, gender, level of education, nationality, and working status for young people aged 16 to 24. The terms

‘males’ and ‘females’ were used and specifically identified as gender in the questionnaire. The term ‘sex’ was purposefully avoided to prevent the questionnaire from being labelled as spam when sent to different entities. ‘Sex’ was also excluded as a precautionary measure, given that the questionnaire had to be filled in by minors aged 13. Various studies tagged the terms ‘males’ and ‘females’ with the ‘gender’ demographic choice (e.g., Arora & Agarwal, 2019; Cvirka et al., 2022; Murillo, 2017; Murillo et al., 2016; Mustafi & Hosain, 2020).

Following the demographics, the respondents were asked about their Internet use. This section included a question to understand whether young people asked their parents or guardians to buy something online or purchase it themselves.

To ensure that respondents understood retargeted advertisements and did not confuse them with other types of advertisements, a written definition was provided. A visual example of the retargeting process using toothpaste as a non-indulgent product was included. Moreover, a 32-second video demonstrating how retargeted advertisements are encountered by individuals when surfing the Internet was also embedded. In the mini video, a mock yoghurt website and a mock news portal were used to avoid indulging any hedonic attributes among respondents. Following these examples, four questions were asked regarding the respondents’ encounter with retargeted advertisements, and one question was about the use of advertising blockers.

The following pages were dedicated to the factors that affect the attitude towards retargeted advertisements, FoMO’s four constructs and the items derived from the TPB. The 7-point Likert scale format was utilised for all these construct items, ranging from Strongly Disagree (1) to Strongly Agree (7). Based on the suggestions of Oaster (1989) and Weng (2004) to use a 7-point rating scale, this scale format was also used as its inter-rater reliability is improved when using 7-point scales (Symonds, 1924), as it has good criterion validity (Preston & Colman, 2000), and odd numbers having a mid-point choice would gather more useful information (Krosnick, 1991). Moreover, Miller (1956) suggested that humans can distinguish between seven different items, solidifying the idea of incorporating a 7-point scale model.

Using this scale format, respondents were asked how they perceive retargeted advertisements. Twenty-four items generated from the main six factors were included, while three items were dedicated to advertising value.

FoMO was tackled in the following section, where four constructs were used: urgency with two items, scarcity containing four statements, social proof with another four items, and loss aversion with three items.

In a separate section, the respondents were asked about their attitudes towards retargeted advertisements. On a 7-point Likert scale, they were posed with four different statements about these advertisements. Subsequently, the other four components of the TPB were examined, which completed the whole survey. In this section, four items were dedicated to subjective norms, two items to the intention to click, while perceived behavioural control and behaviour comprised three items each.

The questionnaire format was created so the participant was allowed to move on to the next section unless all the questions and statements were answered. This was imperative for consistency and validity purposes. There were no questions of any sensitive nature or stirring delicate issues that could reveal the respondent's identity. The items and sections used in the questionnaire were placed with some thought to ensure a smooth flow in filling out the questionnaire, attracting honest answers from the respondents and garnering a higher response rate. Upon submitting the questionnaire, a confirmation message was sent to the respondents, certifying that their response was recorded while thanking them for taking the time to complete the survey. It was calculated that the questionnaire would take approximately eight minutes.

After some deliberations, where Microsoft Forms, SurveyMonkey and Qualtrics surveys were considered, it was decided that the research would be conducted organically. Hence, Google Forms (<https://www.google.com/forms>) was chosen. Google Forms is a cloud data management instrument that facilitates the creation and distribution of Internet-based questionnaires while enabling the collection and analysis of data (Hsu & Wang, 2017). Google Forms is more robust and flexible in the design required for this complex survey, with an unlimited number of questionnaires filled in, an unrestricted number of questions per questionnaire and low cost. Google Forms was also used for the target age group's ease of

use and user-friendliness. Young people are acquainted with these forms as they are introduced to them in schools.

On the information page of the questionnaire, respondents were urged to complete the questionnaire from a desktop or laptop computer to obtain the best survey experience possible. All efforts were made to construct the questionnaire in a way that would adapt to all devices containing a user-friendly interface. Hence, details about font sizes were taken care of. The Maltese survey version was a separate entity from the English survey. In the Maltese version, native fonts containing special characters were integrated directly into the interface to enhance clarity and ensure alignment with the English version of the questionnaire.

Even the background colour of the questionnaire was given attention and chosen with thoughtful consideration. Turquoise is an interesting hue that elicits mental clarity, tranquillity, peacefulness, and peace of mind while nurturing creativity (Cerrato, 2012). This colour produces reasonable response rates. The choice was also based on a recent study by Jakovljević et al. (2021), where they found that turquoise is beneficial for children with dyslexia. This was crucial to ensure that all young people are reached, irrespective of their disabilities. The use of turquoise did not curtail any gradient or amplification of colour on one side more than another, not to affect the rating questions and enhance unnecessary severity.

To represent the retargeting aspect, item adaptations were required for each construct item. Furthermore, a few items had some words modified or added to make it simpler for minors to grasp what the items were asking. Moreover, some rephrasing was done to minimise potential harm to minors; for example, the word “fear” was omitted to not cause needless anguish.

3.4.4 Advertising Value Model

As discussed in the previous chapter, the AVM was built on Ducoffe’s (1996) model. The original version comprised three antecedent factors of advertising value: entertainment, informativeness, irritation, and attitude towards online advertising. Established on extensive research conducted for this study and confirmed by a meta-analysis executed by Lütjens et al. (2022), three additional components were added to the original model: credibility, personalisation, and interactivity.

Table 3.4: The AVM items with their respective sources, Cronbach's alpha, and range

Construct	Measurement Items	Sources	Cronbach's Alpha (Range)
Entertainment	I feel that retargeted advertisements are:		
	Entertaining	Ducoffe (1995; 1996); Kim & Han (2014); Wang & Sun (2010); Zha et al. (2015)	.83 / .85 / .94 / .90 / .87 (.83 - .94)
	Enjoyable		
	Interesting		
	Pleasant		
Exciting			
Informativeness	Retargeted advertisements supply relevant information on products.	Ducoffe (1995; 1996); Kim & Han (2014); Wang & Sun (2010)	.84 / .82 / .74 / .82 (.74 - .84)
	Retargeted advertisements provide timely (appropriate) information on products.		
	Retargeted advertisements tell people about products when they need the information.		
	Retargeted advertisements are a good source of up-to-date product information		
Irritation	I feel that retargeted advertisements are:	Ducoffe (1996); Kim & Han (2014); Mustafi & Hosain (2020)	.78 / .95 / .93 (.78 - .95)
	Annoying		
	Irritating		
	Deceptive (Misleading / dishonest)		
Credibility	Intrusive (Invading my privacy)	Kim & Han (2014); Mustafi & Hosain (2020); Zha et al. (2015)	.85 / .81 / .86 (.81 - .86)
	Convincing		
	Believable		
	Credible (Reliable)		
Personalisation	Trustworthy	Gaber et al. (2019); Kim & Han (2014)	.81 / .83 (.81 - .83)
	I feel that retargeted advertisements display personalised messages to me.		
	I feel that retargeted advertisements are personalised to my browsing behaviour.		
Interactivity	Content in retargeted advertisements is personalised.	Bao et al. (2016); Islam (2017); Lohtia et al. (2003)	.84 / .64 / .94 (.64 - .94)
	Retargeted advertisements give customers the opportunity to connect with the company.		
	Retargeted advertisements facilitate two-way communication between the customers and the companies.		
	I like retargeted advertisements with videos, images, and downloads.		
Retargeted Advertising Value	I prefer retargeted advertising with links in them.	Ducoffe (1996); Kim & Han (2014); Mustafi & Hosain (2020)	.84 / .90 / .86 (.84 - .90)
	I feel that retargeted advertisements are useful.		
	I feel that retargeted advertisements are valuable.		
Attitude towards Retargeted Advertisements	I feel that retargeted advertisements are important.	An & Kim (2008); Pollay & Mittal (1993)	.74 / .83 (.74 - .83)
	My general opinion of retargeted advertisements is favourable (positive).		
	I consider retargeted advertisements essential.		
	Overall, I like retargeted advertisements.		
	Overall, I consider retargeted advertisements a good thing.		

The five items used for entertainment were adapted from the original Ducoffe (1995; 1996), together with Kim and Han (2014), Wang and Sun (2010), and Zha et al. (2015). The items ranged from “I feel that retargeted advertisements are...” “enjoyable” and “interesting”. Four questions were used to assess informativeness in Ducoffe (1995; 1996), Kim and Han (2014), and Wang and Sun (2010). An example of an item in this construct was “Retargeted advertisements are a good source of up-to-date product information”. The four questions used to assess irritation were modified from research by Ducoffe (1996), Kim and Han (2014), and Mustafi and Hosain (2020) studies. Here, items like “intrusive” and “annoying” were included. Credibility was measured using four modified items such as “convincing” and “believable”, employed by Kim and Han (2014), Mustafi and Hosain (2020), and Zha et al. (2015). The three personalisation items were adapted from two studies; Gaber et al. (2019), and Kim and Han (2014). An example of an item used for this construct was “I feel that retargeted advertisements are personalised to my browsing behaviour”.

The four interactivity measurements were adapted from Bao et al. (2016), Islam (2017) and Lohtia et al. (2003). A resulting item for this construct was “Retargeted advertisements facilitate two-way communication between the customers and the companies”. Three adapted measurements employed in Ducoffe (1996), Kim and Han (2014), and Mustafi and Hosain (2020) studies were used for the retargeted advertising value. Four items from An and Kim (2008) and Pollay and Mittal (1993) were modified for the attitude towards retargeted advertisements. Items used for retargeted advertising value ranged from “I feel that retargeted advertisements are...” “useful” and “important” and for the attitude towards retargeted advertisements, “Overall, I consider retargeted advertisements a good thing”. The list of items per construct for the AVM with their respective sources and Cronbach’s alpha can be found in Table 3.4. Since, for most of the items, two or more sources were referred to, apart from the individual Cronbach’s alpha coefficients, the range for each construct was also reported.

3.4.5 FoMO Scale

The four constructs that made up the FoMO scale were never tested en masse, as done in this study. These were mentioned by Lamba (2021) in his book: “FoMO: Marketing to Millennials”, in Argan et al.’s (2023) study and individually in other recent studies (e.g., Gupta & Shrivastava, 2022; Zhang et al., 2022). Therefore, various items from diverse

studies and concepts were adopted and modified accordingly to reflect the core idea of this research.

At this stage, a point must be made clear on the distinguishability of the constructs. Scarcity was considered to be the limited quantity and availability of a product while urgency was examined to be the limited time to make avail of an offer. For loss aversion, the idea of loss that may be augmented when a decision is made leading to losing an offer was highlighted. Finally, social proof was considered to be the phenomenon where messages or visual cues in advertising instigate individuals to follow or copy other individuals' actions to ultimately conform to proper and acceptable behaviour.

For these constructs, except for loss aversion, respondents were asked to reflect on the messages and respective images included in the questionnaire. Hence, the following statement was placed before each item: "When I come across a retargeted advertisement showing a product that interests me with the above messages..."

For limited-time offers or urgency construct, the two items used were adopted from Akram et al. (2018). The direct questions were if "I worry about the limited time" and "I think about the deadline". For the limited stock section or scarcity, four items were used from studies by Aggarwal et al. (2011), Akram et al. (2018), and Shusha and Touny (2016). An example of a scarcity question driven by the message was "I base my decision on the quantity of the product more than other factors". The items adopted from Aggarwal et al.'s (2011) study were originally designed to examine scarcity messages but were primarily focused on consumer competition. Therefore, for this study, these items were adapted accordingly.

Social proof is another factor that could impose pressure on young people. Four questions were adopted for this questionnaire from Shusha and Touny's (2016) and Stibe and Cugelman's (2019) studies. A typical question from the social proof construct is "I prefer to act the way everyone else is acting".

Table 3.5: The FoMO and TPB items with their respective sources, Cronbach's alpha and range

	Construct	Measurement Items	Sources	Cronbach's Alpha (Range)
Fear of Missing Out (FoMO)	Urgency	I worry about the limited time.	Akram et al. (2018)	.91
		I think about the deadline.		
	Scarcity	I worry about the limited quantity.	Aggarwal et al. (2011); Akram et al. (2018); Shusha & Touny (2016)	.84 / .91 / .74
		I base my decision on the quantity of the product more than other factors.		(.74 - .91)
		I think I might lose the opportunity to buy the product if others bought it first.		
		I think I have to buy before others do, in order to get the advertised deal.		
	Social Proof	I prefer to do what other people typically do.	Shusha & Touny (2016); Stibe & Cugelman (2019)	.74 / .85
		I prefer to act the way everyone else is acting.		(.74 - .85)
		I follow behaviours that people typically do.		
	Loss Aversion	Other consumers decisions of buying products have an impact on my buying decisions.		
The pain of losing an offer matters more to me than the pleasure of getting the offer.		Li et al. (2021a)	.83	
I feel nervous when I have to make a decision that may lead to losing an offer.				
Theory of Planned Behaviour (TPB)	Attitude towards Retargeted Advertisements	When making a decision on an offer, I think much more about what might be lost than what might be gained.		
		My general opinion of retargeted advertisements is favourable (positive).	An & Kim (2008); Pollay & Mittal (1993)	.74 / .83
		I consider retargeted advertisements essential.		(.74 - .83)
		Overall, I like retargeted advertisements.		
	Subjective Norms	Overall, I consider retargeted advertisements a good thing.		
		Most people who are important to me think I should click on retargeted advertisements.	Han et al. (2010); Sanne & Wiese (2018); Ullah et al. (2021)	.91 / .90 / .83
		Most people who are important to me would want me to click on retargeted advertisements.		(.83 - .91)
		People that I value their opinion would prefer that I click on retargeted advertisements.		
	Perceived Behavioural Control	People who are important to me click on retargeted advertisements.		
		Whether or not I click on retargeted advertisements is completely up to me.	Sanne & Wiese (2018); Tommasetti et al. (2018); Ullah et al. (2021)	.84 / .93 / .78
I am confident that if I want, I can click on retargeted advertisements.			(.78 - .93)	
Intention to Click	I decide if I click on retargeted advertisements.			
	I have the intention to click on retargeted advertisements.	Tommasetti et al. (2018)	.82	
Behaviour	I will click on retargeted advertisements in the future.			
	I liked retargeted advertisements in the past.	Sanne & Wiese (2018); Tommasetti et al. (2018)	.91 / .81	
	I clicked on retargeted advertisements in the past.		(.81 - .91)	
		I engaged with retargeted advertisements in the past.		

The last construct, loss aversion, was the trickiest, as the wording of the items was changed to reflect the tender age of the respondents. Loss aversion is quite a strong measure to calculate, and hence, much attention was given to it even in the pilot study. Three items were adopted from a set of questions posed by Li et al. (2021a) in their experimental study. An example of the loss aversion item was “I feel nervous when I have to make a decision that may lead to losing an offer”. Table 3.5 shows the items that were included for the FoMO scale with their relevant sources, their respective Cronbach’s alpha values, and the range of these values.

3.4.6 Theory of Planned Behaviour

Attitude is the common denominator between the AVM and the TPB. This construct was placed on the TPB side for continuance purposes, given that the FoMO questions separated the AVM items from the TPB constructs. The attitude construct has already been covered along with the AVM section.

Han et al. (2010), Sanne and Wiese (2018), Tommasetti et al. (2018), and Ullah et al. (2021) were the four studies that the items for subjective norms, perceived behavioural control, intention and behaviour constructs were elevated from. “Most people who are important to me think I should click on retargeted advertisements” is an example of an item from the four adapted for this study for the subjective norms construct. For perceived behavioural control, an adequate example of a question out of the three was “Whether or not I click on retargeted advertisements is completely up to me”. The intention to click was integral for this study and hence, a relevant question adopted from Tommasetti et al. (2018) was “I have the intention to click on retargeted advertisements”. Two items were used for intention.

Finally, for the behaviour construct, three statements were posed; a relevant example was “I engaged with retargeted advertisements in the past”. Table 3.5 contains all the items used in the TPB model for this study which includes information about each item’s relevant source, respective Cronbach’s alpha coefficients, and range of alpha values. All the AVM, TPB and FoMO items represent the finalised version following pre-testing and pilot studies.

3.4.7 Pre-Test Phases

A challenging and sensitive part in creating the questionnaire was crafting the questions and statements to look easy for the target audience. Given that the youngest respondents would be only 13 years old, the text had to be very informal to be understood, eliminating any technical jargon. Prior to the pre-test phase, this was examined by three professionals, and they believed that the questionnaire was still on a higher tangent and not fully suitable to the target audience. As a result, this was updated prior to the commencement of the pre-test phases.

The pre-test phases took almost four months to accomplish. It was factored in a three-step process: first, a participatory pre-test with handpicked respondents was performed, discussing the structure of the questionnaire, filling in an English and Maltese version of the survey; second, a revision with the required changes in the study based on the feedback provided was undertaken, including the addition of visual aids in the questionnaire; and third, a professional back-translation of the Maltese version of the study was conducted to ensure compliance.

Six young people evaluated an initial version of the questionnaire both in English and Maltese, split equally between men and women, with ages ranging from 13 to 21 years old, which were conveniently picked. The questionnaire was originally intended to be administered purely in English but following a conversation and consultation with these six young people and supervisors, it was decided that a Maltese version of the survey should be made available. This discussion was done to understand what prospective respondents anticipate from a questionnaire addressed to them, with a marketing/psychology content, the appropriate length of a questionnaire, and how many questions and statements they would expect in a study. This discussion was pertinent as some initial decisions on the structure of the questionnaire were made based on them.

In the pre-test session, all the respondents filled in the English version of the questionnaire alone in their homes. Then, after three days, they received the Maltese version of the study. From the outset, they were only informed about the subject, but not in much detail. As recommended by Converse and Presser (1986), this was a participatory study, and it was done before an undeclared pilot study. In this phase, participants were asked to jot down

anything that they felt was not clear or unsuitable in the questionnaire during the filling-in. Subsequently, all test respondents were contacted to discuss the questionnaire, address any ambiguities or vagueness encountered, and provide clarification or rectify any misunderstandings regarding the questionnaire items. Moreover, they were asked for suggestions on ameliorating any items in question.

The concept of retargeted advertising was generally understood, although nevertheless, not very clear in their minds. Consequently, there was an immediate recognition of the necessity to create a visual representation of the concept. Visual representations are not new in such studies, notably used by Zarouali et al. (2020) with the same age groups. Initially, a still image split into two parts was created. This was designed using Adobe Photoshop, showing a Sensodyne toothpaste in an Amazon website and then retargeted on The Washington Post news portal as a banner (Fig. 3.2). This representation had two captions, in both languages; next to the Amazon website “You visit a product page” and next to the news portal, the phrase “5 minutes later you see its advert elsewhere”. It seemed that this was not enough; hence, two 32 seconds video clips, one in Maltese and the other in English were produced to avoid any misconceptions. A mock brand of a yogurt product was created called ‘Yogurt’ on a mock website using Adobe Photoshop, Adobe Premiere and Adobe After Effects. Moreover, with the same creative software, a mock news portal called MaltaNews.com was created, showing the same Yogurt product to demonstrate the retargeting concept. Subtitles were used for both clips according to their respective language to make it easier for participants to follow and for any young people with audio impairments. When the same cohort of participants was shown the video clip, they all agreed that the concept was more detailed with the clip incorporated in the questionnaire and that it could have made their lives much easier if the clip had been present when they were filling it out.

In the pre-test phase, the duration of the questionnaire was challenged. The participants were asked if there were too many items or if the questionnaire seemed endless, given the number of items per construct and the models fused. The general feel was that it was somehow lengthy but compelling in how it evolved. When participants were asked to time it, the duration remained consistent at around eight minutes.

1.
You visit a
Product page



2.
5 minutes later
you see
its advert
elsewhere



Figure 3.2: Retargeted advertisement example used in the survey

An interesting suggestion made during the pre-test was the inclusion of images in the FoMO section. Hence, after careful consideration, pictures were included, intentionally avoiding the depiction of products, brands or any other familiar items to maintain focus and engagement with the respondents and avoiding priming. For the limited-time offers section, offer ends soon messages and 30.0% special offer with a countdown in the background were included (Fig. 3.3). For the scarcity section, ‘while stocks last’ message and ‘limited quantities weekend sale’ communication were included (Fig. 3.4). For the social proof part, a blurred image of some happy youngsters was incorporated with the slogan “5,000 people like YOU have already tried it!” Next to it, a Facebook post with the same blurred picture and profile, no slogan, but with 24K likes and over 20K shares (Fig. 3.5). For loss aversion, no images were included, to avoid distracting the respondents.

The participants seemed conversant with what they read most of the time; when asked the meaning of some of the statements after filling the English version, they were on the spot, bar few words which they found tricky or challenging to comprehend. Hence, some questions and statements had to be slightly amended, keeping the same sense and idea, but using easier words for 13-year-olds to understand.



Figure 3.3: Limited time offer examples used in the survey



Figure 3.4: Limited stock examples used in the survey

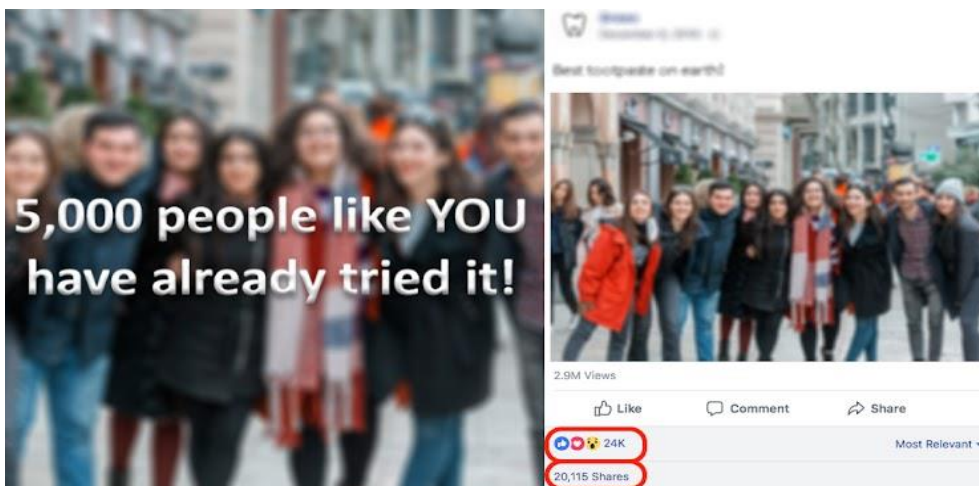


Figure 3.5: Social proof examples used in the survey

Some good examples of words pointed out as hard to understand were “purchase” and “intrusive”. Therefore, to comply with the observations reminiscing from the pre-test, these words and few others, were either changed to ease the questionnaire or added a simplified

word in parenthesis next to the item. Some statements and questions that were felt to be misleading or redundant were either re-hashed or deleted from the questionnaire. Thus, a revamp of the survey was performed to comply with all the observations made.

Another integral part of the pre-test process was the back-translation. Since Malta is a bilingual country, and the data set was required from Malta, a translation was required. Back-translation is not simply a backward and forward translation. According to Son (2018), this tool has been used in cross-sectional survey research for more than half a decade. This procedure normally examines translation accuracy in multi-lingual research (Brislin, 1970). Initially, the English version of the questionnaire was translated into the target language, which in this case was Maltese. This was done by the researcher, being proficient in the Maltese language. After the revamp previously mentioned, two professionals performed parallel translations to translate the questionnaire into Maltese. The three versions tallied and mostly matched, bar a few inaccuracies that were ironed out.

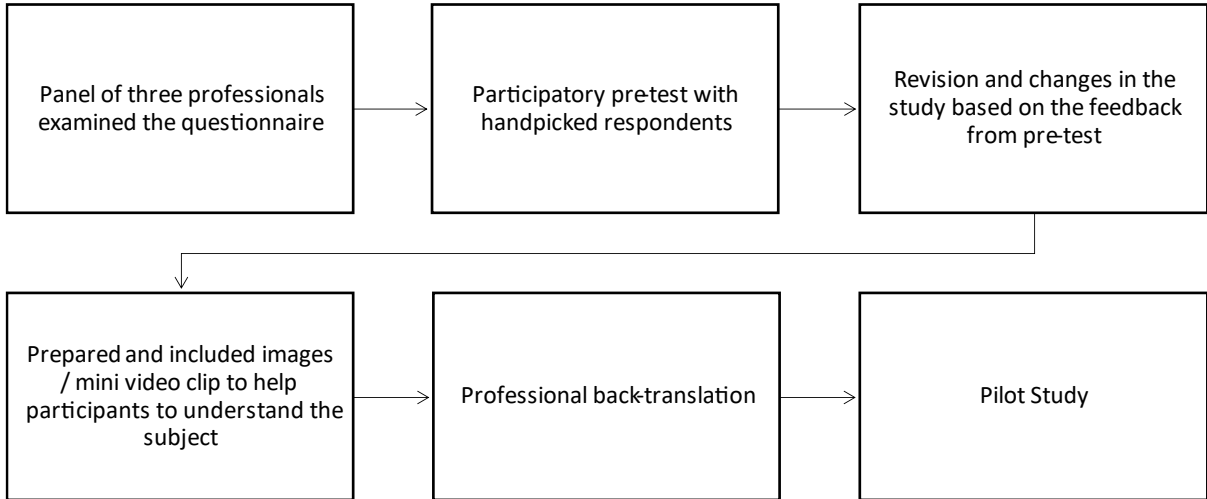


Figure 3.6: A visual representation of the pre-test process

Subsequently, a master’s graduate in English and a bilingual native speaker translated the Maltese version back into the source language. The translator performed a back-translation as accurately as possible to ensure that the measures of the constructs were equivalent using both languages for the same sample (Okazaki & Mueller, 2007). Then, the two English versions were compared to check for any discrepancies and compatibility, considering adaptations required during translations due to language differences. Moreover, some technical words had to be kept the same in both languages; the word “retargeted”, for

example, was a word which was used in the target language as well. No issues were found in the back translation which was considered as a key indicator of the accuracy of the translation in the target language.

For minor participants under 16 years, parents or guardians were contacted beforehand for both the pre-test and the pilot study phases, and verbal consent was provided. The sample survey was sent to the parents or guardians directly, and then disseminated to their respective children. Figure 3.6 presents a visual representation of the whole pre-test process.

3.4.8 Pilot Study

Following the completion of pre-test studies, a pilot study was undertaken to investigate and identify any other potential matters that might have an unfavourable impact on the survey results. The pilot study was split into two parts: first, a walk-through in questionnaires with different young people, and second, the dissemination of the questionnaire with a greater number of respondents using a self-administered approach.

A purposive sampling approach was employed for the first phase of the pilot study. Three men and three women within the targeted age group were handpicked, and the researcher walked through the questionnaire to highlight any challenges and issues they might encounter. Very few issues surfaced during this exercise and were ironed out without jeopardising the items. Most of the changes were cosmetic. Otherwise, a word in parenthesis was added to aid the respondent in fully understanding the meaning and context of the question or for clarity purposes.

The second phase was the self-administered online pilot survey. It was disseminated to 20 young people using convenience sampling, targeting a balanced cluster by engaging equal men and women with ages ranging from 16 to 24 years. Participants were only contacted beforehand and informed about participating in a survey, but the subject was not divulged. This was an undeclared study (Converse & Presser, 1986). The participants were shown that this was a pilot but were instructed not to share the study without any further details.

There were no issues raised during the second phase of the pilot study. This meant that the questionnaire was ready to be sent to FREC within FEMA, after undergoing all the ethical considerations for their final approval.

3.4.9 Ethical Considerations and Approval

The ethical considerations in this study were taken very seriously, given that part of the sample required was essentially minors younger than 16 years. The participation in the research involved only completing the questionnaire which took approximately eight minutes to complete.

It was highlighted in the consent form that the respondents' participation was voluntary, and they were free to confirm or refuse their participation and they could leave the survey incomplete at any time during the administration.

The Information and Data Protection Commissioner was contacted and asked about the inclusion of the General Data Protection Regulation (GDPR) clause in the consent form. Provided that the questionnaire would not collect any kind of personal data from respondents, that is, information which identifies or leads to the identification of the individuals replying to the questionnaire, the requirements of consent and information to be provided concerning the rights deriving from the GDPR do not arise. No information was requested from the respondents that could reveal their identity; no identity card numbers, emails, mobile numbers were collected, and no IP addresses were recorded from the entries. All data collected was completely anonymous and confidential, and there could not be the faculty of any leak or revelation of individual answers. Hence, the GDPR clause was not required in this case.

The respondents' participation did not involve any known or anticipated risks. Respondents were notified that no direct benefits were linked with the survey participation. They were informed that the collected data would be stored in an encrypted electronic format. When the data was eventually delivered to the supervisors, this was sent with a password encryption beknown to them through different channels. Respondents were apprised that the compiled anonymous data would be preserved until academic publications based on the collected data were published, and the final document of the whole study was handed in.

The approval from the FREC within FEMA proved to be the most challenging and most arduous part of the whole process. An online URECA form was filled out and sent to FREC with the relevant forms attached. At first it seemed that respondents younger than 18 years could not be included in the survey process, as it was difficult to manage, given its online nature. The Commissioner for Children was contacted in this regard. They confirmed that in the past, there was never an occasion where young people older than 16 years were given consent for their parents or guardians to sign. Moreover, in the past few years, different amendments in the Maltese laws made it possible for young people aged 16 and over to vote in general elections (CAP. 354, 20:3; 33:5c) and local councils and become local councillors (CAP. 363, PT II: 3B, 5), and given the right to consent to or refuse medical treatment (CAP. 528, 27:2). Moreover, in December 2023, Malta was the first EU country to introduce an act to amend the Local Government Act (CAP. 363) providing 16- and 17-year-old individuals the possibility to be elected as mayors.

Nonetheless, according to the Maltese Minor Protection Act, all children under 18 years are considered minors (CAP. 602, 2). For FREC, the prominent issue was that there was a blanket questionnaire for all age groups. Hence, it was decided that two identical questionnaires be created; one was addressed to minors from 13 to 15 years (Survey A – Appendix G), and the other was for the older age group from 16 to 24 years (Survey B – Appendix H). It was agreed that Survey A had to be disseminated only through schools' channels, while Survey B had to be distributed via post-secondary schools, tertiary institutions, agencies, communication platforms, and SNSs. Initially, secondary schools had to agree in principle, based on the University of Malta's ethical clearance, that they would be supporting the distribution of the questionnaire (Survey A).

Hence, it was critical that gatekeepers be utilised for the minors. First, the research had to be authorised by the government, religious, and independent school heads of departments (Appendix I). Then, the various heads of governmental and religious schools, as well as the chairperson of independent schools, would be asked to send an information and consent email containing a copy of the whole Survey A, presented in English and Maltese, to all parents or guardians of students aged 13 to 15 (Appendix J). Parents or guardians would eventually be asked to approve their children's participation in this study if they agreed with the information supplied and after going through all the topics on Survey A. This required visiting the Survey

A link supplied by the different school heads via the same email, reading the information page on the actual Survey A, giving consent, and then turning in the questionnaire to their children to continue administering it. Figure 3.7 shows a graphical flow diagram for the three different types of schools.

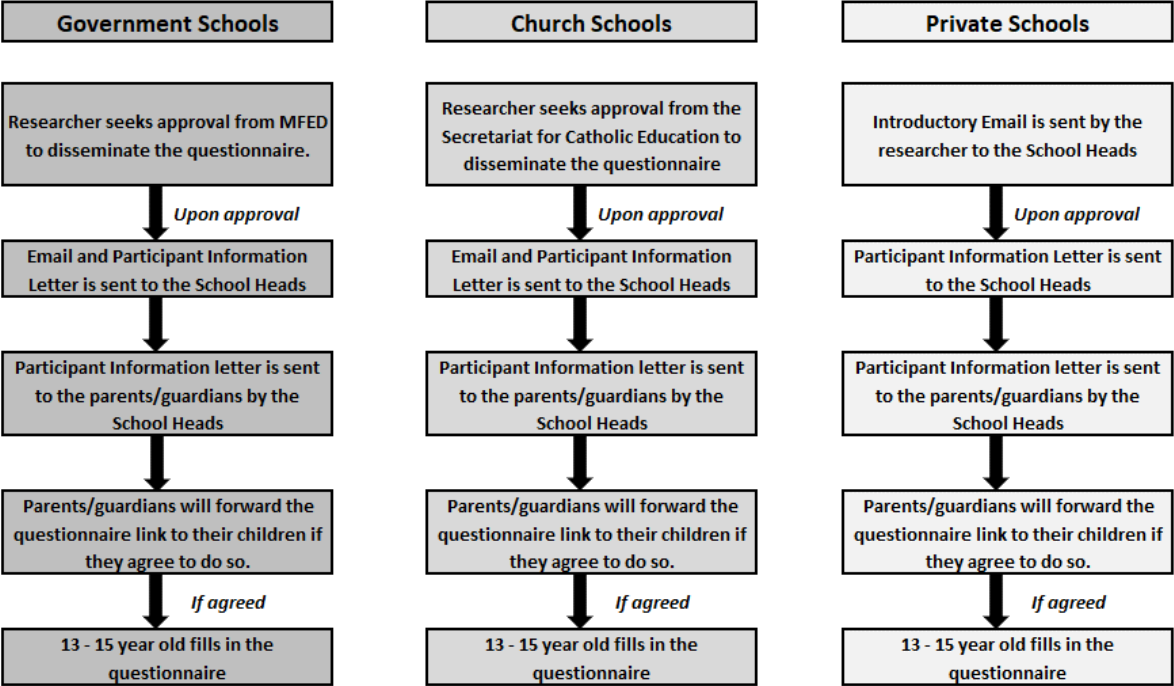


Figure 3.7: Survey A consent process as agreed with FREC

Instead of signing the consent and returning it to school, the holder of parental responsibility actively consented by making an informed decision and promptly giving consent for their child to complete the survey. This is called an active consent procedure; the take-up was lower than predicted compared to passive consent (Blom-Hoffman et al., 2009), although it is the most recommended ethical approach.

Survey B had to include the same information section to inform respondents and ask them for their consent to proceed. Approval was also requested from all other educational institutions, including youth groups and agencies, which independently disseminated the questionnaire following individual assessment and approval (Appendix K). Survey B was also distributed via communication platforms and online via SNSs, given the mild subject and no foreseen moral, physical, emotional, or psychological harm.

The only difference between the two surveys was a question in the demographics. The minors were not asked what they were presently doing as it was obvious that they all attended a secondary school, thus making them full-time students. FREC gave its ethical clearance, and the study was ready to go (Appendix L).

3.4.10 Target, Sampling Method, and Procedure

The target population of this study was young people residing in Malta, ages 13 to 24 years. This age bracket was chosen as the youngest acceptable age to open an account on the main SNSs which is 13. The studied samples were young people who attend secondary schools, sixth forms or post-secondary schools, and tertiary education institutions. Samples were drawn from students attending governmental, Roman Catholic Church, and independent secondary and post-secondary schools, the University of Malta, MCAST, and the Institute of Tourism Studies (ITS). Apart from these, other 16+ youth institutions were involved, such as the Maltese National Youth Agency - *Aġenzija Żgħażaġħ*, the youth wings of the two major political parties, and church youth ministries. Some Facebook sites that are particularly dedicated to surveys (e.g., Malta Survey group) were used to reach even more young people.

Non-probability sampling was predominantly selected in this process – a mixture of convenience (when the sample is easiest to access), self-selection (when the questionnaire is placed online or individuals from organisations are invited to participate), and snowball (when participants are encouraged to pass on the questionnaire to others) sampling were employed (Andrade, 2021; Saunders et al., 2019). The questionnaire aimed to reach every representation of the targeted population. For governmental schools, an option was given to choose six out of 12 schools. This is part of the governmental research procedure. The secondary schools were chosen according to the number of students. Overall, it was estimated that more than 30.0% of the young people in Malta within the required age bracket for this study should have received the questionnaire.

Non-probability sampling was chosen as it is inexpensive, fast, and convenient, given the large spread required over a short period of time, and with the least expenses. Nonetheless, the accuracy of the findings was imperative, and much care was given not to be compromised. Selection bias was mitigated by providing the information to all the institutions

and then, the researcher was independent from the dissemination and dispersion of the questionnaire.

Data were gathered between Monday, 16 May 2022 and Monday, 4 July 2022; hence, the online questionnaire was available for 50 days to ascertain ample time for respondents to participate. Given the busy time of year that the study was conducted, with ongoing examinations, the underlying COVID-19 pandemic fatigue and the innocuous clutter of different questionnaires, a medium response rate was anticipated.

A repeatedly encountered approach for minimum sampling size is asserted on a rule stipulating that the sample size should exceed ten times the maximum count of inner or outer model links directed towards any latent variable within the model (Goodhue et al., 2012). This approach may produce inaccurate estimations (Kock & Hadaya, 2016). The standard regular sample size formula was employed for this study, which yielded a sample size that exceeds the traditional ten-times rule. However, nowadays, with the bootstrapping factor taken into account, the sample size can even be much smaller. Various sample size estimations are available, with the Monte Carlo simulation method, inverse square root and gamma-exponential methods being three of them (Kock & Hadaya, 2016). However, this study aimed to achieve the narrowest margin of error feasible within the 95% confidence level, typically ranging from 4.5% to 7.5%. Since budgetary limitations necessitated the use of a non-probability sample, the chosen sample size formula was crucial in determining an adequate sample size to collect meaningful data under these constraints.

When the below sample size formula was applied to extrapolate the required sample size, the target sample seemed achievable.

$$\text{Sample size} = \frac{(z^2)pp(1 - pp)}{e^2} \div \left(N - 1 + \frac{(z^2)pp(1 - pp)}{e^2} \right)$$

In this formula, the symbols z denotes the level of confidence according to the standard normal distribution (1.96), pp is the estimated sample population proportion², e signifies the margin of error and N the population size.

² Usually, the population proportion is denoted with a p symbol, but this was changed to pp not to be confused with the p symbol indicating the p-value.

$$\text{Sample size} = \frac{\frac{(1.96^2)0.5(1-0.5)}{0.045^2}}{60487 - 1 + \left(\frac{(1.96^2)0.5(1-0.5)}{0.045^2}\right)} = \frac{474.2716}{1.0078} = 470.582 = 471$$

With a confidence level of 95.0%, and the young people proportion kept as 50.0% (pp), with a margin of error set as 4.5% (e) and the targeted young people population totalled to 60,487 (NSO, 2023), the sample size required was 471.

In total, 521 respondents filled in Surveys A and B together. From all the responses, 7.8% stated that they never came across retargeted advertisements and were removed from the sample. Hence, the whole sample which was tested totalled 480 responses. Out of these, 75.2% filled the English version of the questionnaire.

Feedback was encouraging, although, as predicted, the take-up of Survey A was slower when compared with Survey B, given the procedure which had to be adhered to. Nevertheless, the flow of replies was always consistent and constant.

3.4.11 Method Limitations

This quantitative method has some limitations that should be mentioned but it also offers various possibilities for future research. First, the survey was conducted in one country, with only young people. However, this was intentional, given the main scope of the study, and almost all of them were attending an educational institution (i.e., secondary school, university, and institutes). Hence, the current findings might differ if retargeted advertisements are investigated in other contexts (i.e., with other age groups, educational backgrounds, and cultures). This might be a very good avenue for academics to use the same tool and replicate the study with the same age group but in different cultural and/or educational backgrounds or in similar cultures/backgrounds but with different age groups. Hence, to enhance the validation of this tool, particularly the FoMO part of this study, it is necessary to conduct a cross-cultural corroboration of the findings.

Second, although the selection was sent to different educational, political, and religious institutions, groups, and agencies, non-probability sampling was employed to disseminate it among their respective groups. Three types of non-probability techniques were used, including the convenience sampling procedure. This procedure could have led slightly to

selection bias, although the number of respondents that filled in the survey helped reduce this bias. Hence, the results may not provide a generalised view or represent the entire population (Andrade, 2021; Saunders et al., 2019). Hence, future research can conduct the same study but using stratified sampling, where part of the population is split into sub-groups according to traits and strata, and then a random selection is chosen, and a sample apportionment is targeted.

Third, as this survey was self-administered, there could be some methodological bias and systematic errors that stem from the method itself, during the design, implementation, analysis, and interpreting results. No open-ended questions were included in the study, which may have limited the depth and nuance of the respondents' perspectives. Hence, future research can employ primary research methods, such as in-depth interviews and focus groups, to further assess this study and examine all the constructs presented in the survey.

Finally, images of products of utilitarian value were deliberately included in the questionnaire, aiming to avoid priming respondents. The main focus was on retargeted advertisements rather than the advertised product. Nonetheless, it is worth acknowledging that the selected products could have influenced the results. Showcasing hedonic products or other utilitarian products of more interest as examples of retargeting might have yielded different responses from respondents. Future research could explore products spanning different value categories within a retargeting context and including the FoMO phenomenon.

3.4.12 Conclusion

Now that all the research tools have been discussed extensively, this chapter's next and final section will focus on the analytical tools employed to analyse all the data collected from the methods used. This stage demonstrates all the procedures adhered to ensure that all mitigations were in place to enable a correct and unbiased way to analyse the data effectively.

3.5 Data Analysis

3.5.1 Introduction

The final section of the methodology chapter details the analytical methods used to make sense of the findings and address the research questions. Qualitative data analysis was applied to the results of the focus group sessions, while a quantitative data analysis approach was used for the survey. The focus group data was used to develop the questionnaire items employed in the survey. The results of both procedures were analysed thoroughly using various software tools.

3.5.2 Qualitative Data Analysis

For the two focus group sessions, where this qualitative research was executed before setting the whole questionnaire, complete transcripts of the sessions were conducted using Office Dictate, a voice function in Microsoft Word, in parallel with Adobe Audition CC 2019, to ensure all participants' voices were captured accurately. The transcripts were then processed using NVivo™ vers. 12 Pro (QSR, 2020); a qualitative data analysis software for investigation and interpretation. Different software tools are designed for qualitative data analysis (e.g., MAXQDA and ATLAS), but this software was chosen for mainly three reasons. First, this software package offers a larger range of features and tools for coding, analysis, and visualising. Second, it can organise, manage, and analyse large volumes of articles and text without jeopardising the performance of the software. Finally, the rigour and robustness of this software have been reiterated by many scholars, as it has been widely used and included in various studies (E.g., Daems et al., 2019; Throuvala et al., 2019).

The concept of triangulation was exercised in this analysis phase as impinged by Hodkinson (2019). Initially, the transcripts were read, with no notes taken, to get an entire scenario of the interviews. Then, it was printed and re-read, with notes taken manually for a comparative exercise.

All the transcripts were imported manually and not automatically on NVivo (QSR, 2020) to ensure a complete data transfer. Transcripts of both focus groups were organised and coded, with themes extracted and analysed using the NVivo hybrid thematic analysis (Braun & Clarke, 2006). The standard phases for qualitative data analysis using NVivo were followed (Charmaz, 2014; Thomas & Harden, 2008).

First, the data was imported into NVivo (QSR, 2020) and organised meaningfully for the research question (Gibbs, 2018). During this stage, nodes were developed to code various topics for focus group analysis. This was a laborious procedure in which all the data was methodically analysed and arranged comprehensibly. Data were organised according to the focus group session and the participants' gender. Moreover, in this stage, the data were cross-checked with the actual recordings of the sessions to verify if the information was placed correctly.

The second phase was the coding stage, in which particular codes were allocated to various elements of the acquired information in order to organise the data more logically (Braun & Clarke, 2006). In this procedure, hybrid coding was employed, combining inductive and deductive elements. This approach entailed detecting themes or patterns from data by traversing the data flow while employing specific pre-existing concepts to facilitate the process (e.g., scarcity and urgency). Code stability was achieved after iterative coding in this stage, indicating no additional concepts were identified (Hodkinson, 2019).

The third stage involved the identification of patterns in the coded data and the exploration of relationships across different sources (Braun & Clarke, 2006). This procedure involved exploring the codes assigned in the coding stage and identifying similarities and differences to understand the preliminary research question better.

Finally, the information processed in NVivo (QSR, 2020) was ready for evaluation. The data was analysed in-depth and scrutinised to present the key findings in the best form possible. In this phase, the manual notes were compared with the finalised study and confirmed that the pivotal points expressed in the themes were absorbed.

The same NVivo (QSR, 2020) procedure performed for the focus groups was also performed to construct the SLR and analyse the antecedents, bar the manual coding. Initially, the AI-powered Rayyan QCRI tool (Ouzzani et al., 2016) was employed to aid in screening, and eligibility stages. NVivo (QSR, 2020) was used for the article's inclusion, organisation, management, analysis, and sectioning of information.

3.5.3 Quantitative Data Analysis

For the questionnaire, two software packages were used. For the initial testing and reinforcement of other tests along the quantitative data analysis process, IBM Statistical Package for the Social Sciences (SPSS) Statistics vers. 28.0.1.0 (142) (IBM Corp., 2021) was used. This statistical programme is used for complex data, providing designated tools for data management, descriptive and inferential statistics, data visualisation, and predictive analytics. In this study, IBM SPSS (IBM Corp., 2021) was employed for coding, demographic statistics, item reduction process and exploratory factor analysis (EFA). The software was used on a Windows platform. IBM SPSS (IBM Corp., 2021) was chosen from other packages, such as R and Microsoft Excel, as it is more robust for complex data, more trusted by academics as it has been widely used in academia for many years and has a more user-friendly interface for better performance and navigation. It is important to mention that during the IBM SPSS (IBM Corp., 2021) analysis process, a codebook was prepared comprising construct information, such as the alphanumeric variable name, values, and respective variable measurements (Pallant, 2020). Moreover, different IBM SPSS versions were employed during this research, with evolving interfacing, starting from vers. 25 up to vers. 28.

To test the hypotheses extensively, Partial Least Squares Structural Equation Modelling (PLS-SEM) was employed using SmartPLS vers. 4.0.9.4 (Ringle et al., 2022). PLS-SEM analysis can incorporate the assessment of measurement and structural models (Chin, 2010). During the assessment of the measurement phase, the constructs were evaluated for reliability and validity, while assessing the structural models determined the significance of the hypothesised relationships. PLS-SEM was favoured over alternative methods of estimating relationships between latent variables in path models (i.e., IBM SPSS AMOS) for four reasons. First, as this study investigated a) the influence of the six advertising factors on perceived retargeted advertising value and attitude, b) the effect of FoMO on the TPB constructs, and c) the effect of TPB in this paradigm, PLS-SEM would be the best method as it is testing a theoretical framework from both a prediction and explanatory perspective (Hair et al., 2019a). To the best of my knowledge, this is the first time these factors have been investigated collectively in a retargeting context, with FoMO being explored as a higher-order construct and including TPB constructs. Second, according to Hair et al.'s (2017b) rule of thumb, when studies pursue identifying significant driver constructs, they would require using PLS-SEM. The study uses a complex reflective model with many constructs; thus, PLS-SEM

would be the proper technique to tackle this complex model analysis (Abedi et al., 2020; Hair et al., 2017b; 2018). Third, provided that the objective of the analysis is to predict (e.g., FoMO or influence of factors on value and attitude in a retargeting context) and to explain as well, PLS-SEM would be more fruitful and suggested, according to the guidelines offered by Hair et al. (2017b). Finally, as studies in the social sciences are often not normally distributed (Bono et al., 2017), non-parametric tests would be ideal. Hence, PLS-SEM would be the best option for the analysis of the data (Hair et al., 2017b).

Researchers used PLS-SEM in similar complex studies, particularly by Saavedra and Bautista (2020), that included FoMO and TPB. Similarly, Murillo et al. (2016) employed SmartPLS (Ringle et al., 2022) to investigate the mediating role of advertising value between four factors and the attitude towards mobile search advertisements. A subsequent study by Murillo (2017) was analysed using the same PLS-SEM software. Other studies contained similar intricate theoretical frameworks involving mediating factors and moderators who opted for PLS-SEM (e.g., Chellasamy & Nair, 2020; Chow & Shi, 2015; Zha et al., 2015).

The questionnaire analysis was split into two sections to provide a more simple and structured analysis, albeit still complex. The fourth section of Chapter 4 will be dedicated to the analysis of the AVM, followed by the fifth section examining the FoMO and TPB model.

3.5.3.1 Reflective-Reflective Type I Model

As FoMO was considered as a higher-order construct (HOC) in this study, comprising four lower-order constructs (LOCs); scarcity, urgency, social proof and loss aversion, the hierarchical latent variable models in PLS-SEM were considered (Becker et al., 2012). Given that this study is still in the process of exploring this HOC, and the constructs are distinct but correlated, Becker et al.'s (2012) reflective-reflective type I model was considered. In such a case, the HOC would represent the common factor of the four specific variables. Although Becker et al. present this higher-order reflective construct model as the first type in their study, Lee and Cardogan (2013) were vocal in their study, referring to the type I model as “misleading” and “meaningless”, urging researchers not to use higher-order reflective constructs (p. 244). Temme and Diamantopoulos (2016) challenged Lee and Cardogan's arguments and suggested that they have conceptual and statistical defects, producing fallacious conclusions. They urged researchers not to be disheartened but to consider using

this HOC approach. Sarstedt et al. (2019) confirmed that several scholars employed reflective-reflective and reflective-formative in PLS-SEM for their studies in various fields.

A disjointed two-stage approach was conducted for this study (Ringle et al., 2012; Sarstedt et al., 2019). Past research proposed mainly two types of two-stage approaches; the embedded (Ringle et al., 2012) and disjoint (Becker et al., 2012). Given that the two types lead to very similar results (Cheah et al., 2019), there was no strong justification for choosing one approach from the other (Sarstedt et al., 2019). Hence, the disjointed two-stage approach was selected. For the first stage of this approach, it was required that the FoMO lower-order constructs are all connected with the respective TPB constructs (attitude, subjective norms, and intention to click), followed by the second stage, where the LOC scores are added as new constructs in the original dataset and the four LOCs are connected reflectively to the FoMO as an HOC.

Various studies refer to HOC as either a higher-order construct or a higher-order component, with Sarstedt et al. (2019) acknowledging this variability while employing the terms interchangeably. For clarity, this study refers to HOC as a “higher-order construct” for consistency.

3.5.4 Conclusion

In this chapter, the first section delved into the methodology by examining the philosophical perspective, approach to theory development, the methodological stance adopted, and the overarching research strategy employed. The SLR procedure, with its preparation and the techniques employed, was discussed extensively in the second section. The SLR formed the basis for all the items necessary for the AVM. This section focused on the scoping study and explained the purpose and whole procedure of the SLR stages, including bias prevention and method limitations. The third section focused on the two focus groups investigating FoMO in a retargeting context. This section investigated the data collecting technique, the objective of the focus groups, the interview guide prepared for the study, the related pilot study, ethical considerations and relevant approval, and the whole process, including the limitations of the method. The questionnaire was discussed extensively in the penultimate section. The data collection method, the questionnaire framework, the pre-test phase, the pilot study, ethical considerations and relevant approvals, the target sampling,

survey procedure and method caveats were explained. The final section focused on this study's qualitative and quantitative data analysis procedures.

The study's findings will be presented and analysed in the following chapter. First, a brief investigation of the SLR is conducted to understand the procedures and analysis behind choosing the six influencing factors. Subsequently, the data obtained from the participants via the focus group discussions and questionnaires will be examined, and the outcomes of this analysis will be presented. It also explores the themes derived from the qualitative data and assesses the results of the quantitative methodology employed in this study. Finally, it offers a concise analysis of any outcomes when connecting the models.

4. ANALYSIS OF FINDINGS

4.1 Introduction

This chapter provides a detailed analysis of the findings. It examines the data collected during all phases of the research process. It includes the outcomes of the systematic literature review (SLR). This chapter analyses the data derived from both the qualitative and quantitative research tools. Different sections are used to separate one study from the other and in accordance with the methodology chapter layout to ensure clarity and flow. A linear approach was adopted, commencing with the data collected from the SLR and focus groups, which, along with a desk research study for TPB, served as the basic framework for the questionnaire administered in Malta.

The next section of this chapter focuses on the data collected from the SLR. This method was used to assemble all the variables required for the first part of the questionnaire - the advertising value model (AVM) section. The primary focus of this section revolves around four main analytical points, as the whole procedure of the SLR was discussed in the previous chapter, including the criteria for inclusion and exclusion.

The third section scrutinises the data obtained from two focus groups involving young people, categorised into minors and young adults. The outcomes of a thematic analysis facilitated through NVivo™ vers. 12 Pro (QSR, 2020) are explored. This study section deduced and examined four prominent themes: urgency, scarcity, hype and social proof, and lost opportunities. The influencing factors were a supplementary theme in the focus groups, where these precursors were discussed with the participants and analysed accordingly.

The questionnaire is split into two parts, presented in this chapter's fourth and fifth sections. The separation of the model was required to investigate the results of this questionnaire with a certain depth, given the complexity of constructs and indicators used in these reflective models and the number of hypotheses involved. When a complex model contains many variables, it may be challenging to fully understand and analyse all aspects simultaneously. Hence, breaking the conceptual model into smaller and more manageable parts could help acquire a profound understanding of each variable. Indeed, this division

helped in navigating more profoundly into the intricacies of the analysis while enabling a more reflective examination of the individual variables to unearth any nuances.

For these reasons, the fourth section of this chapter analyses the AVM, while the fifth section examines the theory of planned behaviour (TPB) and fear of missing out (FoMO) parts of the model. A general demographical analysis and investigation of other results not pertaining specifically to the indicators of the model were incorporated in the fourth section. Both sections contain subsections that include initial tests conducted on the dataset, means and standard deviation analysis, a comparative analysis with other sources, the evaluation criteria of the measurement and structural model and a multi-group variance test according to gender and age group. After the fifth section, an overall analysis of the whole model is provided, which includes the coefficient of determination and general theoretical framework.

4.2 Systematic Literature Review Analysis

This section focuses on four main observational procedures that aided in the analysis when conducting the SLR. The analysis process of this review was integral in deciding which factors would be included and reflecting on how the first part of the questionnaire would be constructed.

The first analysis focused on observing the preferred methodologies that the scholars used to conduct the AVM. This exercise was the most straightforward, as a strong majority of the studies included in the SLR employed a quantitative approach, particularly a questionnaire. Therefore, this finding fortified the conclusion that a questionnaire would be the ideal and most effective way to collect the information required for this model.

It was observed that different influencing factors were used in the collected studies. The following two procedures were performed to analyse and determine the most influential factors out of all the determinants examined by different scholars.

The second part of the analysis aimed to determine the number of factors investigated simultaneously within a study. This procedure was a double-edged sword as, given the complexity of the study's conceptual framework, various items were required for each construct. The inclusion of many items would render the questionnaire endless and ineffective. A decision was made to include six constructs, similar to the structure used by Arora and Aggarwal (2019), where these scholars tested the determinants of value and attitude in an SNS advertising context. Incidentally, Cvirka et al. (2022) conducted a study focusing on the six influencing factors chosen in this study, with only half of the data sample being young adults. The academics published their study a year after the SLR publication and during data collection. Furthermore, Lütjens et al. (2022) conducted their meta-analytic study, incorporating seven items, and the six constructs used in this study were included. They added privacy concerns as well. These studies further confirmed the decision to administer the first part of the SLR by including six variables.

The third procedure involved the selection of constructs. From the original 33 scholarly papers in the SLR, entertainment was the most explored, featuring in 32 research studies, followed by informativeness, which was included in 31 studies. The irritation element was

investigated 24 times, while credibility or trust were employed in 20 studies. Since personalisation and interactivity are practically new determinants that surfaced during the past decade, they were explored in five studies each. Different researchers included other factors, such as incentives (Arora & Agarwal, 2019) and economy (Wang & Sun, 2010). However, these factors were not deemed crucial in the decision-making process. This decision was determined based on three key considerations: first, the extent to which these factors were selected as part of a study and deemed relevant in the specific context under examination; second, their perceived effectiveness in influencing attitudes towards online advertising; and third, the desire and importance to keep the questionnaire concise without unnecessary complexity, that could overwhelm and discourage the respondents.

The final analytical part of the SLR procedure was on the model's diverse constructions proposed in the collected studies. Many of these studies extended the AVM and incorporated a variety of constructs, including, for example, purchase intention (Ariffin et al., 2018; Dao et al., 2014), brand awareness (Dehghani et al., 2016), and behaviour (Celebi, 2015). Different academics modified the model or adopted and adapted various constructs. In general, researchers developed three distinct models to describe how elements might influence consumers' attitudes towards advertising. Some studies linked the determinants to advertising value and tested the relationship between value and attitude (e.g., Arora & Agarwal, 2019; Aktan, 2016); others have included advertising value as a mediator between the influencing factors and attitude (e.g., Logan et al., 2012; Murillo, 2017) and other studies associated the factors directly to the attitude (e.g., Islam, 2017; Amjad, 2015).

Following these procedures and a comprehensive evaluation of various theoretical frameworks, coupled with extensive analysis and consideration of diverse factors, the selected approach for formulating the AVM part of the study was the adoption of value as a mediator. The mediating role of advertising value was envisaged to provide a valuable perspective by including all the scenarios employed by different scholars into one, using six factors.

The subsequent section thoroughly analyses the focus groups conducted to construct the FoMO component of the conceptual model.

4.3 Focus Group Analysis

This study section will focus on individuals' fear of losing out on opportunities presented by retargeted advertisements. The questions employed in the focus group sessions with the minors and the young adults' cohorts focused predominantly on scarcity (last product available) and urgency (limited-time offer) in a retargeting context, including both FoMO facets and influencing factors. The questions in the focus group session were about:

- a) The personalisation of advertising,
- b) The frequency of retargeted advertisements correlated with the encouragement to click;
- c) The feelings that are instigated by retargeted advertisements that show limited-time scarcity and
- d) Limited-quantity scarcity messages;
- e) The feelings that may be augmented in individuals when their friends or peers purchase a product before they do, and no items are left;
- f) The feelings of worry if friends or peers of individuals boast about a product that they bought, and these individuals recall its appearance on the Internet; and finally,
- g) The essential influencing factors that motivate individuals to click on retargeted advertisements.

Appendix E presents the full interview guide.

In this section, the male and female minors (13 to 17 years) will be presented as MM and MF respectively, while the young male and female adults (18 to 24 years) will be referred to as AM and AF respectively, and all with an associated number. Moreover, it is important to note that since the direct quotes were taken ad verbatim from the focus group recordings, the language used may be informal or have grammatical errors, but these were kept as is to preserve their natural context.

When minors and adults were asked which products they relate to and feel that are personalised to them, males' leanings were more into sports, fitness, computer parts and gaming-related products, while women were more into fashion, travelling, clothing, and beauty products. Travelling was a common denominator for young adults. All participants reported that they receive retargeted advertisements daily and virtually everywhere they surf. Most of the participants admitted that retargeted advertisements for preferred personalised

products would catch their eyes due to the familiarity with the website being visited before and would encourage them to click to learn more but not necessarily to purchase. Others stated that retargeted advertisements depend on how they are perceived; sometimes they might look superficial, or a type of advertising scam or fraud.

The analysis of the focus group's findings will be split into four theme parts; first, urgency and scarcity will be reviewed, followed by hype and social proof, and lost opportunities. An additional theme, which was included in this study will tackle the influencing factors of retargeted advertisements.

4.3.1 Theme 1: Urgency and Scarcity

The last items in stock on one hand, and special offers bound by time on the other, were debated during the focus groups. The feeling of missing out on a quick offer or losing an opportunity to purchase the last item was mostly attributed to the feeling of receiving personalised advertisements showing products that interest them the most. The fear that a product might vanish was somehow present in minors but less frequently in adults. Verbatim responses concerning the last item availability by both minor genders were;

“...if I really need that item or thing, I would probably press on the ad, because if it is the last one then, they [advertisements] like telling you that is the last one, so you can come and buy it before someone else did” (MF02); “I would be intrigued in something that I want to buy. If I know that it has good reputation and is to my liking” (MM02); “if it has to do with me, I would probably press it, yes” (MF03).

The fear that advertisements may instil in individuals because someone else might benefit from the product is present. Others feel baffled when they face the limited-stock messages in advertisements. Two minor participants declared that;

“Usually, when we are searching for stuff, we are just looking at them, because we are still researching about what we want to buy. So, when we get ads about a specific thing, it's like ‘oh, I do need to think to buy as soon as possible before it is out of stock’ or ‘maybe it's not the best option for me, so I need to look for other things’. So I do not know, but it depends. But at the same time, it intrigues you; but also in the same time, makes you want to think about other options. But you know, it depends!” (MF01); “...as long as they don't do something, so they earn more money, like provide a broken product or something that won't work, I think it's fine, apart you know, the person who wants to buy feels a bit rushed” (MM01).

Sometimes even more cautiously: "...it's like a method of trying to intrigue customers be like – 'ok it's the last one, let me try to get it as soon as possible so they can make money more quicker'" (MM02).

When minor participants were posed with the question about offers and limited-time scarcity, there were some contrasting views, with the first response from a female minor and the others from male minors;

"Adverts kept popping up showing that there were last pair of glasses. That made me buy them even quicker. For example, when I see, that a discount on price, or it's the last pair of glasses, it would affect me, and I want to buy it early" (MF03); "... if it's something that I am interested in and it says available for a limited time, and the advert in big font; a very big font and it says "limited time" - that would really instil the fear of missing out" (MM01); "My feeling would be like, there is a 30% offer right now, maybe that offer won't happen again... so if it appeals to me and looks nice to me, I try to get that 30% off, and looks like something that I would buy even without the percentage decrease" (MM02); "...it depends on what it is" (MM03);

When MM01 reasoned on whether he would click on a retargeted advertisement that would pop up on the screen with a personalised limited-time offer message, "on something [a product] I would want urgently or something I would want very badly, I wouldn't know..." The other minor participants were fast in replying favourably to click on a retargeted advertisement where scarcity or urgency is augmented.

Young adults were more cautious about retargeted advertisements' scarcity and urgency messages. AM01 and AF04 stated that;

"it all depends on what the item is and where it's from but usually when I encounter these type of adverts, again it depends on it, but I sometimes am interested, but most of the times it just annoys me a lot. So, instead of persuading me to buy stuff from the website, for example, it annoys me and [how do you say] it pushes me away more, to be honest" (AM01); "Well, sometimes, I kind of felt that it's something different, something that usually you would buy on the Internet, and not something that you would find in shops, that is why I kind of liked that type of targeted advertising" (AF04).

AF04 admitted that if an advertisement catches her eye on a product that she would have already looked for and still "not bought it, and there's limited time... or if it is the last item, rarely, but I would get it." On the other hand, most adult participants admitted to ignoring special offers and last item availability because they irritate them. Nonetheless, an adult participant mentioned travelling – room availability and air seats. FoMO, in this case,

was piercing. She admitted that “it would affect me with travelling rather than an iPhone. FoMO would be more for travel... I would be very anxious!” (AF01). Another female participant declared that if FoMO is used in advertisements portraying holidays, particularly flights and accommodation, “it does work on me badly” (AF04).

Hence, it is dependent on the products that are being advertised as well as how personal and in need people are at the time. A minor participant argued that when he comes across a repeated advertisement showing a FoMO message, “something that might interest me, if it is really, really repeated, I might click on it to see why the hell they want me to click on it so bad” (MM01)

Overall, scarcity and urgency work more among minor participants than adults. Both male and female participants agreed to feel concerned when they miss out on purchasing things that are personalised and tailored to their preferences.

MM02 admitted that a way to attract more customers and set their mindset around products would be the “limited time or a 20% off or last in stock”, where he emphasised that “no matter what the item is, they would be intrigued to get that because of the certain wording [in the advertisement]”.

MF01 argued that she would rapidly acquire a limited-time offer or search for new products for two reasons, “to keep on track of what is new, or maybe be the one of the first people to buy and show off about it or anything of that sort”. This line of inquiry led to the subsequent bi-sectioned theme; delving into the hype created by advertisements and how participants may be influenced in making decisions, such as clicking on retargeted advertisements and maybe proceeding to purchase. This dynamic is intricately connected to the influence of others’ decisions, a phenomenon that may be augmented through advertisements.

4.3.2 Theme 2: Hype and Social Proof

An element that cropped up, particularly during the focus group with minors, was the idea of hype that goes around them and that retargeted advertisements may inflict it. FoMO

largely depends on individuals' needs, current trends, and hype while keeping abreast of what others are doing. A male and female minor stated that;

“...maybe the new hype and a new trend about an item; I want to see what it's about, maybe due to certain circumstances, I can't get it, maybe because it's too expensive for my liking or it's, let say, not in stock in a certain place that I live in, maybe, and you know everyone would have this item, per se. And I will be you know a bit... I feel like I missing out on all the hype going around” (MM02); “I would want to be part of the trend or like you know, at least see what's going on, so I can look for it, so I won't miss out what's new and others are purchasing” (MF01).

Reviews that satisfied customers post also affect minors. MF03 mentioned this, and virtually all of the group agreed. She stated that “other peoples' reviews are important... what they thought about the product, for example, ratings, and what is good and bad about the products. I always look at reviews before buying something”. MF03 added that “when people post pictures about the item, and [...] like it because it's like the one you want to buy... read people's reviews, you can see what the product actually looks like”.

During the adults' focus group, the review factor and hype was mentioned. For most participants, this was important and may intrigue them as well. They would “check that review section” (AF03) to acquire more information and sometimes even ask people to “give me an honest review on the product” (AF03). For others, “I will look [in the reviews], but I won't actually buy anything” (AF01).

Advertisements can instigate FoMO by carrying messages showing that other people their age are purchasing. They would include these FoMO-laden messages to compel viewers to act immediately as “it would make me more prone to click on the advert” (MM02). MF03 admitted that she relies on what others purchase; hence if this is displayed blatantly on the advertisement, that others are purchasing from this product, “it may heighten my anxiety and end up purchasing!” Other minors agreed with MF03 that this can be another way how advertisements may affect them; showing in the message what others are doing. A minor participant argued that an advertisement showing a PS5 and people playing on it would fuel FoMO in him. He also stated that “if my friends bought it and I have to play with them, so I [have to] buy it as well, kind of” (MM03). MM01 admitted that if he is faced with an advertisement showing products that others might have and the product would have been bought by his friends, he “would have slight bias towards the model which my friend would

have.” This discussion triggered the following engaging dialogue among both group participants, exploring the complexities of the notion of lost opportunities.

4.3.3 Theme 3: Lost Opportunities

When an opportunity is missed, MF01 and MM02 admitted they would feel disconnected from the trend and excluded from their group.

A sizeable number of participants, minors and adults stated that they would be dissatisfied and upset for a short period if they lost an opportunity. However, it would pass quickly; sometimes it would take “a week perhaps” (AM01). Minors will be more disappointed if they miss an opportunity and then their peers start showing off their product; “I would be affected” (MF03).

A loss would be felt much stronger than gain; that is the mantra of loss aversion. Lost opportunities augment this feeling of ‘losses’. The opportunity to click an advertisement that implies great loss if, say, a product is not acquired immediately can be compelling. AF03 admitted that upon missing the opportunity to purchase, “there would be some disappointment, yes, but overall, I will try to find something else”.

The feeling of missing an offer and that the price would increase exponentially, foster fear among young people. A young adult participant recounted that;

“I found this flight – €5 going and €5 coming back, and I was seeing that these were prices for the entire month. So, my first fear was obviously that the tickets would finish fast, or the prices would rise. What happened just a day later, I waited a bit so like to see what dates were good for me and so on. Just a day later, from €5 the price rose to €40... I was very disappointed...” (AF04).

The concept of lost opportunities can be embedded in the advertising message itself, stimulating individuals to click and seize the moment, as eventually, the pain of the loss would exceed the pleasure of the gain. A ‘Do not miss out on this product!’ would instigate a sense of loss if it is missed. A female minor acknowledged that when she missed an opportunity depicted in a retargeted advertisement, she said, “‘Oh, I should have taken my chance and got one!’ But you know, like, I was a bit jealous, and I was like, ‘Oh, I should have listened to the ads or what I saw on the websites!’” (MF01). MM03 stated that “we were

looking for computer cases; and we just said, “let’s all buy the same case”. And basically, [when it was my turn to purchase], it got out of stock...”.

AM01 admitted that loss aversion can strongly impact him. If a product was shown in an advertisement and could not be found anymore, but a peer would have purchased it, he would feel like: “‘hmm, I wanted that and I couldn’t find one!’ I would ask the person if... he saw if it was in stock... but yes, it would affect me a lot.” AF03 stated that she encountered retargeted advertisements showing flight prices, and the more she waited for a reduction of price “obviously, they were increasing the prices at the same time.” Prices never went down, so she lost the opportunity to grab the offer instantly. AF02 shared an experience where an advertisement showed a ‘too good to be true’ offer and did not make avail of it. Her friend booked it at that price, but she lost the deal, so “I had to pay a bit more extra, because he got the deal, and I didn’t. So, I was a bit affected, and I was a bit disappointed... Yes, it did affect me at that time!” In another case, the same young female adult admitted that “‘I missed it there’, but I feel quite normal about it, I think!” (AF02). On the other hand, AM01 declared that he is not affected by a lost opportunity; “I wouldn’t think I would be that bothered but depending on the item I wish to buy. I have a big chance that I’ll find it on another website, regardless!” (AM01). Participants were aware that some of these advertisements were only partially truthful in their claims. Even if consumers missed a product or an offer, “...I know, maybe I can find it somewhere else or something that at least is similar to it, so I wouldn’t really think much about it” (AF02).

4.3.4 Additional Theme: Influencing Factors

Despite not being within the scope of the focus groups, a small section of the study was dedicated to the AVM section as part of the preparation of the conceptual model. Participants in both focus groups were asked a pre-set question on the most influential factors that encourage them to click on a retargeted advertisement.

For the participants, “credibility” (MM03 & AF03) is imperative because an essential factor in an advertisement is that it should “look a bit real” (MM03) and “keeping everything [product depicted in the advertisement] close to reality” (AF04). With credibility comes “trust” (AF04), both in the advertisement showing the product and the retailer’s website. Hence, this significant factor makes retargeted advertising useful and appealing. The

reputation of a brand and a product are imperative. They can impinge a positive or negative attitude towards the advertisement. MM02 argued, “I want specific brands which I know have good reputation”. Other issues may hinder advertisements because “there are so many shopping scams that many people are finding it difficult to trust an advertisement and a website” (AF04). “Photoshopping” (AF03) images and placing them in advertisements can look unreal and deflect individuals’ attention.

Other participants emphasised the entertaining and enjoying factor of the advertisement; a retargeted advertisement should be “creative and colourful” (AM01), containing “outstanding colours” (MF02) and “video or an animation” (MF01), using “eye-catching colours and a legible font” (AF01) and being “minimalistic and entertaining” (AM02). The advertisement should be “aesthetically pleasing to my liking” (MF01) because “the design is going to say all for entertainment value” (AF02).

Another factor highlighted in this part of the study was the informativeness of an advertisement. Information “is very crucial to advertisements ... This is a very key factor in my opinion” (MM02). Apart from the design of an advertisement, “it’s the information as well” (AF02), which is fundamental in providing timely material to customers.

Interactivity was another factor that the participants mentioned. An advertisement has to be “more realistic, something that makes the product stand out, in a way... interactive and colourful!” (MF01). MM02 confirmed that interactivity is crucial in today’s culture, as it links and “connects” the customer with the company.

Although personalisation was not mentioned directly by the focus groups’ participants when specifically asked about the integral factors of retargeted advertisements that encourage them to click on them, this was implied throughout both sessions. Otherwise, almost everyone agreed that personalisation is imperative when advertisements bounce products that interest them and are not simply generic; advertisements that they trust are credible and real. There was a general agreement that these advertisements target them directly, making them personal.

All participants were aware of the concept of deception and click-bait in advertisements. Some adult group members argued about the “annoying” (AM01) technique used by advertisements to promote their products. Two participants from the different groups mentioned the “creepy” sensation (MF01 & AF02) that these advertisements sometimes may create. On the other hand, if a repeated advertisement “looks sketchy, I wouldn’t really press on it... I wouldn’t really be persuaded” (MF01), “because some of them are a phishing scam!” (MM01). Unfortunately, sometimes, “...there will be like information which is a little bit hard to believe. So, you wouldn’t press on it because you would know that it is not true!” (MF03). Hence, a retargeted advertisement “has not to look sketchy” (MM03) to be effective.

In conclusion, the insights acquired from these two focus groups have provided perspective to the research, which drove the study to underline four significant constructs that may augment the FoMO among young people in the messages carried by retargeted advertisements. Along with the SLR findings, these themes served as a foundation for further analysis by incorporating them into the questionnaire. The following two sections analyse the data obtained from the questionnaire. The subsequent section delves into a comprehensive examination of the AVM section of the conceptual model with its corresponding dataset, while the other section will focus on the TPB and FoMO aspects of the study.

4.4 Advertising Value Model Analysis

4.4.1 Overview

This section presents the analysis of the AVM results. The data was gathered using a Maltese sample, and the analysis includes the statistical techniques discussed in Chapter 3. The analysis was conducted using two statistical software: IBM SPSS Statistics vers. 28.0.1.0 (IBM Corp., 2021), and SmartPLS vers. 4.0.9.4 (Ringle et al., 2022) for partial least squares structural equation modelling (PLS-SEM). The analysis commenced with the initial tests, followed by a means and standard deviation analysis. A comparative Cronbach's alpha investigation was conducted with other sources. Then, the measurement and structural models were evaluated (Chin, 2010). Sarstedt et al.'s (2017) procedure for examining the reflective constructs was applied. Two stages of the procedure are involved; the first focuses on the evaluation criteria of the measurement model, determining its reliability and validity, while the second stage emphasises the evaluation of the structural model, which assesses the significance of hypotheses and their relationships. A mediation analysis is conducted to

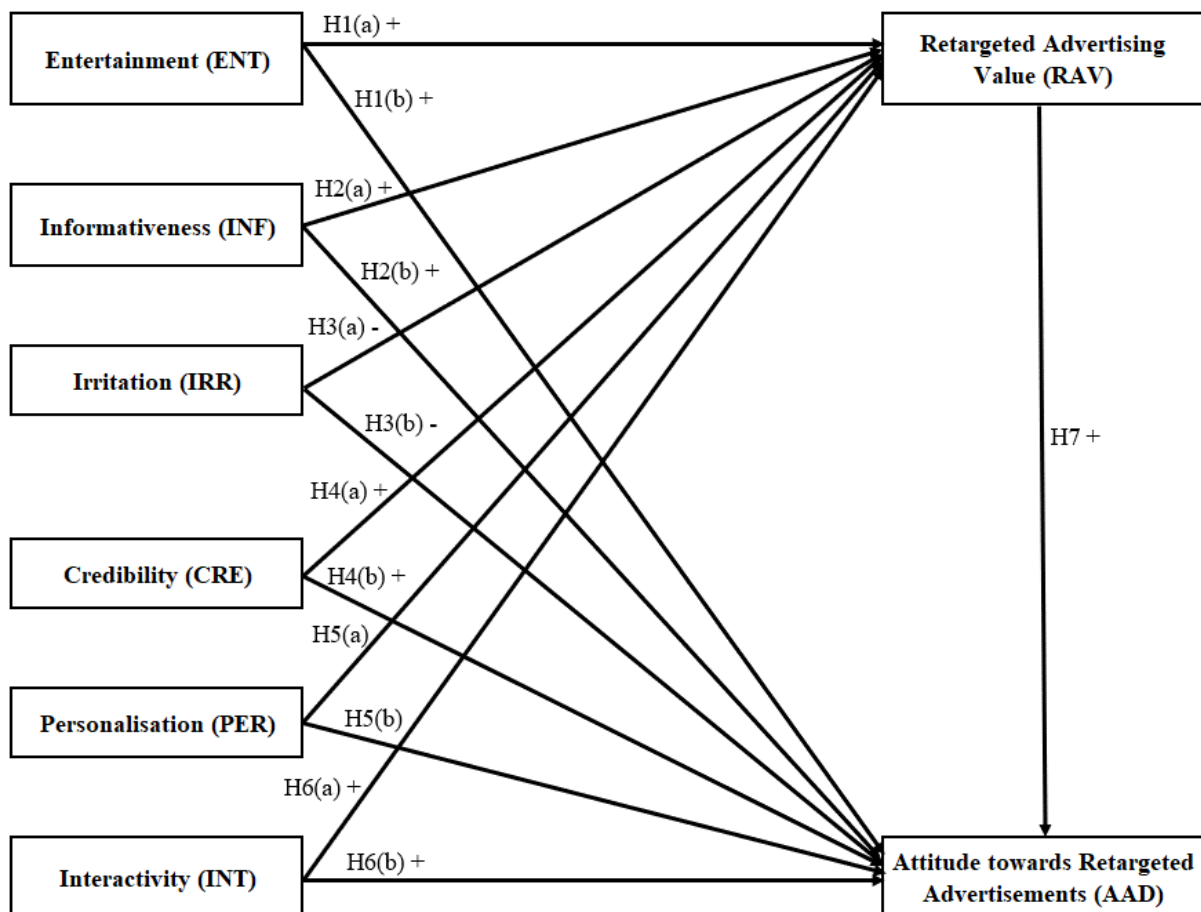


Figure 4.1: The extended AVM with respective hypotheses

Note: Mediation hypothesis: H8, gender-based difference hypothesis: H9, and age-based difference hypothesis: H10

examine the mediation effect of the advertising value in the conceptual model between the six factors and the attitude, followed by a presentation of a parsimonious model. Furthermore, an analysis between genders and ages is performed employing the measurement invariance of composite models (MICOM) procedure (Henseler et al., 2016) and PLS-SEM multigroup analysis (PLS-MGA) (Hair et al., 2018).

Table 4.1: Hypotheses list of AVM including the respective decisions

Hypothesis	Hypothesis Description	Result
H1(a)	The entertainment factor (ENT) of retargeted advertisements positively influences young people's perceived value of retargeted advertisements (RAV).	Supported
H1(b)	The entertainment factor (ENT) of retargeted advertisements positively influences young people's attitudes towards retargeted advertisements (AAD).	Supported
H2(a)	The informativeness factor (INF) of retargeted advertisements positively influences young people's perceived value of retargeted advertisements (RAV).	Supported
H2(b)	The informativeness factor (INF) of retargeted advertisements positively influences young people's attitudes towards retargeted advertisements (AAD).	Not Supported
H3(a)	The irritation factor (IRR) of retargeted advertisements negatively impacts young people's perceived value of retargeted advertisements (RAV).	Not Supported
H3(b)	The irritation factor (IRR) of retargeted advertisements negatively impacts young people's attitudes towards retargeted advertisements (AAD).	Supported
H4(a)	The credibility factor (CRE) of retargeted advertisements positively influences young people's perceived value of retargeted advertisements (RAV).	Supported
H4(b)	The credibility factor (CRE) of retargeted advertisements positively influences young people's attitudes towards retargeted advertisements (AAD).	Not Supported
H5(a)	The personalisation factor (PER) of retargeted advertisements influences young people's perceived value of retargeted advertisements (RAV).	Supported
H5(b)	The personalisation factor (PER) of retargeted advertisements influences young people's attitudes towards retargeted advertisements (AAD).	Not Supported
H6(a)	The interactivity factor (INT) of retargeted advertisements positively influences young people's perceived value of retargeted advertisements (RAV).	Supported
H6(b)	The interactivity factor (INT) of retargeted advertisements positively influences young people's attitudes towards retargeted advertisements (AAD).	Supported
H7	The perceived value of retargeted advertising value (RAV) positively impacts young people's attitudes towards retargeted advertisements (AAD).	Supported
H8	The effect of a) entertainment (ENT), b) informativeness (INF), c) irritation (IRR), d) credibility (CRE), e) personalisation (PER), and f) interactivity (INT) on young people's attitudes towards retargeted advertisements (AAD) is mediated by retargeted advertising value (RAV).	Partially Supported
H9	There is a gender-based difference in the influence of a) entertainment (ENT), b) informativeness (INF), c) irritation (IRR), d) credibility (CRE), e) personalisation (PER), and f) interactivity (INT) on young people's <i>i</i>) perceived retargeted advertising value (RAV) and <i>ii</i>) attitudes towards retargeted advertisements (AAD); and a gender-based difference in the influence of g) perceived retargeted advertising value (RAV) on attitudes towards retargeted advertisements (AAD).	Partially Supported
H10	There is an age-based difference in the influence of a) entertainment (ENT), b) informativeness (INF), c) irritation (IRR), d) credibility (CRE), e) personalisation (PER), and f) interactivity (INT) on people's <i>i</i>) perceived retargeted advertising value (RAV) and <i>ii</i>) attitudes towards retargeted advertisements (AAD); and an age-based difference in the influence of g) perceived retargeted advertising value (RAV) on attitudes towards retargeted advertisements (AAD).	Partially Supported

In this section, abbreviated variable names were used as measurement codes; for example, entertainment is referred to as ENT. Several hypotheses are proposed to evaluate the relationship between the six predictors and value and attitude outcomes. Abbreviated variable names are included in the extended AVM (Fig. 4.1), and the hypotheses list (Table 4.1).

4.4.2 Descriptive Demographics

The respondents that filled in the questionnaire were 521. A total of 41 respondents who stated that they never encountered a retargeted advertisement were excluded from the sample, leaving a remaining of 480 responses. There were 55.8% female respondents, and most respondents were Maltese, with only 7.5% coming from other European countries or other continents but residing in Malta. The mean age was 18.23 ($SD = 2.88$). Two age groups were created to make further comparisons; those between 13 and 17 ($M = 15.59$, $SD = 1.46$) were considered minors, and those between 18 and 24 ($M = 20.20$, $SD = 1.95$) were considered young adults. The young adult group was the largest cohort, with 57.3% of the sample. Twenty per cent of the respondents were secondary school students, while 40.6% and 31.9% were post-secondary and tertiary students, respectively. Table 4.2 presents a summary of the descriptive demographic statistics of the study.

More descriptive statistics are found in Appendix M. It is of interest to observe that nearly two-thirds of the sample stated that they surf the Internet for more than four hours daily. Additionally, 69.2% acknowledged using their smartphones to access the Internet. Forty-one per cent admitted that they encounter retargeted advertisements every time they access the websites they usually visit. At the same time, only 12.7% come across these advertisements once to twice a month. Almost half of the sample admitted purchasing online, while 22.7% said they ask their parents or guardians to purchase. When asked if they ever purchased a product because retargeted advertisements influenced them, 26.3% said they purchased by themselves, and 16.9% acknowledged that they asked their parents to purchase it. Finally, 53.1% admitted not using advertisement blockers on their devices.

Table 4.2: Demographic data of the respondents

Particulars		Frequency	Percentage
Gender	Male	201	41.9
	Female	268	55.8
	Other	11	2.3
	Total	480	100.0
Age Bracket	13-17 (Minors)	205	42.7
	18-24 (Young Adults)	275	57.3
	Total	480	100.0
Educational Level	Form 2/Year 8	20	4.2
	Form 3/Year 9	26	5.4
	Form 4/Year 10	16	3.3
	Form 5/Year 11	35	7.3
	Post-secondary	195	40.6
	Tertiary level/Further education	153	31.9
	Postgraduate degree	35	7.3
	Total	480	100.0
Nationality	Maltese	444	92.5
	Other European Union (EU) nationality	20	4.2
	Other nationalities	16	3.3
	Total	480	100.0

4.4.3 Initial Tests

Initially, various tests were conducted using IBM SPSS (IBM Corp., 2021). First, the Kaiser-Meyer-Olkin (KMO) sample adequacy test was performed to assess the applicability of the main component factor analysis and determine the eligibility of data for factor analysis. The KMO value of the whole model (including FoMO and TPB) stood at .91, whereas for this part of the model, it read .90, which, according to Field (2018), is a superb level of acceptance. Another statistical test, Bartlett's Test of Sphericity, was conducted first for the whole model ($\chi^2 = 18694.09$, $p = .000$) and then for the AVM ($\chi^2 = 9503.55$, $p = .000$) to determine whether a correlation matrix has sufficiently significant correlations to conduct factor analysis; this was significant and adequate for conducting a factor analysis (Hair et al., 2019b).

A factor analysis was conducted to identify a smaller number of underlying factors, if needed, that can explain the correlations among a larger number of observed variables. First,

all AVM indicators were run based on an eigenvalue greater than one, using Varimax rotation.

Five indicators marked as either lower than .70 or loaded on other variables and were removed (Hair et al., 2019b); two indicators from interactivity (INT03 & INT04), and one each from credibility (CRE01), informativeness (INF04) and retargeted advertising value (RAV03). When at least two items are kept, deleting reflected items with low loadings has no effect on the scale's validity (Hair et al., 2019b). Table 4.3 shows the final indicator loadings for further testing, excluding the removed item codes. The total variance explained improved by four per cent.

Table 4.3: Rotated component matrix for AVM

Item Code	Component							
	ENT	INF	IRR	CRE	PER	INT	RAV	AAD
ENT01	.840	.215	-.076	.086	.109	.114	.093	.045
ENT02	.841	.243	-.092	.064	.170	.127	.096	.078
ENT03	.751	.219	-.010	.169	.249	.162	.106	.141
ENT04	.799	.215	-.119	.047	.221	.126	.109	.131
ENT05	.790	.202	-.082	.103	.233	.117	.086	.117
INF01	.156	.787	.076	.103	.086	.179	.143	.174
INF02	.179	.821	.011	.150	.209	.167	.179	.049
INF03	.161	.721	.025	.212	.184	.127	.162	.075
IRR01	-.144	-.036	.915	.050	.008	.039	-.022	-.007
IRR02	-.167	-.081	.920	.072	.044	.046	-.008	.027
IRR03	-.030	-.121	.822	.051	-.177	-.008	.085	-.028
IRR04	.032	-.115	.798	.131	-.067	.017	-.004	-.029
CRE02	.327	.133	-.061	.743	.104	.168	.093	-.007
CRE03	.232	.118	-.082	.870	.057	.139	.079	.074
CRE04	.255	.210	-.071	.765	.035	.174	.040	.182
PER01	.107	.118	.018	.059	.726	.209	.159	.189
PER02	.111	.077	.135	.069	.879	.122	.076	.030
PER03	.094	.030	.157	.044	.886	.089	.070	.062
INT01	.162	.205	.046	.199	.125	.818	.281	.078
INT02	.209	.208	.024	.143	.078	.825	.228	.168
RAV01	.310	.353	-.017	.225	.124	.216	.721	.131
RAV02	.245	.352	-.033	.210	.203	.207	.713	.226
AAD01	.256	.099	-.105	.084	.137	.169	.081	.812
AAD02	.204	.123	-.084	.062	.169	.121	.168	.809
AAD03	.397	.163	-.189	.070	.090	.121	.086	.766
AAD04	.264	.159	-.124	.076	.134	.161	.152	.828

Cronbach's alpha values were inspected to ensure that construct reliability remained adequate. The Cronbach's alpha improved for INT (.80 → .86) and slightly for CRE (.85 → .86). Cronbach's alpha slightly decreased for INF (.85 → .83) and RAV (.90 → .86). Other tests were conducted to detect Common Method Bias (CMB); these are reported under the evaluation criteria of the structural model.

4.4.4 Means and Standard Deviation Analysis

Overall, INF ($M = 3.65$, $SD = 1.32$) and INT ($M = 3.50$, $SD = 1.53$) reported slightly weak, as the mean was just below the scale midpoint of the 7-point scale. On the other hand, irritation (IRR) ($M = 4.95$, $SD = 1.60$) and personalisation (PER) ($M = 4.21$, $SD = 1.53$) were moderately strong, since all the means were above the midpoint. The participants' responses to IRR were the most dispersed from the mean. ENT ($M = 2.85$, $SD = 1.29$) and CRE ($M = 2.87$, $SD = 1.29$) were the weakest and the least dispersed. Table 4.4 provides a whole view of each construct's means and standard deviation values. The excluded indicators are incorporated in the table and specifically denoted with an asterisk. The frequency percentage analysis list per indicator for AVM are found in Appendix N.

4.4.5 Comparison with Other Sources

A comparison between the Cronbach's alpha values of the original sources and those of this study indicated that this study's values were consistent with those of previous studies. Furthermore, bar the PER and the attitude towards retargeted advertisements (AAD) variables, all Cronbach's alpha values from this study were within the range of the scores in the original sources. PER was slightly higher than the highest value of the range of the original sources by a margin of .02. However, AAD reported the highest variance, with a divergence of .10 from the original range (Table 4.5). The following part of this section evaluates the measurement model.

Table 4.4: Measurement codes, items, mean, standard deviation, with convergent validity and reliability analysis results for AVM.

Measurement Item Code	Measurement Items	<i>M</i>	<i>SD</i>	Cronbach Alpha	Composite Reliability	AVE
Entertainment (ENT) - I feel that retargeted advertisements are:		2.85	1.29	.93	.95	.79
ENT01	Entertaining	2.79	1.45			
ENT02	Enjoyable	2.70	1.41			
ENT03	Interesting	3.31	1.58			
ENT04	Pleasant	2.76	1.40			
ENT05	Exciting	2.70	1.44			
Informativeness (INF)		3.65	1.32	.83	.90	.74
INF01	Retargeted advertisements supply relevant information on products.	3.70	1.52			
INF02	Retargeted advertisements provide timely (appropriate) information on products.	3.68	1.54			
INF03	Retargeted advertisements tell people about products when they need the information.	3.57	1.54			
INF04*	<i>Retargeted advertisements are a good source of up-to-date product information</i>	3.48	1.57			
Irritation (IRR) - I feel that retargeted advertisements are:		4.95	1.60	.90	.93	.77
IRR01	Annoying	5.22	1.86			
IRR02	Irritating	5.04	1.89			
IRR03	Deceptive (Misleading / dishonest)	4.58	1.66			
IRR04	Intrusive (Invading my privacy)	4.94	1.85			
Credibility (CRE) - I feel that retargeted advertisements are:		2.87	1.29	.86	.91	.78
CRE01*	<i>Convincing</i>	3.43	1.68			
CRE02	Believable	3.03	1.54			
CRE03	Credible (Reliable)	2.85	1.46			
CRE04	Trustworthy	2.72	1.38			
Personalisation (PER)		4.21	1.53	.85	.90	.76
PER01	I feel that retargeted advertisements display personalised messages to me.	3.65	1.75			
PER02	I feel that retargeted advertisements are personalised to my browsing behaviour.	4.61	1.80			
PER03	Content in retargeted advertisements is personalised.	4.37	1.72			

Interactivity (INT)		3.50	1.53	.86	.86	.88
INT01	Retargeted advertisements give customers the opportunity to connect with the company.	3.64	1.63			
INT02	Retargeted advertisements facilitate two-way communication between the customers and the companies.	3.36	1.63			
INT03*	<i>I like retargeted advertisements with videos, images, and downloads.</i>	3.14	1.67			
INT04*	<i>I prefer retargeted advertising with links in them.</i>	3.22	1.67			
Retargeted Advertising Value (RAV)		3.25	1.42	.86	.94	.88
RAV01	I feel that retargeted advertisements are useful.	3.33	1.49			
RAV02	I feel that retargeted advertisements are valuable.	3.17	1.54			
RAV03*	<i>I feel that retargeted advertisements are important.</i>	3.04	1.56			
Attitude towards Retargeted Advertisements (AAD)		3.02	1.38	.93	.95	.82
AAD01	My general opinion of retargeted advertisements is favourable (positive).	3.06	1.53			
AAD02	I consider retargeted advertisements essential.	2.96	1.51			
AAD03	Overall, I like retargeted advertisements.	2.90	1.51			
AAD04	Overall, I consider retargeted advertisements a good thing.	3.16	1.57			

Note: * Indicators excluded due to low loading during IBM SPSS (IBM Corp., 2021) test

Table 4.5: AVM Cronbach's alpha comparison between previous studies and this study

Construct	Other Sources Cronbach's Alpha Range	Study's Cronbach's Alpha
ENT	(.83 - .94)	.93
INF	(.74 - .84)	.83
IRR	(.78 - .95)	.90
CRE	(.81 - .86)	.86
PER	(.81 - .83)	.85
INT	(.64 - .94)	.86
RAV	(.84 - .90)	.86
AAD	(.74 - .83)	.93

Note: Refer to Table 3.4 for the individual Cronbach's alpha values

4.4.6 Evaluation Criteria of the Measurement Model

According to Sarstedt et al. (2017), the measuring model's assessment criteria include four tests. It commences with reliability testing comprising two assessments: indicator reliability, which evaluates factor loadings, and internal consistency reliability, which determines the degree of stability in responses to items belonging to a single construct.

The model's validity is determined by two tests: convergent validity, which examines the extent to which different measures of the same construct are related to each other, and discriminant validity, which determines the extent to which a measure does not correlate with measures of unrelated constructs.

4.4.6.1 Indicator Reliability

An indicator's reliability is determined by its consistency with what it is intended to measure (Hair et al., 2019b). Indicator reliability is measured by examining the outer loadings of the model; the relationship between the reflective latent variables and their indicators (Hair et al., 2019b). All factor loadings should be preferably .70 or higher (Hair et al., 2019b). All factor loadings marked more than the threshold, except those five indicators removed due to low loadings (marked with an asterisk in Table 4.4).

4.4.6.2 Internal Consistency Reliability

An analysis of reliability was conducted to determine the consistency of the scales and the factors. The Cronbach's alpha coefficient and composite reliability of each construct of a measurement model are satisfactory if they exceed the threshold value of .70 (Hair et al., 2019b). In this part of the questionnaire, Cronbach's alpha ranged between .83 (INF) and .93 (ENT & AAD), resulting in an acceptable inter-item reliability (Nunnally & Bernstein, 1994). The composite reliability varied between .86 (INT) and .95 (ENT & AAD), ranging from good to excellent.

4.4.6.3 Convergent Validity

Convergent validity determines whether multiple methods of measuring the same construct produce similar results or converge on a common score. According to Sarstedt et al. (2017), average variance extracted (AVE) is employed because it compares the scores of a scale with the scores of other related measures that are expected to have a strong positive correlation with the construct being measured. The AVE should not be less than .50 (Hair et

al., 2019b). In this study, AVE varied between .74 (INF) and .88 (INT & RAV). Table 4.4 presents the reliability tests and convergent validity results.

4.4.6.4 Discriminant Validity

A discriminant validity could be performed, as the AVE was established to be larger than the value of equivalent inter-measure correlation (Fornell & Larcker, 1981). To establish discriminant validity, a comparison of the results of one scale with the results of other distinct constructs' measures should be conducted. If the results of these comparisons demonstrate that the scales are not strongly correlated, then the measure is said to have discriminant validity.

Table 4.6: Discriminant validity test using Fornell-Larcker criterion for AVM

Measures	AAD	CRE	ENT	INF	INT	IRR	PER	RAV
AAD	.905							
CRE	.457	.882						
ENT	.610	.579	.887					
INF	.443	.457	.441	.862				
INT	.463	.339	.427	.555	.937			
IRR	-.252	-.164	-.190	.037	.025	.878		
PER	.251	.227	.291	.412	.395	.169	.871	
RAV	.650	.464	.566	.527	.528	-.080	.437	.938

Two tests were conducted to establish discriminant validity. First, a Fornell-Larcker criterion was performed. All the factor values were higher than the loading of other constructs and ranged between .86 and .94, over the .70 threshold (Hair et al., 2019b). Therefore, discriminant validity was established. Table 4.6 shows the results of the Fornell-Larcker criterion.

The Heterotrait–Monotrait ratio (HTMT) method was conducted according to the approach suggested by Hair et al. (2017a). This method is recommended for assessing discriminant validity. It is considered a more robust measure when compared to the Fornell-Larcker criterion, as it examines the potential impact of measurement error on the correlations between the constructs and their indicators. If the ratios are lower than .85, constructs are considered conceptually diverse. In contrast, a ratio greater than .85 shows that the constructs may not be adequately distinctive. In this part of the study, no ratio was greater than .73. Hence, discriminant validity was established (Table 4.7). The subsequent part of this section critically assesses the structural model.

Table 4.7: Discriminant validity test using HTMT Matrix for AVM

Measures	AAD	CRE	ENT	INF	INT	IRR	PER
CRE	.509						
ENT	.653	.645					
INF	.507	.541	.501				
INT	.519	.394	.476	.659			
IRR	.272	.182	.205	.052	.030		
PER	.271	.260	.319	.483	.454	.209	
RAV	.726	.536	.629	.623	.612	.090	.501

4.4.7 Evaluation Criteria of the Structural Model

The evaluation criteria of the structural model conducted using SmartPLS (Ringle et al., 2022) included measures that assess the strength and significance of the relationships between the constructs in the model. Five evaluation criteria were used for the structural model (Sarstedt et al., 2017).

A multicollinearity test helped identify if constructs are highly correlated to each other. Harman's single-factor method supported this test. The coefficient of determination (R^2) indicates the amount of variance in an endogenous construct explained by the exogenous constructs in the model. Predictive relevance (Q^2) or cross-validation indices aid in assessing the model's predictive accuracy using data not used in the initial model estimation. This procedure is followed by the significance and relevance of path coefficients, assessing whether the relationships between the constructs are statistically significant. All the hypotheses in this part of the conceptual model were tested. The effect size of path coefficients – Cohen's f^2 effects was measured, where it assessed the model's explanatory power.

Few other tests were conducted to estimate the goodness-of-fit. This section presents a mediation analysis between the six factors and AAD through RAV. Finally, it concludes with a parsimonious model.

4.4.7.1 Multicollinearity Test

A multicollinearity test was conducted to detect the presence of a high correlation between two or more variables. A multiple regression analysis was conducted using variance inflation factor (VIF) for common method variance (CMV). This was tested twice; initially, the normal AVM model was tested. Then, a random dummy variable was created and tested

(Kock, 2015). The rule of thumb in the multicollinearity test is that if the results are equal to or lower than 3.3, then the model would not be contaminated with common method bias (CMB), whereas a higher value indicates a problem with collinearity (Kock, 2015). The original model's constructs test was lower than 1.96, and the random dummy variable test resulted lower than 1.66. Hence, it was safe to state that the model was free from CMB.

4.4.7.2 Harman's Single Factor Test

The Harman's single factor test is another method used to assess the presence of CMV in survey data. Fuller et al. (2016) accentuate the importance of CMV and CMB by many business researchers and scholars. Harman's one-factor test would be an essential consideration to employ along with a multicollinearity test. However, Podsakoff et al. (2003) highlight various limitations when this test is used in isolation due to its insensitivity and not being a conclusive solution for controlling method effects statistically. This test involved conducting a factor analysis using IBM SPSS (IBM Corp., 2021), where all the items for the AVM were collected and forced into one factor without any rotations (Kock, 2015; Podsakoff et al., 2003). If a single factor emerges accounting for a percentage of variance over 50.0%, it would indicate that CMB is present in the data (Kock, 2015). First, the test was conducted for the whole model (including FoMO and TPB), and it showed a total variance of 29.2%. When the test was conducted for the AVM model, the total variance was 35.5%, reaffirming that the whole model and the AVM model data were free from any CMB contamination.

4.4.7.3 Coefficient of Determination (R^2)

In a regression model, the coefficient of determination is a statistical metric that quantifies the amount of variance in a dependent variable that can be explained by an independent variable. Using SmartPLS (Ringle et al., 2022), the RAV's R^2 was .490, indicating that 49.0% of the change in that variable is driven by young people's perceptions of the degree of the six factors. When evaluating young people's AAD, the R^2 was .548, indicating that the six influencing factors and the advertising value impact 54.8% of the variable change. The adjusted R^2 for RAV and AAD were .484 and .541 respectively.

In social sciences, there is no hard and fast rule for an acceptable R^2 value, as it can vary depending on diverse factors (Stevens, 2009), such as the research question, the quality and number of independent variables, and the sample size. Nevertheless, the results confirm that the measurement model is adequate and satisfactory and that the structural model can undergo a predictive relevance test for the RAV and AAD constructs.

4.4.7.4 Predictive Relevance (Q^2)

A blindfolding procedure was conducted to evaluate the model's predictive relevance using PLS-Predict (Shmueli et al., 2019) in SmartPLS (Ringle et al., 2022). The Q^2 indicates the predictive accuracy of the model by estimating the amount of variation in the endogenous constructs that can be explained by the model. Hair et al. (2019b) suggest that the cross-validated redundancy approach is the best-exercised procedure. If the Q^2 values are above 0, it would clearly indicate that the model has predictive relevance. A blindfolding procedure was conducted, and the predictive relevance for the endogenous constructs RAV ($Q^2 = .47$) and AAD ($Q^2 = .45$) was established.

4.4.7.5 Hypotheses Testing

For the hypotheses testing, a bootstrapping exercise was conducted with 5,000 subsamples to produce bootstrapped confidence intervals of the regression coefficients (Hair et al., 2019b; Henseler et al., 2009). Parallel processing was committed with a significance level gauged at .05 or 95.0% confidence interval. Figure 4.2 shows the PLS-SEM path analysis. Following is an analysis of each hypothesis framed for this part of the conceptual model.

H1(a) and H1(b) investigated if ENT positively influences perceived RAV and AAD. The findings indicate that ENT has a substantial effect on RAV ($\beta = .277, t = 5.493, p = .000$) and AAD ($\beta = .276, t = 5.402, p = .000$). As a result, both H1(a) and H1(b) are supported.

The INF of retargeted advertisements was tested in H2(a) and H2(b) for its positive influence on perceived RAV and AAD. The results show that INF influences RAV ($\beta = .163, t = 3.190, p = .001$) but not AAD ($\beta = .062, t = 1.515, p = .130$). Therefore, H2(a) is supported, but H2(b) is not.

Retargeted advertisements were evaluated for their adverse effects on perceived RAV and AAD using H3(a) and H3(b). The results show that IRR has no impact on RAV ($\beta = -.054, t = 1.432, p = .152$). However, it significantly affects AAD negatively ($\beta = -.159, t = 4.432, p = .000$). Hence, H3(a) is not supported, while H3(b) is supported.

CRE in retargeted advertisements was assessed in H4(a) and H4(b) for its positive influence on perceived RAV and AAD. The results indicate that CRE positively influences

RAV ($\beta = .107, t = 2.089, p = .037$) but does not directly affect AAD ($\beta = .031, t = 0.720, p = .472$). Thus, H4(a) is supported, while H4(b) is not.

H5(a) and H5(b) examined whether PER influences the value of retargeted advertisements and AAD. The results show that PER has a positive influence on RAV ($\beta = .192, t = 4.247, p = .000$), but has no significant negative impact on AAD ($\beta = -.055, t = 1.532, p = .125$). Unlike other hypotheses, the influence was considered for these two hypotheses without declaring if it was positive or negative. Hence, H5(a) is supported favourably, but H5(b) is not supported.

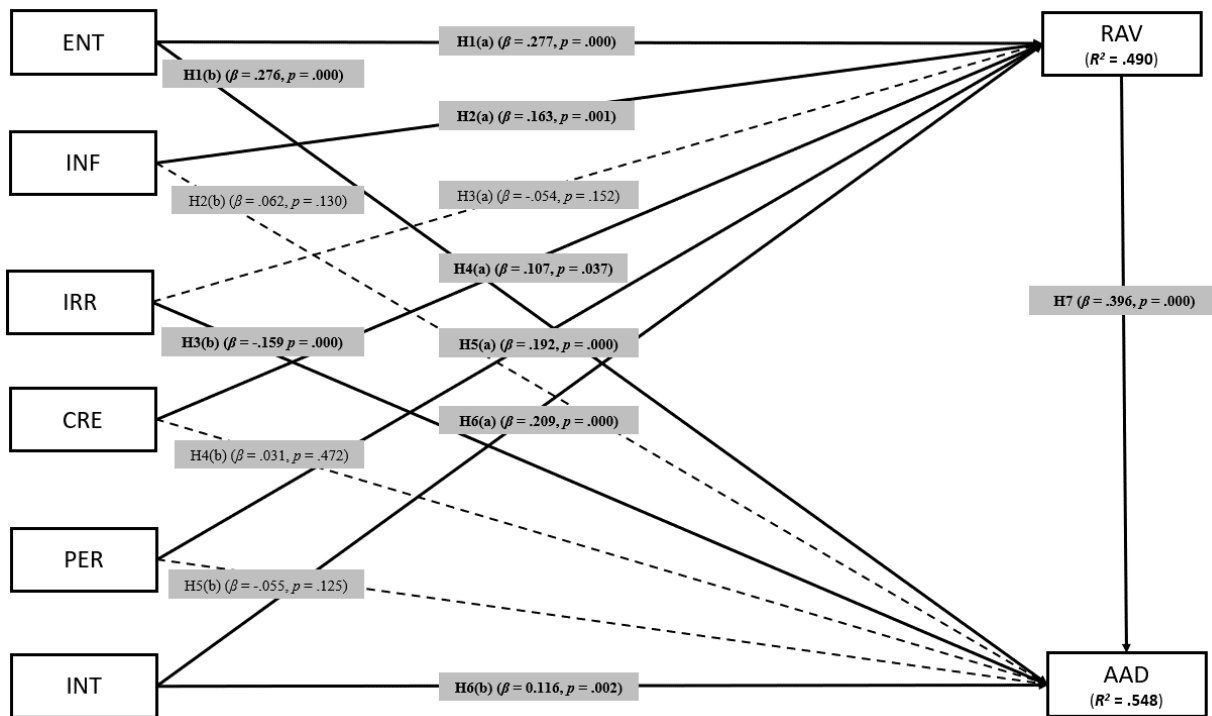


Figure 4.2: PLS-SEM path analysis

H6(a) and H6(b) were used to explore the positive effect of INT on RAV and AAD. It was discovered that INT had a considerable beneficial impact on RAV ($\beta = .209, t = 4.206, p = .000$) and a significant positive influence on AAD ($\beta = .116, t = 3.127, p = .002$). As a result, both H6(a) and H6(b) are supported.

Finally, the impact of RAV on AAD was assessed with H7. Results show that RAV significantly impacts AAD ($\beta = .396, t = 7.635, p = .000$). Hence, H7 is also supported. Table 4.8 summarises the hypotheses' respective path coefficients, T values, the lower limit confidence interval (LLCI) and the upper limit confidence interval (ULCI).

Table 4.8: Hypotheses decisions for AVM

Hypotheses	Variables	Coefficients	T values	LLCI	ULCI	Hypotheses Decisions
H1(a)+	ENT → RAV	.277***	5.493	.171	.377	Supported
H1(b)+	ENT → AAD	.276***	5.402	.175	.375	Supported
H2(a)+	INF → RAV	.163**	3.190	.068	.267	Supported
H2(b)+	INF → AAD	.062	1.515	-.021	.141	Not Supported
H3(a)-	IRR → RAV	-.054	1.432	-.127	.022	Not Supported
H3(b)-	IRR → AAD	-.159***	4.432	-.230	-.089	Supported
H4(a)+	CRE → RAV	.107*	2.089	.005	.206	Supported
H4(b)+	CRE → AAD	.031	0.720	-.051	.118	Not Supported
H5(a)	PER → RAV	.192***	4.247	.103	.282	Supported
H5(b)	PER → AAD	-.055	1.532	-.123	.018	Not Supported
H6(a)+	INT → RAV	.209***	4.206	.113	.304	Supported
H6(b)+	INT → AAD	.116**	3.127	.046	.190	Supported
H7+	RAV → AAD	.396***	7.635	.293	.501	Supported

Note: * $p < .05$; ** $p < .01$; *** $p < .001$, LLCI - lower limit confidence interval, ULCI - upper limit confidence interval

4.4.7.6 Cohen's f^2 Coefficients

Cohen's f^2 coefficients were calculated to determine the model's magnitude of effect. These were analysed to understand if any construct in the model would affect the R^2 value. It quantifies the proportion of variance explained by an independent variable on a dependent variable (Hair et al., 2017a). According to Cohen (1988), values of .02, .15 and .35 represent small, medium, and large effects, respectively. The relationship between RAV and AAD was the strongest among the other antecedents and moderate ($f^2 = .18$), followed by small effect sizes for ENT's relationships between both AAD ($f^2 = .09$) and RAV ($f^2 = .09$), the relationship between IRR and AAD ($f^2 = .05$), and the link between PER ($f^2 = .06$) and INT ($f^2 = .05$) with RAV. By implication, the effect sizes of INF and CRE were ineffective on both RAV and AAD.

4.4.7.7 Other Tests

Sarstedt et al. (2017) were very cautious about running goodness-of-fit (GFI) tests using PLS-SEM due to several studies that were precarious about the relevance of the measurement. However, based on the strong results acquired by this study, a standardised root mean square residual (SRMR) test was conducted. This measures the average difference between the observed and predicted correlations based on the model, standardised by the average variance of the observed variables in the model (Kline, 2015). If a value is .08 or less, it means that there is an acceptable fit between the model and the data, while if the value

marks .05 or less, it indicates a good fit (Hu & Bentler, 1999). The SRMR confidence intervals of this part of the conceptual model stood at .051, marginal on the good fit.

For the same reason, the normed fit index (NFI) was tested to compare the fit of the model to a null model. Hair et al. (2019b) suggest that this should never be used in isolation but in conjunction with other tests such as SRMR. NFI values should range between zero and one, with the highest values indicating a better fit. The NFI for the model reads .83, showing a strong fit.

4.4.7.8 Mediation Analysis

A mediation analysis was performed to determine the mediating role of RAV in the relationship between the six factors and AAD. The mediation analysis followed the procedure proposed by Zhao et al. (2010) and extended by Nitzl et al. (2016). The findings revealed that the indirect effects of INF ($\beta = .064, t = 2.814, p = .002$), CRE ($\beta = .042, t = 2.039, p = .021$) and PER ($\beta = .076, t = 3.793, p = .000$) on AAD through RAV were significant while no significance was found in the direct effect to AAD. Hence, this demonstrated full mediation through RAV in the relationship between INF, CRE, PER, and AAD.

Table 4.9: The impact of the six factors on AAD, through RAV as a mediating variable

Variables	Total Effects		Direct Effect		Indirect Effects		Mediation Effect
	Coefficients	T values	Coefficients	T values	Coefficients	T values	
ENT → AAD	.386***	8.005	.276***	5.402	.110***	4.189	Complementary Partial
INF → AAD	.127**	2.799	.062	1.515	.064**	2.814	Full Mediation
IRR → AAD	-.18***	4.817	-.159***	4.432	-.021	1.413	-
CRE → AAD	.074	1.664	.031	0.720	.042*	2.039	Full Mediation
PER → AAD	.022	0.538	-.055	1.532	.076***	3.793	Full Mediation
INT → AAD	.199***	4.742	.116**	3.127	.083***	3.834	Complementary Partial

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

On the other hand, the results showed that for both ENT ($\beta = .110, t = 4.189, p = .000$) and INT ($\beta = .083, t = 3.834, p = .000$), the indirect effect complemented the direct effect on AAD through RAV; hence, RAV was exhibiting a complementary partial mediating role in the relationship between the ENT and INT precursors and AAD. RAV did not have any mediating role between IRR and AAD. Hence, only H8c is not supported, rendering the hypothesis H8 partially supported. Table 4.9 shows the influence of the six factors tested in the study on AAD via the mediating role of RAV.

4.4.7.9 Parsimonious Model for AVM

What is coined as Ockham's razor philosophy, the principle of parsimony, necessitates adopting a simpler model when investigating a rather complex model (Schaffer, 2015). The option for a parsimonious model for AVM was motivated by the requirement to have a simple but still effective model, that would include the least possible independent variables that make up most of the influence on the dependent variables while still explaining the observed data effectively.

Based on Cohen's f^2 coefficients, a parsimonious model for AVM was constructed and tested. When the model was stripped of non-significant relationships, the newly explained variance (R^2 value) reduced marginally from the original model for RAV ($R^2 = .458$, $d = -3.2\%$) and AAD ($R^2 = .532$, $d = -0.5\%$). The R^2 adjusted was .455 for RAV and .539 for AAD. Interestingly, ENT, as an antecedent, has the highest strongest effect on both RAV ($\beta = .384$, $t = 8.876$, $p = .000$) and AAD ($\beta = .324$, $t = 5.971$, $p = .000$). INT has a strong significant influence on RAV ($\beta = .280$, $t = 6.117$, $p = .000$). PER was found to be more effective on RAV ($\beta = .214$, $t = 5.013$, $p = .000$), while IRR strongly affecting the AAD ($\beta = .155$, $t = 4.966$, $p = .000$).

Based on effect sizes lower than .35, the relationships between CRE and RAV ($f^2 = .014$) and AAD ($f^2 = .001$), INF and RAV ($f^2 = .030$) and AAD ($f^2 = .005$), INT and AAD ($f^2 = .018$), IRR and RAV ($f^2 = .005$) and PER and AAD ($f^2 = .005$) were removed. Subsequently, several tests were carried out. First, when using the Chi-square (χ^2) values and the degrees of freedom (df) testing of the original model ($\chi^2 = 1622.34$, $df = 11975$, $r = .135$) with the parsimonious model ($\chi^2 = 1196.95$, $df = 9101$, $r = .131$), it was established that the difference was not statistically significant when the two models were compared. Moreover, the PLSPredict function in SmartPLS (Ringle et al., 2022) provides outcomes of cross-validated predictive ability test (CVPAT) (Sharma et al., 2023) and Bayesian Information Criterion (BIC) (Schwarz, 1978). For CVPAT, theoretical models are compared for parsimony power. The average loss difference should be lower than zero, as the predictive capabilities of a parsimonious model are compared to the indicator average and linear model (Sharma et al., 2023). When the indicator average test was conducted, the average loss difference (ALD) remained constant for RAV (ALD = $-.903$, $p = .000$) and AAD (ALD = $-.819$, $p = .000$), meaning that the parsimonious model has predictive ability. When the linear model was

tested, RAV was significant (ALD = -.045, $p = .045$), while AAD was not (ALD = -.024, $p = .362$); hence the criteria for both tests was not fully fulfilled. Nevertheless, the endogenous constructs' predictive relevance RAV ($Q^2 = .45$) and AAD ($Q^2 = .43$) was established with a large effect size. Moreover, when the BIC for AAD as the outcome variable in the original model (-332.56) was compared to AAD in the parsimonious model (-340.67), it resulted as smaller than the original model, with a difference of 8.11. According to Raftery (1995), the difference constitutes strong evidence in favour of the parsimonious model. Overall, the results point to a suitable parsimonious model. Figure 4.3 shows the proposed parsimonious model.

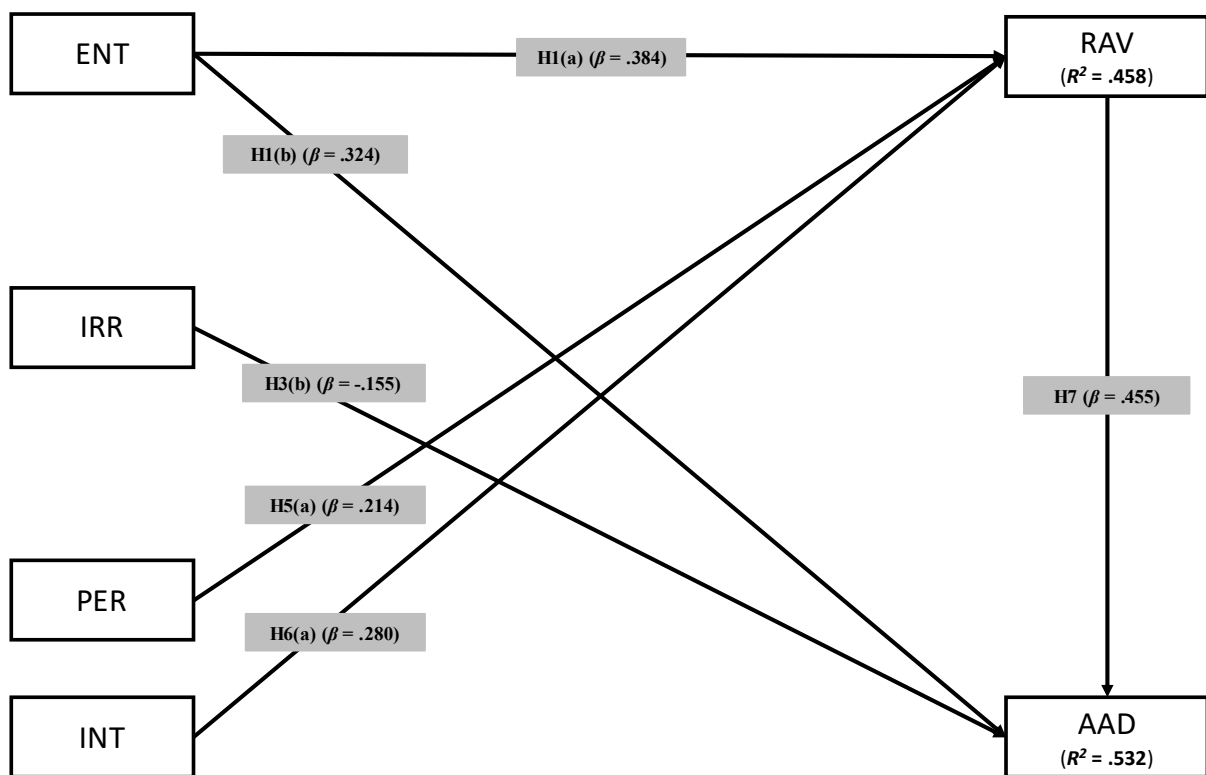


Figure 4.3: Parsimonious model for AVM

Note: All p values < 0.001

4.4.8 Differences Between Young People Groups

This study assesses the impact of retargeted advertisements on young people. The investigation was extended to determine whether there were any differences between genders (men and women) and ages (minors – 13 to 17 years and young adults – 18 to 24 years). Other genders were not counted in this comparative study due to their small sample size. For this investigation, the measurement invariance of composite models (MICOM) procedure was conducted (Henseler et al., 2016). MICOM refers to the consistency of a construct's

measurement structure across different groups or conditions. This technique is based on the latent variables, where SmartPLS (Ringle et al., 2022) characterises these variables as direct arrangements of indicators (Hair et al., 2018). The investigation followed three recommended steps conducted sequentially, comprising:

- a) Configural invariance - refers to the investigative concept in statistics that verifies that the fundamental framework and pattern with all participants was conducted consistently without any differences between groups (Hair et al., 2018). Hence, it must be ascertained during the first step that all participants who filled in the questionnaire were provided with the same questions, and no differences in context and discrimination between genders, ages and geographic means occurred. Even at the analysis stage, every step was conducted equally across the whole study. If there is consistency, without any discrimination, and thus, configural invariance is established, then the investigation will move on to the second step of the procedure.
- b) Compositional invariance - in this phase, the dataset is assessed to understand whether the correlation of one group's combination of variables or composite with another group's composite is significantly lower than one (Henseler et al., 2016). For example, if the data of men are compared to women, and their confidence intervals show no significant difference, then that would indicate no significant composite variation between men and women, resulting in compositional invariance being established, leading the way to the final step.
- c) Equality of composite mean values and variances - in this last step, permutation-based confidence intervals are employed to evaluate whether there are variances in the mean values and any difference in the composite across the groups (Schlängel & Sarstedt, 2016). Suppose the variances and mean values are not equal for a composite; in that case, this will be shown in the outcome and ultimately determines if a partial or full measurement invariance is established (Henseler et al., 2016).

In this study, the first step - configural invariance - was established as respondents filled in the questionnaire simultaneously, with no different items in questionnaires and no discrimination between groups. The back-translation exercises were carried out to ensure that no part of the questionnaire could be interpreted differently. The data were treated equally in the analysis, and consistent algorithm settings were applied (Hair et al., 2018).

Full measurement invariance, meaning that it entirely passed steps two and three without invariances, was established only between young male and female adults. For the following groupings, partial compositional invariance and/or partial equality of composite mean values and variances, according to Hair et al. (2018), could be established (second and third steps): between women and men, female and male minors; and female minors and young female adults.

Between male minors and young male adults and across the age brackets (minor vs young adults) measurement invariance could not be established. All the steps taken in the MICOM procedure are shown in Table 4.10; the two comparisons in which the invariance was not determined are highlighted in light grey and in italics. The procedure results acquired via Smart-PLS (Ringle et al., 2022) can be inspected in Appendix O.

Table 4.10: The MICOM three-step process for AVM

Comparative Factors	Step 1	Step 2	Step 3
	Configural Invariance	Compositional Invariance	Equality of Composite Mean Values and Variances
Females vs. Males	✓	✓	✗
<i>Minors vs. Young Adults</i>	✓	✗	✗
Female Minors vs. Male Minors	✓	✓	✗
Female Minors vs. Young Female Adults	✓	✓	✗
Young Female Adults vs. Young Male Adults	✓	✓	✓
<i>Male Minors vs. Young Male Adults</i>	✓	✗	✗

After the MICOM procedure, a permutation multi-group analysis (PLS-MGA) was conducted, using 1000 permutations, with one-tailed test type and significance level of .05 (Hair et al., 2018). Upon achieving full or partial measurement invariance, a bootstrap PLS-MGA was conducted, with 5,000 subsamples, and one-tailed test type.

Table 4.11: Gender-based differences for AVM model

Relationship	Path Coefficients				Supported Hypothesis	Age-Group
	Females	p-value	Males	p-value		
IRR → RAV	.083	.093	-.109	.032	H9(ci)	Young Adults
IRR → RAV	.019	.356	-.150	.001	H9(ci)	All ages
INT → RAV	.094	.117	.328	.002	H9(fi)	Young Adults
RAV → AAD	.607	.000	.333	.000	H9(g)	Young Adults

IRR showed a significant difference in the path coefficients between female and male young adults on the impact on RAV. Interestingly, for men, IRR is adversely impactful on the value of retargeted advertisements, while for women, it is positively ineffective ($\beta_{\text{females}} = .083, p = .093; \beta_{\text{males}} = -.109, p = .032; d = .192, p = .025$). An identical IRR affecting RAV situation is also reflected in the comparison between women and men of all ages ($\beta_{\text{females}} = .019, p = .356; \beta_{\text{males}} = -.150, p = .001; d = .169, p = .015$). For young male adults, INT is a stronger precursor of RAV than among young female adults ($\beta_{\text{females}} = .094, p = .117; \beta_{\text{males}} = .328, p = .002; d = -.234, p = .041$). Another significant impact is shown in the influence of RAV on AAD, with young female adults more affected than young male adults ($\beta_{\text{females}} = .607, p = .000; \beta_{\text{males}} = .333, p = .000; d = .274, p = .016$). Therefore, H9(ci), H9(fi), and H9(g) are supported. Table 4.11 provides a visual representation of the main gender-based differences.

Table 4.12: Age-based differences for AVM model

Relationship	Path Coefficients				Supported Hypothesis	Gender
	Minors	p-value	Young Adults	p-value		
INT → RAV	.342	.000	.094	.117	H10(fi)	Females
RAV → AAD	.236	.014	.607	.000	H10(g)	Females

It was revealed that INT amongst female minors was a significant precursor of RAV than amongst young female adults ($\beta_{\text{minors}} = .342, p = .000; \beta_{\text{youngadults}} = .094, p = .117; d = .249, p = .028$), while RAV was found to be a stronger driver of AAD for young female adults than minors ($\beta_{\text{minors}} = .236, p = .014; \beta_{\text{youngadults}} = .607, p = .000; d = -.371, p = .003$). Therefore, H10(fi) and H10(g) are both supported. Table 4.12 presents a visual demonstration of the age-based differences.

No significant differences in the path coefficients were found between female and male minors. Hence, H9 and H10 are partially supported. The next section offers an in-depth analysis of FoMO and TPB parts within the conceptual framework.

4.5 FoMO and Theory of Planned Behaviour Analysis

4.5.1 Overview

This section will evaluate the relationship between FoMO and TPB and the role of TPB in a retargeting context. The results relate to the Maltese sample, and the structure of this section follows the previous AVM analysis section. Apart from the descriptive demographics, which Table 4.2 and Appendix M also apply for this section, all the sub-sections were kept almost the same, where possible, for clarity and readability. IBM SPSS Statistics vers. 28.0.1.0 (IBM Corp., 2021) was employed for the factor analysis and other initial tests. Analysis of means and standard deviations, including a comparative analysis of Cronbach's alpha with other sources, was conducted. For this part of the study, the two-stage disjointed approach was required to test FoMO as a higher-order construct (HOC). Hence, the evaluation criteria of the measurement were conducted twice, one for each stage. The

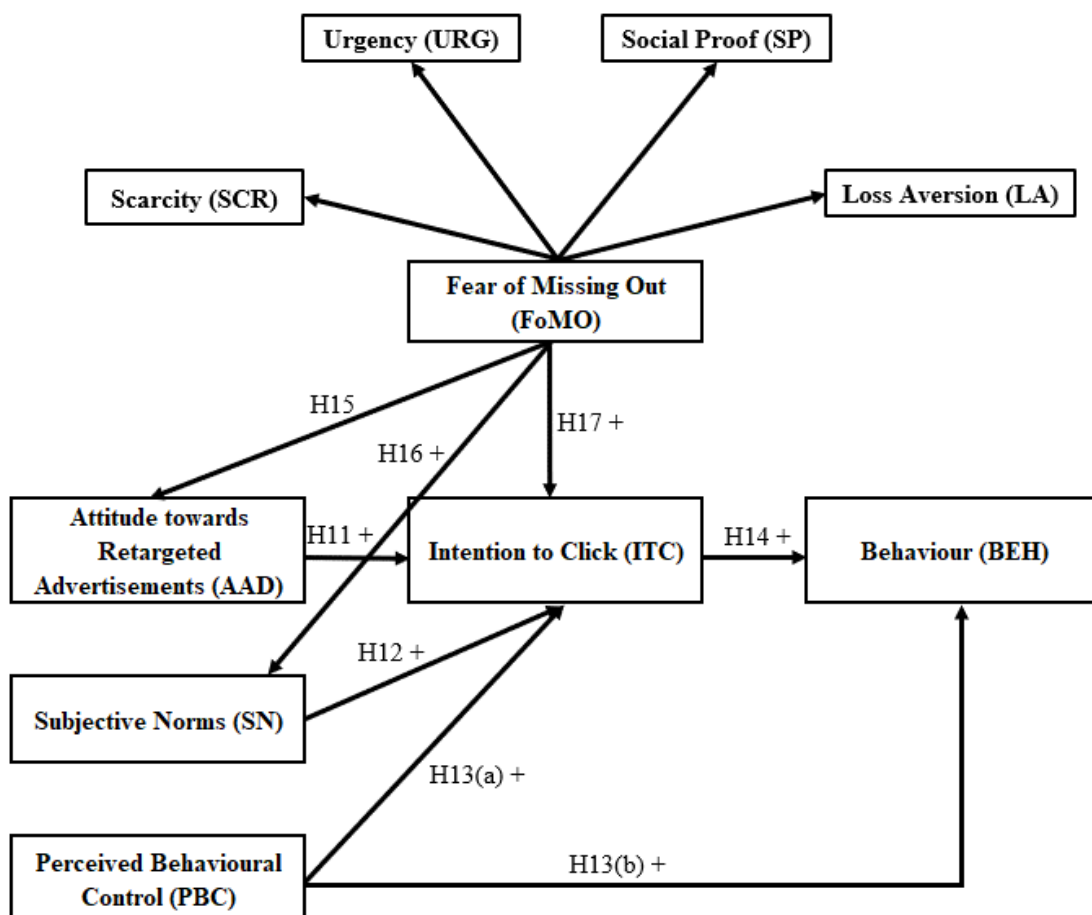


Figure 4.4: FoMO and TPB model

Note: Mediation hypotheses: H13(c) & H18, gender-based difference hypotheses: H19, H21 & H23, and age-based difference hypotheses: H20, H22 & H24.

evaluation criteria of the structural model were performed for the second-stage approach. These procedures were conducted using PLS-SEM, particularly SmartPLS vers. 4.0.9.4 (Ringle et al., 2022). Subsequently, mediation and indirect effects analysis are presented, and an investigation was conducted between gender and age groups employing the MICOM procedure (Henseler et al., 2016) and PLS-MGA (Hair et al., 2018).

Table 4.13: Hypotheses list of TPB and FoMO including the respective decisions

Hypothesis	Hypothesis Description	Result
H11	The attitude towards retargeted advertisements (AAD) positively influences young people's intention to click (ITC) on these advertisements.	Supported
H12	Subjective norms (SN) positively influence young people's intention to click (ITC) on retargeted advertisements.	Supported
H13(a)	Perceived behavioural control (PBC) positively influences young people's intention to click (ITC) on retargeted advertisements	Supported
H13(b)	Perceived behavioural control (PBC) positively influences young people's behaviour (BEH)	Supported
H13(c)	The effect of perceived behaviour control (PBC) on behaviour (BEH) is mediated by young people's intention to click on retargeted advertisements.	Supported
H14	The intention to click (ITC) on retargeted advertisements positively affects young people's behaviour (BEH)	Supported
H15	FoMO affects young people's attitudes towards retargeted advertisements (AAD)	Supported
H16	FoMO positively affects young people's subjective norms (SN)	Supported
H17	FoMO positively affects young people's intention to click (ITC) on retargeted advertisements	Supported
H18	The effect of FoMO on young people's intention to click (ITC) on retargeted advertisements is mediated by a) their attitudes towards retargeted advertisements (AAD) and b) subjective norms (SN).	Supported
H19	There is a gender-based difference in the influence of FoMO on young people's a) attitudes towards retargeted advertisements (AAD), b) subjective norms (SN), and c) intention to click (ITC) on retargeted advertisements.	Partially Supported
H20	There is an age-based difference in the influence of FoMO on young people's a) attitudes towards retargeted advertisements (AAD), b) subjective norms (SN), and c) intention to click (ITC) on retargeted advertisements.	Not Supported
H21	There is a gender-based difference in the influence of a) attitude towards retargeted advertisements (AAD), b) subjective norms (SN), and c) perceived behavioural control (PBC) on young people's intention to click (ITC) on retargeted advertisements.	Partially Supported
H22	There is an age-based difference in the influence of a) attitude towards retargeted advertisements (AAD), b) subjective norms (SN), and c) perceived behavioural control (PBC) on young people's intention to click (ITC) on retargeted advertisements.	Not Supported
H23	There is a gender-based difference in the influence of a) the intention to click (ITC) on retargeted advertisements, and b) perceived behavioural control (PBC) on young people's behaviour (BEH).	Not Supported
H24	There is an age-based difference in the influence of a) the intention to click (ITC) on retargeted advertisements, and b) perceived behavioural control (PBC) on young people's behaviour (BEH).	Not Supported

Following the same path as the previous section, abbreviated variable names were used as measurement codes. FoMO is already abbreviated, and thus, this was kept as is. It is essential to mention that urgency (URG), scarcity (SCR), social proof (SP), and loss aversion (LA) were modelled as reflective lower-order constructs (LOCs) for FoMO, thus creating a reflective-reflective (Type I model) HOC. The hypotheses proposed aim to investigate the effect that FoMO as an HOC has on attitude towards retargeted advertisements (AAD), subjective norms (SN), and intention to click (ITC).

Figure 4.4 shows TPB including FoMO with the relevant hypotheses as depicted in this section, while Table 4.13 provides the list of hypotheses with the respective results.

4.5.2 Initial Tests

As the FoMO part of the model was to be evaluated as a whole for the first time, an exploratory factor analysis (EFA) was necessary at this point. Several tests were performed to discover the underlying structure of the set of variables and act as a data reduction exercise (Hair et al., 2019b). The goal was to identify the fewest latent variables that account for the common variation among the set of observable variables. EFA is often used to analyse big data sets with multiple social sciences, psychology, and marketing research variables. It aids in the reduction of data complexity by discovering underlying elements or dimensions that explain the correlations between variables (Hair et al., 2019b).

The six stages of the EFA decision process, as proposed by Hair et al. (2019b), were followed. The analysis was confirmed to be exploratory as the indicators and constructs included for the FoMO HOC were never tested together. Hence, EFA needs to be applied for data reduction and identification of the structures. The variables need to be clearly defined for an effective analysis. Hence, the appropriate factor extraction method must be selected, the factor method must be established, and the rotational technique to improve the interpretability of the extracted factors must be chosen. Subsequently, several tests are performed, and the results will be interpreted. Finally, a split sampling technique is employed to validate the factor matrix.

The EFA was conducted using IBM SPSS vers. 28.0.1.0 (IBM Corp., 2021). For the dimension reduction exercise, the principal component analysis was selected as a method based on Eigenvalues greater than one. An orthogonal rotation - Varimax rotation - was used

to investigate if the extracted factors were uncorrelated. A level of explanation was determined by assessing the commonality of the scale, which all resulted in $>.50$. The KMO sample adequacy test was conducted to determine if the data was eligible for factor analysis. The KMO value of the model read $.91$, which is a remarkable level of acceptance (Field, 2018). The results of Bartlett's Test of Sphericity were significant ($\chi^2 = 11854.44$; $p = .000$), indicating suitability to perform a factor analysis (Hair et al., 2019b).

Based on this analysis, seven factors accounted for 78.5% of the scale's cumulative variance. URG and SCR; and ITC and BEH, loaded together. The former was expected as some studies take these two factors as one (e.g., Akram et al., 2018). In this initial EFA stage, an ITC indicator was relatively low compared to other indicators (ITC02 = $.561$) and loading on BEH. When the fixed number of factors was established as nine, the results of this new analysis confirmed the nine-dimensional structure theoretically defined in the research, but three indicators. SCR01 loaded on URG, and BEH01 cross-loaded on AAD. Hence, it was decided that these indicators are removed. On the other hand, ITC02 loaded again on BEH. However, when the fixed number test was run, this indicator loaded with the correct factor, albeit low ($.59$). According to Hair et al. (2019b), constructs should have three indicators. However, two indicators are still acceptable but constrained to be identified. ITC already had two indicators and thus it was decided that ITC02 will be kept. Table 4.14 shows the final indicator loadings for subsequent testing, with excluded item codes removed.

With the fixed number of factors test, the cumulative variance improved by six per cent, rising to 84.4%. After these changes, the KMO measurement ($.90$) and Bartlett's Test of Sphericity ($\chi^2 = 10811.612$; $p = .000$) remained almost the same. All variables had communalities greater than $.70$ and thus, were retained in the analysis (Hair et al., 2019b).

Finally, split sampling was conducted to assess the replicability of a factor structure obtained from the EFA. The dataset was split into two random subsamples, and the EFA was conducted separately on each subsample. The factor structure obtained from one subsample was cross-validated on the other subsample to assess the replicability of the factor solution. Due to the substantial sample size, stable results could be obtained. No issues arose from this testing, with communalities consistently resulting in a greater value than the required threshold of $.50$ (Hair et al., 2019b). As part of this test, the FoMO indicators were run together to determine if these are capable of loading together as one construct (Table 4.15).

Table 4.14: Rotated component matrix for TPB and FoMO model

Item Code	Component								
	AAD	SN	SP	PBC	SCR	LA	BEH	URG	ITC
AAD01	.84	.18	.13	.06	.14	.05	.13	.06	.12
AAD02	.78	.26	.19	.09	.13	.17	.06	.10	.08
AAD03	.83	.25	.15	.02	.07	.08	.18	.09	.13
AAD04	.84	.24	.19	.09	.09	.10	.15	.10	.09
SN01	.25	.85	.18	-.08	.13	.15	.08	.05	.04
SN02	.23	.87	.14	-.10	.14	.15	.05	.06	.08
SN03	.28	.85	.21	-.08	.08	.12	.08	.04	.08
SN04	.18	.76	.15	.05	.08	.11	.23	.07	.10
SP01	.16	.20	.85	-.04	.19	.15	.06	.03	.03
SP02	.17	.20	.86	-.07	.15	.16	.02	.07	.08
SP03	.17	.15	.83	-.02	.13	.16	.02	.17	.05
SP04	.14	.11	.76	.06	.09	.15	.21	.14	.12
PBC01	.06	-.03	-.01	.94	.04	-.02	.04	.02	-.07
PBC02	.08	-.02	-.02	.89	-.03	.04	.11	.01	.13
PBC03	.04	-.10	-.02	.93	.02	.03	.07	.01	.02
SCR02	.13	.13	.15	-.02	.76	.23	.06	.19	.04
SCR03	.14	.12	.18	.09	.80	.25	.14	.21	.11
SCR04	.12	.15	.22	-.01	.81	.22	.12	.20	.06
LA01	.09	.17	.22	-.01	.30	.74	.02	.19	.15
LA02	.10	.21	.20	.05	.26	.81	.12	.17	.03
LA03	.17	.14	.22	.02	.20	.82	.12	.08	-.04
BEH02	.17	.16	.05	.13	.12	.10	.85	.07	.21
BEH03	.22	.17	.15	.11	.13	.12	.86	.09	.07
URG01	.13	.07	.19	.03	.31	.21	.09	.83	.06
URG02	.16	.09	.17	.01	.28	.18	.11	.84	.11
ITC01	.37	.20	.20	.05	.17	.09	.28	.13	.74
ITC02	.36	.24	.20	.10	.12	.06	.44	.17	.59

Table 4.15: FoMO HOC - factor loadings of latent variables as one construct

Component	Value	Component	Value
SCR04	.77	SP02	.73
SCR03	.76	LA03	.70
LA02	.76	URG01	.70
LA01	.76	SCR02	.69
SP03	.73	URG02	.68
SP01	.73	SP04	.67

Using a Varimax rotational method, this test succeeded and abided by the rule of thumb of .50 or higher (Hair et al., 2019b). With the removal of SCR01, the alpha value of SCR

dropped slightly (.90 → .88). For TPB, Cronbach's alpha improved when BEH01 was removed from the construct (.86 → .88).

At this stage, Harman's single factor test was conducted to determine if the common method variance (CMV) was present in the data. IBM SPSS (IBM Corp., 2021) was employed to conduct a factor analysis using principal axis factoring and including all the TPB and FoMO variables. The test required forcing all the variables into a single factor without applying any rotations (Kock, 2015; Podsakoff et al., 2003). According to Kock (2015), if a single factor explains more than 50.0% of the variance, then the data would be affected by CMV, compromising the reliability and validity of the study. However, for this study section, the total variance explained by a single factor was 36.4%, far less than the threshold, suggesting that the data were not contaminated with CMV.

This study section considers the four factors comprising FoMO (URG, SCR, SP & LA) as one HOC – FoMO. However, specific mentions occur if direct testing was conducted on other constructs. Like the preceding section of this chapter, other tests were performed to detect CMB. These are detailed in the evaluation criteria of the structural model part.

4.5.3 Means and Standard Deviation Analysis

In this model, the strongest construct ranging above the midpoint of the 7-point scale was PBC ($M = 5.41$, $SD = 1.67$). All the others, bar SN ($M = 2.59$, $SD = 1.26$) varied between BEH ($M = 3.82$, $SD = 1.77$) and AAD ($M = 3.02$, $SD = 1.38$). As for the standard deviation, BEH contained the most dispersed responses; while FoMO ($M = 3.15$, $SD = 1.26$) had the least spread. Table 4.16 shows the means and standard deviations of each construct in the model. The three indicators that were removed are reported in the table and marked with an asterisk. A whole list of frequency percentage analysis per indicator can be found in Appendix P.

Table 4.16: Measurement codes, items, mean, standard deviation, with convergent validity and reliability analysis results for TPB and FoMO

Measurement Item Code	Measurement Items	<i>M</i>	<i>SD</i>	Cronbach Alpha	Composite Reliability	AVE
Attitude towards Retargeted Advertisements (AAD)		3.02	1.38	.93	.95	.82
AAD01	My general opinion of retargeted advertisements is favourable (positive).	3.06	1.53			
AAD02	I consider retargeted advertisements essential.	2.96	1.51			
AAD03	Overall, I like retargeted advertisements.	2.90	1.51			
AAD04	Overall, I consider retargeted advertisements a good thing.	3.16	1.57			
Subjective Norms (SN)		2.59	1.26	.93	.95	.83
SN01	Most people who are important to me think I should click on retargeted advertisements.	2.47	1.33			
SN02	Most people who are important to me would want me to click on retargeted advertisements.	2.44	1.33			
SN03	People that I value their opinion would prefer that I click on retargeted advertisements.	2.55	1.38			
SN04	People who are important to me click on retargeted advertisements.	2.90	1.53			
Perceived Behavioural Control (PBC)		5.41	1.67	.92	.95	.86
PBC01	Whether or not I click on retargeted advertisements is completely up to me.	5.43	1.81			
PBC02	I am confident that if I want, I can click on retargeted advertisements.	5.29	1.79			
PBC03	I decide if I click on retargeted advertisements.	5.51	1.79			
Intention to Click (ITC)		3.26	1.53	.84	.93	.86
ITC01	I have the intention to click on retargeted advertisements.	3.13	1.66			
ITC02	I will click on retargeted advertisements in the future.	3.39	1.65			
Behaviour (BEH)		3.82	1.77	.88	.94	.89
BEH01*	<i>I liked retargeted advertisements in the past.</i>	3.16	1.66			
BEH02	I clicked on retargeted advertisements in the past.	3.90	1.88			
BEH03	I engaged with retargeted advertisements in the past.	3.74	1.86			
FoMO (All Constructs) - When I come across a retargeted advertisement showing a product that interests me with the above messages...		3.15	1.26			
Urgency (URG)		3.44	1.77	.89	.95	.90
URG01	I worry about the limited time.	3.29	1.83			
URG02	I think about the deadline.	3.59	1.90			

Scarcity (SCR)		3.39	1.64	.88	.93	.80
SCR01*	<i>I worry about the limited quantity.</i>	3.53	1.87			
SCR02	I base my decision on the quantity of the product more than other factors.	3.27	1.77			
SCR03	I think I might lose the opportunity to buy the product if others bought it first.	3.60	1.87			
SCR04	I think I have to buy before others do, in order to get the advertised deal.	3.30	1.85			
Social Proof (SP)		2.84	1.43	.92	.94	.80
SP01	I prefer to do what other people typically do.	2.74	1.57			
SP02	I prefer to act the way everyone else is acting.	2.54	1.49			
SP03	I follow behaviours that people typically do.	2.78	1.56			
SP04	Other consumers decisions of buying products have an impact on my buying decisions.	3.29	1.80			
Loss Aversion (LA)		3.13	1.59	.88	.93	.81
LA01	The pain of losing an offer matters more to me than the pleasure of getting the offer.	2.86	1.67			
LA02	I feel nervous when I have to make a decision that may lead to losing an offer.	3.26	1.82			
LA03	When making a decision on an offer, I think much more about what might be lost than what might be gained.	3.27	1.83			

Note: * Indicators excluded due to low loading during IBM SPSS (IBM Corp., 2021) test

4.5.4 Comparison with Original Sources

Upon comparing the Cronbach's alpha values of the original sources with those of this study, it was observed that this study's values fell mostly within the range of the previous studies, with some noticeable differences overall compared to AVM. This outcome was anticipated, considering the sporadic use of the items and constructs. Additionally, the mean Cronbach's alpha of the URG was reported to be lower in this study than in the original source by .05. On the other hand, SP and LA were reported better than the alpha's range, with the former .07 more than the range, and the latter .05 more than the past study reliability test. The overall Cronbach's alpha for the items related to the FoMO construct showed a difference of .08, which is a promising result, considering that this was the first time such large-scale testing was conducted for all the items altogether. Table 4.17 focuses solely on the FoMO construct due to the fractional process of items and the holistic perspective of the construct.

Table 4.17: FoMO Cronbach's alpha comparison between previous studies and this study

Construct	Other Sources Cronbach's Alpha Value/Range	Study's Cronbach's Alpha
URG	.91	.86
SCR	(.74 - .91)	.88
SP	(.74 - .85)	.92
LA	.83	.88
FoMO (HOC)	.83	.92

Note: Refer to Table 3.5 for the individual alpha values

Similar to AVM, this study's Cronbach's alpha values for TPB did not exhibit significant differences from the sources, bar AAD. Furthermore, all the alpha values obtained in this study were either higher than those reported in the original sources (SN & ITC) or within the range (PBC & BEH) (Table 4.18). The first stage of the measurement model evaluation follows.

Table 4.18: TPB Cronbach's alpha comparison between previous studies and this study

Construct	Other Sources Cronbach's Alpha Range	Study's Cronbach's Alpha
AAD	(.74 - .83)	.93
SN	(.83 - .91)	.93
PBC	(.78 - .93)	.92
ITC	.82	.84
BEH	(.81 - .91)	.88

Note: Refer to Table 3.5 for the individual alpha values

4.5.5 Evaluation Criteria of the Measurement Model – First Stage

For the first stage of the disjointed approach, the four FoMO LOCs were connected directly to the TPB constructs. Hence, the HOC was not modelled during this stage. The first stage is required to assess the measurement model. Reliability and validity were determined in this evaluation by conducting two tests each (Sarstedt et al., 2017). The reliability testing involved two assessments: indicator reliability and internal consistency reliability, while validity was determined by running another two tests: convergent validity and discriminant validity.

4.5.5.1 Indicator Reliability

The indicator reliability was measured by examining the outer loadings of the model during the disjointed first-stage again. All factor loadings should be ideally .70 and over (Hair et al., 2019b). All factor loadings marked more than .70. Hence no indicator was further removed from the model.

4.5.5.2 Internal Consistency Reliability

The internal consistency reliability of four FoMO constructs varied between .88 (SCR & LA) and .92 (SP), indicating strong internal consistency. The TPB constructs varied between .84 (ITC) and .93 (AAD & SN), exceeding the .70 threshold for the suitable inter-item reliability (Nunnally & Bernstein, 1994). The composite reliability for the four FoMO constructs varied from .93 (SCR & LA) to .95 (URG), while the TPB part of the model ranged from .93 (ITC) to .95 (AAD, SN & PBC). Therefore, reliability was excellent.

4.5.5.3 Convergent Validity

The convergent validity was assessed by examining the four FoMO LOCs. The average variance extracted (AVE) of the individual correlations ranged between .80 (SCR & SP) and .90 (URG), which was relatively high considering that the results should not be less than .50 (Sarstedt et al., 2017). For the TPB constructs of the model, the scores were high, as expected, varying from .82 (AAD) to .89 (BEH). Table 4.16 presents the reliability tests and convergent validity results.

4.5.5.4 Discriminant Validity

Distinctiveness from other constructs in the model is crucial, and this can be achieved by assessing the correlations between the constructs and checking whether they are significantly

different from unity (Fornell & Larcker, 1981). Three different tests were conducted to determine the discriminant validity.

First, a Fornell-Larcker criterion was performed, and discriminant validity was established (Table 4.19), as all the factor values resulted higher than the loading of other constructs, varying between .89 (SCR & SP) and .95 (URG), over the .70 threshold (Hair et al., 2019b).

Table 4.19: Discriminant validity test using Fornell-Larcker criterion for FoMO LOCs and TPB

Measures	AAD	BEH	ITC	LA	PBC	SCR	SP	SN	URG
AAD	.905								
BEH	.442	.944							
ITC	.641	.653	.927						
LA	.376	.335	.362	.899					
PBC	.137	.220	.164	.049	.925				
SCR	.388	.364	.435	.623	.052	.894			
SP	.448	.304	.455	.502	-.012	.466	.893		
SN	.562	.380	.500	.438	-.074	.384	.454	.911	
URG	.361	.315	.432	.507	.057	.611	.411	.291	.947

The second test conducted for the discriminant validity was the cross-loadings. In this test, an assessment is conducted to determine if an indicator that belongs to a construct loads significantly on its construct instead of the other constructs of the model. All indicators' scores loaded on their respective parent construct (Table 4.20) and therefore, the discriminant validity was achieved.

Finally, the HTMT method was performed (Hair et al., 2017a). For this test, all the ratios were below the .85 criterion. The FoMO LOCs received particular attention in this test. This was continuously lower than the criterion, with the highest score being .71 (SCR/LA). In all other constructs, the ratios were lower than .76, indicating conceptual distinctions between the constructs. As a result, discriminant validity was established (Table 4.21).

Table 4.20: Discriminant validity test using cross-loadings criterion for FoMO LOCs and TPB

Indicators	Constructs								
	AAD	BEH	LA	PBC	ITC	SCR	SN	SP	URG
AAD01	.891	.390	.293	.127	.563	.343	.459	.367	.306
AAD02	.882	.360	.400	.135	.541	.385	.523	.428	.351
AAD03	.911	.426	.318	.085	.610	.324	.524	.393	.315
AAD04	.933	.423	.348	.149	.602	.352	.523	.430	.336
BEH02	.393	.946	.291	.220	.624	.324	.339	.242	.281
BEH03	.443	.942	.342	.194	.609	.364	.378	.333	.314
LA01	.326	.276	.882	.013	.338	.585	.388	.462	.486
LA02	.339	.331	.930	.067	.337	.582	.422	.450	.482
LA03	.350	.295	.884	.050	.299	.512	.369	.443	.397
PBC01	.112	.158	.023	.915	.081	.056	-.070	-.016	.050
PBC02	.159	.243	.060	.935	.211	.044	-.032	.002	.060
PBC03	.093	.183	.040	.926	.123	.047	-.121	-.026	.046
PI01	.589	.558	.339	.125	.921	.410	.449	.423	.395
PI02	.599	.650	.332	.177	.934	.397	.477	.421	.405
SCR02	.312	.275	.530	.005	.335	.837	.320	.374	.509
SCR03	.372	.358	.576	.107	.433	.924	.342	.421	.570
SCR04	.354	.338	.567	.019	.393	.919	.367	.452	.558
SN01	.517	.329	.419	-.097	.440	.362	.929	.426	.272
SN02	.507	.312	.416	-.117	.441	.370	.939	.403	.279
SN03	.548	.332	.394	-.094	.465	.335	.936	.449	.253
SN04	.471	.411	.365	.042	.473	.330	.834	.372	.255
SP01	.402	.263	.458	-.032	.385	.438	.434	.916	.336
SP02	.409	.240	.456	-.061	.398	.414	.434	.924	.355
SP03	.402	.230	.459	-.019	.392	.422	.395	.899	.408
SP04	.385	.353	.421	.072	.450	.389	.355	.831	.370
URG01	.326	.292	.492	.065	.389	.589	.263	.394	.942
URG02	.357	.304	.470	.045	.427	.570	.287	.384	.952

Table 4.21: Discriminant validity test using HTMT matrix for FoMO LOCs and TPB

Measures	AAD	BEH	ITC	LA	PBC	SCR	SP	SN	URG
AAD									
BEH	.491								
ITC	.727	.760							
LA	.417	.381	.421						
PBC	.141	.233	.168	.055					
SCR	.430	.414	.506	.710	.057				
SP	.486	.340	.520	.560	.058	.520			
SN	.604	.421	.566	.483	.108	.426	.491		
URG	.399	.357	.500	.574	.063	.695	.458	.320	

4.5.5.5 Individual FoMO LOCs Effects

A final step during this stage incorporated a bootstrapping exercise to examine FoMO LOCs and their individual direct effect on each TPB construct involved in the study. This examination was conducted to ensure that there is no individual construct that on its own has no

association with the TPB constructs. Table 4.22 shows the list of the variables and respective coefficients, T values, including LLCIs and ULICIs. SP is the only variable that exhibits a significant relationship with all the constructs. LA has only a significant association with SN ($\beta = .233, t = 4.008, p = .000$). Contrastingly, URG ($\beta = -.007, t = 0.137, p = .079$) and SCR ($\beta = .097, t = 1.696, p = .053$) have a weak relationship with SN. The subsequent part of this section assesses the second stage of the evaluation criteria for the measurement model.

Table 4.22: FoMO LOCs and their relationship with TPB constructs.

Variables	Coefficients	T values	LLCI	ULCI
URG → AAD	.121**	2.390	.023	.219
URG → SN	-.007	0.137	-.108	.096
URG → ITC	.154**	3.470	.068	.242
SCR → AAD	.119*	2.080	.005	.232
SCR → SN	.097	1.696	-.016	.208
SCR → ITC	.101*	2.108	.009	.197
SP → AAD	.300***	5.789	.198	.401
SP → SN	.297***	5.806	.197	.399
SP → ITC	.125**	2.804	.039	.215
LA → AAD	.091	1.537	-.026	.208
LA → SN	.233***	4.008	.122	.343
LA → ITC	-.076	1.560	-.171	.020

Note: * $p < .05$; ** $p < .01$; *** $p < .001$, LLCI - lower limit confidence interval, ULCI - upper limit confidence interval

4.5.6 Validating FoMO as an HOC – Second Stage

Before proceeding to the second stage of the disjointed approach, the LOCs scores were saved to the original dataset (Sarstedt et al., 2019). During the second stage, the HOC was validated; hence, the evaluation criteria of the measurement model were conducted again. The Cronbach's alpha value for FoMO was .81 while the composite reliability was .88. The convergent validity for FoMO was .64. Hence, the reliability and convergent validity were established.

Table 4.23: Fornell-Larcker criterion - higher-order discriminant validity

Measures	AAD	BEH	FOMO	ITC	PBC	SN
AAD	.905					
BEH	.442	.944				
FOMO	.496	.412	.800			
ITC	.641	.653	.528	.927		
PBC	.137	.220	.043	.164	.925	
SN	.562	.380	.495	.500	.074	.911

The discriminant validity was performed again, but now conducting two tests: the Fornell-Larcker criterion (Table 4.23) and HTMT method (Table 4.24). For both tests, the discriminant validity was attained. Hence, FoMO as an HOC was validated successfully. Subsequently, the structural model was evaluated.

Table 4.24: HTMT - higher-order discriminant validity

Measures	AAD	BEH	FOMO	ITC	PBC	SN
AAD						
BEH	.491					
FOMO	.567	.488				
ITC	.727	.760	.638			
PBC	.141	.233	.061	.168		
SN	.604	.421	.563	.566	.108	

4.5.7 Evaluation Criteria of the Structural Model

For this model, the five evaluation criteria presented by Sarstedt et al. (2017) were used as the central backbone for the structural model using SmartPLS (Ringle et al., 2022). A multicollinearity test was conducted and the coefficient of determination (R^2) was evaluated. These were followed by predictive relevance (Q^2) or cross-validation indices test and hypotheses testing. The effect size of path coefficients was evaluated through Cohen's f^2 . This sub-section includes additional tests conducted to assess the goodness-of-fit. Mediation and indirect effects were analysed, followed by an attempt to establish a parsimonious model.

4.5.7.1 Multicollinearity Test

Multicollinearity was assessed using Variance Inflation Factor (VIF) in SmartPLS (Ringle et al., 2022). All the variables were included in the analysis. The results of the VIF analysis indicated that multicollinearity was not an issue, as no independent variable was highly correlated with other independent variables. All VIF values were less than 1.68, far less than the 3.3 threshold (Kock, 2015). Furthermore, according to Kock's (2015) advice, a random dummy variable was set up to investigate the FoMO and individual TPB constructs accordingly (Kock, 2015). The random dummy variable test resulted in values lower than 2.18. In this way, common method bias (CMB) was confirmed not to be present in the model.

4.5.7.2 Coefficient of Determination (R^2)

The R^2 value for the linear regression model predicting ITC from the independent variables FoMO, AAD, SN and PBC was .490, indicating that 49.0% of the variance in ITC can be explained by the independent variables. The adjusted R^2 for ITC read .486.

For BEH, with PBC and ITC as precursors, the R^2 value scored .440, showing that 44.0% of the variance in BEH can be explained by its antecedents. The adjusted R^2 for BEH was .438. The R^2 values of both SN and AAD were moderate, given that FoMO was the only predictor for both. The R^2 value of SN was .245, and adjusted R^2 scored .244, while the R^2 value and adjusted R^2 of AAD read .246 and .244, respectively.

4.5.7.3 Predictive Relevance (Q^2)

A cross-validated redundancy procedure evaluated the model's predictive relevance (Hair et al., 2019b). Predictive relevance exists if Q^2 exceeds 0. The predictive relevance for the endogenous constructs, ITC ($Q^2 = .292$), BEH ($Q^2 = .200$), SN ($Q^2 = .239$) and AAD ($Q^2 = .239$) was confirmed and established after running a blindfolding test using PLS-Predict (Shmueli et al., 2019).

4.5.7.4 Hypotheses Testing

The same procedure employed for the AVM model was used for this part. Hence, a bootstrapping exercise was conducted with 5,000 subsamples to test the hypotheses. A parallel processing approach was used to conduct the test at a significance level of .05, corresponding to a 95.0% confidence level. The PLS-SEM path analysis is presented in Figure 4.5, while Table 4.25 summarises the hypotheses' respective path coefficients, T values, LLCI and ULCI. Each hypothesis formulated for this section of the conceptual model was analysed.

The first hypothesis for this model is H11, which investigated whether AAD influences young people's ITC on retargeted advertisements. The findings indicated that attitude has indeed a significant positive effect on ITC ($\beta = .422$, $t = 8.328$, $p = .000$). The results of H12 assessing the influence of SN on ITC revealed that SN positively affect young people's ITC ($\beta = .152$, $t = 3.344$, $p = .001$). Hence, H11 and H12 are both supported.

H13(a) and H13(b) investigated whether PBC affects the ITC on retargeted advertisements and young people's BEH, respectively. The findings indicated that PBC positively affects ITC ($\beta = .107$, $t = 3.589$, $p = .000$) and BEH ($\beta = .116$, $t = 3.336$, $p = .001$). Hypothesis H14 assessed if

ITC on retargeted advertisements positively influences young people’s BEH. The results concluded that there is a significant favourable influence of ITC on BEH ($\beta = .634, t = 21.752, p = .000$). As a result, H13(a), H13(b), and H14 are all supported.

With H15, FoMO was tested to see if it affects AAD. This hypothesis was kept neutral due to conflicting past studies. The results showed that FoMO has a substantial positive effect on AAD ($\beta = .496, t = 12.039, p = .000$). On the other hand, H16 evaluated whether FoMO in a retargeted advertisement context would affect SN positively. The findings indicated another significant impact of FoMO on SN ($\beta = .495, t = 12.350, p = .000$). Hence, H15 and H16 were supported.

The last hypothesis for this model evaluated if FoMO is a predictor of ITC among young people. For H17, the results showed a strong positive influence of FoMO on ITC ($\beta = .239, t = 5.360, p = .000$). Therefore, H17 is supported.

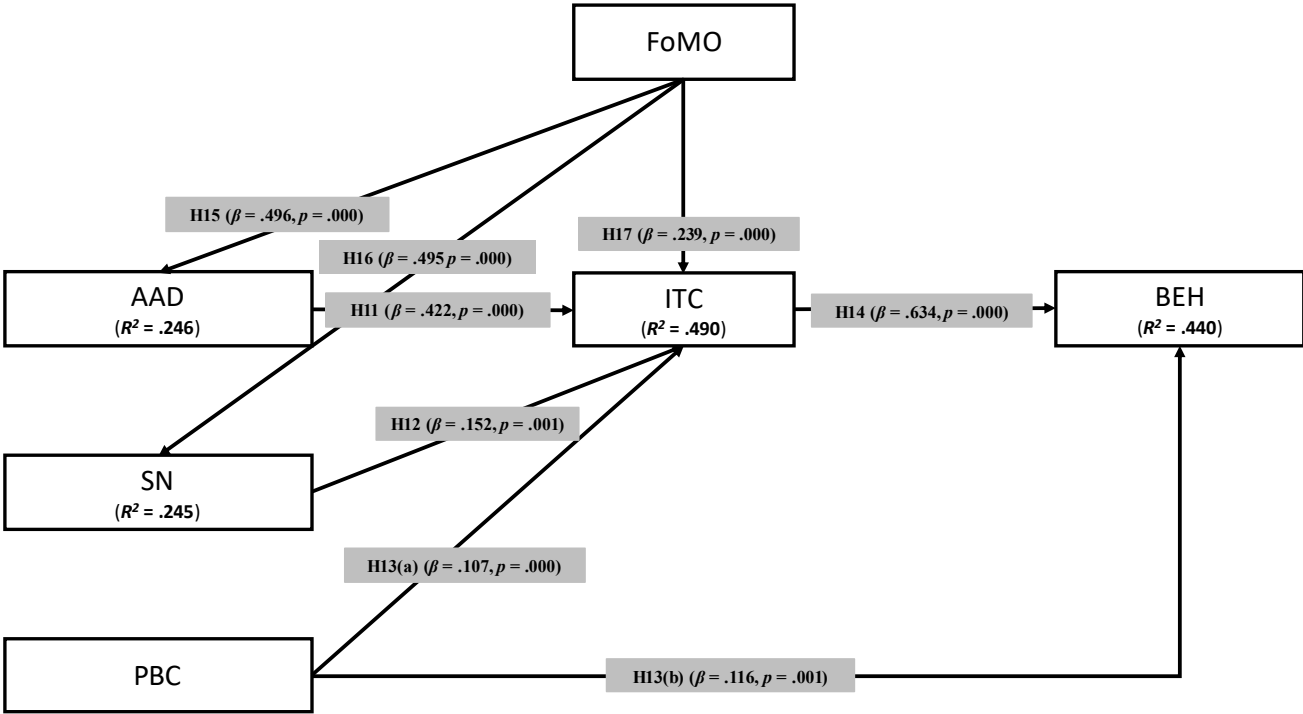


Figure 4.5: PLS-SEM path analysis for TPB and FoMO model

4.5.7.5 Cohen’s f^2 Coefficients

The effect sizes of the antecedent variables were assessed using Cohen’s f^2 coefficients. Values that are .02, .15 and .35 represent small, medium, and large effects, respectively (Cohen,

1988). The results indicated that PBC as an independent variable has a small effect on both ITC ($f^2 = .022$) and BEH ($f^2 = .023$). Even SN as an antecedent construct of the dependent variable ITC has a small effect ($f^2 = .027$). The findings suggest that AAD has a strong effect size on ITC ($f^2 = .209$), ITC has a substantial effect size on BEH ($f^2 = .385$), while FoMO is strong on ITC ($f^2 = .077$) and even stronger effect on AAD ($f^2 = .325$) and SN ($f^2 = .325$).

Table 4.25: Hypotheses decisions for TPB and FoMO model

Hypotheses	Variables	Coefficients	T values	LLCI	ULCI	Hypotheses Decisions
H11+	AAD → ITC	.422***	8.328	.322	.519	Supported
H12+	SN → ITC	.152**	3.344	.064	.244	Supported
H13(a)+	PBC → ITC	.107***	3.589	.045	.162	Supported
H13(b)+	PBC → BEH	.116**	3.336	.046	.182	Supported
H14+	ITC → BEH	.634***	21.752	.572	.687	Supported
H15	FOMO → AAD	.496***	12.039	.406	.569	Supported
H16+	FOMO → SN	.495***	12.350	.410	.567	Supported
H17+	FOMO → ITC	.239***	5.360	.152	.569	Supported

Note: * $p < .05$; ** $p < .01$; *** $p < .001$, LLCI - lower limit confidence interval, ULCI - upper limit confidence interval

4.5.7.6 Other Tests

Running a standardised root mean square residual (SRMR) test should be done cautiously (Sarstedt et al., 2017). Given the stable results, it was still tested to assess the typical deviation between the anticipated correlations, as predicted by the model, and the observed correlations. This deviation is normalised by the average variance of the observed variables in the model, as reported by Kline (2015). An index of .08 or lower suggests an acceptable model fit, while an index of .05 or lower indicates a good model fit. The SRMR confidence intervals of the model read .07, which is an acceptable fit. A normed fit index (NFI) test was performed to fortify this finding. Hair et al. (2019b) suggest that the values should be between 0 and 1, with higher values suggesting a better fit. The model's NFI was .74, indicating a good fit.

4.5.7.7 Mediation and Indirect Effects Analysis

For this part of the model, a mediation analysis was conducted to determine the mediating role of the main constructs of the TPB. ITC was found to have a complementary partial mediating role between PBC and BEH as its indirect effect was significant ($\beta = .070$, $t = 3.557$, $p = .000$). Its path coefficient in the presence of the mediator was also significant. Hence, H13(c) is supported.

The findings revealed that the indirect effects of FoMO on ITC through AAD ($\beta = .209, t = 6.282, p = .000$), and SN ($\beta = .075, t = 3.257, p = .001$) on ITC were significant and even in the respective direct effects. Hence, this demonstrated complementary partial mediation through AAD and SN in the relationship between FoMO and ITC. Therefore, H18 is also supported. Table 4.26 shows the influence of PBC and BEH through ITC and the influence of FoMO on ITC via the mediating roles of AAD and SN.

Table 4.26: The impact of FoMO on ITC, and PBC on AAD via mediator constructs.

Variables	Total Effects		Direct Effect		Indirect Effects		Mediation Effect
	Coefficients	T values	Coefficients	T values	Coefficients	T values	
FoMO → AAD → ITC	.523***	14.669	.239***	5.360	.209***	6.282	Complementary Partial
FoMO → SN → ITC					.075**	3.257	Complementary Partial
PBC → ITC → BEH	.184***	5.197	.116**	3.336	.070***	3.557	Complementary Partial

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 4.27: The indirect effects of FoMO, AAD and SN on BEH.

Variables	Coefficients	T values
FoMO → ITC → BEH	.152***	5.290
FoMO → AAD → ITC → BEH	.133***	5.852
FoMO → SN → ITC → BEH	.048**	3.131
AAD → ITC → BEH	.268***	7.556
SN → ITC → BEH	.095**	3.216

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

The results also revealed significant indirect effects between FoMO and BEH, through ITC ($\beta = .152, t = 5.290, p = .000$), through AAD and ITC ($\beta = .133, t = 5.852, p = .000$), and via SN and ITC ($\beta = .048, t = 3.131, p = .001$). AAD was found to have a strong indirect effect on BEH ($\beta = .268, t = 7.556, p = .000$). Additionally, SN was identified to have an indirect impact on BEH ($\beta = .095, t = 3.216, p = .001$). Table 4.27 displays the indirect effects of FoMO, AAD and SN on young people's BEH.

4.5.7.8 Parsimonious Model (TPB and FoMO)

The effect size of AAD on ITC was strong, while SN and PBC were smaller. The findings also exhibited that young people's PBC has a small effect on BEH towards retargeted advertisements. The approach taken for FoMO as HOC was already parsimonious. This section of the model is less complex than the AVM part, but nonetheless, the principle of parsimony was still exercised.

Different tests were conducted to determine the parsimony of the model. The same procedure as with AVM was taken, where the effect sizes smaller than .35 were removed. These comprised PBC effect on ITC ($f^2 = .022$) and BEH ($f^2 = .023$), and SN effect on ITC ($f^2 = .027$). The comparison of the coefficient of determination reduced minimally from the original model for ITC ($R^2 = .469$, $d = -2.1\%$) and BEH ($R^2 = .427$, $d = -1.3\%$) On the other hand, when the Chi-Square and df calculation were conducted between the original model ($\chi^2 = 1044.37$, $df = 8622$, $r = .121$) and the parsimonious model ($\chi^2 = 751.34$, $df = 7185$, $r = .104$), a slight difference was found. Moreover, the parsimonious model was examined using the BIC test (Schwarz, 1978). When the BIC for BEH as the outcome variable in the original model (-260.78) was compared to BEH in the parsimonious model (-255.73), it was higher than the original model, with a difference of -5.05. According to Raftery (1995), the difference constitutes positive evidence favouring the original model. The indication was that the parsimony did not significantly improve the model. At this stage, the whole model, including AVM, was tested, and it was confirmed once again, that TPB model along with FoMO as an HOC is fit to remain the same.

4.5.8 Differences Between Young People Groups

An interesting point in this study is the focus on the diversity between minors (13 - 17 years) and young adults (18 - 24 years), and genders (men and women). Like the AVM analysis, other genders were left out of this comparative study due to its exceedingly small sample size. Hence, a similar investigation was performed using the MICOM procedure (Henseler et al., 2016). The study adhered to a prescribed set of steps performed sequentially, set by Henseler et al. (2016) and Schlägel and Sarstedt (2016). These steps included establishing:

- a) Configural invariance
- b) Compositional invariance; and,
- c) The equality of composite mean values and variances.

As this model is part of the same questionnaire catered for the AVM model, configural invariance was achieved. The data were analysed equally and utilised consistent algorithm settings in accordance with the methods prescribed by Hair et al. (2018). A permutation PLS-MGA was conducted, followed by a bootstrap PLS-MGA, using the same permutations as for the AVM tests (Hair et al., 2018).

Partial compositional invariance (Hair et al., 2018) was established (second and third stage) for the following: between women and men, minors and young adults (irrespective of gender), female and male minors; female minors and young female adults; and young female adults and young male adults.

On the other hand, measurement invariance could not be established between male minors and young male adults.

Table 4.28: Gender-based differences in the FoMO influence on TPB constructs

Relationship	Path Coefficients				Supported Hypothesis	Age-Groups
	Females	p-value	Males	p-value		
FoMO → SN	.433	.000	.593	.000	H19(b)	All ages
FoMO → ITC	.097	.094	.387	.000	H19(c)	Young Adults
FoMO → ITC	.131	.011	.362	.000	H19(c)	All ages

FoMO resulted into a significant driver on ITC among young male adults than young female adults ($\beta_{\text{females}} = .097, p = .094; \beta_{\text{males}} = .387, p = .000; d = -.290, p = .013$). Men are more susceptible to FoMO than women, as the difference between them was significantly strong, when testing the influence on SN ($\beta_{\text{females}} = .433, p = .000; \beta_{\text{males}} = .593, p = .000; d = -.160, p = .025$) and ITC ($\beta_{\text{females}} = .131, p = .011; \beta_{\text{males}} = .362, p = .000; d = -.231, p = .004$). Therefore, both H19(b) and H19(c) are supported. Table 4.28 shows a visual representation of the gender-based difference in the influence of FoMO as HOC on TPB constructs.

Table 4.29: Gender-based differences in the TPB model

Relationship	Path Coefficients				Supported Hypothesis	Age-Groups
	Females	p-value	Males	p-value		
AAD → ITC	.477	.000	.207	.020	H21(a)	Minors
AAD → ITC	.504	.000	.291	.000	H21(b)	All ages
SN → ITC	.076	.178	.397	.000	H21(b)	Minors

SN showed a significant difference in the path coefficients between female and male minors on the effect on ITC, with men more affected by SN than women ($\beta_{\text{females}} = .076, p = .178; \beta_{\text{males}} = .397, p = .000; d = -.320, p = .007$). On the contrary, then, the influence of AAD on ITC is more prevalent among female minors than male minors ($\beta_{\text{females}} = .477, p = .000; \beta_{\text{males}} = .207, p = .020; d = .270, p = .033$). AAD was found to be a stronger predictor of ITC among

women than men, irrespective of age as well ($\beta_{\text{females}} = .504, p = .000; \beta_{\text{males}} = .291, p = .000; d = .213, p = .012$). Hence, H21(a) and H21(b) are supported. Table 4.29 presents the gender-based differences in the TPB model.

No significant differences in the path coefficients were found between minors and young adults, or female minors and young female adults. No age-based difference was found between FoMO and AAD, SN and ITC, hence H20 is not supported. Moreover, no age-based difference resulted between TPB constructs; therefore, H22 and H24 are not supported. Finally, H23 is also not supported as no gender-based differences were found in the study between ITC, PBC and BEH.

Table 4.30 demonstrates the MICOM three-step process conducted for TPB and FoMO. The only instance where invariance was not established is highlighted in light grey and presented in italics. Appendix Q shows the MICOM procedure results of those for whom a partial compositional invariance was established.

Table 4.30: The MICOM three-step process for TPB and FoMO

Comparative Factors	Step 1	Step 2	Step 3
	Configural Invariance	Compositional Invariance	Equality of Composite Mean Values and Variances
Females vs. Males	✓	✓	✗
Minors vs. Young Adults	✓	✓	✗
Female Minors vs. Male Minors	✓	✓	✗
Female Minors vs. Young Female Adults	✓	✓	✗
Young Female Adults vs. Young Male Adults	✓	✓	✗
<i>Male Minors vs. Young Male Adults</i>	✓	✗	✗

4.6 Connecting the Two Models

Connecting the AVM model to FoMO and TPB was expected to impact the coefficient of determination of the attitude-dependent variable. This anticipation arises from the addition of FoMO as an independent variable, which is expected to explain a portion of the variance in the dependent variable, consequently increasing the coefficient of determination. AAD's R^2 was .548 when tested in AVM and .246 when the influence of FoMO was assessed on AAD. When connecting the model, the R^2 experienced a slight increase to .592, compared to the AVM-only scenario, with an adjusted R^2 of .585 (Fig. 4.7). The predictive relevance for the endogenous constructs of the whole model varied slightly for ITC ($Q^2 = .386$, $d = .103$), BEH ($Q^2 = .246$, $d = .051$), and significantly as expected on AAD ($Q^2 = .515$, $d = .268$).

Table 4.31: Indirect effects of the six factors and RAV on ITC and BEH

Variables	Indirect Effects	
	Coefficients	T values
CRE → AAD → ITC	.012	0.621
CRE → AAD → ITC → BEH	.007	0.619
CRE → RAV → AAD → ITC	.016*	1.915
CRE → RAV → AAD → ITC → BEH	.010*	1.919
ENT → AAD → ITC	.106***	4.476
ENT → AAD → ITC → BEH	.067***	4.354
ENT → RAV → AAD → ITC	.041	3.460
ENT → RAV → AAD → ITC → BEH	.026	3.361
INF → AAD → ITC	.012	0.697
INF → AAD → ITC → BEH	.008	0.696
INF → RAV → AAD → ITC	.024**	2.474
INF → RAV → AAD → ITC → BEH	.015**	2.422
INT → AAD → ITC	.047**	2.808
INT → AAD → ITC → BEH	.030**	2.794
INT → RAV → AAD → ITC	.031***	3.307
INT → RAV → AAD → ITC → BEH	.019**	3.257
IRR → AAD → ITC	-.062***	3.711
IRR → AAD → ITC → BEH	-.039***	3.654
IRR → RAV → AAD → ITC	-.008	1.326
IRR → RAV → AAD → ITC → BEH	-.005	1.318
PER → AAD → ITC	-.023	1.621
PER → AAD → ITC → BEH	-.015	1.616
PER → RAV → AAD → ITC	.028**	3.185
PER → RAV → AAD → ITC → BEH	.018**	3.118
RAV → AAD → ITC	.146***	4.847
RAV → AAD → ITC → BEH	.093***	4.665

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

A considerable difference was recorded in the association between FoMO and AAD ($\beta_{\text{singlemodel}} = .496, p = .000; \beta_{\text{wholemodel}} = .233, p = .000; d = .263$). The other constructs, particularly the six factors and RAV recorded marginal differences in their association with AAD.

Significant indirect effects were noted, notably RAV on ITC ($\beta = .146, t = 4.847, p = .000$) and on BEH ($\beta = .093, t = 4.665, p = .000$), and ENT on ITC ($\beta = .106, t = 4.476, p = .000$) and on BEH ($\beta = .067, t = 4.354, p = .000$). The whole list of indirect effects between the precursors of AAD, and ITC and BEH are shown in Table 4.31.

4.7 Conclusion

The data analysis chapter provided an in-depth analysis of the SLR, the data collected from the focus groups and the questionnaire. The questionnaire was analysed by splitting it between the AVM part and FoMO and TPB sections for ease and clarity. Now, it is imperative to draw conclusions based on the findings and move on to the discussion part of the dissertation.

The discussion chapter explores the meaning of the analysed results, explaining their importance and significance concerning the research questions and objectives. The chapter highlights the main themes and patterns that emerged from the analysis while critically evaluating the results, considering the existing literature, and comparing them to other studies in the field. The chapter offers a thorough and succinct assessment of the key findings, implications and contributions.

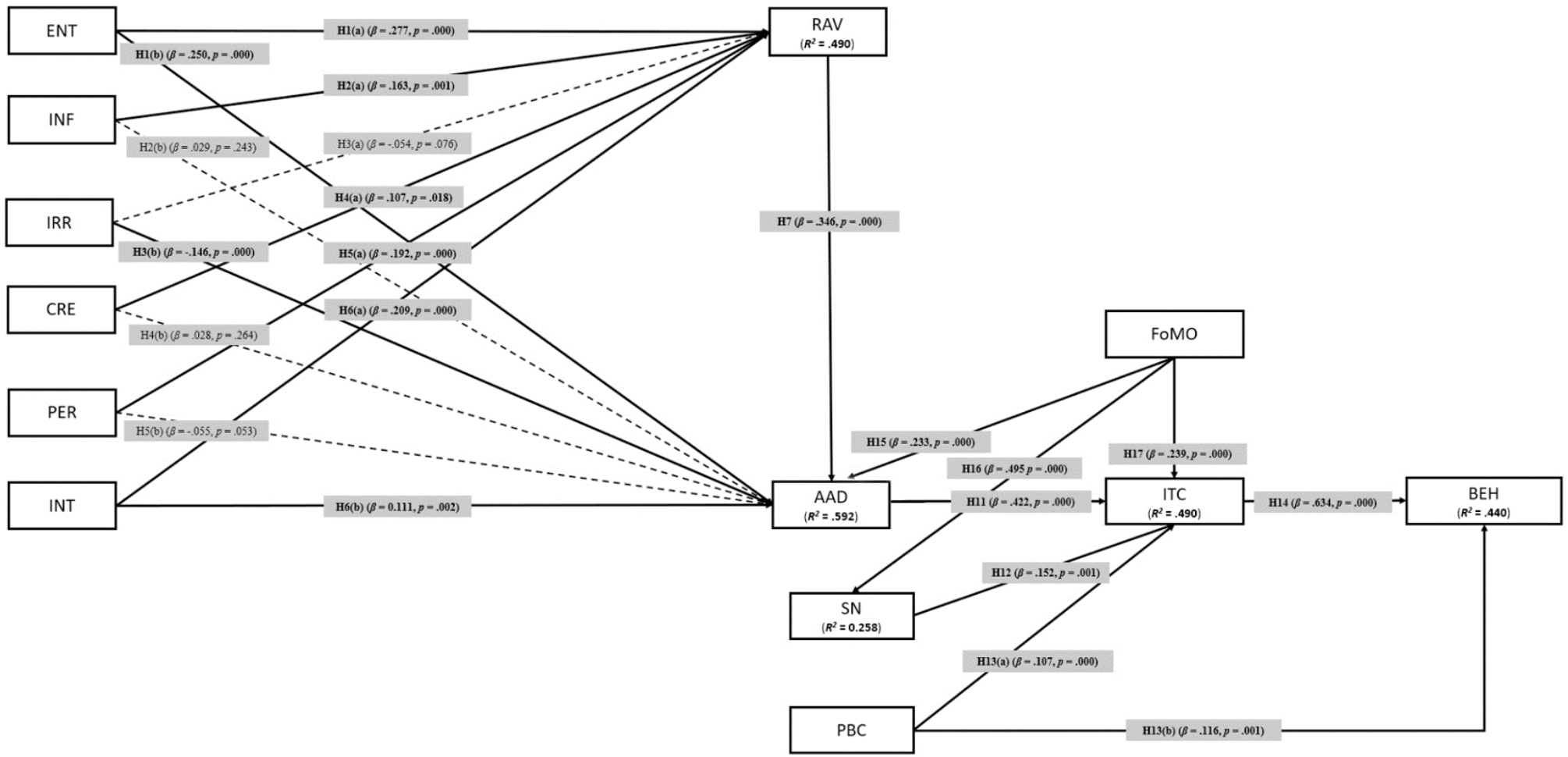


Figure 4.7: The full structural model

5. DISCUSSION

5.1 Introduction

In this study, the over-arching research question (OARQ) aimed to investigate the influence that retargeted advertisements have on young people by employing the advertising value model (AVM) and the theory of planned behaviour (TPB). In addition, the study aimed to explore the role of the fear of missing out (FoMO) appeals in retargeted advertisements on young people's attitudes, social pressures, and behavioural intentions. The OARQ posed for the whole study was:

OARQ: *What is the extent of influence that retargeted advertisements and FoMO appeals exert on young people?*

Firstly, a systematic literature review (SLR) was conducted to identify the main factors affecting young people's attitudes towards online advertising, using the AVM (Ducoffe, 1996) as a basis. Secondly, two focus groups were conducted to explore which elements contribute to the FoMO triggered by retargeted advertisements.

The study sought to address research questions (RQs) corresponding to each section of the conceptual model. These questions drove the investigation to understand the complex correlation between different constructs and their impact on the phenomenon. Hence, pertinent RQs were posed for each section of the conceptual model. For the AVM, the two objectives were: a) to determine which influencing factors affect young people's attitudes towards online advertising and b) to understand the relationship between the six influencing factors and perceived retargeted advertising value and young people's attitudes towards retargeted advertisements. For the TPB section, the study intended to determine the correlation that exists, if any, between retargeted advertisements and elements of TPB among young people. Finally, for the FoMO part of the conceptual model, the two aims of the study were a) to explore and identify the key constructs contributing to an externally initiated FoMO carried by retargeted advertisements and b) to investigate the effect that FoMO in retargeted advertisements have on young people's attitudes (AVM and TPB), subjective norms, and the intention to click on these advertisements.

The discussion chapter is split into two main themes, concentrating on each section of the conceptual model. The first section focuses on the six factors and their influence on young people's perceived value and attitudes towards retargeted advertisements. The second section concentrates on analysing the effects that FoMO in retargeted advertisements have on young people and the evaluation of young people's intention to click on retargeted advertisements. Finally, theoretical contributions and implications, and practical and social implications are presented.

5.2 Perceived Value and Attitudes towards Retargeted Advertisements

An SLR was undertaken, to identify the key factors influencing the perceived advertising value and attitudes of young people towards online advertising. The preliminary research question (PRQ) guiding this first and important step was as follows:

PRQ1: *Which are the most significant factors influencing young people's attitudes towards online advertising?*

The comprehensive SLR provided the results for PRQ1. Six elements were discovered to be the most used and influential in the reviewed studies. After tailoring the six drivers in a conceptual model based on the findings of the SLR, another RQ emerged, mainly to investigate the influence these factors have on the perceived value and attitudes of young people when presented in retargeted advertisements and how they impact them. Hence, the following RQ was formulated:

RQ1: *What is the relationship between the six influencing factors and young people's perceived retargeted advertising value and their attitudes towards retargeted advertisements?*

Two goals were derived from this RQ. First, to scrutinise and understand the model or section that proves advantageous in a retargeting context. Second, to enhance existing research on online advertising by specifically focusing on retargeted advertisements. This was deemed necessary to investigate the relationships between the antecedent factors and their association with young people's perceived retargeted advertising value and attitudes towards retargeted advertisements. As expected, the study found a significant association between two of the original antecedents of the value assessed by Ducoffe (1996), namely informativeness and entertainment, and the advertising value, with the latter being associated with attitude. This partially confirmed the pertinence of Ducoffe's (1996) advertising value model when applied to retargeted advertisements for young people.

Surprisingly, irritation was not negatively associated with advertising value but significantly correlated with attitude. Contrastingly, credibility and personalisation were

significantly related to retargeted advertising value but did not directly relate to attitude. Nonetheless, full mediation through retargeted advertising value was revealed in the association between these two factors and attitudes. The study revealed that interactivity significantly relates to perceived retargeted advertising value and attitude.

5.2.1 The Six Antecedents

5.2.1.1 Entertainment

Among the six factors, entertainment was the most significant predictor of young people's perceived value and attitudes towards retargeted advertisements. Apart from Ducoffe (1995, 1996), similar studies suggested that entertainment has a significant association with the advertising value in an online environment (Arora & Agarwal, 2018; Cvirka et al., 2022; Dao et al., 2014; Logan et al., 2012; Saxena & Khanna, 2013), and directly with attitude (Celebi, 2015; Cvirka et al., 2022; Gaber et al., 2019; Saadeghvaziri et al., 2013; Wang & Sun, 2010; Zha et al., 2015). The strong relationship of entertainment with value and attitude was also reflected in the parsimonious model. This antecedent is crucial as it strikes a hedonistic chord with young people. It creates a bond between consumers and the brand featured in the advertisements. Hence, the more entertaining, enjoyable, interesting, pleasant, and exciting an advertisement is, the higher young people perceive the value and affect their attitudes. It is extremely hard to capture attention if an advertisement does not resonate with emotional reverberations. Retargeted advertisements can be perceived as boring and creepy (Moore et al., 2015) if they pop up everywhere incessantly without any entertaining value. Hence, the findings indicate that retargeted advertisements seeking to pull individuals back to the website should be crafted to maximise their entertainment value (Ozcelik & Varnali, 2019; Wang & Sun, 2010).

The entertaining factor of retargeted advertisements was marked as one of the essential elements of these advertisements during the focus group. Participants emphasised the importance of this precursor by highlighting the creativity and minimalistic simplicity of an advertisement that should be constructed to captivate the young audience better. Such a factor can make an advertisement appealing, which would help in its perceived value and attitude to take action and click to land on the retailer's website again.

The overall collective mean of the entertainment factor was contrastingly low ($M = 2.85$, $SD = 1.29$) compared to the other factors. Out of the five indicators examined under this construct, ‘interesting’ leaned more towards the mid-point ($M = 3.31$, $SD = 1.58$), while both ‘enjoyable’ and ‘exciting’ were least marked ($M = 2.70$, $SD = 1.41$). This study indicates that although the entertainment value in retargeted advertisements is practically low among young people, they still find the advertisements interesting slightly more than enjoyable. Hence, they would be more interested in returning to a website they would have encountered before rather than enjoying the advertisement.

Another intriguing aspect of this study on entertainment emerged in the indirect effect. Interestingly, value has a complementary partial mediating role between entertainment and attitude. Hence, retargeted advertising value partially explains the positive relationship that entertainment has with attitude. The hedonic aspect of an advertisement alters its perceived value among young people, in which in return their attitudes would be influenced accordingly. Although entertainment affects the attitude directly, it also influences the attitude by the significant impact of the entertaining element has on its value. In the analysis of indirect effects when connecting the two models, it was evident that entertainment plays a significant role in affecting the intention to click and behaviour through its impact on attitude. For this factor, no differences between men and women, minors (13 - 17 years) and young adults (18 - 24 years) were reported. Similar results were reported by Cardoso and Cardoso (2012) and Murillo (2017).

5.2.1.2 Interactivity

As Lütjens et al. (2022) put it, interactivity holds significant importance as a determinant in the digital age. In this study, interactivity was the second strongest predictor of retargeted advertising value and a significant determinant of attitude. The findings are consistent with past studies that associated interactivity with value (Deraz, 2019; Kim et al., 2023), and others linked this factor directly with attitude (Ariffin et al., 2018; Ching et al., 2013).

Therefore, the data suggest that the more interactive retargeted advertisements are, the more they are appreciated and perceived as valuable by young people while influencing their attitudes. Given the internet clutter, especially on SNS, the rapid technological advancements, and the fast-paced lifestyle of young people, interactive advertisements of products are

becoming increasingly popular. When young people have already searched for a product and visited a website to get more information, or merely come across a product via an e-retailer, they may encounter interactive retargeted advertisements. These could drive them to click-through, leading them to purchase the right products.

Participants underscored the importance of more interactive retargeted advertisements during the focus group. Recognising that interactivity could serve as a pivotal element for advertisers to differentiate themselves amidst the abundant information and activities in contemporary society, it becomes evident that these advertisements should transcend traditional forms. These advertisements ought to function as dynamic conduits, establishing a meaningful link between young individuals and the respective retailer. Therefore, by leveraging the interactive nature of native advertisements, advertisers can facilitate a seamless engagement, effectively guiding young audiences to connect and securely navigate back to the retailer's website.

The interactivity factor registered the third-highest overall collective mean ($M = 3.50$, $SD = 1.53$). Two of the four indicators examined under this construct exhibited high cross-loadings and were consequently removed. These two indicators asked if respondents like retargeted advertisements with videos, images, and downloads and if they are preferred when they have links. These may have loaded on others due to the blurred boundary between interactivity and entertaining value when young people encounter advertisements with videos, images, and defined links. Videos and images may be associated with fun and arousal, making the advertisement pleasant and exciting to encounter (Islam, 2017). Nowadays, it has become common for advertisements to be linked and carry videos and imagery. Interestingly, respondents scored low in their belief that retargeted advertisements provide customers with the opportunity to connect with the company ($M = 3.64$, $SD = 1.63$) and that these advertisements facilitate two-way communication between the customers and the companies ($M = 3.36$, $SD = 1.63$). While the overall average of interactivity is closer to the midpoint compared to the entertainment factor, it still suggests that young people relatively minimally perceived interactivity. When it comes to retargeting in general, young people will find the advertisements valuable and useful only if it provides them with the opportunity to engage and facilitates the connection back to the previously visited website.

Retargeted advertising value has a complementary partial mediating role between interactivity and attitude, partly explaining the positive association between interactivity as an independent variable and attitude as the dependent variable. It means advertising value as a mediating variable benefits the relationship between interactive advertisements and attitude. The interactivity of an advertisement influences the perceived value, which helps foster a more favourable attitude among young people. When connecting the two models and analysing the indirect effects, it was evident that interactivity plays a significant role in influencing the intention to click and behaviour, through its effect on value and attitude.

Daems et al. (2019) argue that interactivity augments minors' attitudes, and so this factor in retargeted advertisements may highly influence minors beyond their conscious awareness. This study found that for female minors, interactivity is a significant determinant of value than their female counterparts. Hence, for women, the interactivity factor may shape the perception of value among minors more than young adults. This factor also emerged during the focus groups, where minors consistently highlighted their preference for interactivity. Another finding suggests that young male adults find the advertisements more interactive than young female adults and thus perceive them as valuable. Hence, although there is an age-based difference within the female group, there is also a gender-based difference, leaning towards men. No existing study was identified to corroborate these particular findings.

5.2.1.3 Personalisation

Interestingly, personalisation was the third most influential factor in the study, but only in relationship with value. The direct effect of personalisation on attitude was not significant. There are mixed results about this antecedent in the literature as studies found that it is a valuable predictor of advertising value (Dehghani et al., 2016), while others did not find it strong enough or even not supported (Arora & Agarwal, 2019; Ho Nguyen et al., 2022). Consequently, in this study, the hypothesis was non-directional. Gaber et al. (2019) posit that personalisation does not influence the attitude towards SNS advertising. In contrast, according to Lütjens et al. (2022), alongside interactivity, personalisation is the other prevalent determining factor in the digital age. In this study, personalisation of retargeted advertisements positively influenced young people's perceived value of retargeted advertising. The direct link between personalisation and attitude was found to be not significant. Personalisation may come across as valuable and useful but not necessarily form

the attitude of young people directly; it is through value that it is perceived as personalised and not directly effective. This could mean that advertisements would have become very personal, with high in frequency and recency, which may initiate content fatigue, and might be perceived as creepy (Moore et al., 2015). Although retargeting may come across as valuable, given its reminder to take individuals back to a pre-visited website, the attitude would not be equally favourable; advertisements might be ignored. Kim et al. (2016) suggest that although personalisation is considered appealing, it can also be perceived as intrusive and annoying.

Personalisation was not explicitly mentioned in the focus groups when respondents were specifically asked about the most important factors that encourage them to click on a retargeted advertisement. This was assumed to be inherent in retargeted advertisements, characterised by their customisation and targeting capabilities. The participants were aware that these advertisements actively chased them, showcasing products they would have encountered before on a website or searched on a retailer's website.

The overall average score for personalisation was the highest out of all the six antecedents of value ($M = 4.21$, $SD = 1.53$). This factor surpassed the mid-point, revealing that young people feel that retargeted advertisements are customised according to their browsing behaviour ($M = 4.61$, $SD = 1.80$) and that their content is tailored to them ($M = 4.37$, $SD = 1.72$). The personalisation item that scored below the mid-point was the one where respondents were asked if they felt that retargeted advertisements exhibited personalised messages to them ($M = 3.65$, $SD = 1.75$). Compared to the previous two factors, personalisation is better received by young people and influences the value more than their attitudes. Young people find retargeted advertisements more personalised and tailored to them, rather than being entertaining, interactive, informative, and credible. Therefore, this aspect becomes even more relevant in this context because retargeted advertisements are primarily tailored according to the preferences of individuals who have visited the retailer's website. Indeed, personalisation is a distinguished element of retargeting.

Retargeted advertising value was found to be a full mediating variable between personalisation and attitude. Hence, value has full intervention between personalisation as an independent variable and attitude as a dependent variable. It means that personalisation has no effect on attitude if value is controlled. Therefore, personalisation influences young

people's attitudes towards retargeted advertisements through the value pathway, which means that personalisation indirectly affects attitudes by increasing the value. Advertising value is shaped by personalisation, which ultimately attitude is significantly impacted by the emotional response of value that personalisation heightens among young people. Likewise, upon connecting the two models to analyse the indirect effects, personalisation showed that it influences the intention to click and behaviour, both through its impact on value. The study did not show any differences between minors and young adults. The data suggest that personalisation affects young people evenly, regardless of age and gender.

5.2.1.4 Irritation

The study revealed that irritation had no statistically significant relationship with perceived value. This finding is in line with Kim and Han's (2014) and Cvirka et al.'s (2022) studies that found an insignificant relationship between irritation and value. Murillo et al. (2016) found limited support for impact of irritation on advertising value. Contrastingly, other studies found a significant negative effect (Aktan et al., 2016; Arora & Agarwal, 2019; Murillo, 2017). On the other hand, a strong negative correlation was found when irritation was related directly to attitude towards retargeted advertisements. Even when the parsimony exercise was conducted, irritation came out as one of the potent independent variables that directly affects attitude. The findings are in line with previous studies investigating attitudes towards online advertisements (Gaber et al., 2019; Saadeghvaziri et al., 2013). This indicates that irritation did not influence young people's perception about retargeted advertising value. This approach would become more nuanced, as it shows that young people might have a positive perception about the advertising value if they consider retargeted advertisements as entertaining, interactive, personalised, credible and provide information, despite the feeling of annoyance by the advertisement. Nevertheless, irritation directly affects young people's attitudes, indicating that the tactics used in retargeted advertisements might irritate the audience, and render them as obtrusive, interfering in their digital life, and unsolicited (Saadeghvaziri et al., 2013; Xu, 2006). The reaction to these advertisements might be altered due to the relentless occurrences and frequency. It may create a hostile attitude in young people, through the perception of threatened freedom to surf without being chased (Brehm, 1966). This contrasts with Lütjens et al. (2022) conclusions that irritation has less negative impact on students compared to older customers. The mechanics of retargeted advertisements might be perceived as more irritating and obtrusive by young people when compared to other online advertising techniques due to their persistent chase, rate of recurrence, and agility.

Similar to Murillo et al. (2016), it may be argued that young people would disregard such advertisements in the first place, rather than considering them as annoying, irritating, deceptive, and intrusive. The users may either ignore advertisements or else, young people in particular, may endure, consciously or subconsciously, an element of advertisement blindness. Nonetheless, it will still affect their attitudes. Another reflection on this result might be the use of advertisement blockers. In this study, 47.0% of respondents admitted using these blockers. Yet, 41.0% acknowledged that they encounter retargeted advertisements every time they access websites that they visit most often. Another third of the participants confirmed that they come across these advertisements between 3 to 25 times weekly. Hence, young people may be feeling the brunt of advertisements, not necessarily retargeting, and are trying to shield themselves by installing blockers. These blockers would stop most of the advertisements, including retargeting.

Irritation was also mentioned in the focus groups, where participants emphasised that retargeted advertisements should not creep them by chasing them incessantly or even looking sketchy. The type of messages or how these advertisements are placed sometimes come across as annoying among young people. Moreover, if retargeted advertisements about a particular product are perceived as deceiving, sketchy, looking more like a scam or a phishing expedition, presented only to lure young people, it would be a turn-off. It would affect their attitudes towards these advertisements.

The overall collective mean of irritation was contrastingly high ($M = 4.95$, $SD = 1.60$) compared to the other factors; it tipped over the mid-point, leaning more towards agreement. Particularly, young people feel that retargeted advertisements are mostly annoying ($M = 5.22$, $SD = 1.86$), irritating ($M = 5.04$, $SD = 1.89$) and intrusive ($M = 4.94$, $SD = 1.85$). Young people find these advertisements slightly less misleading ($M = 4.58$, $SD = 1.66$) when compared to the aforementioned indicators. This study suggests that the disturbance triggered by the number of retargeted advertisements received by young people can be felt as irritating, invading their privacy, and annoying, but less deceptive. The irritation may be instigated by the frequency and recency of retargeted advertisements rather than the message being carried by the advertisement itself. This aligns with the occurrence interval issues discussed by Försch and de Haan (2018) and the small probability of clicking on an advertisement if the interval between one retargeted advertisement and the subsequent ones is short (Sahni et al., 2019). Advertisements would become tedious.

As the relationship between irritation and value was insignificant, no mediation effect could be found between irritation and attitude through value. Conversely, when examining the indirect effects, it became apparent that irritation plays a substantial role in affecting the intention to click and behaviour, through its impact on attitude. Surprisingly, it was found that while irritation exhibited no significant relationship with retargeted advertising value for the entire sample, its significance emerged when genders were compared. A multi-group analysis (PLS-MGA; Hair et al., 2018) revealed that irritation's impact on RAV differed significantly between young female adults and young male adults. Men were found to be more affected by irritation than women. A positive relationship was found for women. Even when men and women of the whole age bracket were compared, similar effects were noticed; irritation among men was negatively associated with value while women recorded a positive insignificant association. This factor was more gender-related than age-related. Murillo (2017) observed that women were not affected by irritation, but men showed a significant influence of irritation on value. This is consistent with the study, demonstrating a gender-related difference, with men being more influenced by irritation than women. Therefore, the chasing phenomenon of retargeted advertisements and their frequent occurrences are perceived as more intrusive and annoying by men than women.

5.2.1.5 Informativeness and Credibility

The last two predictors of retargeted advertising value were informativeness and credibility. Significant relationships were found between informativeness and value as well as between credibility and value. These two variables were not as strong as the preceding four components. These findings were similar to other studies examining both predictors (Aktan et al., 2016; Cvirka et al., 2022; Dao et al., 2014; Murillo, 2017; Murillo et al., 2016). Like personalisation, these two variables did not directly affect young people's attitudes. This finding was surprising as many studies suggested the contrary (Aktan et al., 2016; Amjad et al., 2015; Cardoso & Cardoso, 2012; Gaber et al., 2019; Murillo, 2017; Wang & Sun, 2010; Zha et al., 2015). Conversely, Mustafi and Hosain (2020) found no significant relationship between credibility and value, while Cvirka et al. (2022) found neither a link between credibility and attitude nor information and attitude. Aydin (2016) found that informativeness has a less significant influence on attitude when compared to other determinants.

Retargeted advertisements must function as an information vehicle for young people supplying relevant product information in a timely fashion. The primary function of

retargeted advertisements is to remind consumers about a product that has already been searched for and might, therefore, be of interest. Upon clicking, the advertisements would re-route the consumers to the website they had visited. Surprisingly, no direct effect was found between perceived informativeness and attitude. This may be due to SNS becoming inundated with myriad of information, creating an information overload condition that might hinder persuasion and attitude but not its value. Sending right and trustworthy messages to a young audience while keeping away from dubious advertisements may enhance the perceived value of the advertisement but not directly affect their attitudes.

In the focus group discussions, credibility emerged as a pivotal factor, intricately linked to the significance of conveying a believable message within each component of the advertisement, avoiding puffery and any exaggerated claims. The accuracy and relevance of information were also underlined as critical aspects of retargeted advertising. The timeliness of content, coupled with comprehensive information, can be pivotal in shaping an advertisement's perceived value. Like the irritation factor, if a retargeted advertisement is perceived as unbelievable or carries outdated information, a lack of credibility or inappropriate content would adversely impact the perception of retargeted advertisements.

The overall collective mean of these factors, informativeness ($M = 3.65$, $SD = 1.32$) and credibility ($M = 2.87$, $SD = 1.29$) were notably low. Each of these two variables had an indicator that loaded highly on other constructs during the indicator reliability testing. Consequently, the indicator “retargeted advertisements are a good source of up-to-date product information” from the informativeness list, and “I feel that retargeted advertisements are convincing” from the credibility construct were removed. “Believable” ($M = 3.03$, $SD = 1.54$) scored the highest mean among the credibility list, while the feeling that retargeted advertisements provide relevant information on products ($M = 3.70$, $SD = 1.52$) was the highest among informativeness.

For both factors, value completely mediated their relationship with attitude. Hence, if the value is controlled, neither informativeness nor credibility would influence attitude. The information and trustworthiness of the advertisements indirectly influence the attitude by augmenting the value. When examining the indirect effects of the whole model, it was evident that information plays a significant role in affecting the intention to click and behaviour, while credibility had a smaller influence on the intention to click and behaviour,

both through their impact on value. On the other hand, the study did not report any differences between minors and young adults. Hence, the data suggest that informativeness and credibility affect young people equally, regardless of their age and gender.

5.2.2 Value and Attitude

Finally, as expected, this study presented a robust connection between the perceived value of retargeted advertisements and young people's attitudes towards them. This is consistent with previous studies, including Ducoffe's (1996) model and other researchers' studies (e.g., Aktan et al., 2016; Arora & Agarwal, 2019; Aydin, 2016; Brackett & Carr, 2001; Hamouda, 2018; Lee et al., 2017; Logan et al., 2012; Murillo, 2017; Murillo et al., 2016). One indicator from the value construct, namely "I feel that retargeted advertisements are important" was excluded due to cross-loadings on other constructs. Hence, the "useful" ($M = 3.33$, $SD = 1.49$) and "valuable" ($M = 3.17$, $SD = 1.54$) indicators made up the value construct. It means that if the value of retargeted advertisements is perceived as useful and valuable for young people due to its 'driving element' that takes the previously visiting individuals back to the website, then the attitudes of young people towards these advertisements would be favourable.

In the analysis of indirect effects, it became apparent that perceived retargeted advertising value plays a substantial role in influencing the intention to click and subsequent behaviour through its impact on attitude. Interestingly, the findings indicated that for young female adults, retargeted advertising value is a stronger driver of attitude than for female minors. This finding suggests that young adults would find a retargeted advertisement more useful and valuable, which ultimately affects their attitudes, more than their minor counterparts due to, for example, the purchasing power they may have. Another interesting finding was the significant impact of value on attitudes among young female adults compared to young male adults. As men were reported to feel annoyed by retargeted advertisements, this result shows that men find these advertisements less valuable than women. To my knowledge, no study differentiated gender according to value impact on attitude.

After analysing and discussing the relationship between the six influencing factors and perceived advertising value and young people's attitudes towards retargeted advertisements, the subsequent section will discuss the impact of FoMO appeals carried by retargeted advertisements and the influence that young people's attitudes, social pressures, and self-

efficacy have on their intention to click on retargeted advertisements, ultimately leading to action – clicking.

5.3 FoMO Appeals in Retargeting, Attitude, Intention and Behaviour

The second part of the study included the fusion of another theory into the conceptual model, namely: the TPB with AVM and the influence that FoMO plays in retargeted advertising on young people. It presented the four FoMO constructs as a higher-order construct (HOC) and tested the effect that FoMO has on the intention to click and two of its antecedents, namely: attitude and subjective norms.

An integral part of the study was the involvement of TPB, as it was required to understand how attitude, subjective norms, and perceived behavioural control affect young people's intention to click on retargeted advertisements. Hence, the following RQ was posed:

RQ2: *To what extent do the three primary factors (attitudes, subjective norms, and perceived behavioural control) of the TPB influence young people's intention to click, and consequently, their behaviour towards retargeted advertisements?*

FoMO has amplified attention both in the commercial domain and with academic scholars because young people are relying more on digital technologies and investing in their digital lives by accessing the Internet, particularly SNSs. In 2013, Przybylski and colleagues called for more academics to investigate self-initiated FoMO. Numerous studies have investigated this part of FoMO, but only very few have investigated another facet of FoMO triggered by advertisements (e.g., Hodkinson, 2019; Weideinger et al., 2021). No empirical study has been conducted to test the main determinants of externally initiated FoMO, as presented in this study. So, these determinant factors were needed before testing them in a quantitative study. Therefore, this part of the study required identifying the main determinants of externally initiated FoMO via retargeted advertisements. Hence, the PRQ attributed to this study section was:

PRQ2: *Which elements contribute to the externally initiated FoMO caused by retargeted advertisements?*

Two focus groups were conducted with minors and young adults to extrapolate the main elements that depict externally initiated FoMO. Four contributing factors were

identified and included in the subsequent study, as part of a questionnaire. Hence, this section of the study led to the following RQ, formulated as follows:

RQ3: *What is the relationship between externally initiated FoMO and young people's attitudes, subjective norms, and intention to click on retargeted advertisements?*

The main objective was to understand the link between FoMO that is externally initiated via a retargeted advertisement, and attitudes, social pressures of young people, and their intention to click on these advertisements. Additionally, it was essential to determine whether any contrasts may exist between men and women, minors, and young adults. The findings provided an interesting view of FoMO and its impact on the main two precursors of the intention to click. This result was optimistic, given that four constructs identified as contributors of FoMO, were assessed together for the first time. It gives a glimpse on the influence that scarcity, urgency, social proof, and loss aversion combined and operationalised as FoMO has on young people's attitudes, social pressures, and intention to click on retargeted advertisements.

This section of the study will commence by examining the individual constructs of FoMO as observed in the focus groups. It will then proceed to explore FoMO as an HOC. Subsequently, the survey results related to FoMO constructs will be analysed, with a specific focus on the significant influences that FoMO exerts on young people's attitudes, subjective norms, and intentions to click on retargeted advertisements.

5.3.1 The FoMO Constructs

FoMO is a sensitive and intimate topic that individuals are not always willing to declare if they are affected by the marketing appeals in such circumstances. However, during the focus group, the participants expressed aspects of fear and sense of loss. For instance, minors reported being more fearful when an advertisement showcases a product that carries a scarcity message, urging them to take immediate action, for example, due to limited stock. This may trigger mostly when the product is required or attractive. The fear that a product featured in a retargeted advertisement might be taken and disappear was mostly present amongst minors. Contrastingly, young adults said they were more cautious when faced with urgency and scarcity, albeit few admitted that if they do not get hold of a product or service, particularly travel, they would be affected. Therefore, it was evident that it always depends

on the product in question. When minors encounter a product of interest on a website and exit without action, they may receive advertisements teasing them that the same product is nearing the end of the stock, augmenting their fear, and leading them to act. This will push them to either pester their parents due to lack of financial power or else purchase it themselves. Moreover, fear can also transcend into more anxiety among minors when their friends or other individuals avail themselves of a product and render it out of stock. Nonetheless, there is also awareness among the entire studied age group that advertisements may be a 'stunt' to attract their attention and instigate fear.

Herd behaviour, hype, social proof, and the effect of reviews can foster anxiety and impulsiveness in choice and behaviour. Young people are intrigued when they have retargeted advertisements that include reviews targeted to them, with products they would have already come across on a previously visited website. The focus groups showed that FoMO is typically effective more on minors, as they accentuated this phenomenon. Retargeted advertisements carrying a message or a visual representation, showing or stating that young people are purchasing and enjoying a product that may interest minors, would instigate them to click on the advertisement to take them back to the previously visited website. This factor was primarily evident among male minors. On the other hand, the hype and reviews interest the adult groups, with the latter finding it useful in choosing the right products.

Even the discontent and fear of losing an opportunity can augment dissatisfaction and disappointment among young people. Minors are likely to experience more apprehension if they miss out on an opportunity, and these feelings may even intensify if they witness their friends brandishing the product they acquired. The appeal in a retargeted message not to miss out on a product or a deal rather than urging them to benefit from an offer or a deal may affect minors, instilling the feeling of loss and detachment from the trend. For adults, it depends on which product or service the 'loss tag' is pinned to. A lost offer on airline tickets or valuable products might instigate a sense of lost opportunity; therefore, preventing from losing it by taking immediate action. Adults have more purchasing power than their counterparts; hence, the immediacy would prevent them from losing an opportunity.

5.3.2 FoMO as an HOC

To the best of my knowledge, this study presented FoMO as a reflective-reflective type I HOC for the first time, with scarcity, urgency, social proof, and loss aversion constructs as its indicators. From the outset, it has to be made clear that these constructs may not be exhaustive, as future studies may discover other constructs contributing to FoMO.

In the current study, the lower-order constructs (LOCs) contributed to the over-arching HOC. The LOCs were treated as reflective constructs as they are distinguished but make up the HOC. Furthermore, the LOCs correlated, thus designating FoMO as the latent variable. The HOC helped reduce the number of relationships in the model, achieving model parsimony. This is the first step to fleshing out the FoMO variable with LOCs contributing to it.

Social proof (or herd behaviour) is a type of FoMO, and it can be explicitly instigated via an advertisement without the necessary scarcity, urgency or loss aversion methods. Nonetheless, it is still a dimension that can propagate a sense of fear in young people that others are purchasing, so they would follow suit. On the other hand, although product scarcity can instigate a sense of urgency, urgency does not necessarily instigate product scarcity. The limited time made available to acquire an offer or benefit from a promotion does not make the product scarce. Although Jang et al. (2015) used the word ‘scarcity’ in the limited time factor, and Cialdini (2021) listed urgency under scarcity, they referred to the scarcity of time, not the product. In this study, these were distinguished constructs with dedicated distinct indicators. Loss aversion focuses on the losses that are twice as powerful as the gains. Lamba (2021) distinguished this phenomenon from scarcity and urgency. In the current study, these were treated as unique as well. Hence, considering the nuanced nature of these sub-dimensions and their ability to be distinct yet correlated constructs (Becker et al., 2012), they were treated as reflective, and the reflective-reflective type I model was employed.

5.3.3 The Effects of FoMO in Retargeted Advertisements

The composite mean of FoMO was below mid-point ($M = 3.15$, $SD = 1.26$). When the constructs are observed individually, urgency ($M = 3.44$, $SD = 1.77$) and scarcity ($M = 3.39$, $SD = 1.64$) reported the closest average means, with loss aversion reporting a slighter less overall mean ($M = 3.13$, $SD = 1.59$), with the least favourable being social proof ($M = 2.84$,

$SD = 1.43$). For FoMO, an indicator was removed from the scarcity construct as it failed the indicator reliability test; asking the respondents if they worry about the limited quantity when they come across a retargeted advertisement showing a product that interests them.

For urgency, young people were predominantly in disagreement when asked if they think more about the deadline ($M = 3.59$, $SD = 1.90$) and if they worry about the limited time shown in the advertisement ($M = 3.29$, $SD = 1.83$). Furthermore, respondents tended to disagree when asked whether encountering a retargeted advertisement featuring a product that interests them with scarcity messages made them more cautious about missing the opportunity to purchase a product if others bought before them ($M = 3.60$, $SD = 1.87$), they thought they had to purchase before others do, in order to get the advertised deal ($M = 3.30$, $SD = 1.85$), and based their decision on the quantity of the product as portrayed in the retargeted advertisement ($M = 3.27$, $SD = 1.77$).

For social proof, when respondents were asked whether other consumers' decisions to purchase products affect their purchasing decisions when shown on a retargeted advertisement, the mean marked the highest among the indicators ($M = 3.29$, $SD = 1.80$), although still below the mid-point. On the other hand, when asked if they prefer to do what other people typically do ($M = 2.74$, $SD = 1.57$) or prefer to act the way everyone else is acting ($M = 2.54$, $SD = 1.49$), or they follow behaviours that people typically do ($M = 2.78$, $SD = 1.56$) when they encounter retargeted advertisement showing a product that interests them with social proof (FoMO) messages, exhibited similar mean totals. Two items from the loss aversion scored almost equal mean totals; when they were asked if, when deciding on an offer, they would think more about losses than gains ($M = 3.27$, $SD = 1.83$) and the nervous feeling of losing an offer ($M = 3.26$, $SD = 1.82$), instigated by FoMO messages on an advertisement.

5.3.3.1 FoMO and Attitude

FoMO that occurs in retargeted advertisements was investigated to determine its influences on young people's attitudes. According to past studies, this relationship was either found to be positive when urgency and scarcity were involved (e.g., Jang et al., 2015; Ku et al., 2012) or negative when FoMO was tested on consumption behaviour (Saavedra & Bautista, 2020; Zhang & Cain, 2017). Therefore, the hypothesis was kept non-directional. This study revealed that FoMO positively affects young people's attitudes towards retargeted

advertisements. Therefore, the research findings suggest that an advertisement including FoMO appeals has the ability to alter young people's attitudes favourably. The findings of this study corroborate with the statement stemming from an SLR by Alfina et al. (2023). They acknowledge that although FoMO is often associated with negative psychological situations, it elicits a positive response, in a marketing context.

In other words, a positive connection exists between receiving a retargeted advertisement with a FoMO message showing a product that interests the respondents and forming their attitudes. This connection was also mentioned during the focus groups. Specifically, young people may be inclined to form an attitude if they encounter an advertisement demonstrating a product they came across during a previous visit to a retailer's website; there would already be prior engagement with the product. The advertisement would only be the springboard for individuals to make the next move, together with the fear that they might lose the opportunity to acquire it. Memory decay can trigger and defuse the attitude towards an advertisement, provided that individuals do not come across the same advertisement showcasing the product within a short period of time (Brown, 1958). When individuals repeatedly come across the same advertisement, a connection with the advertisement would be formed (Zajonc, 1968). The present study suggests that when the advertisement is augmented with a FoMO message, it heightens its importance and triggers a favourable attitude.

When analysing FoMO's four LOCs' direct impacts during the first stage of the disjointed approach, it was found that social proof is the most significant positive determinant of attitude. Therefore, if an advertisement is exhibiting a message or image of people who have already purchased and tried a product, it would prompt the phenomenon of social proof, where young people would follow suit due to wide acceptance and purchase by a vast majority. This would shape their attitudes accordingly, based on the premise that if a product or service is acquired by many others, thus deemed correct, their action would be safer. Urgency and scarcity are also effective and have a positive relationship with attitude. Upon viewing a retargeted advertisement of a product or service that individuals would have seen on a previously visited website, stating that a special offer may be ending soon or only one product is left in stock, this would generate a favourable attitude. Hence, if the scarcity and urgency are enticed to a product that individuals may have searched for before by visiting the retailed website, this may influence their feelings and thoughts about the advertisement

favourably, triggering the intention to click on it. Indeed, the findings showed that attitude has a partial complementary mediating role between FoMO as an HOC and the intention, which means that the attitude towards retargeting partially explains the positive relationship FoMO has with the intention to click on them. Additionally, an indirect effect was found between FoMO and young people's actions driven by the intention to click on the advertisement. FoMO plays a significant role in the indirect effect on behaviour through the impact on attitude and intention. Therefore, FoMO indirectly shapes young people's behaviour towards retargeting.

Contrastingly, loss aversion had no statistically direct relationship with attitude. The pain of missing an opportunity can be more 'expensive' than gaining it (Tversky & Kahneman, 1991). Nonetheless, this psychological phenomenon does not seem to affect young people's attitudes. Loss aversion may be tricky as it may implicitly influence individuals without realising its toll. Participants might not admit this psychological bias, but unconsciously, it would prevail. During the focus groups, young people showed that they might be affected, but only for a brief period. It also depends on what they are being offered; for example, travel for young adults, and fashion- and beauty-related items for female minors. Few participants rejected the idea that can befall the loss opportunity conundrum.

Surprisingly, no differences were found between young people when a PLS-MGA (Hair et al., 2017) was conducted for the relationship between FoMO and attitude. Studies suggest that anxiety and fear are more prevalent among women than men, younger than older (Bahrami & Yousefi, 2011; Brody, 1999; Racine et al., 2021). The research findings imply that FoMO, linked to attitude, plays a significant role in shaping the perceptions and beliefs of young people in a similar manner.

5.3.3.2 FoMO and Subjective Norms

Another construct where FoMO was found to be significantly impactful is subjective norms. The findings indicate that FoMO has a positive relationship with the social pressures exerted on young people. Hence, this finding suggests that FoMO can alter the social pressures among young Maltese people. FoMO appeals in retargeted advertisements can manifest into augmenting the pressures that reference groups might exert and enhance the likelihood of clicking on these advertisements. Young people are affected by social norms and abound by what others are doing, including following the trends with all the pressures

that SNSs and the Internet exert. The results indicate that the more elements of FoMO are present in advertisements, the more it affects subjective norms. Studies investigating self-initiating FoMO found similar results in other contexts (Parker & Flowerday, 2021; Radic et al., 2022; Saavedra & Bautista, 2020).

When the individual variables pertaining to FoMO were investigated for their influence on subjective norms, it was found that unlike attitude, scarcity and urgency have no significant effect. Therefore, scarcity and urgency are not the types of FoMO messages that enhance subjective norms' effect on young people's click intention. Contrastingly, as predicted, based on what the participants in the focus group pointed out, reviews posted under retargeted advertisements on SNSs, hype in advertisements and 'herd behaviour' messages are more effective and exert more pressure on them. To this effect, this study revealed that social proof significantly influences subjective norms. This matches a previous study that found a similar relationship (Lee & Hong, 2016). This finding suggests that individuals informed by advertisements that a substantial number of people are purchasing a particular product are likelier to believe that others who are important to them expect them to endorse the advertisement. Consequently, this perception directs them to the behavioural intention to express approval for the advertisement.

The only influence that loss aversion has is on subjective norms. Advertisements appealing to young people that pose a 'threat' of loss impact the subjective norms more than attitude and intention. Messages that put individuals in a situation that may lead to losing an offer and thoughts about what might be lost rather than what might be gained flourishes, may heighten the pressure on young people, encased with the social pressures that already exist. This factor would eventually form an intention to click on an advertisement if young people come across a retargeted advertisement showing products that have already been encountered on a retailer's website.

The indirect effect between FoMO HOC and the intention to click was tested with subjective norms taking a mediating role. The findings suggest that subjective norms partially mediate between FoMO and behavioural intention, meaning that social pressures partly justify the favourable relationship that FoMO has with the intention to click on retargeted advertisements. Additionally, FoMO indirectly affected behaviour through subjective norms and behavioural intention. FoMO articulated in retargeted advertisements indirectly

influences the behaviour of young people towards these advertisements. Hence, young people encountering FoMO appeals may be more likely to engage in behaviours aligned with what they believe others in their social circle expect from them, contributing to their intention to click on advertisements to mitigate the power of FoMO.

Interestingly, from the comparative study between minors and young adults and genders, a strong difference was found between men and women of all ages. The analysis revealed that men exhibit greater susceptibility to FoMO when compared to women. Previous studies suggest that herd behaviour, along with anxiety and fear, are more prevalent among women than men (Racine et al., 2021; Zheng et al., 2021). This finding is interesting as it implies that FoMO plays a significant role in shaping the perceptions and beliefs of men compared to women. Men are becoming more self-conscious about what they wear, how they look, what they have, and how they live. In a study, the media, celebrities, and influencers were to blame for heightening unattainable standards of physical male perfection (Diedrichs, 2012). Weideinger et al. (2021) argue that males' susceptibility increases when presented with FoMO-laden appeals. Hence, this finding suggests that this continuous societal shift might lead men to become more receptive to experiencing FoMO as they conform to the social pressures influencing them.

5.3.3.3 FoMO and the Intention to Click

FoMO was investigated as a precursor of behavioural intention. The study findings indicate that FoMO significantly positively influences the intention to click on advertisements. Thus, the results suggest that externally initiated FoMO appeals in retargeted advertisements have a favourable influence on the formulation of an idea and the reflection and deliberation on carrying out an action. Therefore, FoMO can not only shape the attitude of young people towards advertisements and exert influence on their subjective norms but also directly influence their behavioural intention. Past studies found that FoMO positively impacts intention (Dinh & Lee, 2020; Good & Hyman, 2020, 2021). FoMO can augment the intention to click on the advertisement, leading to the actual clicking behaviour that would land individuals on the previously visited website. Hence, the study suggests that externally initiated FoMO in retargeted advertisements that chase individuals to take immediate action or else they would miss out can boost interest and augment the intention to click.

The FoMO LOCs were examined individually to better understand their distinct impact on behavioural intention. Findings indicate that scarcity and urgency have a significant positive relationship with intention. This matches the results of previous studies on scarcity and urgency (Jang et al., 2015; Ku et al., 2012). These factors suggest that limited-time offers and quantity-bound messages influence young people's behavioural intention to click on retargeted advertisements showing products they had already come across before. If young people were questioning their next move, such FoMO appeals would heighten the rapidness of switching the intention to click into actual clicking and landing on the website once again.

Social proof is another determinant that significantly influences the intention. Again, this relationship aligns with previous studies testing social proof and herd behaviour (Abdul Talib & Mat Saat, 2017; Bhattacharyya & Rose, 2020). Young people encountering messages that others of the same age purchased a product, and they might be left behind, creates hype and may lead them to speed up the likelihood of clicking and returning to the website. Contrastingly, loss aversion was not found to exert any influence on intention. This result was consistent with past studies testing risk and loss aversion (Cvirka et al., 2022; Zhang & Cain, 2017). In general, FoMO has a positive relationship with the intention to click on advertisements, which would lead young people to decide and ultimately engage with advertisements and click on them.

The comparative study between men and women, minors, and young adults reported some differences. Similarly to the relationship between FoMO and subjective norms amongst genders, men were found to be more susceptible to FoMO than women in its influence on their behavioural intention. This result carries the same rationale for the FoMO and subjective norms relationship. It is a resulting factor that stems from the impact of FoMO on young people's attitudes towards advertising with additional influence on the social pressures surrounding them, where FoMO intends to directly affect the likelihood to click on retargeted advertisements. In addition, another difference was observed between young male adults and young female adults: the research findings revealed that the difference between men and women, is stronger for young adults than for minors. This aspect was contrary to what was expected, as minors are usually more vulnerable and disposed to influence than adults (Aral & Walker, 2012). This inclination might stem from the purchasing ability between the different ages. Young adults have more purchasing power than minors. In this study, 47.1% admitted they would purchase independently. Minors would pester their parents or guardians

to purchase a product when they encounter a retargeted advertisement; 22.7% stated that they would ask their parents to purchase, while 24.6% admitted that they would pester their parents and purchase on their own, as well.

5.3.4 The Intention to Click on Retargeted Advertisements

The TPB has been investigated in many different studies in diverse contexts (e.g., Fu et al., 2015; Heirman & Walrave, 2012; Reza Jalilvand & Samiei, 2012; Wang & Zhang, 2016). However, the TPB with all the constructs involved in an impersonal advertising context was investigated much less (e.g., Cheung & To, 2017; Sanne & Wiese, 2018).

5.3.4.1 Attitude and the Intention to Click

This study investigated the relationship between attitude towards retargeted advertisements and intention. The research findings show that attitude has the strongest positive relationship with intention out of the three antecedents. This supports previous research findings in which attitude predicts behavioural intention in an advertising context (Cheung & To, 2017; Saadeghvaziri et al., 2013; Sanne & Wiese, 2018; Wang et al., 2009; Wolin et al., 2002). Hence, an attitude, which is positively influenced by entertainment, interactivity, and the value of retargeted advertisements, and indirectly influenced by informativeness, credibility and personalisation, and impacted by externally initiated FoMO, predicts the intention to click on these advertisements. Interestingly, attitude has a significant indirect effect on behaviour, through behavioural intention. Hence, the more favourable an individual's attitude, the more intense the intention would be, which may translate into action.

The overall collective mean for attitude was less than the mid-point ($M = 3.02$, $SD = 1.38$). Respondents generally disagreed that retargeted advertisements are a good thing ($M = 3.16$, $SD = 1.57$). Slightly more disagreement was noted with respect to whether they consider them essential ($M = 2.96$, $SD = 1.51$) or like them ($M = 2.90$, $SD = 1.51$). Considering that the irritation factor is noticeably high, these results suggest that young people's attitudes are waning based on different aspects; it can be the incessant commercial use of this kind of advertising, or the creepiness that young people might feel when they are 'chased' by retargeted advertisements, or feeling annoyed when the advertisement is received as soon as they move away from the retailer website without any action, or pestering them. Conversely, fostering favourable attitudes through effective retargeting strategies can

enhance the likelihood of young people forming positive intentions to act in desired ways, in this case, clicking on the advertisement.

A compelling factor emerged upon the comparative investigation of attitudes between men and women. The research findings indicated that females' attitude is a stronger predictor than males', suggesting that their attitudes towards retargeting have a more pronounced influence on their behavioural intention when compared to men. This finding implies that the attitude formation in women appears to be stronger and more probable to manifest itself in solid actions. Therefore, women might be more prone to fulfil their thoughts, perceptions and feelings and openly express them by transforming them to intentions and ultimately actions, while men might exhibit them with lesser intensity. Moreover, the findings provide an even more precise indication of this aspect. Attitude predicts behavioural intention more amongst female minors than adults, as when compared to men, the difference is distinctive and robust. So, the attitude of female minors is more likely to translate into behavioural intention than that of male minors. Women of all ages are more likely to be drawn to websites via brand advertisements than men (Misco, 2023).

5.3.4.2 Subjective Norms and the Intention to Click

As hypothesised, subjective norms is another significant determinant of the intention to click. This aligns with previous studies that found a positive relationship (Bamberg et al., 2003; Cheung & To, 2017; Chu et al., 2015; Ham et al., 2015; Sanne & Wiese, 2018). Therefore, the perceived social pressure from peers and family members to execute or not execute certain behaviour impacts the intention to act.

Subjective norms reported the lowest recorded overall collective mean compared to the other TPB constructs ($M = 2.59$, $SD = 1.26$). Respondents predominantly disagreed with the notions that people important to them think they should click ($M = 2.47$, $SD = 1.33$) or would want them to click ($M = 2.44$, $SD = 1.33$). Even when people, that they value, would prefer them that they click ($M = 2.55$, $SD = 1.38$) on retargeted advertisements. The disagreement extended even to whether people who are important to them would click on retargeted advertisements themselves ($M = 2.90$, $SD = 1.53$), even though the mean score was the highest. In this context, the findings suggest that although subjective norms affect the intention to click, young people feel less pressured to click on a retargeted advertisement that drives them to the retailer's website. It can be more of a personal experience and process. For

instance, individuals would visit a website to search for a product, which social pressures would have already driven an individual to. After departing the website without making a purchase and subsequently being targeted with retargeted advertisements, individuals would not feel pressured to click on them. The social pressure would be steered towards purchasing the product and not clicking on a customised advertisement. There may also be other ways individuals are driven to purchase a product, besides being subjected to retargeting. It is essential to point out that there may be a minor element of social desirability bias, where individuals may be reluctant to admit that they are affected by social pressures and may conceal their genuine opinions. Although the questionnaire was self-administered, anonymity was ensured, and special consideration was given to the wording of each indicator. Subjective norms was another construct, along with loss aversion, posing potential inconsistencies with social norms.

Subjective norms also have a significant indirect effect on behaviour through behavioural intention, which means that the stronger the social pressures are on the individuals, the likelihood of clicking would be greater, which will ultimately result in clicking on the retargeted advertisements. An interesting finding emerged from the comparative analysis between female and male minors, indicating that subjective norms affect males strongly than female minors. In the young adults section, no differences were found. Minors are more influenced than adults by their surroundings (Aral & Walker, 2012) and in this case, the approval or disapproval of minors' behaviour by their normative reference groups would be more influential and effective.

5.3.4.3 Perceived Behavioural Control, the Intention to Click and Behaviour

The construct differentiating the TPB from the theory of reasoned action (TRA) is perceived behavioural control. This construct was always tested in direct relationship with behavioural intention and behaviour. This construct was important in understanding individuals' self-efficacy when they encounter an advertisement portraying a product which was already viewed on a pre-visited website or a product placed in a cart and abandoned. It tested the respondents' ability to control themselves when exposed to retargeting. In this study, these relationships were found to be strong and significant. These findings are consistent with previous research results (e.g., Cheung & To, 2017; Pundir et al., 2021; Reza Jalilvand & Samiei, 2012; Ullah et al., 2021). Nonetheless, past research did not always find

perceived control as a significant precursor of behaviour (e.g., Akar & Dalgic, 2018; Hamilton & White, 2008; Muralidharan & Sheehan, 2016), but this relationship was found to be significant in this study. This may have resulted due to the difference in the study and context, being more concentrated on the advertising area. A retargeted advertisement would show a product or service already encountered by individuals; hence, young people would feel more in control whether they take action or not. Individuals would perceive it easy to perform such behaviour but always based on their situational constraints. They would have already checked a product or service; all they would have to do then is to either click or not click to get more information or else purchase the product.

As expected, the perceived behavioural control overall collective mean scored higher than the mid-point ($M = 5.41$, $SD = 1.67$). Respondents feel that they are in control of what to do when they encounter a retargeted advertisement, as whether they click on them ($M = 5.43$, $SD = 1.81$), whenever and if they want to click ($M = 5.29$, $SD = 1.79$), and the ultimate decision to click on these advertisements depends on them ($M = 5.51$, $SD = 1.79$). Hence, the findings suggest that young people who have searched for or encountered a product on a website are in control of what they do when they receive an advertisement showing the same product. It is positively associated with the intention to click and the actual clicking on retargeted advertisements.

In this scenario, the intention to click acts as a mediator between perceived behavioural control and behaviour. This mediating role was examined, and the study revealed that behavioural intention has a significant complimentary mediating role, yet partial, between control and behaviour. Hence, the intention to click, as a mediating variable, accounts for some of the relationship between perceived behavioural control as an independent variable and behaviour as the ultimate dependent variable. Intention may serve as a pathway that connects control and action. Hence, if young people believe they have the necessary control, their intention to perform the behaviour will likely be stronger, driving them to click. Exposure to advertisements showing products encountered before on a website, placed conveniently on frequently visited websites or SNSs among young people, may prime them to think favourably about the advertised product; therefore, enhancing their confidence in their ability to make informed decisions aligned with their preferences and needs. No differences were found in the comparative analysis between genders and age groups.

5.3.4.4 The Intention to Click and Behaviour

Finally, the connection between behavioural intention and behaviour was investigated, and as expected, a significant positive relationship was found. Previous studies found this strong connection, and thus, align with this association (e.g., Akar & Dalgic, 2018; Heirman & Walrave, 2012; Muralidharan & Sheehan, 2016; Sanne & Wiese, 2018). The results suggest that the higher the behavioural intention of young people to click on retargeted advertisements is, the higher the engagement with advertisements, and propensity to click. The overall collective mean for intention ($M = 3.26$, $SD = 1.53$) was less than behaviour ($M = 3.82$, $SD = 1.77$), but both were less than the mid-point. The intention to click on these advertisements ($M = 3.13$, $SD = 1.66$) scored less than the will to click on these advertisements in the future ($M = 3.39$, $SD = 1.65$). Hence, the willingness to click on the advertisement is slightly more appreciated than merely intending to click. In the behaviour section, two questions in the past tense were asked: if they clicked on retargeted advertisements ($M = 3.90$, $SD = 1.88$) or engaged with retargeted advertisements ($M = 3.74$, $SD = 1.86$) in the past. Although these were in disagreement, behaviour scored slightly better than intention. These research findings indicate that behavioural intention influenced by FoMO, attitude, subjective norms, and perceived behavioural control has a strong positive effect on young people's actual clicking on a retargeted advertisement that would drive them back to the visited website to either acquire more information about a product or a service or purchase it. The comparative analysis showed no significant differences between genders and age groups.

The study findings have several theoretical implications and contributions and practical and social implications that can be valuable for academicians, advertisers and marketers, young people, policymakers, and parents or guardians. The following two sections will discuss these. These propose various opportunities for researchers to understand the influencing factors, perceived value, young people's attitudes, intention to click and behaviour towards retargeted advertisements. The study provides implications for FoMO in a retargeting environment.

5.4 Theoretical Implications and Contributions

The findings of this study offer relevant implications and contributions to the realm of retargeted advertising and marketing. First, while numerous studies have investigated the AVM for different advertising techniques, no study has focused on retargeting, which is part of the programmatic advertising paradigm, where billions of Euros are being injected globally yearly. Hence, an SLR was first required to understand the factors applicable to the studied domain to address this gap. To my knowledge, no SLR was conducted before, specifically for influencing factors and young people. This study was helpful as it laid the foundation for this quantitative study and other studies. The SLR aided in integrating past studies into one comprehensive research that offered different alternatives of influential factor usage in different advertising contexts.

Additionally, this was the first time a study tested retargeting using six predictors of value and attitude and connected all the predictors to both dependent variables. It incorporated interactivity as an integral antecedent, which resulted in a strong predictor of retargeted advertising value and attitude. The proposed conceptual model provided significant explanatory power of the essential exogenous elements of perceived value ($R^2 = 49.0\%$) and attitude ($R^2 = 54.8\%$). As Hsiao and Chang (2014) emphasise in such contexts, this study can consequently be generalised to other analogous scenarios, facilitating valuable insights into advertising value and attitude towards advertising. Moreover, based on the effect sizes and other rigorous tests, a parsimonious model for retargeted advertisements was proposed, providing four salient precursors of value and attitude.

Furthermore, this study also confirmed some already established hypotheses in the area, such as the relationship of entertainment with perceived value and attitude (Ducoffe, 1996), and information and credibility with value (Brackett & Carr, 2001) and challenged others, like for example, where no direct influence was found between the irritation factor and advertising value.

The findings suggest that entertainment, interactivity, and personalisation are the most significant predictors of retargeted advertising value. Additionally, entertainment, interactivity, irritation, and perceived value are the most influential factors shaping young people's attitudes towards retargeted advertisements. Notably, while personalisation emerged

as a pivotal factor, surpassing the midpoint of neutrality, its influence on attitude was found to be not significant.

Differences based on gender and age were apparent in the relationship between irritation, interactivity, perceived value, and attitude. Notably, irritation exhibited no significant influence on perceived value. However, its influence diverged notably among gender and age cohorts. Specifically, male respondents, especially young adults, displayed a heightened sensitivity to irritation compared to females. Interactivity significantly shaped perceived value, particularly among young male adults. Conversely, its impact varied across demographic segments, with young female adults showing more responsiveness to interactivity than female minors.

Next, externally initiated FoMO – FoMO appeals in advertisements, particularly in retargeting, were never tested before. To the best of my knowledge, this was the first empirical study that examined four distinctive constructs together, with FoMO serving as an HOC, and investigated its effect on young people's attitudes, subjective norms, and intention to click on retargeted advertisements. Like other studies that extended the TPB (e.g., Göncz & Tian, 2020; Tommasetti et al., 2018; Wang & Zhang, 2016), this study attempted to extend it by investigating the influence of FoMO, modelled as an HOC. When the four LOCs were tested separately during the first stage of the disjointed approach, scarcity and urgency were found to be positively related to attitude and the intention to click, while loss aversion impacted subjective norms. Social proof is the only element significantly correlated with attitude, subjective norms, and intention to click.

The study indicates that FoMO has a positive relationship with attitude towards retargeted advertisements, subjective norms, and intention to click. Again, like the AVM, a strong coefficient of determination was found, with a collective power on attitude ($R^2 = 59.5\%$), subjective norms ($R^2 = 25.8\%$), intention to click ($R^2 = 48.8\%$), and behaviour ($R^2 = 44.0\%$). Hence, study generalisability can be done, albeit cautiously, to similar contexts, yielding insights on FoMO and TPB. The study also provided essential information about divergencies between minors and adults, both genders, in a retargeting context.

Men are more prone to FoMO influence on subjective norms and intention to click than women. Additionally, the variance between men and women is increased at an adult stage rather than with minors, with the influence on intention to click.

Attitudes, subjective norms, and perceived behavioural control influence young people's intention to click and, consequently, their behaviour towards retargeted advertisements. Attitude strongly predicts women's clicking intentions, especially among minors, compared to men and male minors. Social pressures strongly influence clicking intentions in male minors more than female minors.

Finally, a valuable part of the study was that minors, particularly teens between 13 and 16, were included. A research objective was to design a study in which a comparative analysis could be carried out between different gender and age groups. Hence, valuable and meaningful insights were obtained by carefully navigating and incorporating ethical principles into the study design, while maintaining the utmost respect and integrity with all focus group participants and questionnaire respondents.

5.5 Practical and Social Implications

This study has contributed more to online advertising, particularly the retargeted advertisements literature. The study findings have significant implications for young people encountering retargeted advertisements, advertisers, policymakers, and parents or guardians.

Young people must understand that more time spent on the Internet, surfing and indulging in compulsive SNS usage can result in more aggregation of retargeted advertisements, which would systematically increase due to frequent usage. Reading the terms and conditions before accepting cookies is imperative; often, these are clicked, and advertisers are given the green light to track one's behaviour. Although young people are immersed in the Internet, it does not automatically put them in an advantageous position over the older generation, who were introduced to it later in life. Minors should recognise the paradoxes of advertisements and the different messages they may carry that would augment fears and anxieties. Although participants admitted that FoMO does not always influence them, its subtlety and the way how appeals are crafted, along with their association with familiar products, can still capture their attention, and augment anxiety subconsciously. The irritating and obtrusive aspects of retargeting may be overly heightened by the excessive surfing and hopping from one website to another.

The study findings indicate that entertaining, informative, interactive, credible, and personalised advertisements have positive relationships with perceived value and young people's attitudes towards them. This would eventually lead young people to the intention to click on these advertisements and take them back to the pre-visited retailer website if clicked on. Nevertheless, advertisers should be careful in how they use this advertising technique, what they do with retargeted advertisements, when and where they use them, and who they are targeting. Advertisers should be more careful when employing retargeted advertisements. First, advancing with caution when using young people's data. Second, respecting young people's privacy concerns by providing opt-out options before landing on a retailer website that is geared by retargeting. Third, giving more attention to the frequency and recency of retargeting, as this may come across as creepy and intrusive, which ultimately affects their attitudes, and be more costly for advertisers. Finally, a more creative approach is required to deliver more credible and informative messages without the excessive use of FoMO as although these may influence the attitude and behavioural intention, which would lead to a

click-through, they can also heighten anxiety and fear among young people. With the introduction of the European Union's (EU) Digital Services Act and Digital Markets Act, advertisers must ensure full compliance with these laws and regulations to foster a safer and morally sound Internet environment for young people, children, and future generations.

For policymakers, empowering young people through increased education on advertising influences and media literacy is essential. From a tender age, much younger than the investigated age group, students need to be introduced to the dynamics of the Internet and SNSs. The inclusion of media literacy in schools should be accelerated and permeated to early secondary school classes. YouTube is being used by children incessantly, and children sometimes lie by providing an inflated age to join Facebook and Instagram. Ofcom conducted a study in 2022 and reported that a third of English children, starting from the young age of 8 up to 17, provide an adult age of more than 18. Therefore, children would be exposed to all advertisements presented on the Internet, irrespective of genre, particularly on SNSs. Students should be discouraged to input an inflated age, as they will be targeted with advertisements normally distributed among adults. The new Year 7 Maltese Ethics syllabus includes online advertising in a learning outcome; this is a good start, where advertisements, particularly retargeting and FoMO, can be explored more and included in a detailed method in the subsequent years.

Hence, FoMO in advertisements should be explicitly discussed in class, not only the self-initiated conventional type. The four FoMO elements presented in this study should be highlighted and discussed overtly in schools. FoMO as an HOC influences the attitude, heightens social pressures, and impacts the likelihood of clicking on advertisements and going back to the retailer's website. Policymakers should ensure that young people are equipped with the proper tools to develop the necessary skills to become resilient and navigate the media landscape with confidence and informed decisions. They should also explore policy improvements for retargeted advertisements aimed at young people while ensuring that the EU's Digital Services Act and Digital Markets Act regulations are enforced and adhered to adopt a safer environment for young people. Finally, it is important that policymakers explore and eventually introduce safer ethical considerations when basic emotions are intentionally targeted through FoMO messages and related tactics in advertisements.

Finally, parents or guardians should be aware of their children's excessive Internet and SNS usage, particularly those aged 17 and under. Two-thirds of the respondents in the study admitted that they spend more than four hours daily on the Internet. Parents or guardians are encouraged to monitor and check the engagement instructions given with SNSs for the altered age issues and any other incorrect data. Depression and anxiety prevalence among children is on the increase, partly due to SNS fatigue, which would lead to potential negative impacts on their personal and social wellbeing (Dhir et al., 2018; Ho et al., 2017). Understandably, the more they surf and access websites, the more they would be 'chased' by retargeted advertisements. Moreover, when minors receive retargeted advertisements, the influencing factors trigger. Even more so, if a FoMO appeal used in a retargeted advertisement influences their attitudes and intention, they often act by pestering their parents or guardians to purchase the advertised item.

5.6 Summary

In this chapter, the findings analysed in the previous chapter were discussed, and the meaning of each relationship was explored and interpreted. The importance and significance of the data collected from the SLR, focus groups and self-administered questionnaire were identified. In the introductory part of this chapter, the OARQ was presented, and the individual PRQs and RQs were discussed. Then, two major sections were dedicated to the three main parts of the conceptual model. The sections were kept the same as how they were presented in Chapter 4 to facilitate the reading and embrace coherence. The first section focused on the AVM part of the model, where the findings were unpacked, focusing on the relationship between the six influencing factors and advertising value and attitude. The subsequent section concentrated on the FoMO relationship with the TPB elements and how retargeted advertisements perform using the TPB model. Finally, this chapter presented various implications and contributions targeted to academia, young people encountering retargeted advertisements, advertisers, policymakers, and parents or guardians.

The next and final chapter is the conclusion, where the key findings and contributions are discussed with conclusive arguments, the limitations and relevant opportunities that this study invokes for future research are presented and concluding with a closing summary.

6. CONCLUSION

6.1 Introduction

This chapter brings the study to an end by summarising key research findings in relation to the research aims, objectives, and research questions. It delineates the contributions from the study, aiming to enhance societal well-being. The chapter also proposes opportunities for future research and concludes with a closing message.

6.2 Key Study Findings and Contributions

Primarily, this study was conducted based on various motivations, including the urge to know more about the effects of this kind of advertising technique and its influences on young people. Additionally, it was essential to understand closely one of the tools that many billions of Euros are being injected into and in response to various calls by academics and practitioners for more studies on retargeted advertisements (Bleier & Eisenbeiss, 2015b; Zarouali et al., 2017) and the fear of missing out (FoMO) phenomenon (Zhang et al., 2020).

The study aimed to explore five major objectives to comprehensively understand retargeted advertising and FoMO appeals and their influence on young people. First, the study explored and identified the influential factors of online advertising. A systematic literature review (SLR) explored the most influential factors in an online advertising environment. Six influential factors were identified: entertainment, informativeness, irritation, credibility, personalisation, and interactivity. This choice was substantiated by Lütjens et al. (2022).

Second, this study explored FoMO to determine the primary constructs contributing to augmenting it when incorporated in retargeted advertisements. Based upon two focus groups conducted with minors and young adults, respectively, and after a thematic analysis, the research findings indicated that four key elements play a significant role in augmenting FoMO among young people: scarcity, urgency, social proof, and loss aversion. When these are included in an advertisement, they may amplify the fear among young people that an opportunity may be lost by missing the last available product or service (scarcity) or a special offer that needs to be redeemed quickly (urgency). Young people can be prompted by fear when being exposed to messages or situations showing that many people with homogenous

traits are benefitting from the offers presented or enjoying the products or services benefits (social proof), or when individuals are presented with messages or situations that instigate the pain of loss rather than the joy of gain (loss aversion).

When all these constructs with their respective indicators were included in the questionnaire and disseminated, data was collected and analysed. Third, the results indicated that entertainment, interactivity, and personalisation are the most significant precursors of retargeted advertising value. Entertainment, interactivity, irritation, and value are the strongest determinants of attitude towards retargeted advertisements. Hence, retargeted advertisements displaying products that have already been encountered on a retailer's website that are enjoyable, interactive, and customised for young people are more perceived as valuable and useful. The results suggest that these advertisements may strongly influence young people's attitudes towards them if they are entertaining and interactive, but also adversely if they are annoying. The means analysis of these factors indicates that young people feel that retargeted advertisements are still less amusing, not so informative, less credible, and less interactive.

The findings suggest that information, personalisation, and credibility influence the perceived value of retargeting but do not correlate with attitude. Personalisation was the only factor that surpassed the mid-point neutral bar. Notable variances were observed among genders and age groups in terms of irritation and interactivity as precursors of value and value as a determinant of attitude. Interestingly, although irritation was not found to be significant as a precursor of value, men in general were found to be more adversely affected than women, and particularly, young male adults more than young female adults. Interactivity influences young male adults' perceived value more than young female adults. Contrastingly, interactivity influences female minors' perceived value more than young female adults. Retargeted advertising value was found to be a stronger driver of young female adults' attitudes than that of female minors. A significant impact was found in the influence of value on attitudes among young female adults compared to young male adults.

Fourth, the study sought to understand the association between retargeted advertisements and the trigger of FoMO messages among young people on their attitudes, social pressures, and intention to click on them. The research findings suggest retargeted advertisements that chase young people after encountering the product or service on a

website carrying a FoMO appeal influence significantly their attitudes, amplify the subjective norms, and impact their behavioural intention. The findings demonstrate a nuanced model of FoMO and its relationships with retargeted advertisements, as FoMO is usually attributed to negative impacts when studied intrinsically, primarily on attitude. However, in this study, FoMO has a strong positive influence on attitude. The study indicates that young people encountering such advertisements that are entertaining, interactive, and valuable, augmented with a FoMO appeal, can create the feeling and alter their opinion about the product and the advertisement itself favourably. On the other hand, the annoyingness and creepiness of the same advertisement may adversely alter this feeling and opinion. These findings further suggest that when individuals observe a significant number of their reference group members expressing positive reactions towards retargeted advertisements featuring FoMO appeals for a product encountered before on a website and align with their interest, individuals would be more inclined to believe that important reference group members anticipate their approval of the advertisement leading to the product. FoMO appeals in retargeted advertisements augment young people's likelihood to click on the advertisement.

FoMO messages in retargeted advertisements directly affect the intention. The association between these two variables is significant. Thus, the findings suggest that FoMO is also an influential antecedent of behavioural intention and ultimately, behaviour in the context of retargeted advertisements. Even more so, the study went a step forward in identifying the most significant FoMO elements and their relationships with attitude, social pressures, and intention. Scarcity and urgency are positively related to attitude and the intention to click, while loss aversion impacts subjective norms. Social proof is the only element significantly correlated with attitude, subjective norms, and intention to click.

Interestingly, although past studies found anxiety and fear predominant among women when compared to men and minors more than adults (Bahrami & Yousefi, 2011; Brody, 1999; Racine et al., 2021), in this study, no differences were found between the different age groups and genders on attitude. Furthermore, contrary to what was expected, the findings indicate that men are more prone to FoMO influence on subjective norms and behavioural intention than women. Additionally, the variance between men and women is increased at an adult stage rather than with minors. Again, this result was averse to what was expected and challenges existing studies since minors are reported that, in general, they are more

influenced than adults in an SNS environment (Aral & Walker, 2012) and by same-age peers when risk is perceived (Knoll et al., 2015; 2017).

Finally, the study aimed to investigate how the theory of planned behaviour (TPB) fits into the equation, with attitude as the critical connection between the advertising value model (AVM) and TPB. The TPB, as proposed by Ajzen (1991), was found to align properly with the conceptual model. Notably, the theory was in sync with the fact that individuals would have encountered the products or services on a website they had previously visited, so there was an element of 'planned' behaviour. The theory demonstrated a good fit with all the constructs, and the corresponding hypotheses were significantly supported, reinforcing the validity of the findings. The actions of young people result from their intentions to click, which consequently are affected by their attitudes, subjective norms, and perceived behavioural control. The findings suggest that when the influencing factors and the FoMO factor form the attitude, added with the social pressures and FoMO that influence them, and a favourable perception of the easiness and control to click on a retargeted advertisement, would shape the likelihood to click. This would lead to clicking the retargeted advertisement to return to the previously visited website. If all the elements are in place, retargeted advertisements are an efficient and effective way to drive young people back to the original website for further action. Attitude emerged as a robust precursor of the intention to click among women, particularly minors when compared to men in general and male minors. Additionally, social pressures were found to be more affecting male minors' behavioural intentions than female minors.

This study is valuable for various reasons, which include academic contribution, expanding theoretical knowledge and empirical evidence, addressing novel challenges and filling research gaps.

- a) It was the first time an SLR was conducted solely on influencing factors in an online advertising context, particularly targeting young people. This SLR identified six influential factors which were further tested. A meta-analytical comparative study was conducted a year later, acknowledging this study and presenting the same six factors (Lütjens et al., 2022).
- b) Determining the four elements of FoMO, although not exclusive, was another contribution and a gap filled. During the study, different research mentioned these elements in tandem (Argan et al., 2023; Lamba, 2021), while others separately in

various marketing contexts (e.g., Kang et al., 2019; 2020; Kang & Ma, 2020; Zhang et al., 2020; 2022). This research represents an empirical study for the first time in this area of investigation. The indicators of the four elements were not created from scratch but adopted from other studies that used them separately and were adapted for this study. The blend of these constructs and their relevant indicators formed a reflective-reflective type I higher-order construct (HOC). The constructs with their respective indicators have not been previously tested together, with FoMO modelled as an HOC that includes these four lower-order constructs. The findings for FoMO as an HOC are promising.

- c) A conceptual framework extending the TPB was constructed, adding FoMO as an HOC and connecting it to AVM via attitude. FoMO was previously tested on TPB by other scholars but predominantly used the self-initiated FoMO or the individual FoMO elements. In this study, FoMO incorporated in retargeted advertisements was investigated.
- d) Focusing on minors was another differentiating factor. Hence, this study contributed to filling another gap in the literature where minors are involved. Moreover, age and gender variances were also presented where these occurred in relationships between the different variables.

6.3 Limitations and Opportunities for Future Research

While certain limitations have already been presented in the methodology chapter, additional overarching caveats are acknowledged. First, the study is very specific, focusing on retargeting and young people from 13 to 24 years, including six factors affecting the perceived value and attitude towards retargeted advertisements. A plausible avenue for future research would be to test these factors using the AVM conceptual model proposed in the study and, eventually, the parsimonious model in different contexts, age groups, genders, cultures, and ethnicities. Hence, the AVM can be used with other novel advertising tools such as native advertisements, proximity-based marketing, and other programmatic advertising techniques targeting hedonic and utilitarian products. Researchers can focus on different age brackets, including younger children and adults and their genders. A comparative study can be conducted between cultural and ethnic groups, such as two intra-continental or two inter-continental countries. Additionally, this study acknowledges the possibility of including further factors beyond the antecedents presented in this study, for example, incentives or privacy concerns. Moreover, the influencing factors can also be tested directly with other constructs, such as the flow experience and intention to click. All these have the potential to extend the conceptual framework further and broaden its applicability and relevance across various study areas and contexts.

Second, although AVM served as a critical pillar in this study, it is essential to acknowledge that other theories, such as Bandura's (1977) Social Learning Theory and Rogers' (1962) Diffusion of Innovation Theory, offer valuable perspectives that were not fully examined. The AVM was chosen as the primary focus because it aligned with this study's specific aims and context. However, it is recognised that these alternative theories may provide further insights into the phenomenon under investigation. Social Learning Theory states that individuals learn from observing others within social contexts (Bandura, 1977), hence emphasising the importance of observational learning. Thus, it implies that advertising effectiveness can be influenced by social interactions and observational learning processes. On the other hand, the Diffusion of Innovation Theory provides a framework for understanding how new ideas, products, or behaviours spread through societies and cultures over time; it includes five types of people: the innovators, early adopters, early majority, late majority, and laggards (Rogers, 1962). This theory could be particularly relevant in exploring the adoption and diffusion of innovative advertising strategies on the Internet and through

SNSs. Future research combining these theories with AVM could offer a more thorough understanding of advertising effectiveness, taking into account cognitive processes and social dynamics. Furthermore, investigating the relationship between these theories within specific demographics (gender and age) or other cultural contexts may yield valuable insights into the intricacies of consumer behaviour and decision-making processes.

Third, this study was the first attempt to examine four different constructs under the umbrella of FoMO as an HOC within a single investigation. Hence, it may limit the generalisability of the findings, as the relationships between such constructs may vary across different contexts. Therefore, the whole conceptual framework, including the FoMO as an HOC, can be examined in different studies. Future research can attest to this framework in other contexts, as depicted previously with AVM. Moreover, previous studies were found to include purchase intention and behaviour but did not involve subjective norms and perceived behavioural control. This study demonstrated the importance of incorporating the TPB in a context where advertisements are becoming not only customised according to individual searches, traits, and desires but also programmatic, contextual, coherent, and blended on the Internet. FoMO can be further tested in relationship with advertising value or perceived behavioural control.

Another limitation was the construction of FoMO as an HOC itself; there may be self-initiated factors that could have implications but were not addressed within the HOC framework. Hence, this HOC can be investigated in other domains and contexts that evoke externally initiated FoMO. This instrument can be tested using TPB in other contexts, and it can also be applied to other theories and models, such as the Technology Acceptance Model (TAM; Davis, 1989) or the Unified Theory of Acceptance and Use of Technology (UTAUT; Venkatesh et al., 2003; UTAUT2; Venkatesh et al., 2012). It can also be applied in other domains, such as the metaverse or blockchain, or in traditional advertising contexts where FoMO is still being used, for example, billboards and television/cable advertisements. Future empirical research can also invest in extending the current FoMO instrument as it may not be exhaustive and incorporate other elements deemed relevant to the study context. Further qualitative studies can be conducted to understand how FoMO affects adults 25 years and over. Experiments involving different advertisements with FoMO messages can be conducted for cognitive and affective investigations.

The study has suggested some novel conclusions that other researchers might find helpful to further investigate and build upon, particularly on retargeted advertisements. This marketing technique, other programmatic advertisements and their derivatives are worth further exploring. Billions of euros are being spent in this area yearly, thus mounting substantial global influence. Hence, this merits attention as it is being employed more than other online advertising types. This study employed a self-administered questionnaire run amongst young people. Another caveat was that retargeting was presented in a generic manner, devoid of any brands or genres, in order to prevent priming the respondents. Future research could include experiments and analyses of live-case campaigns run by different organisations. A study can test two separate organisations to analyse multiple retargeted advertisement campaigns that will include influential factors and FoMO messages carrying scarcity, urgency, social proof, or loss aversion appeals. With recent technological advancements, web analytics tools can help researchers analyse traffic, click-through and view-through information, and user identification verification.

Although age and gender differences were identified, other variables, such as socioeconomic status and educational background, could have influenced these variations. This is another caveat of the study. Further research focusing specifically on various demographic categories can be conducted to delve deeper into every aspect that might influence the relationships outlined in this study.

Finally, young people, particularly minors, merit more studies. In other words, there needs to be more studies where minors are involved. The paradigm shift between real and digital life may sometimes seem blurred for this age group. Constant connectivity in the digital world is shifting the actions and reactions of individuals; anxiety and stress may be augmented. This study suggests that even advertisements carrying FoMO messages and chasing young people can influence their attitude, amplify social pressures, and transform their behaviour intention to, ultimately, act. Researchers should be mindful of the involuntary and sometimes voluntary adverse effects that SNSs and Internet usage generate. Additionally, the advertisements on these platforms and websites can evoke negative feelings. Hence, researchers should persist in delving into the causes, influences, and consequences that such advertisements create and provide more instructions on how young people should shield themselves from FoMO tendencies and added pressures.

6.4 Closing Message

With this work, retargeted advertisements were studied to acquire a deeper understanding of their influence on young people. FoMO was placed under the lens, with four constructs empirically tested and modelled as an HOC. The TPB was investigated in this context and provided information which can be exploited to help improve our society. The study showed that retargeted advertisements strongly influence young people and can drive them back to a previously visited website. Furthermore, the study illuminated the strong effect of FoMO on shaping attitudes, social pressures, and influencing the intentions of young people to click on these advertisements.

I hope this work will contribute significantly to the responsible and strategic utilisation of retargeted advertisements, specifically when targeting young people. More importantly, more attention is required to the influencing factors of these advertisements, and FoMO appeals that these advertisements may carry. Presenting retargeted advertisements to young people should be treated with due consideration for the benefit of our young citizens and the betterment of our society.

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APPENDICES

Appendix A: Information Letter – Minors – Focus Group

I am Ivan De Battista, a researcher at the University of Malta under the supervision of Dr Franco Curmi and Dr Emanuel Said. My research focuses on the influence that different factors have on the attitude of young people towards online advertisements. The participation of your son/daughter in this study will contribute to our understanding and knowledge of how these advertisements are influencing young people.

The questions in the focus group session will be about personalised advertising and how young people perceive them, their feelings, and attitudes towards these advertisements, if they are affected by these advertisements, how they feel if a product is bought by their friends before them, and what encourages them to click on online advertisements.

I kindly ask you not to disclose this information about the questions to your son/daughter before the focus group session, so as not to influence him/her.

Participation in this research involves your son/daughter joining up in an online focus group on Zoom to discuss and express his/her opinion on this area. This discussion should take approximately 90 minutes. This focus group is targeted at young people ages 13- to 15-years old only. The participation of your son/daughter in this discussion is voluntary, as s/he is free to agree or to refuse to participate.

The participation of your son/daughter does not involve any known or anticipated risks. S/he will receive no direct benefits from participating in this survey. Data will be anonymous, and there will be no disclosure or communication of individual results. No personal data that may identify your son/daughter is required, and everything will be kept confidential. The session will be recorded, and the recording will be stored in an encrypted electronic format. To maintain anonymity, cameras will be left switched off during the session. The recording will be retained until the whole session has been transcribed. After transcription, the recording will be destroyed.

Should you have any questions, please email me on ivan.debattista.19@um.edu.mt. I thank you in advance for your time to participate in this focus group session. Should you accept that your son/daughter will participate in this focus group, I ask you to kindly fill in the attached consent form and send it on ivan.debattista.19@um.edu.mt. As soon as we receive the consent form, we will provide you with the Zoom link for your son/daughter to join the session.

I thank you in advance for your cooperation. The participation of your son/daughter would be greatly appreciated.

Best regards
Ivan De Battista

Appendix B: Consent Form – Minors – Focus Group

CONSENT FORM – FOCUS GROUP (Under 16)

Researcher: Ivan De Battista

Supervisors: Dr Franco Curmi & Dr Emanuel Said

Faculty of Economics, Management and Accountancy – University of Malta

I agree that my son/daughter voluntarily take part in this research. I understand that the reason for this research is purely for academic purposes, and I recognise what the role of my son/daughter will be in this research. I have read the subject and notes on the questions that are going to be asked in the session, provided in the information letter by the researcher. I understand that I cannot disclose the subject and information given to my son/daughter before the focus group session, so as not to influence him/her.

I understand that my son/daughter is free to withdraw from the research at any time, for any reason and without any prejudice.

I have been informed that the researcher will safeguard the confidentiality of the information my son/daughter provides. In fact, the data collection is all being done in the strictest confidentiality.

I am informed that the focus group session is going to be held online on Teams and it will be recorded. The recording and any form of notes taken during the session will be deleted when the recording is fully transcribed.

We are free to ask any questions at any time before the study, and my son/daughter during the discussion.

Data Protection: I agree that the researcher will process data which my son/daughter have supplied. I agree to the processing of such data and the recording for any purposes connected with the Research Project as outlined to me. I give permission for the researcher to use and publish any data gathered, in anonymity.

Name of Parent/Guardian.....Signed..... Date.....

Name of Researcher Signed..... Date.....

Appendix C: Information Letter – Young Adults – Focus Group

I am Ivan De Battista, a researcher at the University of Malta under the supervision of Dr Franco Curmi and Dr Emanuel Said. My research focuses on the influence that different factors have on the attitude of young people towards online advertisements. Your participation in this study will contribute to our understanding and knowledge of how these advertisements are influencing young people.

Participation in this research involves joining up in an online focus group on Zoom to discuss and express your opinion on this area. This discussion should take approximately 90 minutes. This focus group is targeted at young people ages 19 – 21 years. Your participation in this discussion is voluntary, as you are free to agree or to refuse to participate.

Your participation does not involve any known or anticipated risks. You will receive no direct benefits from participating in this survey. Data will be anonymous, and there will be no disclosure or communication of individual results. No personal data that may identify you is required, and everything will be kept confidential. The session will be recorded, and the recording will be stored in an encrypted electronic format. To maintain anonymity, cameras will be left switched off during the session. The recording will be retained until the whole session has been transcribed. After transcription, the recording will be destroyed.

Should you have any questions, please email me on ivan.debattista.19@um.edu.mt. I thank you in advance for your time to participate in this focus group session.

Should you decide to participate, kindly fill in the attached consent form and send it to me on ivan.debattista.19@um.edu.mt. As soon as I receive the consent form, I will provide you with the Zoom link for the session.

I thank you in advance for your cooperation. Your participation would be greatly appreciated.

Best regards

Ivan De Battista

Appendix D: Consent Form – Young Adults – Focus Group

CONSENT FORM – FOCUS GROUP (16+)

Researcher: Ivan De Battista

Supervisors: Dr Franco Curmi & Dr Emanuel Said

Faculty of Economics, Management and Accountancy – University of Malta

I voluntarily agree to take part in this research. I understand that the reason for this research is purely for academic purposes, and I recognise what my role will be in this research.

I understand that I am free to withdraw from the research at any time, for any reason and without any prejudice.

I have been informed that the confidentiality of the information I provide will be safeguarded. In fact, the data collection is all being done in the strictest confidentiality.

I am informed that the focus group session is going to be held online on Teams and it will be recorded. The recording and any form of notes taken during the session will be deleted when the recording is fully transcribed.

I am free to ask any questions at any time before and during the study.

Data Protection: I agree that the researcher will process data which I have supplied. I agree to the processing of such data and the recording for any purposes connected with the Research Project as outlined to me. I give permission for the researcher to use and publish any data gathered, in anonymity.

Name of Participant..... Signed..... Date.....

Name of Researcher Signed..... Date.....

Appendix E: Interview Guide – Focus Group

Welcome part

I am Ivan De Battista, a researcher at the University of Malta under the supervision of Dr Franco Curmi and Dr Emanuel Said. I would like to welcome you and thank you for accepting my call to take part in this online focus group which is very important for my study. Although we are living in extraordinary times due to Covid-19, you were gentle enough to find some time and participate in this study. Your perspectives are very important and valuable, and that is why you were asked to join in this focus group.

Anonymity and confidentiality

Although this is virtual and I will be recording the session, I would like to put your mind at rest that the discussion will be anonymous and kept in the strictest confidence. The recording will be kept safely in a dedicated USB and will be kept under lock and key until transcribed. Once it is fully transcribed, the recording would be deleted. The transcribed file of the focus group will have no names or details or any other information that can link the participant with any statements or declarations made during the focus group discussion. What I would ask from you is to be very truthful in your argumentation and as accurate as possible. I would appreciate, for the sake of everyone and the study itself, that you do not disclose what has been said in the focus group with others that are not part of the study, except your parents (if under 16). If there are any questions that you feel not comfortable to answer, you have the right to do so without hesitation. However, it is much appreciated if you can answer all the questions and participate in the discussion. To maintain anonymity, cameras must be left switched off during the whole session. This focus group will take approximately an hour and a half. May I start recording it please? (If I have a general confirmation, I click on the record button).

Overview

My research focuses on the influence that different factors have on the attitude of young people like you towards online advertisements. Online advertising is a form of marketing that uses the internet as a platform to deliver messages to customers. This focus group discussion is intended to discuss and assess your current thoughts, attitudes, and feelings about this.

Ground rules

- It is imperative that only one person speaks at a time. This will ease the discussion and make it flow.
- There are no right or wrong answers. Every perspective is vital for the study.
- You do not have to speak in any order.
- When you do have something to say or add to someone's argument, please raise your virtual hand. I must attain the views of everyone.
- You do not have to agree with the views of other people in the group. It is not a problem at all. That's why we are unique! We need to respect others by listening attentively to one another.

- Does anyone have any questions?
- Let's start.

Warm-up

First, I would like everyone to introduce themselves. Can you tell us your name?

Introductory questions

There are different forms of online advertisements. One form of online advertisements works like this: After browsing a product on a retail website, an advertisement of the same product is displayed on another website that you visit.

- Has anyone ever come across this kind of advertising?
- What was your experience?

These types of advertisements are called retargeted advertisements. I will be referring to this kind of advertisements in the following questions.

Guiding questions

- What makes an advertisement 'personalised' for you?
- Do you feel encouraged to click on a personalised advertisement that is shown repeatedly on the internet? Why?
- What kind of feelings do retargeted advertisements that show an 'offer' or 'last items' arouse in you?
- Would you be affected, in any way if a product is bought by your friends/peers before you do? Why?
- Would you be affected, in any way if your friends/peers boast about a product that they bought, and you recall its appearance on the internet? Why?

Concluding question

- Of all the things we have discussed today, what would you say are the most important factors that encourages you to click on a retargeted advertisement?

Conclusion

- Thank you for your participation. This has been a very successful discussion.
- Your opinions will be an asset to the study.
- I hope that you have found the discussion interesting.
- If there is anything you are unhappy with or wish to complain about, please speak to me later via this online channel.
- I would like to remind you that any comments featuring in this recorded discussion will be kept anonymous and with the strictest confidentiality.
- Before you leave, please send me your signed copy of the consent form via private chat.

Appendix F: Ethical Clearance – Focus Group

• Ethical Clearance

Gmail/Inbox ☆



• **Fema Ethics Committee** <research-ethics.fema@um.edu.mt>
To: Ivan De Battista



Mon, Oct 5, 2020 at 12:20 PM ☆

Dear Ivan

Please note that FREC has reviewed your forms and has approved your proposal. You may continue with your research project.

Regards

Josian Grech
Secretary to the FEMA Research Ethics Committee

Faculty of Economics, Management & Accountancy

Dean's Office
Room 425
Humanities B (FEMA)
University of Malta
Msida
☎ +356 2340 3417

Email: research-ethics.fema@um.edu.mt

Appendix G: Survey A (English/Maltese Versions) - Minors

12/05/2022, 19:36

Retargeted Advertisements and Young People / Reklami "Retargeted" u ż-Żgħażaġh

Retargeted Advertisements and Young People / Reklami "Retargeted" u ż-Żgħażaġh

* Required

1. *

Mark only one oval.

	
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Kwestjonarju bil-Malti
Skip to question 30

Questionnaire in English
Skip to question 2

Retargeted Advertisements and Young People

I am Ivan De Battista, a researcher at the University of Malta under the supervision of Dr Franco Curmi and Dr Jirka Konietzny. My research focuses on the influence that different factors have on the attitude of young people towards **retargeted advertisements**. After browsing a product on a retail website, an advertisement of the same product is sometimes displayed on other websites that you visit; this kind of advertising is called retargeted advertisement.

The research focuses on the thoughts and feelings of young people about retargeted advertisements. Your son's/daughter's participation in this study will contribute to our understanding and knowledge of how retargeted advertisements are influencing young people.

Participation in this research involves completing this questionnaire, which should take approximately 8 minutes. This survey is targeted at young people, ages from 13 to 15 years old only.

Participation in this survey is voluntary, as everyone is free to agree or to refuse to participate and may exit the survey at any time. Participation does not involve any known or anticipated risks. You will receive no direct benefits from your son's/daughter's participation in this survey.

All data collected will be entirely anonymous, and there will be no disclosure or communication of individual results. No personal data that may identify you is required, and everything will be kept confidential. Data will be stored in an encrypted electronic format. All the collected anonymous data will be retained until such time that academic publications based on the collected data are issued, and the final document of the whole study is handed in.

If you have any questions, please send an email to ivan.debattista.19@um.edu.mt.

Clicking on the "Give my consent for my son/daughter to answer this questionnaire" button shows that:

- Your son/daughter is between 13 and 15 years of age.
- As a parent/guardian, you have read the contents of the questionnaire attached to the participant information email, and have read the above information.
- You are allowing your son/daughter to participate in this survey voluntarily.

To obtain the best survey experience possible, the questionnaire can be completed from a desktop or laptop computer. Your participation is greatly appreciated.

Researcher: Ivan De Battista (ivan.debattista.19@um.edu.mt)

Supervisors: Dr Franco Curmi (franco.curmi@um.edu.mt) and Dr Jirka Konietzny (jirka.konietzny@um.edu.mt)

2. I agree that I have read the contents of the questionnaire and hereby: *

Mark only one oval.

- Give my consent for my son/daughter to answer this questionnaire.
Skip to question 3
- Do not give my consent for my son/daughter to answer this questionnaire.
Skip to section 13 (Thank you anyway.)

General Information

Minors

3. Age *

Mark only one oval.

- 13 *Skip to question 7*
- 14 *Skip to question 7*
- 15 *Skip to question 7*
- 16+ *Skip to section 14 (Thank you for your interest...)*

4. Gender *

Mark only one oval.

- Female
- Male
- Other

5. Level of education *

Mark only one oval.

- Form 2/Year 8
- Form 3/Year 9
- Form 4/Year 10
- Form 5/Year 11

6. Nationality *

Mark only one oval.

- Maltese
- Other European Union (EU) Nationality
- Other: _____

Skip to question 7

Internet Use**7. On average, how many hours do you spend on the Internet? ***

Mark only one oval.

- More than 4 hours a day
- 3 to 4 hours daily
- 2 to 3 hours daily
- 1 to 2 hours daily
- Few hours a week
- Few hours a month
- Never

8. Which device do you use most to access the Internet? *

Mark only one oval.

- Desktop Computer
- Laptop
- Tablet
- Smartphone
- Other: _____

9. **Generally, do you ask your parents/guardians to buy you something online, or do you buy it online yourself?** *

Mark only one oval.

- My parents/guardians *Skip to question 12*
- Myself *Skip to question 13*
- Both *Skip to question 10*
- Never *Skip to question 14*

Online Shopping

BOTH

10. **How often do your parents/guardians buy you something online?** *

Mark only one oval.

- More than once a week
- Once a week
- Once a month
- Rarely

11. **How often do you buy something online?** *

Mark only one oval.

- More than once a week
- Once a week
- Once a month
- Rarely

Skip to question 14

Online Shopping

PARENTS/GUARDIANS

12. How often do your parents/guardians buy you something online? *

Mark only one oval.

- More than once a week
- Once a week
- Once a month
- Rarely

Skip to question 14

Online Shopping

MYSELF

13. How often do you buy something online? *

Mark only one oval.

- More than once a week
- Once a week
- Once a month
- Rarely

Retargeted Advertisements Information

After browsing a product on a retail website, an advertisement of the same product is displayed on other websites that you visit. These types of advertisements are called retargeted advertisements.

A short example of a Retargeted Advertisement - Important to watch (Only 32 seconds)



[v=8cXfVub7EY4](https://www.youtube.com/watch?v=8cXfVub7EY4)

<http://youtube.com/watch?>

Another Retargeted Advertisement Example

1.
You visit a
Product page



2.
5 minutes later
you see
its advert
elsewhere



14. Have you ever come across a retargeted advertisement? *

Mark only one oval.

- Every time I access the websites that I visit most often
- About 11 to 25 times over the past week
- About 3 to 10 times over the past week
- About 1 or 2 times over the past week
- Once to twice a month
- Never

15. Do you use any Ad Blockers? (Ad Blockers are a piece of software intended to block advertisements from appearing on a webpage.) *

Mark only one oval.

- Yes
- No

16. Where do you come across retargeted advertisements? (You can choose more than one option) *

Check all that apply.

- Search Engines
- News Portals
- Websites
- Facebook
- Twitter
- YouTube
- Instagram
- Online games for PC console
- Mobile games (Apps)
- Never came across retargeted advertisements
- Other: _____

17. **Have you ever bought a product because you were influenced by retargeted advertisements?** *

Mark only one oval.

Yes

No

18. **Have you ever asked your parents/guardians to buy you a product that you have seen in a retargeted advertisement?** *

Mark only one oval.

Yes

No

Factors of Retargeted Advertisements

I want you to think of retargeted advertisements for products that interest you that you have come across.

Now I want you to rate how strongly you agree or disagree with the following statements:

19. **I feel that retargeted advertisements are: ***

Mark only one oval per row.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Entertaining	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enjoyable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interesting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exciting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Convincing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Believable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Credible (Reliable)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trustworthy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Annoying	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Irritating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Deceptive (Misleading / dishonest)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intrusive (Invading my privacy)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other Factors and Value of Retargeted Advertisements

I want you to think of retargeted advertisements for products that interest you that you have come across.

Now I want you to rate how strongly you agree or disagree with the following statements:

20. Please also rate whether you agree or disagree with the following statements: *

Mark only one oval per row.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Retargeted advertisements supply relevant information on products.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Retargeted advertisements provide timely (appropriate) information on products.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Retargeted advertisements tell people about products when they need the information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Retargeted advertisements are a good source of up-to-date product information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Retargeted advertisements give customers the opportunity to connect with the company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Retargeted advertisements facilitate two-way communication between the customers and the companies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like retargeted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

advertisements with videos, images, and downloads.

I prefer retargeted advertisements with links in them.

I feel that retargeted advertisements display personalised messages to me.

I feel that retargeted advertisements are personalised to my browsing behaviour.

Content in retargeted advertisements is personalised.

I feel that retargeted advertisements are useful.

I feel that retargeted advertisements are valuable.

I feel that retargeted advertisements are important.

Messages and Information on Retargeted Advertisements

Limited-Time Offers



21. When I come across a retargeted advertisement showing a product that interests me with the above messages...

*

Mark only one oval per row.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
I worry about the limited time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think about the deadline.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Limited Stock

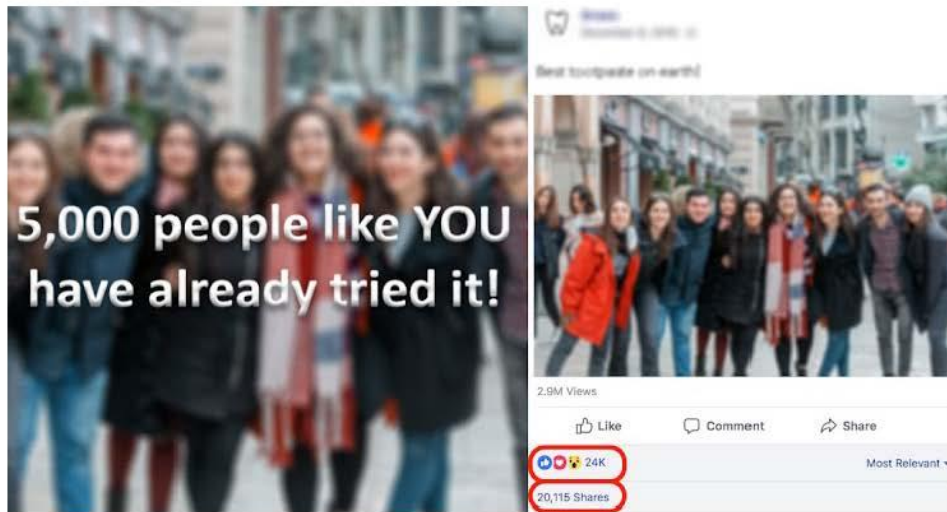


22. **When I come across a retargeted advertisement showing a product that interests me with the above messages...** *

Mark only one oval per row.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
I worry about the limited quantity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I base my decision on the quantity of the product more than other factors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I might lose the opportunity to buy the product if others bought it first.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I have to buy before others do, in order to get the advertised deal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Social Proof



23. **When I come across a retargeted advertisement showing a product that interests me with the above information...** *

Mark only one oval per row.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
I prefer to do what other people typically do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to act the way everyone else is acting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I follow behaviours that people typically do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other consumers decisions of buying products have an impact on my buying decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. Lost Opportunities *

Mark only one oval per row.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
The pain of losing an offer matters more to me than the pleasure of getting the offer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel nervous when I have to make a decision that may lead to losing an offer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When making a decision on an offer, I think much more about what might be lost than what might be gained.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

My Attitude, Intention and Behaviour Towards Retargeted Advertisements

LAST PAGE

We all have different opinions about things. Retargeted advertisements are no different. I want you to think about your thoughts, feelings and opinions on retargeted advertisements and please rate how strongly you agree or disagree with the following statements. (There are no right or wrong answers.)

25. Attitude *

Mark only one oval per row.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
My general opinion of retargeted advertisements is favourable (positive).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I consider retargeted advertisements essential.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I like retargeted advertisements.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I consider retargeted advertisements a good thing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26. Subjective Norms *

Mark only one oval per row.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Most people who are important to me think I should click on retargeted advertisements.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people who are important to me would want me to click on retargeted advertisements.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People that I value their opinion would prefer that I click on retargeted advertisements.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People who are important to me click on retargeted advertisements.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

27. **Perceived Behavioural Control ****Mark only one oval per row.*

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Whether or not I click on retargeted advertisements is completely up to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident that if I want, I can click on retargeted advertisements.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I decide if I click on retargeted advertisements.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

28. **Intent ****Mark only one oval per row.*

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
I have the intention to click on retargeted advertisements.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will click on retargeted advertisements in the future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

29. Behaviour *

Mark only one oval per row.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
I liked retargeted advertisements in the past.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I clicked on retargeted advertisements in the past.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I engaged with retargeted advertisements in the past.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thank you anyway.

Skip to section 13 (Thank you anyway.)

**Thank you
for your
interest...**

Thanks for your interest in our survey, but this study is aimed at young people from 13 to 15 years old.

If you are 16+, you can participate by filling this questionnaire:
https://docs.google.com/forms/d/e/1FAIpQLSc4-no4DvIV_vXRfZ3HX_qcJ0IAdbLlcrPE2xEkxUR3dp4g7w/viewform

Skip to section 14 (Thank you for your interest...)

**Reklami
"Retargeted"
u ż-
Żgħażaġh**

Jien Ivan De Battista, riċerkatur fl-Università ta' Malta, taht is-superviżjoni ta' Dr Franco Curmi u Dr Jirka Konietzny. Ir-riċerka tiegħi tiffoka fuq l-influenza li fatturi differenti għandhom fuq l-attitudni taż-żgħażaġh lejn ir-reklami "Retargeted". Wara li tfitteż prodott fuq websajt partikolari, xi kultant reklam tal-istess prodott jintwera fuq websajts oħra li żżur; dan it-tip ta' reklamar jissejjaħ "Retargeted".

Ir-riċerka tiffoka fuq il-ħsbijiet, sentimenti u emozzjonijiet taż-żgħażaġh dwar ir-reklami "Retargeted". Il-parteeċipazzjoni tat-tifel/tifla tiegħek f'dan l-istudju tikkontribwixxi għall-fehim u l-għarfien tagħna ta' kif ir-reklami "retargeted" qed jinfluwenzaw liż-żgħażaġh.

Il-parteeċipazzjoni f'din ir-riċerka tinvolvi li jimtela dan il-kwestjonarju, li għandu jiehu madwar 8 minuti. Dan l-istħarriġ huwa mmirat għal żgħażaġh ta' etajiet minn 13 sa 15-il sena biss.

Il-parteeċipazzjoni f'dan l-istħarriġ hija wahda volontarja; għaldaqstant kulhadd liberu/a li jaqbel jew jirrifjuta li jipparteċipa u jista' toħroġ mill-istħarriġ fi kwalunkwe ħin. Il-parteeċipazzjoni ma tinvolvi l-ebda riskju magħruf jew antiċipat. Inti mhu se tirċievi l-ebda benefiċċju dirett mill-parteeċipazzjoni tat-tifel/tifla tiegħek f'dan l-istħarriġ.

Id-dejta kollha miġbura tkun kompletament anonima, u mhux se jkun hemm żvelar jew komunikazzjoni tar-riżultati individwali. L-ebda dejta personali li tista' tidentifika lil lekk m'hija meħtieġa, u kolloxx se jinżamm kunfidenzjali. Id-dejta tinħażen f'format elettroniku kriptat. Id-dejta anonima kollha miġbura tinżamm sa dak il-ħin li jinħarġu pubblikazzjonijiet akkademici bbażati fuq id-dejta miġbura u sakemm jiġi sotomess id-dokument finali tal-istudju sħiħ.

Jekk għandek xi mistoqsijiet, jekk jogħġbok ibgħat email fuq ivan.debattista.19@um.edu.mt.

Meta tikklkja fuq il-buttuna "Nagħti l-kunsens tiegħi biex ibni/binti twieġeb dan il-kwestjonarju" turi li:

- It-tifel/tifla għandha bejn 13 u 15-il sena.
- Bħala ġenitur/kustodju, inti qrajt il-kontenut tal-kwestjonarju meħmuż mal-email tal-informazzjoni tal-parteeċipant li rċevejt, u qrajt l-informazzjoni t'hawn fuq.
- Qed tippermetti lil ibnek/bintek tipparteċipa f'dan l-istħarriġ b'mod volontarju.

Biex tinkiseb l-aħjar esperjenza possibbli tal-istħarriġ, il-kwestjonarju jista' jimtela minn kompjuter (desktop) jew laptop. Il-parteeċipazzjoni tiegħek hija apprezzata ħafna.

Riċerkatur: Ivan De Battista (ivan.debattista.19@um.edu.mt)

Superviżuri: Dr Franco Curmi (franco.curmi@um.edu.mt) u Dr Jirka Konietzny (jirka.konietzny@um.edu.mt)

30. Naqbel li qrajt il-kontenut tal-kwestjonarju u b'dan: *

Mark only one oval.

- Nagħti l-kunsens tiegħi biex ibni/binti twieġeb dan il-kwestjonarju.
Skip to question 31
- Ma nagħtix il-kunsens tiegħi biex ibni/binti jwieġeb dan il-kwestjonarju.
Skip to section 25 (Grazzi ħafna xorta waħda.)

Informazzjoni Ġenerali**31. Età ***

Mark only one oval.

- 13 Skip to question 35
- 14 Skip to question 35
- 15 Skip to question 35
- 16+ Skip to section 26 (Grazzi tal-interess tiegħek)

32. Ġeneru *

Mark only one oval.

- Mara
- Raġel
- Oħrajn

33. Livell ta' edukazzjoni *

Mark only one oval.

- Form 2/Year 8
- Form 3/Year 9
- Form 4/Year 10
- Form 5/Year 11

34. Nazzjonalità *

Mark only one oval.

- Maltija
- Nazzjonalità oħra tal-Unjoni Ewropea (UE)
- Other: _____

Skip to question 35

Użu tal-Internet

35. **Bhala medja, kemm-il siegħa tqatta' fuq l-Internet? ***

Mark only one oval.

- Iktar minn 4 sigħat kuljum
- Bejn 3 u 4 sigħat kuljum
- Bejn sagħtejn u 3 sigħat kuljum
- Bejn siegħa u sagħtejn kuljum
- Ftit sigħat fil-gimgħa
- Ftit sigħat fix-xahar
- Qatt

36. **Fuq liema apparat l-iktar li taċċessa l-Internet? ***

Mark only one oval.

- Kompjuter (Desktop)
- Laptop
- Tablet
- Smartphone
- Other: _____

37. **Normalment, tistaqsi lill-ġenituri/kustodji tiegħek biex jixtrulek xi haġa online, jew tixtriha online inti stess? ***

Mark only one oval.

- Lill-ġenituri/kustodji tiegħi *Skip to question 41*
- Jien stess *Skip to question 40*
- It-tnejn li huma *Skip to question 38*
- Qatt *Skip to question 42*

Xiri Online

IT-TNEJN LI HUMA

38. Kemm-il darba l-ġenituri/kustodji tiegħek jixtrulek xi ħaġa online? **Mark only one oval.*

- Iktar minn darba fil-ġimgħa
- Darba fil-ġimgħa
- Darba fix-xahar
- Rari

39. Kemm-il darba tixtri xi ħaġa online? **Mark only one oval.*

- Iktar minn darba fil-ġimgħa
- Darba fil-ġimgħa
- Darba fix-xahar
- Rari

*Skip to question 42***Xiri Online**

JIEN STESS

40. Kemm-il darba tixtri xi ħaġa online? **Mark only one oval.*

- Iktar minn darba fil-ġimgħa
- Darba fil-ġimgħa
- Darba fix-xahar
- Rari

*Skip to question 42***Xiri Online**

LILL-ĠENITURI/KUSTODJI TIEGHI

41. **Kemm-il darba l-ġenituri/kustodji tiegħek jixtrulek xi ħaġa online? ***

Mark only one oval.

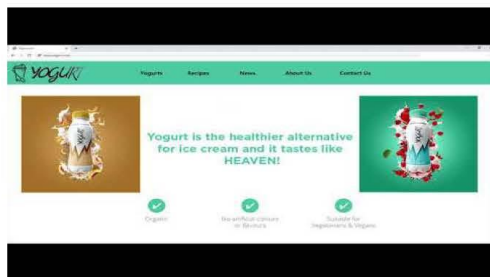
- Iktar minn darba fil-ġimgħa
- Darba fil-ġimgħa
- Darba fix-xahar
- Rari

Skip to question 42

Informazzjoni dwar Reklami "Retargeted"

Wara li tfittex prodott fuq websajt ta' kumpanija, tibda ssib reklami tal-istess prodott f'websajts oħra li żżur. Dawn it-tip ta' reklami jissejħu reklami "retargeted".

Eżempju qasir ta' Reklamar "Retargeted" - Importanti li ssegwih... (Fih biss 32 sekonda)



<http://youtube.com/watch?v=iKOs-olzxrl>

Eżempju ieħor ta' Reklam "Retargeted"

1.
Iżżur paġna fejn hemm prodott



2.
5 minuti wara tara r-reklam tiegħu xi mkien ieħor



42. **Qatt iltqajt ma' reklam "retargeted"?** *

Mark only one oval.

- Kull darba li naċċessa l-websajts li nżur ta' spiss
- Madwar 11 u 25 darba fl-aħħar ġimgħa
- Madwar 3 u 10 darbiet fl-aħħar ġimgħa
- Madwar darba jew darbtejn fl-aħħar ġimgħa
- Darba jew darbtejn f'xahar
- Qatt

43. Tuża' xi Ad Blockers? (Ad Blockers huma "software" maḥsuba biex jimblukkaw ir-reklami milli jidhru fuq siti tal-internet.) *

Mark only one oval.

Iva

Le

44. Fejn tiltaqa' ma' reklam "retargeted"? (Tista' tagħmel iktar minn għażla waħda) *

Check all that apply.

Search Engines

Portals tal-aħbarijiet

Websajts

Facebook

Twitter

YouTube

Instagram

Logħob online fuq PC

Logħob fuq il-mowbajl (Apps)

Qatt ma ltqajt ma' reklami "retargeted"

Other: _____

45. Qatt xtrajt prodott għax ġejt influwenzat minn reklami "retargeted"? *

Mark only one oval.

Iva

Le

46. Qatt tlabt lill-ġenituri/kustodji tiegħek biex jixtrulek prodott li tkun rajt f'reklam "retargeted"? *

Mark only one oval.

Iva

Le

12/05/2022, 19:36

Retargeted Advertisements and Young People / Reklami "Retargeted" u z-Żgħażaġh

**Fatturi tar-Reklami
"Retargeted"**

Irridek taħseb freklami "retargeted" ta' prodotti li jinteressawk li
Itqajt magħhom.

Issa rridek tikklassifika fuq kemm taqbel jew ma taqbilx mad-
dikjarazzjonijiet li ġejjin:

47. Jien inħoss li r-reklami "retargeted" huma *

Mark only one oval per row.

	Ma Naqbilx Hafna	Ma Naqbilx	Ma Naqbilx ftit	Newtrali	Naqbel Ftit	Naqbel	Naqbel Hafna
Divertenti (Entertaining)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ta' gost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interessanti	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pjačevoli	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eçitanti	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Konvinçenti	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ta' min jemminhom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kredibbli (Ta' min jafdahom)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Affidabbli (Onesti)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tedjanti (Annoying)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Irritanti	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Qarrieqa (Dizonesti)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intrużivi (Invading my privacy)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Aktar Fatturi u l-Valur tar-
Reklami "Retargeted"**

Irridek taħseb f'reklami "retargeted" ta' prodotti li jinteressawk li ltqajt magħhom.

Issa rridek tikklassifika fuq kemm taqbel jew ma taqbilx mad-dikjarazzjonijiet li ġejjin:

48. **Jekk jogħġbok, iwwaluta wkoll kemm taqbel jew ma taqbilx mad-dikjarazzjonijiet * li ġejjin:**

Mark only one oval per row.

	Ma Naqbilx Hafna	Ma Naqbilx	Ma Naqbilx Ftit	Newtrali	Naqbel Ftit	Naqbel	Naqbel Hafna
Reklami "retargeted" jipprovdu informazzjoni rilevanti fuq prodotti.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reklami "retargeted" jipprovdu informazzjoni f'waqtha dwar prodotti.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reklami "retargeted" jgħidu lin-nies dwar prodotti meta jkollhom bżonn l-informazzjoni.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reklami "retargeted" huma sors tajjeb ta' informazzjoni aġġornata tal-prodott.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reklami "retargeted" jagħtu l-opportunità lill-klijenti li jikkonnettjaw mal-kumpanija.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reklami "retargeted" jiffaċilitaw il-komunikazzjoni	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

bejn il-klijenti u l-kumpaniji.

Jien jogħġbuni reklami "retargeted" b'filmati, stampi, u "downloads".

Jien nippreferi reklami "retargeted" li għandhom "links".

Jien inħoss li reklami "retargeted" iwassluli messaġġi personalizzati.

Jien inħoss li reklami "retargeted" huma personalizzati skont dak li nfittex jien.

Il-kontenut f'reklami "retargeted" huwa personalizzat.

Jien inħoss li reklami "retargeted" huma utli.

Jien inħoss li reklami "retargeted" għandhom valur.

Jien inħoss li reklami "retargeted"

huma
importanti.

Skip to question 49

Messaġġi u Informazzjoni f'Reklami "Retargeted"

Offerti għal Żmien Limitat



49. **Meta niltaqa' ma' reklam "retargeted" li juri prodott li jinteressani bil-messaġġi li *
jidhru hawn fuq...**

Mark only one oval per row.

	Ma Naqbilx Hafna	Ma Naqbilx	Ma Naqbilx Ftit	Newtrali	Naqbel Ftit	Naqbel	Naqbel Hafna
Ninkwieta dwar iż-żmien limitat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Naħseb dwar l-iskadenza (deadline).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Stokk Limitat

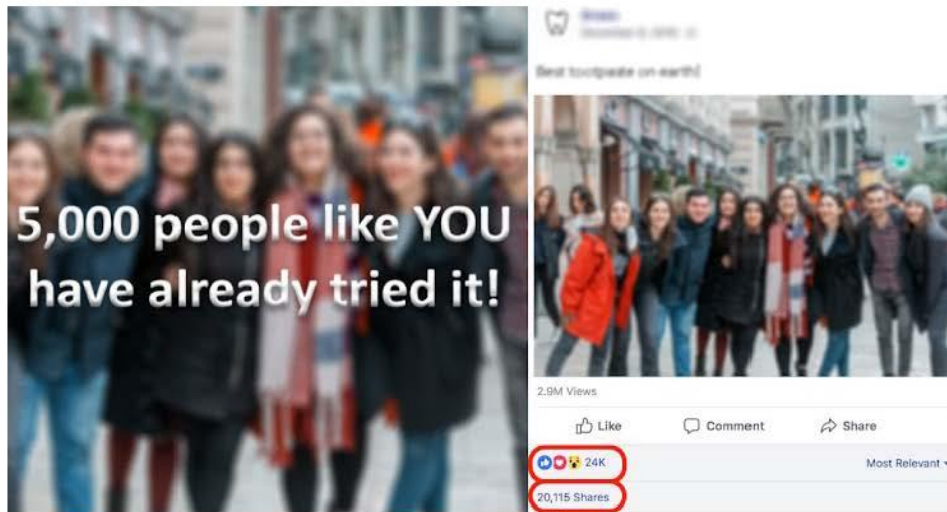


50. **Meta niltaqa' ma' reklam "retargeted" li juri prodott li jinteressani bil-messagġi li jidhru hawn fuq...**

Mark only one oval per row.

	Ma Naqbilx Hafna	Ma Naqbilx	Ma Naqbilx Ftit	Newtrali	Naqbel Ftit	Naqbel	Naqbel Hafna
Ninkwieta dwar il-kwantità limitata.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nibbaża d-deċiżjoni tiegħi fuq il-kwantità tal-prodott iktar minn fatturi oħra.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Naħseb li nista' nitlef l-opportunità li nixtri l-prodott jekk ħaddieħor jixtrih l-ewwel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Naħseb li għandi nixtri qabel ma jixtru l-oħrajn, sabiex nakkwista id-"deal" reklamat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

"Social Proof"



51. **Meta niltaqa' ma' reklam "retargeted" li juri prodott li jinteressani bl-informazzjoni li tidher hawn fuq...** *

Mark only one oval per row.

	Ma Naqbilx Hafna	Ma Naqbilx	Ma Naqbilx Ftit	Newtrali	Naqbel Ftit	Naqbel	Naqbel Hafna
Nippreferi nagħmel dak li tipikament jagħmlu nies oħra.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nippreferi naġixxi kif qed jaġixxi kulhadd.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Insegwi l-imġiba li nies tipikament jagħmlu.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Id-deċiżjonijiet ta' konsumaturi oħra fix-xiri ta' prodotti jagħmlu impatt fuq id-deċiżjonijiet tax-xiri tiegħi.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

52. **Opportunitajiet Mitlufa ***

Mark only one oval per row.

	Ma Naqbilx Hafna	Ma Naqbilx	Ma Naqbilx Ftit	Newtrali	Naqbel Ftit	Naqbel	Naqbel Hafna
Il-wegġha ta' meta nitlef offerta taffetwani aktar mis-sodisfazzjon ta' meta nakkwista l-offerta.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inhossni nervuż/a meta jkolli nieġu deċiżjoni li tista' twassal biex nitlef offerta.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meta nkun qed nieġu deċiżjoni dwar offerta, naħseb hafna aktar dwar dak li nista' nitlef milli dak li nista' nakkwista.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Skip to question 53

Grazzi hafna xorta waħda.

Skip to section 25 (Grazzi hafna xorta waħda)

Grazzi tal-interess tiegħek

Grazzi tal-interess tiegħek fl-istharrig tagħna, iżda dan l-istudju huwa mmirat għal żgħażaġh minn 13 sa 15-il sena.

Jekk għandek 16+, tista' tipparteċipa billi timla dan il-kwestjonarju:
https://docs.google.com/forms/d/e/1FAIpQLSc4-no4DvIV_vXRfZ3HX_qcJOIAdbLlcrPE2xEkxUR3dp4g7w/viewform

L-Attitudni, l-Intenzjoni u l-Imġiba Tiegħi Lejn Reklami "Retargeted"

L-AHHAR
PAĠNA

Ilkoll għandna opinjonijiet differenti dwar l-affarijiet. Ir-reklami "retargeted" mhumiex differenti. Irridek li taħseb fuq il-ħsbijiet, is-sentimenti u l-opinjonijiet tiegħek dwar reklami "retargeted" u jekk jogħġbok iwwaluta kemm taqbel jew ma taqbilx mad-dikjarazzjonijiet li ġejjin. (M'hemmx risposti tajbin jew ħżiena.)

53. L-Attitudni *

Mark only one oval per row.

	Ma Naqbilx Hafna	Ma Naqbilx	Ma Naqbilx Ftit	Newtrali	Naqbel Ftit	Naqbel	Naqbel Hafna
L-opinjoni ġenerali tiegħi dwar reklami "retargeted" hija favorevoli (pożittiva).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jien inqis ir-reklami "retargeted" bħala essenzjali.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B'mod ġenerali, jogħġbuni reklami "retargeted".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B'mod ġenerali, jien nikkonsidra reklami "retargeted" bħala ħaġa tajba.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

54. In-Normi Sugġettivi *

Mark only one oval per row.

	Ma Naqbilx Hafna	Ma Naqbilx	Ma Naqbilx Ftit	Newtrali	Naqbel Ftit	Naqbel	Naqbel Hafna
Hafna nies li huma importanti għalija jaħsbu li għandi nikklikkja fuq reklami "retargeted".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hafna nies li huma importanti għalija jkunu jriduni nikklikkja fuq reklami "retargeted".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nies li normalment napprezza l-opinjoni tagħhom jippreferu li nikklikkja fuq reklami "retargeted".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nies li huma importanti għalija jikklikkjaw fuq reklami "retargeted".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

55. **Il-Perċezzjoni ta' Imġiba Kkontrollata ****Mark only one oval per row.*

	Ma Naqbilx Hafna	Ma Naqbilx	Ma Naqbilx Ftit	Newtrali	Naqbel Ftit	Naqbel	Naqbel Hafna
Jekk nikklikkjax jew le fuq reklami "retargeted" huwa kompletament f'idejja.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ninsab kunfidenti li jekk irrid, nista' nikklikkja fuq reklami "retargeted".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jien niddeċiedi jekk nikklikkjax fuq reklami "retargeted".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

56. **L-Intenzjoni ****Mark only one oval per row.*

	Ma Naqbilx Hafna	Ma Naqbilx	Ma Naqbilx Ftit	Newtrali	Naqbel Ftit	Naqbel	Naqbel Hafna
Għandi l-intenzjoni li nikklikkja fuq reklami "retargeted".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Se nikklikkja fuq reklami "retargeted" fil-futur.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

57. L-Imġiba *

Mark only one oval per row.

	Ma Naqbilx Hafna	Ma Naqbilx	Ma Naqbilx Ftit	Newtrali	Naqbel Ftit	Naqbel	Naqbel Hafna
Fil-passat, għoġbuni r-reklami "retargeted".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fil-passat, ikklikkjajt fuq reklami "retargeted".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fil-passat, ir-reklami "retargeted" ġibdu l-interess tiegħi.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Google Forms

Appendix H: Survey B (English/Maltese Versions) - Young Adults ³

12/05/2022, 19:37



Retargeted Advertisements and Young People / Reklami "Retargeted" u z-Zgħażaġh

Retargeted Advertisements and Young People / Reklami "Retargeted" u z-Zgħażaġh

*Required

1. *

Mark only one oval.

 <input type="radio"/> Kwestjonarju bil-Malti Skip to question 31	 <input type="radio"/> Questionnaire in English Skip to question 2
--	--

<https://docs.google.com/forms/d/1SJeERpkqsuA3OymYJt29MFrUHKFiCoSzvni0u53rC-s/edit>

1/46

³ As Survey B is identical to Survey A bar the employment question (Q7) in the demographics part, only the first section of the English and Maltese surveys are being reproduced.

Retargeted Advertisements and Young People

I am Ivan De Battista, a researcher at the University of Malta under the supervision of Dr Franco Curmi and Dr Jirka Konietzny. My research focuses on the influence that different factors have on the attitude of young people towards **retargeted advertisements**. After browsing a product on a retail website, an advertisement of the same product is sometimes displayed on other websites that you visit; this kind of advertising is called retargeted advertisement.

The research focuses on the thoughts and feelings of young people about **retargeted advertisements**. Your participation in this study will contribute to our understanding and knowledge of how retargeted advertisements are influencing young people.

Participation in this research involves completing this questionnaire, which should take approximately 8 minutes. This survey is **targeted** at young people, ages from 16 to 24 years old only.

Your participation in this survey is voluntary, as you are free to agree or to refuse to participate and may exit the survey at any time. Your participation does not involve any known or anticipated risks. You will receive no direct benefits from participating in this survey.

All data collected will be entirely anonymous, and there will be no disclosure or communication of individual results. No personal data that may identify you is required, and everything will be kept confidential. Data will be stored in an encrypted electronic format. All the collected anonymous data will be retained until such time that academic publications based on the collected data are issued, and the final document of the whole study is handed in.

If you have any questions, please send an email to ivan.debattista.19@um.edu.mt. I thank you in advance for taking the time to fill in this survey.

Should you decide to participate and you are 16 years and over, kindly click on the button marked "I consent to participate in this survey" hereunder to start the questionnaire.

Clicking on the "I consent to participate in this survey" button shows that:

- You have read the above information.
- You voluntarily agree to participate in this survey.
- You are between 16 and 24 years of age.

To obtain the best survey experience possible, please complete the questionnaire from a desktop or laptop computer. Your participation is greatly appreciated.

Researcher: Ivan De Battista (ivan.debattista.19@um.edu.mt)

Supervisors: Dr Franco Curmi (franco.curmi@um.edu.mt) and Dr Jirka Konietzny (jirka.konietzny@um.edu.mt)

2. For electronic consent, please select your choice below: *

Mark only one oval.

- I consent to participate in this survey *Skip to question 3*
- I do not wish to participate in this survey *Skip to section 13 (Thank you anyway.)*

General Information

Adults

3. Age *

Mark only one oval.

- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25+ *Skip to section 14 (Thank you for your interest...)*

4. Gender *

Mark only one oval.

- Female
- Male
- Other

5. Level of education *

Mark only one oval.

- Form 5/Year 11
- Post-Secondary
- Tertiary Level/Further Education
- Postgraduate Degree

6. Nationality *

Mark only one oval.

- Maltese
- Other European Union (EU) Nationality
- Other: _____

7. Presently, I am *

Mark only one oval.

- Full-time student
- Part-time student
- Employed full-time
- Employed part-time
- Self-employed
- Unemployed

Internet Use

**Reklami
"Retargeted"
u ż-
Żgħażaġh**

Jien Ivan De Battista, riċerkatur fl-Università ta' Malta, taħt is-superviżjoni ta' Dr Franco Curmi u Dr Jirka Konietzny. Ir-riċerka tiegħi tiffoka fuq l-influenza li fatturi differenti għandhom fuq l-attitudni taż-żgħażaġh lejn ir-reklami "Retargeted". Wara li tfitteż prodott fuq websajt partikolari, xi kultant reklam tal-istess prodott jintwera fuq websajts oħra li żżur; dan it-tip ta' reklamar jissejjaħ "Retargeted".

Ir-riċerka tiffoka fuq il-ħsbijiet, sentimenti u emozzjonijiet taż-żgħażaġh dwar ir-reklami "Retargeted". Il-parteeċipazzjoni tiegħek f'dan l-istudju tikkontribwixxi għall-fehim u l-għarfien tagħna ta' kif ir-reklami "retargeted" qed jinfluenzaw liż-żgħażaġh.

Il-parteeċipazzjoni f'din ir-riċerka tinvolvi li timla dan il-kwestjonarju, li għandu jieħu madwar 8 minuti. Dan l-istħarriġ huwa mmirat għal żgħażaġh ta' etajiet minn 16 sa 24 sena biss.

Il-parteeċipazzjoni tiegħek f'dan l-istħarriġ hija volontarja; għaldaqstant inti liberu/a li taqbel jew tirrifjuta li tipparteċipa u tista' toħroġ mill-istħarriġ fi kwalunkwe hin. Il-parteeċipazzjoni tiegħek ma tinvolvi l-ebda riskju magħruf jew antiċipat. Inti mhu se tirċievi l-ebda benefiċċju dirett mill-parteeċipazzjoni f'dan l-istħarriġ.

Id-dejta kollha miġbura tkun kompletament anonima, u mhux se jkun hemm żvelar jew komunikazzjoni tar-riżultati individwali. L-ebda dejta personali li tista' tidentifika lil lekk m'hija meħtieġa, u kollox se jinżamm kunfidenzjali. Id-dejta tinħażen f'format elettroniku kriptat. Id-dejta anonima kollha miġbura tinżamm sa dak il-hin li jinħarġu pubblikazzjonijiet akkademici bbażati fuq id-dejta miġbura u sakemm jiġi sotomess id-dokument finali tal-istudju sħiħ.

Jekk għandek xi mistoqsijiet, jekk jogħġbok ibgħat email fuq ivan.debattista.19@um.edu.mt. Niringrazzjak bil-quddiem għall-hin tiegħek biex timla dan l-istħarriġ.

Jekk tiddeċiedi li tipparteċipa u għandek minn 16-il sena 'l fuq, ġentilment ikklikkja fuq il-buttuna mmarkata "Qed nagħti l-kunsens tiegħi biex nipparteċipa f'dan l-istħarriġ" hawn taħt biex tibda l-kwestjonarju.

Meta tikklikkja fuq il-buttuna "Qed nagħti l-kunsens tiegħi biex nipparteċipa f'dan l-istħarriġ" turi li:

- Qrajt l-informazzjoni t'hawn fuq.
- Inti taqbel volontarjament li tipparteċipa f'dan l-istħarriġ.
- Inti bejn 16 u 24 sena.

Biex tikseb l-aħjar esperjenza possibbli tal-istħarriġ, jekk jogħġbok, imla l-kwestjonarju minn kompjuter (desktop) jew laptop. Il-parteeċipazzjoni tiegħek hija apprezzata ħafna.

Riċerkatur: Ivan De Battista (ivan.debattista.19@um.edu.mt)

Superviżuri: Dr Franco Curmi (franco.curmi@um.edu.mt) u Dr Jirka Konietzny (jirka.konietzny@um.edu.mt)

31. **Għal kunsens elettroniku, jekk jogħġbok agħmel l-għażla tiegħek hawn taħt: ***

Mark only one oval.

- Qed nagħti l-kunsens tiegħi biex nipparteċipa f'dan l-istħarrig
Skip to question 32
- Ma nixtieqx nipparteċipa f'dan l-istħarrig
Skip to section 25 (Grazzi ħafna xorta waħda.)

Informazzjoni Ġenerali

Adulti

32. **Età ***

Mark only one oval.

- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25+ *Skip to section 26 (Grazzi tal-interess tiegħek)*

33. **Ġeneru ***

Mark only one oval.

- Mara
- Raġel
- Oħrajn

34. Livell ta' edukazzjoni *

Mark only one oval.

- Form 5/Year 11
- Post-Sekondarja
- Livell Terzjarju/Further Education
- Postgraduate Degree

35. Nazzjonalità *

Mark only one oval.

- Maltija
- Nazzjonalità oħra tal-Unjoni Ewropea (UE)
- Other: _____

36. Bħalissa, jien *

Mark only one oval.

- Student/a full-time
- Student/a part-time
- Impjegat/a full-time
- Impjegat/a part-time
- Naħdem għal rasi
- M'għandix xogħol

Użu tal-Internet

Appendix I: E-mail to Head of Schools/Institutions (Minors) – Survey

Dear ***,

Good morning/afternoon.

I am Ivan De Battista, a researcher at the University of Malta under the supervision of Dr Franco Curmi (franco.curmi@um.edu.mt) and Dr Jirka Konietzny (jirka.konietzny@um.edu.mt). My research is about the influence that different factors have on the attitude and behaviour of young people towards retargeted advertisements.

The participation of teens in this study will contribute to our understanding and knowledge of how these advertisements influence young people. The research focuses on the thoughts and feelings of young people about retargeted advertisements. The questions in the survey will be about personalised advertising and how young people perceive them, their feelings, attitudes, intents, and behaviours towards these advertisements.

Participation in this research involves completing a questionnaire, which should take approximately 8 minutes. The students must be between 13 and 15 years to complete the questionnaire (circa Form 2+/Year 8+). A participant information letter for parents/guardians of students is attached to this email. The questionnaire can be filled out either in Maltese or English, and it will be available for the next ** days.

I would really appreciate it if you could kindly disseminate this participant information letter to all the parents/guardians so they can pass on the questionnaire to their children for participation.

You can find the contents of the questionnaire attached to this email for your perusal. The link to the questionnaire is on the information letter. Nevertheless, I am including the link here, just in case:

Questionnaire Link

I thank you in advance for your kind cooperation in this study.

Keep well and stay safe.

Best regards

Ivan De Battista
ivan.debattista.19@um.edu.mt

Appendix J: Participant Information and Consent Letter (Minors) - Survey

Dear Parent/Guardian,

I am Ivan De Battista, a researcher at the University of Malta under the supervision of Dr Franco Curmi and Dr Jirka Konietzny. My research focuses on the influence that **retargeted advertisements** have on young people's attitudes and behaviour. After browsing a product on a retail website, an advertisement of the same product is sometimes displayed on other websites that you visit; this kind of advertising is called retargeted advertisement.

The research focuses on the thoughts and feelings of young people about retargeted advertisements. The questions in the survey will be about personalised advertising and how young people perceive them, their feelings, and attitudes towards these advertisements, if they are affected by these advertisements, how they feel if others buy a product before them, or when they encounter advertisements suggesting a sense of urgency or scarcity in products, and what encourages them to click on these retargeted advertisements.

Participation in this research involves completing this questionnaire, which should take approximately 8 minutes. A link to the questionnaire may be found below. Your son/daughter can only complete the questionnaire if he/she is 13 to 15 years.

Participation in this survey is voluntary. Everyone is free to agree or refuse to participate and may exit the survey at any time. Participation does not involve any known or anticipated risks. Participants will receive no direct benefits from participating in this survey.

All data collected will be entirely anonymous, and there will be no disclosure or communication of individual results. No personal data that may identify the participant is required, and everything will be kept confidential. Hence, there is no risk to children participating in the study. Data will be stored in an encrypted electronic format. All the collected anonymous data will be retained until academic publications based on the collected data are issued and the final document of the whole study is handed in.

If you have any further questions, require additional information about this study, or have any comments about the research, please feel free to contact me by e-mail at ivan.debattista.19@um.edu.mt and/or my supervisors; Dr Franco Curmi on franco.curmi@um.edu.mt and Dr Jirka Konietzny on jirka.konietzny@um.edu.mt.

You can find the questionnaire contents, both in Maltese and English, attached to this email for your perusal. Should you agree and consent that your son/daughter can participate in this study, you can kindly access the questionnaire link below to give your consent, and your son/daughter can continue filling out the survey in either Maltese or English.

Questionnaire Link:

Thank you very much for taking the time to read this and considering whether you will allow your son/daughter to participate. Your son's/daughter's participation is greatly appreciated.

Yours sincerely,

Ivan De Battista

ivan.debattista.19@um.edu.mt

Appendix K: Participant Information (Young Adults) – Survey

Dear Student

I am Ivan De Battista, a doctoral student at the University of Malta under the supervision of Dr Franco Curmi and Dr Jirka Konietzny. My research focuses on the influence that retargeted advertisements have on young people's attitudes and behaviour. After browsing a product on a retail website, an advertisement for the same product is sometimes displayed on other websites that you visit; this kind of advertising is called retargeted advertisement. The questions in the survey are about personalised advertising and how young people perceive them, their feelings, attitudes, intents, and behaviours towards these advertisements.

Participation in this research involves completing this questionnaire, which should take approximately 8 minutes. This survey is targeted at young people aged from 16 to 24 years old only.

Participation in this survey is voluntary. Everyone is free to agree or refuse to participate and may exit the survey at any time. Participation does not involve any known or anticipated risks. Participants will receive no direct benefits from participating in this survey.

All data collected will be entirely anonymous, and there will be no disclosure or communication of individual results. No personal data that may identify the participant is required, and everything will be kept confidential. Hence, there is no risk in participating in the study. Data will be stored in an encrypted electronic format. All the collected anonymous data will be retained until academic publications based on the collected data are issued, and the final document of the whole study is handed in.

If you have any further questions, require additional information about this study, or have any comments about the research, please feel free to contact me by e-mail at ivan.debattista.19@um.edu.mt and/or my supervisors; Dr Franco Curmi on franco.curmi@um.edu.mt and Dr Jirka Konietzny on jirka.konietzny@um.edu.mt

Questionnaire Link:

I would also appreciate it if you could pass on this e-mail request to friends, family, and acquaintances who might be interested in filling out the questionnaire since the minimum sample required is very high.

Your participation and support are greatly appreciated.

Kind Regards

Ivan De Battista
ivan.debattista.19@um.edu.mt

Appendix L: Ethical Clearance – Survey



L-Università
ta' Malta

Research Ethics and Data Protection Form

University of Malta staff, students, or anyone else planning to carry out research under the auspices of the University, must complete this form. The UM may also consider requests for ethics and data protection review by External Applicants.

Ahead of completing this online form, please read carefully the University of Malta [Research Code of Practice](#) and the University of Malta [Research Ethics Review Procedures](#). Any breach of the Research Code of Practice or untruthful replies in this form will be considered a serious disciplinary matter. It is advisable to download a full digital version of the form to familiarise yourself with its contents (<https://www.um.edu.mt/media/um/docs/research/urec/URECAReplica.docx>). You are also advised to refer to the FAQs (<https://www.um.edu.mt/research/ethics/faqs>).

Part 1: Applicant and Project Details Applicant Details

Name: Ivan
Surname: De Battista
Email: ivan.debattista.19@um.edu.mt
Applicant Status: Student

Please indicate if you form part of a Faculty, Institute, School or Centre: *

Faculty of Economics, Management & Accountancy

Department: * Marketing
Principal Supervisor's Name: * Dr Franco Curmi
Principal Supervisor's Email: * franco.curmi@um.edu.mt
Co-Supervisor's Name: Dr Jirka Konietzny
Course and Study Unit Code: * PhD
Student Number: * 1005227

Project Details

Title of Research Project: * Retargeted Advertisements and Young People

Project description, including research question/statement and method, in brief: *

This survey is an extension of the survey which was approved on 09/12/0021 with Application ID: FEMA-2021-00159

The study will explore the influence that different factors have on young people's attitude, intent and behaviour towards retargeted advertisements. After browsing a product on a retail website, an advertisement for the same product is sometimes displayed on other websites that you visit; this kind of advertising is called retargeted advertisement. The participation of young people in this study will contribute to our understanding and knowledge of how these advertisements influence young people. The research focuses on the thoughts and feelings of young people about retargeted

advertisements. **Will project involve collection of primary data from human participants?**

Yes / Unsure

Explain primary data collection from human participants:

a. Salient participant characteristics (min-max participants, age, sex, other): * Min-750 Max-950
Ages - 13-24 - All genders

b. How will they be recruited: *

Online survey via independent and summer schools, Church schools (secondary), MFED (if not bound by time), post-secondary/tertiary institutions, governmental institutions (e.g. Aġenzija Żgħażaġh), communication platforms (e.g. Teams, VLE), and social media (e.g. Facebook)

c. What they will be required to do and for how long: *

Filling a survey. The survey will only take 8 minutes. The survey will be entirely anonymous, and there are no foreseeable risks of harming participants in any way.

d. If inducements/rewards/compensation are offered: * No rewards are offered.

e. How participants/society may benefit: *

The benefits are to the society, notably respondents, as the researcher will better understand what is happening in this under-researched advertising tool.

f. If participants are identifiable at any stage of the research: * No, as no emails, IP addresses, and any other indication will be collected.

g. The manner in which you will manage and store the data: *

Data will be stored in an encrypted electronic format, saved on an external hard drive and kept under lock and key. All the collected anonymous data will be retained until academic publications based on the collected data are issued and the final document of the whole study is handed in.

Part 2: Self Assessment and Relevant Details Human Participants

- 1. Risk of harm to participants:** No / N.A.
- 2. Physical intervention:** No / N.A.
- 3. Vulnerable participants:** Yes / Unsure

Two identical, fully confidential questionnaires will be conducted in this study; one will be addressed to minors from 13 to 15 years (Survey A), and the other will be targeted at young people aged 16 to 24 years (Survey B). Survey A will be disseminated only through schools' channels, while Survey B will be distributed via post-secondary schools, tertiary institutions, agencies, communication platforms, and social media. Initially, secondary schools have to agree in principle, based on the University of Malta ethical clearance, that they will be supporting the researcher in the distribution of the questionnaire (Survey A). The secondary schools will send an information letter to parents/guardians on behalf of the researcher with the contents of the survey attached to the email and a link to Survey A. On the survey itself (in the information section on the first page), the parents/guardians give their consent and then their children will fill it in if the parents/guardians agree.

Survey B will include the same information section to inform respondents and ask them for their consent to proceed. The post-secondary/tertiary institutions/agencies will be asked to disseminate Survey B. Survey B will also be distributed via communication platforms and online via social media, given the mild subject and no foreseen moral, physical, emotional or psychological harm. For both surveys, the information page will be in Maltese and English for ease of understanding.

Participation in both surveys is voluntary, as respondents are free to agree or refuse to participate and may exit the survey at any time. Participation does not involve any known or anticipated risks. Participants will receive no direct benefits from filling in the surveys. No personal data from respondents, that is, information that identifies or leads to identifying the individuals replying to the questionnaire will be collected. The way the survey will be deployed makes the respondents completely anonymous. Hence, there are no risks related to personal data leaks or association of the data to the respondent or relatives. Provided that the questionnaire will not collect any kind of personal data from respondents, that is, information that identifies or leads to the identification of the individuals replying to the questionnaire, the requirements of consent and information to be provided concerning the rights deriving from the GDPR, do not arise.

- | | |
|---|-----------|
| 4. Identifiable participants: | No / N.A. |
| 5. Special Categories of Personal Data (SCPD): | No / N.A. |
| 6. Human tissue/samples: | No / N.A. |
| 7. Withheld info assent/consent: | No / N.A. |
| 8. 'opt-out' recruitment: | No / N.A. |
| 9. Deception in data generation: | No / N.A. |
| 10. Incidental findings: | No / N.A. |

Unpublished secondary data

- | | |
|-----------------------------------|-----------|
| 11. Human: | No / N.A. |
| 12. Animal: | No / N.A. |
| 13. No written permission: | No / N.A. |

Animals

- | | |
|---|-----------|
| 14. Live animals, lasting harm: | No / N.A. |
| 15. Live animals, harm: | No / N.A. |
| 16. Source of dead animals, illegal: | No / N.A. |

General Considerations

- | | |
|-------------------------------------|--------------|
| 17. Cooperating institution: | Yes / Unsure |
|-------------------------------------|--------------|

After FREC clearance, the approval of the pertinent institutions; MFED in the case of public schools, the Secretariat for Catholic Education in the case of Church Schools, and the respective Head of Schools in case of private and summer schools (some of which may also have a 'Parents Foundation') will be sought. These institutions will be contacted via an

official email so that a uniform approach is applied to all types of schools, where the authority to carry out research is always sought. A copy of this email is attached to this form.

18. Risk to researcher/s: No / N.A.

19. Risk to environment: No / N.A.

20. Commercial sensitivity: No / N.A.

Other Potential Risks

21. Other potential risks: No / N.A.

22. Official statement: Do you require an official statement from the F/REC that this submission has abided by the UM's REDP procedures? Yes / Unsure

Part 3: Submission

Which F/REC are you submitting to? * Faculty of Economics, Management & Accountancy

Attachments:

- Information and/or recruitment letter*
- Consent forms (adult participants)*
- Consent forms for legally responsible parents/guardians, in case of minors and/or adults unable to give consent*
- Assent forms in case of minors and/or adults unable to give consent*
- Data collection tools (interview questions, questionnaire etc.)
- Data Management Plan
- Data controller permission in case of use of unpublished secondary data
- Licence/permission to use research tools (e.g. constructs/tests)
- Any permits required for import or export of materials or data
- Letter granting institutional approval for access to participants
- Institutional approval for access to data
- Letter granting institutional approval from person directly responsible for participants
- Other

Please feel free to add a cover note or any remarks to F/REC

This survey is an extension of the survey which was approved on 09/12/0021 with Application ID: FEMA-2021-00159

Declarations: *

I hereby confirm having read the University of Malta Research Code of Practice and the University of Malta Research Ethics Review Procedures.

I hereby confirm that the answers to the questions above reflect the contents of the research proposal and that the information provided above is truthful.

I hereby give consent to the University Research Ethics Committee to process my personal data for the purpose of evaluating my request, audit and other matters related to this application. I understand that I have a right of access to my personal data and to obtain the rectification, erasure or restriction of processing in accordance with data

protection law and in particular the General Data Protection Regulation (EU 2016/679, repealing Directive 95/46/EC) and national legislation that implements and further specifies the relevant provisions of said Regulation.

Applicant Signature: * Ivan De Battista

Date of Submission: * 13/05/2022

If applicable: Date collection start date 01/05/2022

Administration

REDP Application ID FEMA-2022-00132

Current Status Approved

Appendix M: Descriptive Statistics – Survey

Particulars		Frequency	Percentage
Questionnaire Language	English	361	75.2
	Maltese	119	24.8
		480	100.0
Employment	Full-time student	426	88.7
	Part-time student	5	1.0
	Employed full-time	31	6.5
	Employed part-time	9	1.9
	Self-employed	4	0.8
	Unemployed	5	1.0
		480	100.0
Average Internet Usage	More than 4 hours a day	311	64.8
	3 to 4 hours daily	100	20.8
	2 to 3 hours daily	56	11.7
	1 to 2 hours daily	9	1.9
	Few hours a week	3	0.6
	Few hours a month	1	0.2
		480	100.0
Device to Access Internet	Desktop Computer	55	11.5
	Laptop	73	15.2
	Tablet	12	2.5
	Smartphone	332	69.2
	PlayStation	1	0.2
	Mix	7	1.5
		480	100.0
Ask to Purchase?	My parents / guardians	109	22.7
	Myself	226	47.1
	Both	118	24.6
	Never	27	5.6
		480	100.0
My parents / guardians	More than once a week	1	0.2
	Once a week	4	0.8
	Once a month	35	7.3
	Rarely	69	14.4
		109	22.7
Myself	More than once a week	4	0.8

	Once a week	17	3.5
	Once a month	113	23.5
	Rarely	92	19.2
		226	47.0
Parents (Both)	More than once a week	3	0.6
	Once a week	4	0.8
	Once a month	30	6.3
	Rarely	81	16.9
		118	24.6
Myself (Both)	More than once a week	2	0.4
	Once a week	9	1.9
	Once a month	41	8.5
	Rarely	66	13.8
		118	24.6
Retargeted Advertisements Encountering	Every time I access the websites that I visit most often	197	41.0
	About 11 to 25 times over the past week	67	14.0
	About 3 to 10 times over the past week	93	19.4
	About 1 or 2 times over the past week	62	12.9
	Once to twice a month	61	12.7
		480	100.0
Ad Block	Yes	225	46.9
	No	255	53.1
		480	100.0
Purchase from Retargeted Advertisements (Myself)	Yes	126	26.3
	No	354	73.8
		480	100.0
Purchase from Retargeted Advertisements (Parents)	Yes	81	16.9
	No	399	83.1
		480	100.0

Appendix N: Frequency Percentage Analysis (AVM) – Survey

The table below illustrates the frequency percentages per item code. The percentages coloured in light grey represent values below 51.0%. As a result, the dark grey shaded areas denote the percentages of selections that failed to surpass the 51.0% threshold. Respondents mainly disagreed with the statements about CRE, with a staggering average of 64.7%, immediately followed by ENT, with 62.8% in disagreement. The item code ENT03 asked respondents if they found retargeted advertisements ‘interesting’; more than a quarter of the respondents found this positive, and more than 15.0% from the rest of the ENT items.

Item Code	Disagree	Neutral	Agree
ENT01	62.3%	26.3%	11.5%
ENT02	67.5%	21.0%	11.5%
ENT03	50.2%	23.1%	26.7%
ENT04	67.3%	21.5%	11.3%
ENT05	66.9%	22.9%	10.2%
INF01	40.6%	30.8%	28.5%
INF02	42.5%	26.7%	30.8%
INF03	45.2%	29.0%	25.8%
IRR01	18.3%	11.0%	70.6%
IRR02	21.0%	13.5%	65.4%
IRR03	25.0%	25.4%	49.6%
IRR04	22.1%	20.8%	57.1%
CRE02	60.6%	20.8%	18.5%
CRE03	65.0%	22.5%	12.5%
CRE04	68.5%	22.3%	9.2%
PER01	44.2%	22.7%	33.1%
PER02	25.0%	18.8%	56.3%
PER03	27.9%	21.0%	51.0%
INT01	41.9%	26.5%	31.7%
INT02	49.0%	25.6%	25.4%
RAV01	47.5%	32.7%	19.8%
RAV02	53.5%	29.0%	17.5%
AAD01	54.6%	30.4%	15.0%
AAD02	60.2%	24.0%	15.8%
AAD03	60.2%	26.7%	13.1%
AAD04	51.3%	29.4%	19.4%

When respondents were asked if they ‘feel that retargeted advertisements display personalised messages’ to them (PER01), a third of them agreed, although 44.2% differed.

There were similar cases to the PER item code for INF and INT. On the other hand, 70.6% of respondents find retargeted advertisements 'annoying' (IRR01), 65.4% feel that it is 'irritating' (IRR02) and 57.1% 'intrusive' (IRR04). Item code IRR03 asked young people if they find retargeted advertisements 'deceptive (misleading or dishonest)', and a quarter of the participants disagreed, but 49.6% were in favour. Only 15.0% and 15.8% admitted that their 'general opinion of retargeted advertisements is favourable' (AAD01), and they 'consider retargeted advertisements essential' (AAD02).

Appendix O: MICOM Results for AVM - Survey

MICOM results for female and male minors for AVM

MICOM Step 1

Configural Variance Established

MICOM Step 2

Composite	Correlation <i>c</i>	5% quantile of the empirical distribution of <i>cu</i>	<i>p</i> value	Compositional invariance established?
AAD	1.000	.999	.856	Yes
CRE	.991	.989	.081	Yes
ENT	1.000	.999	.635	Yes
INF	1.000	.989	.966	Yes
INT	1.000	.997	.680	Yes
IRR	.998	.942	.829	Yes
PER	.996	.984	.390	Yes
RAV	1.000	.999	.441	Yes

MICOM Step 3

Composite	Difference of the composite's mean value (=0)	95% confidence interval	<i>p</i> value	Equal mean values?
AAD	.043	[-.228; .234]	.382	Yes
CRE	-.137	[-.242; .221]	.164	Yes
ENT	-.063	[-.230; .233]	.323	Yes
INF	-.052	[-.225; .235]	.369	Yes
INT	-.003	[-.229; .217]	.503	Yes
IRR	.154	[-.249; .222]	.134	Yes
PER	-.058	[-.239; .223]	.347	Yes
RAV	-.018	[-.232; .232]	.459	Yes

Composite	Logarithm of the composite's variance ratio (=0)	95% confidence interval	<i>p</i> value	Equal variances?
AAD	-.378	[-.289; .286]	.013	No
CRE	-.066	[-.245; .247]	.341	Yes
ENT	-.024	[-.257; .265]	.458	Yes
INF	-.100	[-.287; .280]	.287	Yes
INT	-.310	[-.246; .244]	.013	No
IRR	-.096	[-.278; .302]	.278	Yes
PER	-.014	[-.286; .276]	.465	Yes
RAV	-.113	[-.273; .260]	.259	Yes

MICOM results for female and male young adults for AVM

MICOM Step 1

Configural Variance Established

MICOM Step 2

Composite	Correlation <i>c</i>	5% quantile of the empirical distribution of <i>cu</i>	<i>p</i> value	Compositional invariance established?
AAD	1.000	1.000	.537	Yes
CRE	1.000	.997	.828	Yes
ENT	1.000	.999	.944	Yes
INF	.998	.994	.414	Yes
INT	.999	.997	.180	Yes
IRR	.998	.984	.692	Yes
PER	.998	.986	.542	Yes
RAV	1.000	.999	.877	Yes

MICOM Step 3

Composite	Difference of the composite's mean value (=0)	95% confidence interval	<i>p</i> value	Equal mean values?
AAD	.107	[-.213; .205]	.208	Yes
CRE	.008	[-.206; .207]	.478	Yes
ENT	.031	[-.218; .206]	.394	Yes
INF	-.103	[-.214; .209]	.219	Yes
INT	.108	[-.220; .210]	.204	Yes
IRR	.049	[-.211; .207]	.334	Yes
PER	.094	[-.218; .198]	.200	Yes
RAV	-.010	[-.217; .213]	.479	Yes

Composite	Logarithm of the composite's variance ratio (=0)	95% confidence interval	<i>p</i> value	Equal variances?
AAD	-.097	[-.230; .224]	.257	Yes
CRE	-.077	[-.209; .216]	.273	Yes
ENT	.019	[-.219; .223]	.443	Yes
INF	-.162	[-.269; .295]	.161	Yes
INT	-.010	[-.215; .253]	.455	Yes
IRR	.004	[-.273; .309]	.504	Yes
PER	.176	[-.240; .257]	.133	Yes
RAV	.110	[-.222; .233]	.230	Yes

MICOM results for female minors and young adults for AVM

MICOM Step 1

Configural Variance Established

MICOM Step 2

Composite	Correlation <i>c</i>	5% quantile of the empirical distribution of <i>cu</i>	<i>p</i> value	Compositional invariance established?
AAD	1.000	.999	.208	Yes
CRE	.997	.995	.128	Yes
ENT	1.000	.999	.541	Yes
INF	.999	.992	.671	Yes
INT	.999	.995	.365	Yes
IRR	.985	.985	.054	Yes
PER	.999	.987	.657	Yes
RAV	1.000	.999	.760	Yes

MICOM Step 3

Composite	Difference of the composite's mean value (=0)	95% confidence interval	<i>p</i> value	Equal mean values?
AAD	-.107	[-.211; .208]	.197	Yes
CRE	-.121	[-.195; .219]	.152	Yes
ENT	-.085	[-.199; .214]	.228	Yes
INF	-.044	[-.191; .200]	.371	Yes
INT	-.315	[-.195; .213]	.004	No
IRR	-.084	[-.220; .205]	.249	Yes
PER	-.202	[-.200; .193]	.049	No
RAV	-.092	[-.196; .212]	.240	Yes

Composite	Logarithm of the composite's variance ratio (=0)	95% confidence interval	<i>p</i> value	Equal variances?
AAD	-.147	[-.244; .245]	.181	Yes
CRE	-.026	[-.235; .229]	.436	Yes
ENT	.040	[-.233; .219]	.377	Yes
INF	.093	[-.282; .272]	.273	Yes
INT	-.266	[-.265; .248]	.049	No
IRR	.045	[-.280; .284]	.396	Yes
PER	-.152	[-.245; .254]	.141	Yes
RAV	-.197	[-.260; .249]	.104	Yes

MICOM results for females vs. males for AVM

MICOM Step 1

Configural Variance Established

MICOM Step 2

Composite	Correlation <i>c</i>	5% quantile of the empirical distribution of <i>cu</i>	<i>p</i> value	Compositional invariance established?
AAD	1.000	1.000	.777	Yes
CRE	.999	.998	.341	Yes
ENT	1.000	1.000	.927	Yes
INF	.999	.996	.522	Yes
INT	.999	.999	.135	Yes
IRR	1.000	.990	.946	Yes
PER	.998	.993	.249	Yes
RAV	1.000	1.000	.674	Yes

MICOM Step 3

Composite	Difference of the composite's mean value (=0)	95% confidence interval	<i>p</i> value	Equal mean values?
AAD	.083	[-.159; .147]	.175	Yes
CRE	-.053	[-.150; .138]	.278	Yes
ENT	-.008	[-.166; .151]	.496	Yes
INF	-.074	[-.155; .152]	.217	Yes
INT	.074	[-.155; .145]	.192	Yes
IRR	.114	[-.146; .155]	.100	Yes
PER	.039	[-.154; .153]	.331	Yes
RAV	-.007	[-.160; .148]	.482	Yes

Composite	Logarithm of the composite's variance ratio (=0)	95% confidence interval	<i>p</i> value	Equal variances?
AAD	-.214	[-.176; .180]	.021	No
CRE	-.067	[-.154; .161]	.272	Yes
ENT	.000	[-.155; .180]	.488	Yes
INF	-.141	[-.204; .192]	.125	Yes
INT	-.107	[-.158; .168]	.143	Yes
IRR	-.071	[-.188; .200]	.285	Yes
PER	.111	[-.185; .198]	.161	Yes
RAV	.026	[-.177; .180]	.408	Yes

Appendix P: Frequency Percentage Analysis (TPB and FoMO) – Survey

The table in this appendix presents the complete list of frequency percentages for TPB and FoMO. The 51.0% threshold employed in the AVM model was also applied to this part of the model. Respondents disagreed with FoMO carried by retargeted advertisements with an average (when including the four constructs – URG, SCR, SP, & LA) of 55.8%.

Nevertheless, more than a third of respondents agreed that when they encounter a retargeted advertisement showing a product that interests them with urgency or scarcity appeals, they ‘think about the deadline’ (URG02), and they ‘think they might lose the opportunity to buy the product if others bought it first’ (SCR03). Another 25.6% ‘base their decision on the quantity of the product more than other factors’ (SCR02).

Item Code	Disagree	Neutral	Agree
AAD01	54.6%	30.4%	15.0%
AAD02	60.2%	24.0%	15.8%
AAD03	60.2%	26.7%	13.1%
AAD04	51.3%	29.4%	19.4%
SN01	70.4%	24.6%	5.0%
SN02	71.5%	23.1%	5.4%
SN03	68.5%	24.2%	7.3%
SN04	58.8%	28.3%	12.9%
PBC01	15.8%	10.2%	74.0%
PBC02	14.8%	14.4%	70.8%
PBC03	14.6%	11.7%	73.8%
ITC01	54.0%	27.1%	19.0%
ITC02	45.6%	32.1%	22.3%
BEH02	36.7%	17.9%	45.4%
BEH03	39.6%	21.9%	38.5%
URG01	50.8%	20.0%	29.2%
URG02	42.7%	21.9%	35.4%
SCR02	52.5%	21.9%	25.6%
SCR03	45.0%	18.1%	36.9%
SP01	66.5%	19.0%	14.6%
SP02	71.5%	17.3%	11.3%
SP03	65.6%	19.4%	15.0%
SP04	52.1%	19.4%	28.5%
LA01	61.3%	21.7%	17.1%
LA02	52.9%	19.8%	27.3%
LA03	53.1%	21.3%	25.6%

One of the most pronounced disagreements arose in the context of SP statements, particularly SP02, where 71.5% disagreed if they ‘prefer to act the way everyone else is acting’. Overall, SP recorded the highest disagreements out of the four FoMO constructs, with an average of 63.9% opposing the four-item statements. LA registered the second-highest level of disagreement, reaching 55.8%. Notably, only 17.1% of respondents agreed that ‘the pain of losing an offer matters more to them than the pleasure of getting the offer’.

From the TPB part, SN scored the worst out of all the constructs, with more than two-thirds opposing the four items. As expected, young people agreed with PBC items, with the three statements scoring all over 70.0%. BEH was the highest in agreements, although less than the midpoint.

Appendix Q: MICOM Results for TPB and FoMO - Survey

MICOM results for female and male minors for the TPB and FoMO

MICOM Step 1

Configural Variance Established

MICOM Step 2

Composite	Correlation <i>c</i>	5% quantile of the empirical distribution of <i>cu</i>	<i>p</i> value	Compositional invariance established?
AAD	1.000	.999	.269	Yes
BEH	1.000	.998	.573	Yes
FOMO	.999	.994	.692	Yes
ITC	1.000	.999	.365	Yes
PBC	.995	.988	.206	Yes
SN	1.000	.999	.684	Yes

MICOM Step 3

Composite	Difference of the composite's mean value (=0)	95% confidence interval	<i>p</i> value	Equal mean values?
AAD	.044	[-.225; .233]	.378	Yes
BEH	.098	[-.228; .237]	.249	Yes
FOMO	.190	[-.232; .239]	.098	Yes
ITC	.090	[-.222; .236]	.246	Yes
PBC	-.184	[-.245; .233]	.094	Yes
SN	-.072	[-.240; .241]	.321	Yes

Composite	Logarithm of the composite's variance ratio (=0)	95% confidence interval	<i>p</i> value	Equal variances?
AAD	-.380	[-.287; .287]	.013	No
BEH	-.118	[-.212; .221]	.189	Yes
FOMO	-.048	[-.248; .269]	.381	Yes
ITC	-.258	[-.246; .251]	.041	No
PBC	.044	[-.321; .335]	.401	Yes
SN	-.076	[-.235; .220]	.294	Yes

MICOM results for female minors and young adults for the TPB and FoMO

MICOM Step 1

Configural Variance Established

MICOM Step 2

Composite	Correlation <i>c</i>	5% quantile of the empirical distribution of <i>cu</i>	<i>p</i> value	Compositional invariance established?
AAD	.999	.999	.133	Yes
BEH	1.000	.999	.724	Yes
FOMO	.997	.991	.359	Yes
ITC	1.000	.999	.824	Yes
PBC	1.000	.960	.956	Yes
SN	1.000	.998	.770	Yes

MICOM Step 3

Composite	Difference of the composite's mean value (=0)	95% confidence interval	<i>p</i> value	Equal mean values?
AAD	-.108	[-.211; .206]	.196	Yes
BEH	-.182	[-.208; .200]	.065	Yes
FOMO	.081	[-.199; .206]	.278	Yes
ITC	-.198	[-.211; .216]	.063	Yes
PBC	-.278	[-.206; .185]	.015	No
SN	-.069	[-.212; .206]	.283	Yes

Composite	Logarithm of the composite's variance ratio (=0)	95% confidence interval	<i>p</i> value	Equal variances?
AAD	.144	[-.244; .248]	.182	Yes
BEH	.028	[-.208; .198]	.418	Yes
FOMO	-.060	[-.298; .278]	.347	Yes
ITC	.308	[-.254; .240]	.020	No
PBC	-.436	[-.335; .318]	.011	No
SN	-.076	[-.199; .206]	.279	Yes

MICOM results for females vs. males for the TPB and FoMO

MICOM Step 1

Configural Variance Established

MICOM Step 2

Composite	Correlation <i>c</i>	5% quantile of the empirical distribution of <i>cu</i>	<i>p</i> value	Compositional invariance established?
AAD	1.000	1.000	.144	Yes
BEH	1.000	.999	.620	Yes
FOMO	.999	.997	.679	Yes
ITC	1.000	1.000	.268	Yes
PBC	.999	.986	.683	Yes
SN	1.000	.999	.390	Yes

MICOM Step 3

Composite	Difference of the composite's mean value (=0)	95% confidence interval	<i>p</i> value	Equal mean values?
AAD	.083	[-.159; .147]	.177	Yes
BEH	.134	[-.161; .149]	.072	Yes
FOMO	.050	[-.152; .154]	.286	Yes
ITC	.172	[-.168; .137]	.028	No
PBC	.054	[-.150; .162]	.262	Yes
SN	-.068	[-.156; .139]	.254	Yes

Composite	Logarithm of the composite's variance ratio (=0)	95% confidence interval	<i>p</i> value	Equal variances?
AAD	-.215	[-.177; .179]	.020	No
BEH	-.007	[-.142; .144]	.466	Yes
FOMO	-.106	[-.200; .186]	.175	Yes
ITC	-.073	[-.165; .167]	.231	Yes
PBC	-.137	[-.240; .233]	.160	Yes
SN	-.145	[-.157; .150]	.064	Yes

MICOM results for minors vs. young adults for the TPB and FoMO

MICOM Step 1

Configural Variance Established

MICOM Step 2

Composite	Correlation <i>c</i>	5% quantile of the empirical distribution of <i>cu</i>	<i>p</i> value	Compositional invariance established?
AAD	1.000	1.000	.557	Yes
BEH	1.000	1.000	.082	Yes
FOMO	.999	.996	.671	Yes
ITC	1.000	1.000	.327	Yes
PBC	.999	.984	.579	Yes
SN	1.000	.999	.821	Yes

MICOM Step 3

Composite	Difference of the composite's mean value (=0)	95% confidence interval	<i>p</i> value	Equal mean values?
AAD	-.091	[-.148; .145]	.151	Yes
BEH	-.161	[-.156; .152]	.051	Yes
FOMO	-.041	[-.155; .142]	.339	Yes
ITC	-.154	[-.154; .144]	.043	No
PBC	-.083	[-.156; .157]	.184	Yes
SN	-.071	[-.155; .147]	.217	Yes

Composite	Logarithm of the composite's variance ratio (=0)	95% confidence interval	<i>p</i> value	Equal variances?
AAD	.004	[-.186; .169]	.497	Yes
BEH	.034	[-.149; .140]	.313	Yes
FOMO	.022	[-.187; .166]	.408	Yes
ITC	-.187	[-.165; .146]	.031	No
PBC	.258	[-.245; .213]	.068	Yes
SN	.028	[-.152; .153]	.381	Yes

MICOM results for female and male young adults for the TPB and FoMO

MICOM Step 1

Configural Variance Established

MICOM Step 2

Composite	Correlation <i>c</i>	5% quantile of the empirical distribution of <i>cu</i>	<i>p</i> value	Compositional invariance established?
AAD	1.000	.999	.180	Yes
BEH	.999	.999	.056	Yes
FOMO	.998	.993	.439	Yes
ITC	1.000	.999	.568	Yes
PBC	.999	.896	.834	Yes
SN	1.000	.998	.507	Yes

MICOM Step 3

Composite	Difference of the composite's mean value (=0)	95% confidence interval	<i>p</i> value	Equal mean values?
AAD	.106	[-.214; .205]	.209	Yes
BEH	.149	[-.213; .202]	.115	Yes
FOMO	-.062	[-.212; .220]	.335	Yes
ITC	.217	[-.223; .205]	.038	No
PBC	.169	[-.205; .196]	.109	Yes
SN	-.072	[-.202; .206]	.302	Yes

Composite	Logarithm of the composite's variance ratio (=0)	95% confidence interval	<i>p</i> value	Equal variances?
AAD	-.097	[-.231; .225]	.253	Yes
BEH	.083	[-.202; .218]	.252	Yes
FOMO	-.135	[-.247; .269]	.189	Yes
ITC	.014	[-.218; .223]	.471	Yes
PBC	-.305	[-.321; .338]	.055	Yes
SN	-.198	[-.230; .237]	.073	Yes