
The Effect of Ambidextrous Strategic Leadership and Digital Technology Adoption on Creating Shared Value

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Abstract:

Purpose: The aim of this article is to provide an overview of how the strategic leadership ambidexterity, impacts the creation of shared value and how this impact is moderated by digital technology adoption.

Design/Methodology/Approach: The methodology builds upon on primary data collection with comprehensive analysis of the collected data. The structural equation modelling technique was applied to examine the constructs.

Findings: The findings suggest a positive relationship between ambidexterity and creating shared value. Furthermore, the study shows that leaders tend to be more optimistic about future opportunities and trends, which indicates that they focus more on exploring new opportunities rather than exploiting existing resources. While digital technology adoption has a positive impact, this is not significant. The moderating impact is more positive at lower levels and has a greater impact on creating social results versus business results.

Practical Implications: With the increasing importance of addressing societal challenges, including creating social results, it is crucial to identify which strategic leadership characteristics impact both social and business results. Ambidexterity refers to a leader's ability to exploit current resources while exploring future opportunities and trends. While digital technology acts as a moderator for strategic leaders when creating shared value.

Originality/value: The research results provides two key contributions, strategic leadership and digital technology. That is, an understanding of the impact of ambidextrous strategic leadership on the creation of social and business results by measuring each ambidextrous strategic leadership constructs including exploitation and exploration impact on social and business results separately. And how this is moderated by different levels of digital technology adoption.

Keywords: Ambidexterity, strategic leadership, creating shared value, sustainability, digital technology.

JEL classification: M100.

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1. Introduction

According to Barbara J. Davies and Brent Davies (2004), strategic leaders possess several key characteristics: they have a clear vision, are proactive, innovative, analytical, collaborative, decisive, and communicative. These characteristics are essential for guiding organisations through change and positioning them for long-term success (Davies and Davies, 2004). The quality of leadership performance is a critical factor in the success of any organisation, as highlighted by Singh *et al.* (2016).

In recent years, the importance of addressing societal challenges while achieving business results has become increasingly recognized. While various findings are available in the literature, there is evident a research gap on strategic leadership and its impact on creating shared value, which includes both business and social results (Porter and Kramer, 2019). Based on an initial literature review, the authors identified contextual ambidexterity as a crucial leadership characteristic.

Contextual ambidexterity refers to a leader's ability to exploit the firm's current resources while exploring future opportunities and trends. Ambidexterity is crucial in helping enterprises navigate the challenges associated with the dynamic business environment, steer organisations through change, and create shared value.

However, questions remain about whether the impact of ambidexterity is significant and whether it can be measured, which this paper aims to address. A recent study showed that the question of whether ambidexterity leads to improved organisational performance or not still needs to be developed and the results still need to be more conclusive (Alamayreh *et al.*, 2019). Moreover, adoption and use of digital technologies may help gain a competitive advantage. Digital technology is also connected to business model innovation and how leaders can innovate according to market needs (Menz *et al.*, 2021).

Dynamic Strategic Leadership theory has the social issues and sustainability as a fundamental element of doing business. The strategic leader is focused on adopting digital technology to amplify the social and financial impact. Hence, during this sensing of new technology, the strategic leader aims to increase variance and risk quality to capture new trends and being able to seize any opportunity.

This paper has three main contributions. First, it discusses the literature on the ambidextrous leader as the vital characteristic of enterprise leaders. Breaking down ambidexterity into two sub-characteristics: exploiting the firm's current resources and exploring future opportunities and trends. Second, the paper analyses the impact of ambidextrous strategic leadership on creating social and business results, isolating each construct and measuring their impact. Thirdly, measuring the moderating impact of digital technology adoption of the ambidextrous strategic leader when creating shared value.

The paper's structure is as follows. First, the author present the theoretical background supporting the development of four hypotheses. Then, an explanation of the survey method and the structural equation modelling (SEM) technique used in the analysis is given. It is followed by the analysis results. Finally, the paper concludes with a discussion and suggestions for future research.

2. Background

Businesses struggle to compete in highly dynamic environments (Chan *et al.*, 2018). Early exploration of strategic leadership topics indicates an increased complexity for strategic leaders in creating shared value compared with companies solely focusing on creating business results (Jackson *et al.*, 2017; Norena-Chavez and Thalassinou, 2021; 2022). According to Jackson *et al.* (2017) the complexity lies within levels of ambiguity, fast-changing social trends and the need for an established theoretical and practical knowledge base to rely on, making strategic leadership more challenging.

Another study identifies different characteristics of strategic leadership, such as driving transformation, engaging with stakeholders and diversity (Schlosser and Volkova, 2022). In this study, the authors identified three key attributes of strategic leadership essential for achieving success, driving transformation, engaging with stakeholders, and promoting diversity. The study provides a detailed analysis of each of these attributes and discusses how they can be developed and implemented in the context of strategic leadership (Barnett and Davis, 2020).

Ambidexterity refers to an organisation's ability to simultaneously engage in exploratory and exploitative activities, which enables them to adapt effectively to changing market conditions and improve overall performance (O'Reilly and Tushman, 2014).

2.1 Ambidextrous Strategic Leadership

Strategic leadership is viewed upon as the foundation for the successful performance of any organisation operating in the constantly changing and complex environment of the 21st century (Jaleha and Machuki, 2018). Hitt *et al.* (1998) and Ireland and Hitt (1999) described the capabilities needed for effective strategic leadership in the new competitive landscape expected for the 21st century.

They argued that effective strategic leaders had to: (1) develop and communicate a vision, (2) build dynamic core competencies, (3) emphasise and effectively use human capital, (4) invest in the development of new technologies, (5) engage in valuable strategies, (6) build and maintain an effective organisational culture, (7) develop and implement balanced controls, and (8) engage in ethical practices (Hitt *et al.*, 1998; Ireland and Hitt, 1999).

Ambidextrous leadership refers to the ability of leaders to simultaneously manage the existing operations of a company while also promoting innovation and exploration of new opportunities. This type of leadership is important for organisations that need to balance their current performance with future growth and development. Ambidextrous leaders are able to navigate these competing demands by creating a culture that supports both incremental improvements and breakthrough innovations.

On the other hand, ambidextrous strategic leadership refers to the ability of leaders to develop and implement both exploitative and exploratory strategies. Exploitative strategies focus on optimising existing products or services, while exploratory strategies involve developing new products or services that may disrupt the current market. Ambidextrous strategic leaders are able to balance these two types of strategies to drive sustained growth and competitiveness (Birkinshaw and Gibson, 2004). Overall, ambidextrous leadership and ambidextrous strategic leadership are related but distinct concepts that are both important for organisational success.

According to recent research, ambidexterity is a crucial characteristic of effective strategic leaders (Teece *et al.*, 2018; Beveridge *et al.*, 2021; DeCieri *et al.*, 2020). Research on ambidexterity is an important topic in management research, having grown meteorically over the past 17 years (Hughes, 2018). Frogeri *et al.* (2022) propose a conceptual and theoretical hypothetical model that explains the influence of various types of ambidexterity at three levels such as structural, contextual, and sequential (Frogeri *et al.*, 2022).

Another study aims to investigate the impact of ambidexterity capability and resource availability on firm resilience, along with perceived environmental uncertainty playing a moderating role. The research also looks into the interchange relationship between exploration and exploitation capability as components of ambidexterity (Gayed and Ebrashi, 2022). Gayed and Ebrashi (2022) used SEM to analyse a sample of 202 companies located in one country, and the results indicated that both organisational ambidexterity capability and resource availability impact organisational resilience.

Ambidextrous leadership is a vital aspect of this process, as it involves balancing the competing demands of exploration and exploitation. This literature review examines the concept of ambidextrous leadership and its relationship with innovation, organisational performance, and resilience.

Schlosser and Volkova (2022) found that enterprise leaders should be able to balance pursuing social impact with the need for financial results, which requires possessing ambidextrous skills. The study emphasises the significance of creating shared value while simultaneously addressing social and environmental challenges.

Alamayreh, Sweis, and Obeidat (2019) investigate the connection between organisational ambidexterity, innovation, and organisational performance. Their findings reveal a positive correlation between ambidexterity and both innovation and organisational performance. The authors propose that ambidextrous strategic leadership is crucial in enabling organisations to balance exploratory and exploitative activities effectively.

Similarly, Ceptureanu, Ceptureanu, and Cerqueti (2021) examined the relationship between innovation ambidexterity and performance in IT companies, focusing on the moderating role of business experience. The study found that ambidextrous firms outperformed non-ambidextrous firms and that business experience moderated the relationship between ambidexterity and performance.

Mavroudi, Kesidou, and Pandza (2020) investigated the relationship between the temporal cycling of exploratory and exploitative research and development (R&D) and firm performance. The results suggested that a higher level of cycling between exploratory and exploitative R&D was positively associated with performance, highlighting the importance of ambidextrous leadership in achieving this balance.

Guerrero (2021) conducted a literature review of studies on ambidexterity and entrepreneurship and found a positive impact of ambidexterity on entrepreneurial performance. However, the author also suggested further research to understand this relationship more comprehensively. Finally, Brown, Jie, Le, Sharafizad, Sharafizad, and Parida (2022) examined the factors influencing small and medium-sized enterprises (SME) business resilience in the post-COVID-19 era. The results revealed that ambidextrous leadership was a significant predictor of SME resilience during the pandemic, emphasising the critical role of ambidexterity in building organisational resilience.

Overall, the literature suggests that ambidextrous leadership is crucial for organisations to balance exploratory and exploitative activities and achieve higher levels of innovation, organisational performance, and resilience.

Further research is needed to better understand the relationship between ambidextrous leadership and entrepreneurship. Studies have suggested that ambidextrous leadership is positively associated with various organisational outcomes, such as innovation (Li, Wang, and Liao, 2015), firm performance (Liu, Li, Chen, and Chen, 2019), and strategic change (Moldogaziev and Gillespie, 2018). Additionally, research has identified several antecedents of ambidextrous leadership, such as transformational leadership (De Jong and Den Hartog, 2010).

Ambidexterity in this regard is identified under contextual ambidexterity, where strategic leaders on one side exploit resources of the enterprise and thereby decrease variance while creating results. On the other hand, the ambidextrous strategic leader is focused on exploring trends within their sector and beyond.

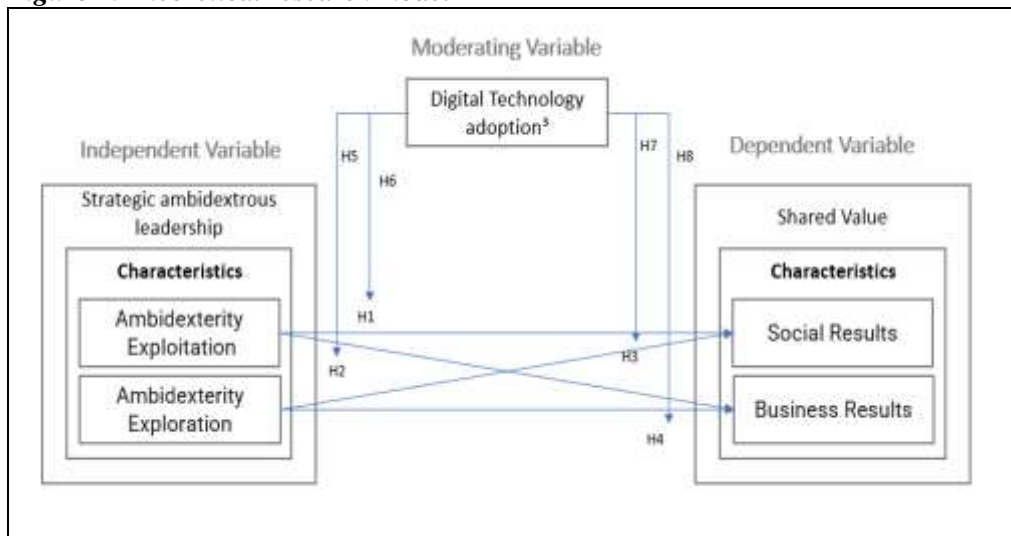
Sustainability and digital technology are two key trends strategic leaders are exploring (Schoemaker and Krupp 2015).

With exploration, strategic leaders increase variance to sense and seize new opportunities. Despite the potential benefits of ambidextrous strategic leadership, there are also challenges associated with this approach. For example, balancing exploration and exploitation may lead to organisational tensions and conflicts (Gupta, Smith, and Shalley, 2006).

Furthermore, there may be limitations to the generalizability of ambidextrous leadership theory across different cultural contexts (Xu and Wu, 2019). Based on the literature review, the theoretical model has been developed. The independent variable is the strategic leadership characteristic, ambidexterity.

The two characteristics of ambidexterity are exploiting the firms' current resources and exploring future trends and opportunities. The dependent variable is creating shared value and the characteristics hereof, creating social and business results.

Figure 1. Theoretical research model



Source: Own study.

Based on the theoretical model, four hypotheses are created:

- H1.** The intensity of exploitation of resources positively influences social results.
- H2.** The intensity of the exploitation of resources positively influences business results.
- H3.** The level of exploration of resources positively influences social results.
- H4.** The level of the exploration of resources positively influences business results.

H5. *Digital technology adoption moderating effect on exploitation of resources has a positive impact on social results.*

H6. *Digital technology adoption moderating effect on exploitation of resources has a positive impact on business results.*

H7. *Digital technology adoption moderating effect on exploration of resources has a positive impact on social results.*

H8. *Digital technology adoption moderating effect on exploration of resources has a positive impact on business results.*

The first hypothesis is related to understanding the impact of leaders on intensifying exploitation of current resources on social results. The second hypothesis will be investigated to understand the relationship between leaders' intensifying exploitation of current resources on business results. The third relates to exploring future opportunities and trends and will measure the level of exploration and its impact on social results. The fourth will measure how the level of exploration of resources will impact business results. Hypothesis 5 till 8 examines the moderating effects of digital technology adoption on the four first hypothesis.

3. Research Methodology

Partial Least Square Structural Equation Modelling (PLS-SEM) and RStudio were used to evaluate the proposed research model and to test hypotheses. PLS-SEM methodology is well accepted in management studies (Cenamor *et al.*, 2019; Clauss *et al.*, 2020; Hair *et al.*, 2019).

3.1 Data Collection and Sample

The following will focus on survey design and development, utilisation of the survey method for collecting data from the object, aiming to gain information supporting the research objectives. The research method uses questionnaires and interviews for systematic data collection. The unit of analysis will be strategic leaders in enterprises.

The survey was conducted in Latvia and Denmark and was across 5 main sectors, 1) information, communication and technology (ICT), 2) Finance, 3) Energy, 4) Education and 5) Health Care. The finance sector is an important contributor to the Danish economy. According to the Danish Financial Supervisory Authority, the finance sector's total assets in Denmark amounted to 30.2 trillion Danish Kroner in 2020, which is equivalent to approximately 12 times Denmark's GDP (FSA, 2021).

The finance sector is essential to Latvia's economy, contributing around 4% to the country's GDP and providing jobs for around 12,000 people. The sector is well-regulated, with a stable banking system and a growing fintech industry, making Latvia an attractive location for foreign investors looking to do business in the region (European Central Bank, 2021).

The ICT sector is another significant contributor to Denmark's economy, with a focus on software development, digitalisation, and innovation. In 2020, the ICT sector contributed 3.2% to Denmark's GDP, employing around 94,000 people (The Danish ICT Industry Association, 2021).

The ICT sector in Latvia has been growing rapidly in recent years, with the country becoming a hub for start-ups and innovative technology companies. The sector contributes around 4.5% to Latvia's GDP and employs around 17,000 people (Investment and Development Agency of Latvia, 2021). Latvia is known for its highly skilled workforce and innovative technology solutions, making it an attractive destination for foreign companies looking to outsource their IT services or set up new ventures.

According to the World Bank's Ease of Doing Business Report 2022, Latvia ranks 19th out of 190 countries in the ease of starting a business category, indicating a favourable environment for new ventures (World Bank, 2022).

Denmark has a well-developed education sector that contributes to the development of the country's workforce and innovative capacity. The education sector employs around 125,000 people and contributed 4.4% to Denmark's GDP in 2019 (Statistics Denmark, 2021). Furthermore, Denmark's education system is considered to be one of the best in the world, ranking consistently high in international education rankings such as the Programme for International Student Assessment (PISA) (OECD, 2021).

Education is another vital sector in Latvia, contributing to the country's human capital development and economic growth. The sector employs around 36,000 people and provides education services to over 200,000 students (State Education Development Agency, 2021). Denmark's energy sector is essential due to its efforts to transition to a low-carbon economy and reduce its reliance on fossil fuels.

Denmark is a world leader in renewable energy, with wind power being a major contributor to the country's energy mix. The country's ambitious goal is to become fossil fuel-free by 2050, and the energy sector plays a critical role in achieving this target. In 2019, the energy sector contributed around 4.4% to Denmark's GDP and employed over 40,000 people (Danish Energy Agency, 2021). The energy sector in Latvia is important for the country's energy independence and security.

Latvia has made significant progress in transitioning to renewable energy sources, with around 40% of its energy coming from renewable sources such as biomass and hydropower (International Energy Agency, 2021). Finally, health care is a crucial sector in Denmark, providing essential services to the population and contributing to the overall well-being of the country. The sector employed around 231,000 people in 2020, and in 2019, it contributed around 9.2% to Denmark's GDP (Statistics Denmark, 2021).

The health care sector is essential to Latvia's population, providing vital health care services to around 2 million people. The sector employs around 42,000 people and contributes around 6% to Latvia's GDP (Central Statistical Bureau of Latvia, 2021). The sector is undergoing significant reforms to improve the quality and accessibility of health care services, including investments in digital health technologies and preventative health care.

Out of the 300000 enterprises in Denmark, currently there are 6000 medium and large enterprises in Denmark, representing about 2% of all companies (Danmarks Statistik, 2021). Of which just 449 are large enterprises with more than 250 employees. About one-third of all employees are working in large enterprises (Ballisager, 2021). In Latvia there are about 2000 medium and large-sized enterprises, of which 226 are large (Lursoft, 2022).

The author conducted a survey targeting the above-mentioned sectors. The response format consists of dichotomous responses. That is, agree/disagree, yes/no. However, this will be minimal and rather, a scale of degree of agreeing/disagreeing was available. Then nominal responses will be available to determine the social enterprise industry. Type of sector, position held etc. intervals scales will be a key part of the survey design.

The Likert scale (Likert, 1932) will be used to collect responses from the population. It is used to assess the level of agreement or disagreement of a symmetric agree-disagree scale. The Likert scale is similar to Thurstone scale, however, simpler to develop and analyse (Salkind, 2018, pp. 120-121).

The parts outlined below, are the four parts of which the survey consist of:

Part 1: Socio-demographic data together with data on the enterprise where the respondent work;

Part 2: Strategic leadership and the characteristics in the enterprise;

Part 3: Social impact generated by the enterprise;

Part 4: Digital technologies adoption. The current and future adoption of digital technologies by the strategic leaders with the aim to create shared value.

There are 37 main questions divided between the four main parts. Out of the 37 questions 15 of those have sub-statements which the respondent will reply to a 5-point Likert scale with a total of 111 sub-statements in the survey.

The sample size is 405 collected responses from employees with a leadership, senior specialist position or business owners. All collected responses has been broken down according to position, sector, company size, location, business region, age, and gender (Table 1).

Table 1. Respondents' breakdowns

Variable	Respondents	
	n	%
Position		
Executive	164	40.5%
Manager	208	51.4%
Specialist	33	8.1%
Sector		
Education	58	14.3%
Energy	81	20.0%
Finance	100	24.7%
Health care	52	12.8%
ICT	73	18.0%
Other	41	10.1%
Company size		
Large	199	49.1%
Medium	206	50.9%
Location		
Denmark	249	61.5%
Latvia	156	38.5%

Source: Based on authors empirical research results.

Table 1 respondents' breakdowns, provides information about the respondents in the completed survey. The variables included are position, sector, company size, location, business region, age, and gender. Each variable is divided into categories, and the number and percentage of respondents in each category are provided. In terms of position, the majority of respondents (51.4%) were managers, followed by executives (40.5%) and specialists (8.1%). In terms of sector, the largest group of respondents worked in finance (24.7%), followed by energy (20.0%), ICT (18.0%), education (14.3%), healthcare (12.8%), and other (10.1%).

Company size, almost half of the respondents (49.1%) worked in large companies, while the other half worked in medium-sized companies. Regarding location, the majority of respondents were from Denmark (61.5%), with the remaining respondents from Latvia (38.5%). In terms of which region, they conducted business, the largest group of respondents worked globally (36.3%), followed by the EU (40.7%) and across the region (23.0%).

The age groups are as follows, the largest group of respondents were aged 45-54 (31.4%), followed by 35-44 (30.1%), 55-64 (25.9%), 65-74 (7.7%), and 25-34 (4.9%). Lastly, gender is split so that most respondents were male (55.3%), while 44.7% were female. Overall, this table provides a useful snapshot of the characteristics of the respondents in the survey. This information highlights the demographic makeup of the sample and will be used for further analysis and interpretation of the survey results.

3.2 Constructs

The constructs are independent variables: 1) Construct–exploration (ambidexterity) (EPR) and Construct – exploitation (ambidexterity) (EPT). For the Dependent variables, 1) Social results (SOC) and 2) Business results (BUS). Each construct has underlying constructs.

Independent variables:

1) Construct – exploration (ambidexterity) (EPR)

- Leaders are eager exploring for new trends in your industry (ERNT)
- Leaders are making an effort to explore new opportunities (ERNO)
- My company focuses on planning for possible future agenda (ERFA)

2) Construct – exploitation (ambidexterity) (EPT)

- Leaders are using existing resources to full extent (ETRF)
- Leaders focus on value chain efficiency (ETVC)

3) Moderating variable - digital technology adoption (DTA)

- Company experiments with new digital technologies (DTER)
- Company exploits current digital technologies fully (DTET)

The other construct are dependent variables:

4) Social results (SOC)

- Social issues are part of our strategic agenda (SOSA)
- Leaders in my company recognize social issues as a company responsibility (SOCR)

5) Business results (BUS)

- Market share (BUMS)
- Brand recognition (BUBR)
- Customer satisfaction (BUCS)

This study constructs, presented above, aims to investigate the relationship between ambidextrous leadership (measured by exploration and exploitation), social results (measured by social issues and company responsibility), and business results (measured by market share, brand recognition, and customer satisfaction).

The table provides information on the estimated regression coefficients, bootstrapped means and standard deviations, t-statistics, confidence intervals, and the results of the hypothesis tests. The abbreviations for each construct will be used for the remaining of this study.

3.3 Measurement Model Evaluation – Reliability and Validity Analysis

Quality of the constructs EPT, EPR, SOC, BUS and DTA is assessed based on evaluation of the measurement model. Factor loading refers to the extent to which each of the items correlates with the given principal component (construct). Factor loadings can range from -1.0 to +1.0, with higher absolute values indicating a stronger correlation of the item with the underlying factor. All the items, with only one exception (EECT), in this study had factor loading higher than recommended value of 0.708 (Hair *et al.*, 2019) and all are statistically significant at level $\alpha < 0.001$. Factor loadings are presented in Table 2.

Table 2. Factor loading

Items	EPT	EPR	SOC	BUS	DTA	Sign
ETRF	0.720					<0.001
ETVC	0.897					<0.001
ERNT		0.808				<0.001
ERNO		0.791				<0.001
ERFA		0.819				<0.001
SOSA			0.847			<0.001
SOCR			0.856			<0.001
BUMS				0.830		<0.001
BUBR				0.731		<0.001
BUCS				0.758		<0.001
DTER					0.859	<0.001
DTET					0.893	<0.001

Source: Authors compilation using RStudio.

The two most common used ratios for establishing reliability are Cronbach’s alpha and composite reliability (ρ_{OC}). Cronbach’s alpha is the lower bound and the composite reliability ρ_{OC} is the upper bound for internal consistency reliability. The reliability coefficient ρ_{OA} lies between these bounds and serve a good representation of a construct’s internal consistency reliability.

Table 3. Reliability ratios

Construct	α	ρ_{OC}	AVE	ρ_{OA}
EPT	0.505	0.794	0.661	0.611
EPR	0.741	0.848	0.650	0.767
DTA	0.699	0.869	0.768	0.707
SOC	0.622	0.841	0.726	0.623
BUS	0.686	0.817	0.599	0.735

Source: Authors compilation using RStudio.

As suggested by Henseler *et al.* (2015) double inequality $0.60 < \rho_{OA} < 0.8$ is valid (Table 3), therefore one can conclude that internal consistency reliability is established. Convergent validity is the extent to which the construct converges to explain the variance of its indicators. The metric used for evaluating a construct’s

convergent validity is the average variance extracted (*AVE*) for all indicators on each construct.

The *AVE* is defined as the grand mean value of the squared loadings of the indicators associated with the construct (i.e., the sum of the squared loadings divided by the number of indicators). Therefore, the *AVE* is equivalent to the commonality of a construct. The minimum acceptable *AVE* is 0.50 – an *AVE* indicates the indicators variance that makes up the construct (Hair *et al.*, 2019). As one can see in Table 2, the *AVE* values are above the required minimum level of 0.50 (Hair *et al.*, 2019). Thus, the measures of reflectively measured constructs have high levels of convergent validity.

Discriminant validity is the degree to which measures of different concepts are distinct. It shows how well the test measures the concept it was designed to measure. The notion is that if two or more constructs are unique, the valid measures of each should correlate only a little. According to Fornell and Larcker criterion (*FL*), discriminant validity is established when the monotrait-heteromethod correlations for all constructs are larger than heterotrait-heteromethod correlations (i.e., square root of *AVE* for construct is greater than its correlation with all other constructs).

Table 4. *FL* ratios.

Construct	EPT	EPR	DTA	SOC	BUS
EPT	0.813				
EPR	0.315	0.806			
DTA	0.217	0.479	0.876		
SOC	0.223	0.517	0.487	0.852	
BUS	0.137	0.328	0.271	0.276	0.774

Source: Calculated by authors using RStudio.

As one can see from Table 4, *FL*-ratios for a construct (in Bold on diagonal) are larger than its correlation with other constructs, hence, providing strong evidence for establishing of discriminant validity. Discriminant validity can be assessed based on heterotrait-monotrait (*HTMT*) ratio, which is an estimate of correlations between constructs.

Table 5. *HTMTL* ratios.

Construct	EPT	EPR	DTA	SOC	BUS
EPT	.				
EPR	0.506	.			
SOC	0.383	0.722	0.736	.	
BUS	0.215	0.432	0.366	0.412	.

Source: Calculated by authors using RStudio.

As can be seen from the above Table 5, all *HTMT* ratios are significantly lower than threshold (0.85) suggested by Henseler *et al.* (2015), hence, discriminant validity is established. All bootstrapped *HTMT* are within 95% confidence intervals.

Table 6. Descriptive statistics of independent and moderating variables

Variable	n	Mean	SD	SE	LCL	UCL	Med	Min	Max	LCL _{med}	UC _{Lmed}
ERNT	405	3.91	1.08	0.054	3.81	4.02	4	1	5	4	4
ERNO	405	3.82	1.05	0.052	3.72	3.93	4	1	5	4	4
ERFA	405	3.80	1.07	0.053	3.69	3.90	4	1	5	4	4
ETRF	405	3.11	1.19	0.059	2.99	3.22	3	1	5	3	4
ETVC	405	3.52	1.16	0.58	3.41	3.63	4	1	5	4	4
DTER	405	3.45	1.25	0.062	3.33	3.57	4	1	5	4	4
DTET	405	3.14	1.29	0.064	3.01	3.26	3	1	5	3	4

Source: Authors compilation using RStudio.

Table 6, Descriptive statistics of independent variables by respondent groups, presents summary statistics for five variables (ERNT, ERNO, ERFA, ETRF, and ETVC) in a total group of 405 observations. The mean, standard deviation (SD), standard error (SE), lower confidence limit (LCL), and upper confidence limit (UCL) are provided for each variable. The mean represents the average value of each variable across the entire group of 405 observations.

The standard deviation (SD) is a measure of the variability or spread of the values in each variable. The standard error (SE) represents the standard deviation of the sample mean and indicates how much the sample mean may differ from the true population mean. The lower confidence limit (LCL) and upper confidence limit (UCL) represent the range within which the true population mean is likely to lie, with a certain confidence level of 95%.

About the moderating variable, digital technology adoption (DTA) and the two variables, Company experiments with new digital technologies (DTER) and, Company exploits current digital technologies fully (DTET). the mean score for "Company experiments with new digital technologies" (DTER) is 3.45 out of 5, with a standard deviation of 1.25. This suggests that, on average, respondents perceive their company to be moderately involved in experimenting with new digital technologies.

DTET is another interesting variable where examining the mean and median is advised. Below Figure 2 illustrates respondents by sub-groups.

The mean score for "Company exploits current digital technologies fully" (DTET) is 3.14 out of 5, with a standard deviation of 1.29. This suggests that, on average,

respondents perceive their company to be moderately involved in fully exploiting current digital technologies. These results may indicate that respondents are having a more optimistic view on their company exploring new technologies and with an opportunity for improvement in terms of digital technology exploitation.

However, looking at the median, which is 3, rather than the mean, it is clear that less than 50% of both managers and specialists are agreeing or somewhat agreeing to the statement, my company exploits current digital technologies fully. This suggests a more pessimistic view from those two sub-groups.

Figure 2. Distributions of respondent's answers on variable DTET by positions.



Source: Own study.

Whereas the Executives scores 4 on the median indicating that they are more optimistic. This should be investigated further in the interviews. Therefore, based on the survey, it may be said from Executives perspective that investing in and adopting new and current digital technologies can lead to increased efficiency, productivity, and innovation, which can ultimately contribute to the creation of shared value for all stakeholders.

Table 7. Descriptive statistics of dependent variables

Variable	n	Mean	SD	SE	LC	UC	Med	Min	Max	LC	UC
		n			L	L				L _{med}	L _{med}
SOSA	40	3.41	1.17	0.05	3.30	3.53	4	1	5	4	4
SOCR	40	3.71	1.16	0.05	3.59	3.82	4	1	5	4	4
BUMS	40	3.05	0.75	0.03	2.98	3.13	3	1	4	3	3
BUBR	40	3.04	0.81	0.04	2.96	3.12	3	1	4	3	3

BUC	40	3.15	0.79	0.03	3.08	3.23	3	1	4	4	4
S	5			9							

Source: Authors compilation using RStudio.

Table 7, Descriptive statistics of dependent variables, similar to Table 2, and include the five dependent variables: SOSA, SOCR, BUMS, BUBR, and BUCS. SOSA has a mean of 3.41 with a standard deviation of 1.17. The standard error is 0.058, which indicates the precision of the mean estimate. The lower and upper confidence limits are 3.30 and 3.53, respectively, which provide a range of values within which we can be confident that the true population mean lies with a specified level of confidence.

SOCR has a higher mean of 3.71 and a similar standard deviation of 1.16, indicating that this SOCR has higher values on average than SOSA. The standard error and confidence limits are also similar to SOSA. BUMS has a lower mean of 3.05 and a lower standard deviation of 0.75, suggesting that this variable has lower values on average and is less variable than the other variables in the table.

The standard error is smaller than the other variables, which indicates a more precise estimate of the mean. The confidence limits are also narrower, indicating a higher level of confidence in the estimate. BUBR has a similar mean and standard deviation to BUMS, but with slightly wider confidence limits.

The wider confidence limits for BUBR suggest that there may be more uncertainty around the true value of this measure, and this could be a concern leaders. BUBR represents a measure of brand recognition, and the wider confidence limits suggest that there may be more variability in brand recognition ratings for the business. BUCS has a higher mean than BUMS and BUBR, but a similar standard deviation. The standard error and confidence limits are similar to the other variables in the table.

4. Results

Partial Least Square Structural Equation Modelling (PLS-SEM) and RStudio were used to evaluate the proposed research model and to test hypotheses. PLS-SEM methodology is well accepted in management studies [1, 2, 5]. To examine the impact of the constructs on creating shared value we use bootstrapped (nboot = 10000) paths statistics, see following Table 8.

Table 8. Partial Least Square Structural Equation Modelling

Paths	Orig. Est.	Boot. Mean	Boot.S D	t-stat	2.5% CI	97.5% CI	H tests
EPT -> SOC	-0.018	-0.018	0.042	-0.416	-0.103	0.064	H1 No
EPT -> BUS	-0.003	-0.000	0.045	-0.072	-0.088	0.089	H2 No
EPR -> SOC	0.193	0.192	0.063	3.040	0.065	0.314	H3 Yes

EPR -> BUS	0.172	0.173	0.070	2.457	0.039	0.314	H4 Yes
EPT*DTA	-	-0.069	-0.069	0.040	-1.726	-0.148	H15 No
>SOC							
EPT*DTA-> BUS	0.047	0.045	0.050	0.936	-0.055	0.143	H16 No
EPR*DTA->	-0.070	-0.071	0.062	-1.138	-0.193	0.049	H17 No
SOC							
EPR*DTA->	0.042	0.043	0.074	0.564	-0.105	0.191	H18 No
BUS							

Source: Authors compilation using RStudio.

The original estimate of the effect of exploiting resources on creating social results is -0.018. This suggests that simply focusing on exploiting resources may not necessarily lead to positive social outcomes for a company. The bootstrap mean, which is the average estimate obtained from resampling the data, is also -0.018. This indicates that the original estimate is a reliable estimate of the true effect. The bootstrap standard deviation is 0.042, which provides an estimate of the variability in the estimates obtained from resampling.

The *t*-statistic for the effect of EPT on SOC is -0.416, this indicates that the estimate is not significantly different from zero at the 5% level of significance. The 95% confidence interval for the effect of EPT on SOC is -0.103 to 0.064, which includes zero. That is, -0.416 suggests that the estimated effect of exploiting resources on creating social results is not statistically significant.

This means that leaders should not rely solely on exploiting resources to create social results and should consider other factors or strategies that may have a stronger impact. Therefore, this further supports the conclusion that there is no significant effect of EPT on SOC. The hypothesis test for the effect of EPT on SOC (H1) was not significant.

When exploiting resources on creating business results, once again, it is indicated that the estimate is not significantly different from zero at the 5% level of significance. The 95% confidence interval is -0.088 to 0.089, which also includes zero. This further supports the conclusion that there is no significant effect of EPT on BUS.

Looking at exploration on social, the original estimate of the effect of EPR on SOC is 0.193. The bootstrap mean, which is the average estimate obtained from resampling the data, is very close to the original estimate at 0.192, which indicates that the original estimate is a reliable estimate of the true effect.

Furthermore, the bootstrap standard deviation is 0.063, which provides an estimate of the variability in the estimates obtained from resampling. The *t*-statistic for the effect of EPR on SOC is 3.040, this indicates that the estimate is significantly different from zero at the 5% level of significance, suggesting that there is a

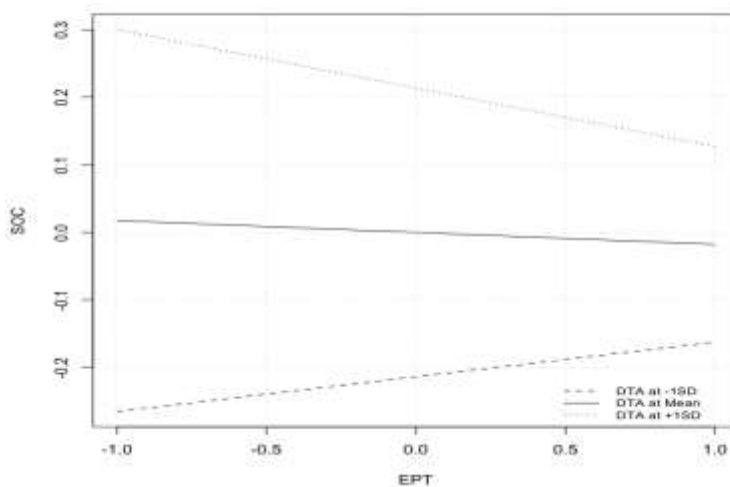
significant effect of EPR on SOC. This becomes more evident as the 95% confidence interval for the effect of EPR on SOC is 0.065 to 0.314. This further supports the conclusion that there is a significant effect of EPR on SOC. Lastly, the hypothesis test for the effect of EPR on SOC (H3) was significant.

Exploration on business also has a significant effect. This can be seen from the effect of EPR on BUS is 2.457 and implies that the estimate is significantly different from zero at the 5% level of significance, suggesting that there is a significant effect of EPR on BUS. This further supports the conclusion that there is a significant effect of EPR on BUS.

As can be seen in Table 8, the interaction term 'EPT*DTA' has a negative effect on 'SOC' of - 0.069, whereas the simple effect of 'EPT' on 'SOC' is - 0.018. Jointly, the results suggest that the relationship between 'EPT' and 'SOC' is - 0.018 for an average level of digital technology adoption. For higher levels of digital technology adoption, i.e., for every standard deviation unit increase of DTA, the relationship between 'EPT' and 'SOC' decreases by the size of the interaction term, i.e., $- 0.018 - 0.069 = - 0.087$.

On the contrary, for lower levels of digital technology adoption, i.e., for every standard deviation unit decrease of 'DTA', the relationship between 'EPT' and 'SOC' increases by the size of the interaction term, i.e., $- 0.018 - (- 0.069) = 0.051$. A more accurate insight into the moderating effect is provided by slope analysis, (Figure 3).

Figure 3. Slope analysis of the interaction effect 'EPT*DTA' on 'SOC'. Source: author's calculations using RStudio



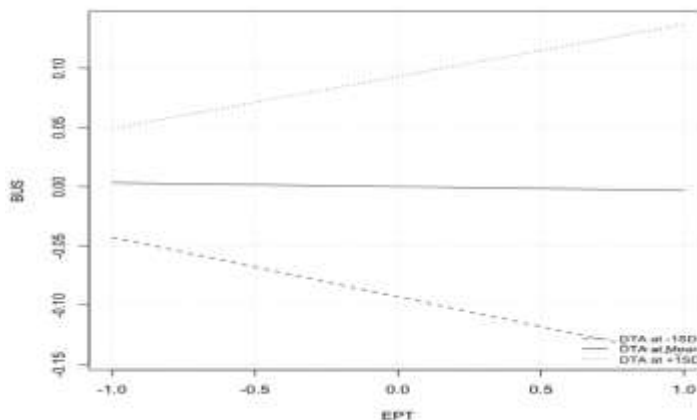
Source: Own study.

Solid line represents the relationship for an average level of digital technology adoption, dotted line represents the relationship for higher (mean value of DTA plus one standard deviation unit) level of digital technology adoption and dashed line - the relationship for lower (mean value of DTA minus one standard deviation unit) level of digital technology adoption. As can be seen, the relationship between 'EPT' and 'SOC' is positive for lower level of 'DTA' (dashed) regression line as indicated by their positive slope, negative for higher (dotted) and average (solid level of 'DTA' regression lines as indicated by their negative slopes.

Due to negative moderating effect, at high level of digital technology adoption, the effect of exploiting existing resources to full extent on 'SOC' is weaker, while at lower levels of digital technology adoption, the effect of exploiting existing resources to full extent on 'SOC' is stronger. In turn, as shown in Table 8, *t*-statistic (-1.726) for the path linking the interaction term and 'SOC' points out that this relationship is not statistically significant, the probability of error exceeds 5% (~8.5%) and should therefore be approached with caution.

The interaction term 'EPT*DTA' has a positive effect on 'BUS' of 0.047, whereas the simple effect of 'EPT' on 'BUS' is negative - 0.003. Jointly, the results suggest that the relationship between 'EPT' and 'BUS' is - 0.003 for an average level of digital technology adoption. For higher levels of digital technology adoption, i.e., for every standard deviation unit increase of DTA, the relationship between 'EPT' and 'BUS' increases by the size of the interaction term, i.e., $- 0.003 + 0.047 = 0.044$. On the contrary, for lower levels of digital technology adoption, i.e., for every standard deviation unit decrease of DTA, the relationship between 'EPT' and 'BUS' decreases by the size of the interaction term, i.e., $- 0.003 - 0.047 = - 0.050$. A more accurate insight into the moderating effect is provided by slope analysis, (Figure 4).

Figure 4. Slope analysis of the interaction effect 'EPT*DTA' on 'BUS'. Source: author's calculations using RStudio



Source: Own study.

As can be seen, the relationship between 'EPT' and 'BUS' is positive for higher level of 'DTA' (dotted) regression line as indicated by their positive slope, and negative for average level of 'DTA'(solid) and lower level of 'DTA'(dashed) regression lines as indicated by their negative slope. Due to positive moderating effect, at high level of digital technology adoption, the effect of exploiting existing resources to full extent on 'BUS' is stronger, while at lower levels of digital technology adoption, the effect of exploiting existing resources to full extent on 'BUS' is weaker.

As shown in Table 8, *t*-statistic (0.936) for the path linking the interaction term and 'BUS' points out that this relationship is not statistically significant, the probability of error exceeds 5% and should therefore be approached with caution.

The interaction term 'EPR*DTA' has a negative effect on 'SOC' of - 0.070, whereas the simple effect of 'EPR' on 'SOC' is 0.193. Jointly, the results suggest that the relationship between 'EPR' and 'SOC' is 0.193 for an average level of digital technology adoption. For higher levels of digital technology adoption, i.e., for every standard deviation unit increase of DTA, the relationship between 'EPR' and 'SOC' decreases by the size of the interaction term, i.e., $0.193 - 0.070 = 0.123$.

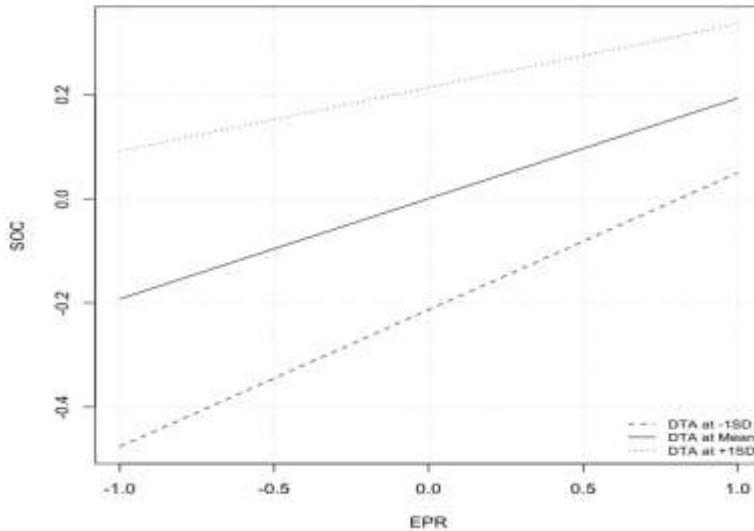
On the contrary, for lower levels of digital technology adoption, i.e., for every standard deviation unit decrease of 'DTA', the relationship between 'EPR' and 'SOC' increases by the size of the interaction term, i.e., $0.193 - (-0.070) = 0.263$. A more accurate insight into the moderating effect is provided by slope analysis, (Figure 5).

As can be seen on Figure 5, the relationship between 'EPR' and 'SOC' is positive for all three regression lines as indicated by their positive slopes. Hence, higher levels of exploration go hand in hand with higher levels of social values. Due to negative moderating effect, at high levels of digital technology adoption, the effect of exploration on social values is weaker, while at lower levels of digital technology adoption, the effect of exploration on social values is stronger.

As shown in the table 8, *t*-statistic (-1.138) for the path linking the interaction term and SOC points out that this relationship is not statistically significant, that the probability of error exceeds 5% and should therefore be approached with caution.

As can be seen in Table 8, the interaction term 'EPR*DTA' has a positive effect on 'BUS' of 0.042, whereas the simple effect of 'EPR' on 'BUS' is 0.172. Jointly, the results suggest that the relationship between 'EPR' and 'BUS' is 0.172 for an average level of digital technology adoption. For higher levels of digital technology adoption, i.e., for every standard deviation unit increase of DTA, the relationship between 'EPR' and 'BUS' increases by the size of the interaction term, i.e., $0.172 + 0.042 = 0.213$.

Figure 5. Slope analysis of the interaction effect 'EPR*DTA' on 'SOC'. Source: author's calculations using RStudio



Source: Own study.

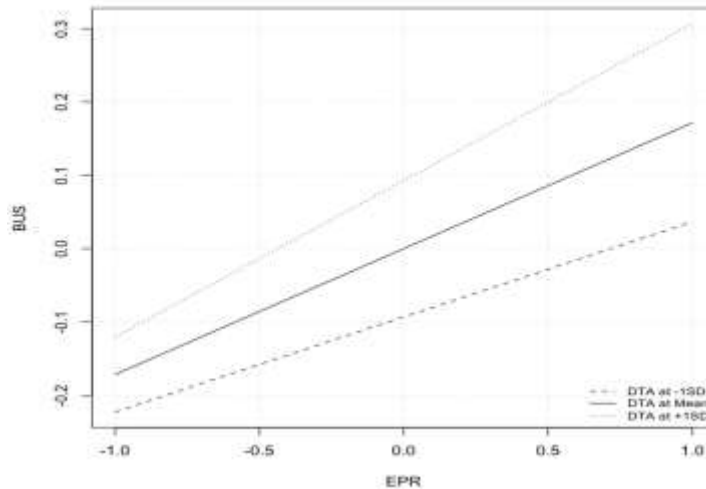
On the contrary, for lower levels of digital technology adoption, i.e., for every standard deviation unit decrease of 'DTA', the relationship between 'EPR' and 'BUS' decreases by the size of the interaction term, i.e., $0.172 - 0.042 = 0.130$. A more accurate insight into the moderating effect is provided by slope analysis, see Figure 6.

As can be seen on Figure 6, the relationship between 'EPR' and 'BUS' is positive for all three regression lines as indicated by their positive slopes.

Hence, higher levels of exploration go hand in hand with higher levels of business values. Due to positive moderating effect, at high levels of digital technology adoption, the effect of exploration on business values is stronger, while at lower levels of digital technology adoption, the effect of exploration on business values is weaker.

As shown in Table 8, t -statistic (0.564) for the path linking the interaction term and 'BUS' points out that this relationship is not statistically significant, that the probability of error exceeds 5% and should therefore be approached with caution.

Figure 6. Slope analysis of the interaction effect 'EPR*DTA' on 'BUS'. Source: author's calculations using RStudio



Source: Own study.

5. Discussion

The ambidexterity of a leader, or the ability to balance exploration and exploitation activities, has been shown to be positively associated with organisational performance and innovation (Alamayreh, Sweis, and Obeidat, 2019; Ceptureanu, Ceptureanu, and Cerqueti, 2021). The results of the path analysis in the study cited above also indicate that exploring for new trends in the industry, exploring new opportunities, and focusing on planning for possible future agendas are all positively related to social results and business results. The analysis also showed that different levels of digital technology adoption impact social results and business results differently. Strategic leaders should be mindful of this.

From a business perspective, ambidexterity can help organisations remain competitive in a rapidly changing marketplace by allowing them to adapt to new trends and opportunities while also maintaining their existing competitive advantage (Mavroudi, Kesidou, and Pandza, 2020). This can lead to increased market share, brand recognition, and customer satisfaction, all of which are important for the long-term success and sustainability of a business (Brown *et al.*, 2022).

From a societal perspective, businesses have a responsibility to address social issues and contribute to the well-being of the communities in which they operate (Guerrero, 2021). By recognising social issues as a company responsibility and incorporating them into their strategic agenda, organisations can contribute to the creation of a more sustainable and equitable society. This can also positively impact the

organisation's reputation of the organisation, which in turn can enhance brand recognition and customer loyalty (Alamayreh *et al.*, 2019).

The H1 statement suggests that exploiting resources has an effect on creating social results, but this effect is not statistically significant. While exploiting resources can potentially contribute to creating social outcomes, other factors may play a more substantial role in determining social results.

Therefore, leaders should be aware of the effect but also look to other strategies for creating social results. There may be several reasons why exploiting resources could not have a significant effect on creating social results. For instance, the resources being exploited may not be directly related to achieving social outcomes, or they may need to be more effectively utilised for social purposes as the existing business model still needs to be adapted to creating social results using existing resources.

It is also important to note that the lack of statistical significance does not necessarily mean that exploiting resources does not affect creating social results. The effect may be small or difficult to measure using the available data or statistical methods. Furthermore, statistical significance is not the only criterion for assessing an effect's practical significance or importance.

The H2 indicates that exploiting enterprise resources influences creation of business results, but this effect is not statistically significant. This is a common area of research in business management, and several studies have explored the relationship between resource exploitation and business outcomes. For example, a study by Li and Liu (2014) found that resource exploitation positively affects firm performance, but the effect is weakened by environmental dynamism and uncertainty.

On the other hand, a study by Gupta, Bhattacharya, and Sethi (2019) found that excessive resource exploitation can negatively affect firm performance, particularly when it leads to reduced environmental and social performance. This is interesting to see as H1 suggest an impact, but exploitation of resources must be balanced to create both social and business results.

The H3 implies that leaders exploring new trends and future opportunities have a significant effect on generating social results. These are interesting and highlight the importance of forward-thinking leadership in achieving positive social outcomes. Yet to this date, limited studies have explored the relationship between ambidextrous leadership in the context of exploring future opportunities and trends.

Moreover, a study by Berman and Wicks (2014) found that proactive leadership focused on creating social value can lead to positive outcomes such as increased customer loyalty, enhanced employee engagement, and improved stakeholder relations. These findings suggest that leaders willing to explore new trends and

future opportunities can create significant social results, impacting their organisations and communities.

The H4 suggests that leaders exploring new trends and future opportunities can significantly affect creating business results. Once again, this evidence emphasizes the importance of forward-thinking leadership in driving organisational growth and success.

Additionally, these findings implies that ambidextrous leadership, which involves exploring new opportunities and anticipating future trends, can enhance organisational performance and competitive advantage. To summarise the findings, leaders willing to explore new trends and future opportunities can create significant results for their organisations.

H5 and H6 suggest that leaders to are exploiting current resources should use lower levels of digital technology adoption for a positive impact on social results and higher levels of digital technology adoption on creating positive business results.

H7 and H8 for exploring future trends and opportunities, higher levels of exploration are aligned with higher levels of social values. Because of the negative moderating effect, at high levels of digital technology adoption, the effect of exploration on social results is weaker, while at lower levels of digital technology adoption, the effect of exploration on social values is stronger.

Lastly, the relationship between exploring and business results and the positive impact of the moderating variable, it is evident that higher levels of digital technology adoption results in higher positive impact on business results.

6. Conclusion

Ambidextrous leadership, which refers to the ability of leaders to focus on both exploration and exploitation of opportunities simultaneously, has been found to affect creating shared value positively. Shared value refers to creating economic value while addressing social and environmental challenges (Porter and Kramer, 2011).

In conclusion, the study suggests that ambidextrous leadership, particularly exploration, is essential for achieving both social and business outcomes. The findings highlight the importance of balancing exploration and exploitation and suggest that social and business outcomes may require different strategies and actions. The study provides valuable insights for leaders and organisations seeking to achieve better social and business outcomes.

Moreover, DTA, it is crucial to note that in several cases, lower levels of DTA is having a significant positive moderating effect, while higher levels of DTA has a less positive and not significant positive effect on social and business results.

While exploiting resources may have an effect on creating social results, the lack of statistical significance suggests that it may not be a robust or reliable predictor of social outcomes. Other factors, such as driving transformation, stakeholder engagement, and developing internal knowledge, may be more important for achieving social results. The relationship between resource exploitation and business outcomes is complex and contingent on various factors. While exploiting enterprise resources may affect creating business results, the lack of statistical significance implies that the effect may not be strong or consistent across different contexts.

This research suggests that strategic leaders exploring new trends and future opportunities can significantly affect creating social results. However, this requires a combination of transformation, stakeholder engagement, and collaborative action to achieve meaningful and sustainable outcomes.

This study found that ambidextrous strategic leadership positively affects the creation of shared value by encouraging organisations to adopt a long-term view that considers both financial and non-financial goals.

Therefore, ambidextrous strategic leadership can contribute to creating shared value by balancing the pursuit of business and social objectives. As such, businesses that adopt ambidextrous strategic leadership practices are likely to be more resilient, competitive, and sustainable, creating value for both shareholders and society. While considering digital technology adoption as a moderator at different levels when the objective is to amplify the social and or business results.

7. Future Research Agenda

The ambiguity and lack of management models for strategic leadership who wish to create both social results and business results are scarce. Therefore, future research is needed to analyse additional dimensions of strategic leadership and its impact on creating shared value.

Additionally, the future research agenda should focus on adding the most critical characteristics of strategic leaders, which will aid them, their human resources and societies in creating value, and extend the analysis to include these. The future research agenda should also include expert interviews to better understand the findings. Especially understand why strategic leaders are more optimistic about exploration while managers are more so about exploitation.

Furthermore, expert interview should shed light on digital technology adoption and its impact on creating shared value. Lastly, it would be interesting to examine the

potential trade-offs between creating social and business results, and it is possible that pursuing one goal could come at the expense of the other.

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