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Impact of the Digital-Income Level Divide on Financial Inclusion of Informal Traders in the Tanzanian Context

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Abstract

Purpose: Numerous studies have been conducted on digital finance and financial inclusion. However, there is limited information on the impact of the digital income level divide on the financial inclusion of informal practitioners. Thus, there is a need to examine the area critically from the perspective of a marginalised society. Hence, the current study focused on identifying the components of the digital income level divide and establishing its impact on the financial inclusion of informal traders.

Methodology: The study applied a mixed-methods research design whereby interviews and questionnaires were employed to collect data. Quantitative and qualitative data were analysed using inferential statistics and content analysis, respectively.

Findings: The findings show that the digital-income level divide has resulted from digital usage, the insignificance of the benefits of digital finance usage, low income levels, and the practical nature of informal traders. Also, informal traders pay high transaction costs, which are not considered beneficial for the services of receiving and sending money.

Originality/Value: The paper informs on the set of strategies that enable informal traders to become part of digital financial users and benefit from financial inclusion. This study adds knowledge to the literature on the combined impacts of income level and digital divide challenges associated with informal traders on financial inclusion.

Introduction

Digital finance is assumed to promote the growth of financial inclusion in both developing and developed countries. Numerous stakeholders have taken various initiatives to promote the usage of digital technology in finance and transform society towards an inclusive cashless economy (Siddik, Alam, & Kabiraj, 2020; Yue, Korkmaz, Yin, & Zhou, 2020). Digital finance and financial inclusion are two components of finance and technology that have been advocated by numerous researchers for the benefit of financial institutions, financial services users, the government, and the economy in the financial ecosystem.

The benefits of digital finance are spread to different stakeholders, including users of financial services, providers of digital finance, policymakers, and academicians (Arner, Buckley, & Zetzsche, 2018). For example, governments have used digital finance mechanisms to achieve financial inclusion (Ozili, 2018). Branchless financial services have helped financial institutions minimise running costs and financial users increase the liquidity of money by using such instruments as e-money cards and debit cards (Durai & Stella, 2019).

Numerous studies have examined the extent to which technology in the financial sector has had an impact on people of different socioeconomic statuses, particularly low-income earners (Ozili, 2020). Other studies (i.e., Ozili, 2020; Aziz & Naima, 2021; Agwu, 2021; Nasir et al., 2021; Moro-Visconti, 2021) have investigated the extent to which the economic activities of low-income earners affect and are shaped by digital finance. Moreover, studies (Karlan et al., 2016; Foster & Azmeh, 2020; Loh & Chib, 2021) have pointed out that the impact of digital finance on low-income earners is harmful, undesirable, or destined for failure. However, it is argued that detaching the digital financial systems from the operations of low-income people is impossible (Karlan et al., 2016; Li, Wu, & Xiao, 2020). In this respect, despite numerous studies reporting that digital finance improves people's welfare based on socioeconomic status, the benefits seem to vary between formal and informal practitioners (Fundie & Chisoro, 2015; Otioma, Madureira, & Martinez, 2019). The usage of digital finance and its benefits are confirmed to be better in the formal than in the informal sectors

(Ozili, Contesting Digital Finance for the Poor, 2020; Li, Wu, & Xiao, 2020). This is due to the existing divide between different perspectives on digital and income levels that affect informal practitioners (Simons, 2018; Otioma, Madureira, & Martinez, 2019).

Moreover, digital finance has been reported to have positively correlated with financial inclusion in both developing and non-developing economies (Siddik, Alam, & Kabiraj, 2020; Yue, Korkmaz, Yin, & Zhou, 2020). In addition, numerous studies have focused on the digitalization of financial activities (Agwu, 2021; Arner, Buckley, Zetzsche, & Veidt, 2020; Aziz & Naima, 2021). However, the information about the existence of the link between the digital-income level divide and digital finance and its impact on the financial inclusion of informal traders has been narrowly addressed by the existing literature. This study, therefore, filled the gap by addressing the link between the digital income level divide and the financial inclusion of informal traders.

To address this gap, this paper examines the digital-income level divide that impedes the inclusion of informal traders in the financial ecosystem. Moreover, the cost-benefit analysis model (Cervone, 2010; Poinsot & Dupuit, 2020) is applied to enhance the analysis of the digital-income level divide from three main angles, such as the usage expenses of digital finance, the benefit derived by informal traders from using digital finance, and the operation nature of informal traders during undertaking business.

Consequently, to achieve the study objective, the following research questions have been addressed:

i. What are the components of the digital income level divide for informal practitioners?

ii. What are the impacts of the digital income level divide on the financial inclusion of informal practitioners?

iii. What are the potential strategies for tackling the digital income gap?

Literature Review

Digital Financial Inclusion

Digital finance uses digital infrastructure, such as a mobile phone and internet network, to enhance cashless transactions and less traditional brick-and-mortar banking systems (Beck & Frame, 2018). This involves financial products, financial services, financial management software, and interaction and communication technology in dealing with customers and other stakeholders (Beck & Frame, 2018; Di Castri & Gidvani, 2014; Hu & Zheng, 2016). In the case of this study, digital finance incorporates financial products, financial services, technologies, and infrastructure that enhance payments, savings and credit facilities, and other related services through online means and without a physical visit to a bank branch.

Digital finance products and services should be measured from a cost-benefit perspective to ensure their efficiency, effectiveness, and economy. The effectiveness measure measures the extent of the use of digital finance products and services and the appropriate differences in the daily practises of informal practitioners. Efficiency measures the extent to which digital finance products and services are easy to use, easy to handle compliance, and suitable for informal practitioners (Durai & Stella, 2019; Fostel & Geanakoplos, 2016). The economic measure is the extent of affordability. Digital finance measures the pricing of digital finance products and services to informal practitioners. It also measures the extent to which the cost of digital instruments is affordable to informal practitioners.

Financial inclusion means access to and use of financial services for the entire population without the barrier of income level or any other disadvantage (Arner, Buckley, Zetzsche, & Veidt, 2020; Durai & Stella, 2019). The financial inclusion campaign focuses on the unbanked and those who have not been offered financial services such as accounts, savings, and credit. Financial inclusion is aimed at achieving a formal financial system and environment that ensure the participation of everyone in economic growth.

Financial inclusion focuses on enhancing financial access to and use of financial services such as credits, savings, and formal transactions for all people, including

informal practitioners. The overall strategy is to create an environment whereby all people, including the disadvantaged, are involved in economic growth by being included in formal financial services (Durai & Stella, 2019; Silber, 1983; Siddik, Alam, & Kabiraj, 2020). One of the best strategies for doing this is the adoption of digital finance, where financial services are brought closer to people through digital technology. Under digital finance, new financial services and products are brought to people through mobile technology or sophisticated software with new ways of communicating and interacting with financial services customers.

Digital finance enhances the delivery of financial services to society at large, including informal practitioners. The delivery of financial services is through innovative technologies such as mobile banking solutions, e-money systems, and digital payment infrastructure at a reasonable cost, in inappropriate modes, and in a safe environment. Having the opportunity to settle financial matters digitally brings the entire population into a formal and easy financial system (Teng, Wu, & Yang, 2022; Moro-Visconti, 2021). Therefore, digital finance adds new strata to financial inclusion by proposing expanding the inclusion of poor and disadvantaged groups in mainstream financial activities.

Moreover, several studies on digital finance focused on achieving global financial inclusion. This is justified by the rapid innovation of the digital ecosystem and cryptocurrency technology that enhance international paperless transactions and unlock bank account transactions (Yue, Korkmaz, Yin, & Zhou, 2020; Siddik, Alam, & Kabiraj, 2020). Digital finance is affected by several factors, including the digital income-level divide, digital finance security, digital finance regulations, and digital finance usage.

Digital-Income Level Divide

The digital-income level divide as used in this study comprises two aspects: the digital divide (Otioma, Madureira, & Martinez, 2019) and the income level divide (Aziz & Naima, 2021). The study focused on the divide between the digital income level and the financial inclusion of informal traders. Informal practitioners naturally are at the end of a formal economic occupation that suffers the consequences of the

digital, social, and economic divide and hence remains stagnant (Gomera, Oreku, & Shau, 2021; Di Castri & Gidvani, 2014).

The digital divide is a result of multi-dimensional and multi-level problems of unequal usage and benefit of digital technology. The divide is not limited to internet access or devices alone but also to the working environment, knowledge, and usage needs (Pandey & Pal, 2020). Regardless of some universal divide identified by scholars, every country faces its own country-specific digital divide that affects people of different ages, genders, regions, levels of income, carders, and levels of education. In this case, the globally accepted digital divide model should be used to conceptualise the perspective of a specific group (Barbesino, Camerani, & Gaudino, 2005). The rapid evolution of the digital finance edge resulted in a questionable relationship between digital finance and the population stranded outside the reach of formal business operations, employment, and financial ecosystems. The informal practitioners seem to have neither formal financial behaviour nor a favourable income level for financial inclusion (Gomera, 2022; Hu & Zheng, 2016).

Moreover, low income, a high cost of accessing digital financial services, low exposure to formal financial systems, and the inability to own digital devices are some of the components aggravating the exclusion of informal practitioners from financial inclusion and hence increasing the income level divide. Digital finance has invited big players, including large financial institutions, telecommunications companies, technology corporations, and large financial engineering corporations, into the finance ecosystem. However, the needs of disadvantaged groups such as informal traders as important stakeholders in the system have not been fully addressed, leaving them out of the digital finance ecosystem and financial inclusion opportunities.

Nature and Practises of Informal Trades

Informal traders are self-employed, petty traders, and digitally ignored, working mostly at the lower end of the economic occupational ranking (Kingu & Gomera, 2022). In this context, the paper examines the extent to which their income level and digital disadvantages altogether affect the financial inclusion of informal traders. It is

argued in this paper that income level and low use of digital technology impede the financial inclusion rate of informal traders, who conduct unregistered and unregulated businesses and are outside the reach of government control (Fundie & Chisoro, 2015; Goda & Gomera, 2022; Kingu & Gomera, 2022).

Despite their disadvantaged characteristics, informal traders form a large segment of the population involved in economic activities. These traders are the owners of business personnel that do not have business records and most of whom are not consistently dealing with one product or service (Steiler, 2018; Gomera, 2022). Business operations are based on cash-hand transactions, whereby most of their suppliers provide them with merchandised goods based on personal trust (*mali kauli*). Informal traders are linked to formal practitioners, albeit informally. Profit generated by informal traders is mostly for family consumption instead of savings or business expansion.

Cost-Benefit Analysis Model

Jules Dupuit (1804–1866) was the first to come up with a cost-benefit analysis as one of the important mechanisms used in decision-making (Poinsot & Dupuit, 2020). This initial technique is mostly applied by the government for planning; however, over time, both the private sector and individuals have been using it for decision-making (Cervone, 2010).

The informal traders, as well as other business practitioners, are focusing on optimising resource allocation to ensure a competitive advantage (Teng, Wu, & Yang, 2022). Therefore, the adoption of digital finance should also consider the efficiency of service provision, cost reduction, and availability of growth potential (Moro-Visconti, 2021).

This study applied a cost-benefit analysis to examine the impact of the digital income level divide on the financial inclusion of informal traders. Using the cost-benefit analysis model, the study established one: a trade-off that arises from the costs, risks, and benefits of digital finance for informal traders; two: the cost proportion of digital finance usage to the profit of informal traders; and three: the practical nature of informal traders' usage of digital finance. The adoption of cost-benefit analysis aimed

to use the responses of informal traders to establish whether the cost and risks of using digital finance could be offset by digital finance benefits such as operational efficiency for transaction processing, ease of online savings, and better forms of suppliers' payment processes.

Cost-benefit analysis helps to analyse the decisions on whether or not to use the product or services based on the net value that can be derived from the product or services. The model focuses on the identification of benefits and establishes the associated cost of a decision, which ends up netting off the costs from the benefits (Sindhu & Namratha, 2019). The model is useful in this study as it helps to set the preferences of informal traders' decisions on using digital finance. However, its usefulness in this study is limited to the accuracy of determining all kinds of costs and benefits, as informal traders fail to recognise potential costs and benefits, which may lead to poor or suboptimal decisions (Cervone, 2010). Moreover, the cost-benefit analysis is useful when the analysis is based on financial consideration only; given the scenarios in this study, the models were not fully utilised, rather including the non-financial aspects of the informal traders, like the nature of business and usage.

Research Methodology

This study used a mixed-methods approach, both quantitative and qualitative. The quantitative part involved information that establishes the general relationship between the digital income level divide and the financial inclusion of informal traders. The qualitative part focused on the detailed impact of the digital income level divide and the financial inclusion of informal traders and explored strategies for addressing the digital income level divide and the financial inclusion of informal traders. This approach enabled the researcher to reach a large sample size and provide detailed information to achieve the research outcomes and greater credibility.

Quantitative data were collected through questionnaires, whereas qualitative data were collected through an interview approach. The questionnaire enabled the researcher to reach a large sample size, which gave the outcome greater credibility

for statistical analysis and enabled the researcher to collect information quickly with randomised samples. On the other hand, the interviews for collecting qualitative information lasted between 15 and 30 minutes, depending on the interviewee's understanding of the aspect under study.

The researcher sought respondents' consent before involving them in the study. The researcher explained to the respondents the importance of the study and that their participation is voluntary, and no financial gains would accrue from their participation in the study.

The research targeted informal traders operating their businesses at Mbezi-Luis, Ubungo, and Dar es Salaam. For this study, a simple random sampling technique was adopted to select a sample of 285 informal traders for the collection of quantitative data. The snowball approach was used to identify respondents from qualitative data. In addition, the saturation point approach was applied for qualitative data (Francis et al., 2010). Therefore, for quantitative data, the study adopted the formula for an indefinite population to estimate sample size (Cochran & Lord Jr., 1963). By using Cochran and Lord Jr.'s (1963) formula, a sample size of 285 informal traders was obtained out of 452 informal traders as follows:

$$n = \frac{z^2 pq}{e^2}$$

Where;

n = sample size;

z = the abscissa of the normal curve (1.96);

p = probability that when a respondent is picked at random, he or she belongs to the population (0.5);

e = the acceptable sampling margin of error at the 95 percent confidence interval (0.05); and

q = 1 -p (0.5).

Qualitative data were analysed through content analysis and categorised into different themes to form a group of information. Quantitative data were analysed through descriptive and inferential statistics in SPSS.

Variable Measurements

The methodology used to measure the digital income-level divide in this paper employed a series of questions to measure a wide range of factors that affect digital finance and the inclusion of informal traders. A set of questions focused on reporting the factors affecting digital finance to enhance the financial inclusion of informal traders. By using a Likert scale questionnaire, the research could explain the impact of the digital income level divide on the financial inclusion of informal traders. The set of variables, including the digital income-level divide, digital finance security, digital finance regulations, and digital finance usage, as summarised in Table 1:

Table 1: *Contents of Data Collection Tool*

Item	Items	Sources
Digital Income-Level Divide	Digital finance is expensive to use	(Ozili, Contesting digital finance for the poor, 2020; Ledwin, 2018; Simatele & Kabange, 2022; Aziz & Naima, 2021; Gopane, 2019)
	Digital finance discloses a person's income information	
	The cost of digital transactions affects a large portion of informal traders' profit	
	Most of the services received from suppliers are in the form of cash	
	Digital transactions do not have the advantage over informal trader	
	Level of income affects the usage of digital transaction	
	Informal traders prefer to hold cash than keep it in the bank	
	Having digital cash results in unexpected expenses	
Digital Finance Security	Security of digital transactions to informal traders is low	(Ozili, Uncertainty and challenges., 2020; Diniz, Cernev, & Albuquerque, 2013; Di Castri & Gidvani, 2014)
	Customers are not willing to share financial information	
	Digital data security breaches are common hence lower customers' trust in digital finance platforms	
	No clear regulatory framework concerning digital finance securities	

	Digital finance regulators do not ensure cyber-safe of users	
Digital Finance Regulations	Many policy and regulatory environments are not enabling full-scale digital finance	(Siwela & Njaya, 2021; Simatele & Kabange, 2022; Di Castri & Gidvani, 2014; Hu & Zheng, 2016; Karlan, et al., 2016)
	Central bank policies and regulations on monitoring digital finance are not clear	
	There are no friendly consumer protection laws	
	Direct Government intervention	
	The enforcement strategies of digital finance affect voluntary inclusion	
Digital Finance Usage	The digital finance process is hard to use	(Ozili, Impact of digital finance on financial inclusion and stability, 2018)
	Recovery of digital finance platforms is not friendly	
	Digital finance platforms do not consider the unique needs and preferences of informal traders	
	Digital finance platforms should offer additional services	
	There are too many stages to receiving services from a digital finance platform	
	Fee-based digital finance platforms seem to benefit high- and medium-income individuals at the expense of poor and low-income individuals	
	Digital finance should be a perfect substitute or a complement to other forms of finance	
	Availability and access to digital finance services	

Findings

Respondents in this research were given 285 questionnaires; however, only 248 were returned and analysed, yielding an 87 percent response rate. Based on the mean values, the five-point Likert scale ranges are as follows: 1 represented Strong Disagree, 2 Disagree, 3 Moderate, 4 Agree, and 5 Strongly Agree.

Reliability and validity of the questionnaire

The study used factor analysis to test their interpretable influence, which formed the basis for the inclusion or exclusion of items. The factor analysis was conducted on 27 items, divided into four categories: digital income-level divide (8 items), digital finance security (6 items), digital finance regulations (5 items), and digital finance usage (8 items). From the result, all 27 items were accepted as they were higher than 0.5 with a range between.640 and.908 as recommended by Hair et al. (2010) (see Table 2). The Kaiser Meyer-Olkin (KMO) analysis was used to assess the strength of the relationships and suggest the factorability of the variables (Beavers et al., 2013). According to Tabachnick and Fidell (2007), the KMO must exceed 0.50. For the pilot test, results indicate the value of KMO has exceeded the minimum value of 0.5 (rankings from.808 to.944), and therefore it was considered an adequate indication of internal consistency. Moreover, Cronbach's alpha was performed to determine the reliability and validity of the selected items. The selected items passed the tests, as the measurement range was between.846 and.965, hence they were used accordingly. The analysis was done by considering the common underlying cut-off point for significant factor loading to be 0.50, as proposed by Hair et al. (2010).

Table 2: Summary factor loadings, KMO and Cronbach's alpha

No. of Item	Items	Factor loadings	KMO	Cronbach's Alpha (α)
Digital Income-Level Divide (DID)				
DID1	Digital finance is expensive to use	.908		
DID2	Digital finance discloses a person's income information	.870		
DID3	The cost of digital transactions affects a large portion of informal traders' profit	.796		
DID4	Most of the services received from suppliers are in the form of cash	.915		

DID5	Digital transactions do not have the advantage over informal trader	894	.944	.965
DID6	Level of income affects the usage of digital transaction	.759		
DID7	Informal traders prefer to hold cash than keep it in the bank	.754		
DID8	Having digital cash results in unexpected expenses	.770		
Digital Finance Security (DFS)				
DFS1	Security of digital transactions to informal traders is low	.894		
DFS2	Customers are not willing to share financial information	.857		
DFS3	Digital data security breaches are common hence lower customers' trust in digital finance platforms	.646	.897	.909
DFS4	No clear regulatory framework concerning digital finance securities	.780		
DFS5	Digital finance regulators do not ensure cyber-safe of users	.762		
Digital Finance Regulations (DFR)				
DFR1	Many policy and regulatory environments are not enabling full-scale digital finance	.815		
DFR2	Central bank policies and regulations on monitoring digital finance are not clear	.770	.808	.846
DFR3	There are no friendly consumer protection laws	.680		
DFR4	Direct Government intervention	.762		
DFR5	The enforcement strategies of digital finance	.640		
DFR6	affect voluntary inclusion			
Digital Finance Usage (DFU)				
DFU1	The digital finance process is hard to use	.685		
DFU2	Recovery of digital finance platforms is not	.727		

	friendly			
DFU3	Digital finance platforms do not consider the unique needs and preferences of informal traders	.728		
			.853	.935
DFU4	Digital finance platforms should offer additional services	.737		
DFU5	There are too many stages to receiving services from a digital finance platform	.660		
DFU6	Fee-based digital finance platforms seem to benefit high- and medium-income individuals at the expense of poor and low-income individuals	.735		
DFU7	Digital finance should be a perfect substitute or a complement to other forms of finance	.728		
DFU8	Availability and access to digital finance services	.735		

Use of Digital Equipment in Finance

The study sought to determine the effect of the digital income level divide on the financial inclusion of informal traders. The respondents were provided with statements. For each statement, the respondents were required to rate the level of agreement by allocating numbers ranging from 1 to 5. The findings are presented in Table 3.

Table 3: *Impact of Digital-Income level divide on Financial inclusion of informal traders*

	Mean	Std. Deviation	Interpretation
The digital finance process is expensive to use	4.5891	1.03901	Strongly Agree
Digital finance discloses a person's income level	3.0097	1.16646	Neutral
The cost of digital transactions affects a large portion of informal traders' profit	4.4066	1.11244	Strongly Agree
Most of the services received from suppliers are in the form of cash	4.0459	1.12403	Agree

Digital transactions do not have the advantage over informal trader	3.0248	1.16442	Neutral
Level of income affects usage of digital transaction	4.8066	0.80244	Strong Agree
Informal traders prefer to hold cash than keep it in the bank	3.7492	1.20879	Agree
Having digital cash results in unexpected expenses	4.5278	1.10087	Strong Agree
COMPOSITE MEAN	**4.01996**		

Source: Field Data (2022).

From the statistical Table 3, the respondents asserted that the income level, the cost of digital finance and the nature of expenses caused by digital finance are impeding informal traders from enjoying financial inclusion. These aspects were revealed through the following findings: Digital finance process is expensive to use (Mean = 4.5891; SD = 1.03901), Digital finance discloses a person's income level (Mean = 3.0097, SD = 1.16646), The cost of a digital transaction affects a large portion of informal traders' profit (Mean = 4.4066, SD = 1.11244). The level of income affects the usage of the digital transaction (Mean = 4.8066, SD = 0.80244).

Also, findings show that the nature of informal traders' business connection and the notion of income privacy are the contributors to the finance and digital divide that impede the financial inclusion of informal traders. These have been revealed in the following findings; most of the services received from suppliers are in the form of cash (Mean = 4.0459, SD = 1.12403). Digital transactions do not have the advantage to informal traders (Mean = 3.0248, SD = 1.16442), informal traders prefer to hold than keep cash in the bank (Mean = 3.7492, SD = 1.20879). With the composite mean of **4.01996**, this implies that to a high extent, income level and digital finance divide affect the financial inclusion of informal traders.

Relationship between Digital-Income level divide on financial inclusion of informal traders

The study findings sought to determine the relationship between the Digital-Income level divide on the one hand and the financial inclusion of informal traders on the other. The findings in Table 4 depict a negative relationship between the digital income level divide and the financial inclusion of informal traders ($r = -0.762$, $N = 248$).

Table 4: *Digital-Income level divide and financial inclusion of informal traders*

Correlations			
		Digital-Income level divide	Financial inclusion of informal traders
Digital-Income level divide	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	248	
Financial inclusion of informal traders	Pearson Correlation	-762**	1
	Sig. (2-tailed)	.000	
	N	248	248
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Field Data (2022).

Regression Analysis

Multiple regression analysis was conducted to analyse the influence among the various variables. Statistical package for social sciences.

Table 5: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.735[a]	.641	.536	3.56763

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4896.649	3	1632.216	128.239	.000[b]
	Residual	4162.040	327	12.728		
	Total	9058.689	330			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
	(Constant)	3.456	1.720		2.762	.007
	Digital-Income level divide	. 0.310	.039	.390	7.828	.067

a. Dependent Variable: Financial inclusion of informal traders

Source: Field Data (2022).

The fitness of the model was ascertained by the use of the coefficient of determination. The coefficient of determination (R^2) from the model, which was 64.1 percent of the variations in financial inclusion, is explained by digital-income level divide factors. Hence, it was a fairly good model since $R2 > 50\%$.

The results of the ANOVA test were as follows: $F(3, 326) = 128.238$, p 0.05. This implies that the relationship between the dependent variables and the independent variable of the model fitted to the collected data is statistically significant. This outcome is also supplemented by the F-critical value associated with the degrees of freedom. This indicates that the digital-income level divide has a significant influence

on the financial inclusion of informal traders. The output as presented in Table 3, the equation (**Y = 0 + 1X1 +** a), becomes:

$$Y= 3.456 + 0.310X_{21} + 1.720$$

The regression model above provides that a change in the unit of the digital-income level divide, with other influencers remaining constant, leads to an increase in the financial inclusion of informal traders. A unit change in the digital-income level divide, while holding the other factors constant, results in a change in the financial inclusion of informal traders by a value of 0.310.

Qualitative Findings

The income level of informal traders and the digitization of transaction practises were disclosed through interviews with informal traders as driving factors for holding cash in an informal savings system. The financial inclusion of informal traders in digital financing is hampered by factors including their degree of investment, faith in the institutions of digital finance, and perceptions of digital transactions towards making an impulsive transaction.

For informal traders, the usage of digital technology in financing activities is significantly clustered around receiving and sending money, checking balances, and making airtime purchases.

The inability of the business nature and model to incorporate digital finance for informal traders was reported to have negatively affected the financial inclusion of informal traders. One of the interview respondents revealed, "Most of our transactions are cash-based because we are purchasing products from individuals who do not use digital transactions." Additionally, when formal traders are involved in the business cycle of formal traders, the nature of the transaction is merchandised credits that will be refunded at the end of the business day (*mali kauli* in Kiswahili). This kind of business relationship does not foster the use of digital finance by informal traders.

Discussion

RQn 1: What are the components of the digital income level divide for informal practitioners?

The study confirmed that the use of digital finance products and infrastructure can be too demanding (Arner, Buckley, & Zetzsche, 2018), thus widening the usage gap for informal practitioners.

The components of the digital-income level divide include low-income levels, low-profit generation, the digital gap, and the nature and practise of informal business operations.

In terms of elements, the digital income level split has been deemed to include the low income level of informal traders. One is that because they have modest incomes, informal traders do not require digital finance services for transactions or savings. A sophisticated digital equipment that can be used for financial or professional activity is out of reach for them due to their low income, which is the second reason. An informal dealer sees a digital device as a basic need rather than a top goal.

Low profit generated has been considered one of the components of the digital income level divide that affects informal traders. The profit generated by informal traders is claimed to be too small to have a significant impact on earnings. The profit level and size of the business impede informal traders from acquiring digital devices and participating in digital finance (Di Castri & Gidvani, 2014).

The digital gap is another confirmed component of the digital income level divide. The gap originates from limited access to internet services due to the high cost and the insignificant benefit informal traders realise from the usage of digital finance (Lin & Zhang, 2022).

The nature and practises are confirmed to be another digital-income level divide. It is confirmed that informal traders do not have enough time to use digital devices, as most of the time they are moving from one place to another. Moreover, business nature, suppliers, and business types do not foster the usage of digital devices. In addition, it is confirmed that most of the investments made by informal traders are in merchandised products rather than investment assets.

RQn 2: What are the impacts of the digital income level divide on the financial inclusion of informal practitioners?

The findings confirmed that there is a significant negative relationship between the digital income divide and the financial inclusion of informal traders. This implies that as the digital income level divide increases, more informal traders are eliminated from financial inclusion. This is evident as it has been established that digital finance assists financial inclusion (Arner, Buckley, Zetzsche, & Veidt, 2020); therefore, anything that increases the digital divide reduces the possibility of increasing financial inclusion.

Moreover, the findings confirmed that the increase in the digital income level divide leads to a decrease in the financial inclusion of informal traders. These results reveal that any initiatives that can be taken to reduce the divide between digital income levels will increase the financial inclusion of informal traders. Findings confirmed that the digital income level divide is a complex phenomenon that weakens the financial inclusion of informal traders. Informal traders are at a disadvantage in comparison to formal firms because of digital finance technology, the cost, the nature of transactions, and payment processes, which have significant drawbacks for informal traders.

The results revealed that digital finance transactions reduce the trust of informal traders in financial transactions and that they prefer to keep hard cash. Moreover, the complicated nature of digital transaction systems makes informal traders prefer cash transactions. In addition, it is confirmed that e-savings increase the risk of unnecessarily using the small amount of profit they can retain per day, as cashless money nowadays is more liquid than cash.

Moreover, income level affects the use of digital finance, resulting in decreased financial inclusion for informal traders. It has been confirmed that most informal traders opt for e-cash transactions, arguing that digital transaction costs reduce the small profit they produce from sales. The findings revealed that informal traders are incurring a high proportion of digital finance expenses compared to the profit they

are generating. The portion of digital transaction costs that is claimed to worsen the profit of informal traders compared to cash transactions Also, the findings confirmed that informal traders prefer to use cash in hand for their transactions due to the number of transactions they make resulting from low levels of income; most informal traders are breadwinners since not having savings reduces the demand for savings in the bank and mobile accounts.

The findings confirmed that digital finance has significantly increased consumption; these findings are in contrast with the finding in a study by Lin and Zhang (2022), who concluded that digital finance promotes financial asset holding. The holding of financial assets in the form of digital finance is contrary to the practise of informal practitioners, as digital finance shows to increase the informal practitioners' transaction costs and unplanned expenses.

Moreover, the nature of business undertakings and the type of suppliers of most of their products involve cash transactions rather than banking or digital transactions. The findings confirmed that the nature of informal traders' transactions does not promote the use of digital finance. Moreover, the informal trader is less advantageous with digital finance, formal bank savings, and the related formal financial infrastructures because either their businesses are at an early stage of development or they have no formalised agreement or transaction that requires either a bank account or a digital form of transaction.

The findings confirmed that the existing digital finance gap reduces the collective power of the anti-poverty movement in Tanzania (Allen, Demirguc-Kunt, Klapper, & Peria, 2016; Ozili, 2020).

Based on the outcome and the cost-benefit analysis model, digital finance seems not to have benefited informal practitioners as much as it has formal practitioners.

RQn 3: What are the potential strategies to tackle the digital income level divide?

Among the strategies, the study explored whether digital finance products and services are designed to help informal traders achieve high utilisation and cost savings. Moreover, the issues of risk, unnecessary network challenges, and savings costs were addressed. The contribution of policy is confirmed to promote digital

finance as an effective solution for financial inclusion in emerging countries (Ozili, 2020; Barbesino, Camerani, & Gaudino, 2005).

The findings confirmed that policies can help in the rapid development of digital financial services, their delivery to the poor, and the associated risks. Policies and practical assistance can be seen as incentives for informal traders and transformative solutions to formal digital financial inclusion.

From the findings, it is suggested that to ensure digital finance favours the financial inclusion of informal traders, there is a need to ensure an adequate assessment of the digital transformation potentials of informal traders. This study is in line with the suggestions of Cawley (2019) that the authorities and practitioners have to consider the nature, level, and features of the digital practise and business model of informal traders. The use of digital finance should also consider the roles and activities of informal traders against their custodians and operational contexts. Moreover, there is a need to determine to what extent informal traders will be protected against information, money, and customers (Cawley, 2019; Gopane, 2019).

Contribution, limitation, and Conclusions

The paper has indicated that the digital-income level divide results from disadvantages associated with digital usage, insignificant benefits of digital finance usage, income level, and the practical nature of informal traders, which is associated with the digital-income level divide of informal traders. It is indicated that informal traders incur costs while using digital finance, especially when compared to the profit they are generating. Moreover, the usage of digital finance is limited to the level of receiving and sending money, which is not considered significantly beneficial to informal traders.

This research concludes that digital finance, financial inclusion, and the formalisation of informal practitioners' campaigns are among the drivers of poverty eradication solutions in emerging economies. The study findings are intended to help policymakers, practitioners, and researchers relate the issues of technological advancement, financial inclusion, and the practises of informal practitioners. Also, the study adds knowledge to the existing literature on the emergence of digital

finance, financial inclusion, and the management of micro and small businesses. Furthermore, this paper contributes knowledge to the existing literature on digital finance, the risks and challenges of digital finance, and the contribution of digital finance to development. The paper also contributes knowledge on the analysis of aspects that focus on the causes and challenges of the digital finance gap that excludes informal practitioners from enjoying the full available opportunities of digital finance. It also adds knowledge to the literature on the potential solutions to narrowing the digital fiancé gap for informal practitioners. This paper improves our understanding of the functions of digital finance stakeholders and regulators and the relationship between fintech, digital finance, and financial inclusion.

This paper calls for more collaborative research among academics and policymakers to tackle the challenges surrounding the relationship between digital finance and development finance as well as the alternative models and perspectives in this area.

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