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Social and Digital Skills on Social Media Use in Tanzania

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The Effects of Social and Digital Skills on Social Media Use in Tanzania

Completed Research paper

1. Introduction

Increasing access to the Internet is hailed as critical policy target of most governments (van Deursen & van Dijk, 2019). It has been urged that access to the Internet is necessary for achieving all SDGs through the provision of cost-effective solutions, scaling-up existing solutions, and improving efficiency and monitoring through the use of Internet of things, robotics, and artificial intelligence on top of efficient data networks.[1] The debate on access deals with the telecommunication industry's supply side and has been hinged on the premise of 'build it and they will come' (Bailey, 2017). Along with this understanding, most policies such as market liberalisation, infrastructure unbundling, or number portability have focused on increasing ICT infrastructure investments to improve access to the Internet and other telecommunication services. Various efforts have been made to estimate the investment needed to achieve universal Internet coverage i.e., 100% of the population. For example, the World Bank estimated that USD 100 billion is needed to achieve universal access to the Internet in Africa (Broadband Commission, 2019). Of course, access is not only constrained by network coverage but also by other factors such as device opportunities, diversity, maintenance costs, and peripherals (van Deursen & van Dijk, 2019).

While universal access is still an important policy goal, it is not adequate. Once access has been achieved, it should translate into the use of the Internet,[2] as it is through its use that societies can reap the benefits of the Internet.[3] Studies have shown that, while access has increased substantially, adoption has not kept pace in Africa. For instance, while mobile Internet coverage in Africa stood at 70% of the population in 2019, Internet adoption was only 25% of the entire population (Broadband Commission, 2019). This phenomenon shifts the debate from access to the use of the Internet; thus, the telecommunication industry's demand side. Pew Global reported that, in 2018, 75% of all Internet users in Africa had subscribed to one or more social media sites (Poushter et al., 2018).

The above scenario has been conceptualised as a second-level digital divide (Hargittai, 2002; Hargittai & Hinnant, 2008; Scheerder et al., 2017), and there is a wide gap in the use of the Internet, with social media being one of the most popular uses of the Internet. The second-level digital divide is differentiated from the first-level digital divide, which deals with the population's access to telecommunication services (van Deursen & van Dijk, 2019).

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[1] https://www.itu.int/en/mediacentre/backgrounders/Pages/icts-to-achieve-the-united-nations-sustainable-development-goals.aspx

[2] http://pubdocs.worldbank.org/en/312571561424182864/062519-digital-economy-from-africa-initiative-Tim-Kelly.pdf

[3] https://www.itu.int/en/mediacentre/backgrounders/Pages/icts-to-achieve-the-united-nations-sustainable-development-goals.aspx

Studies have shown that skills are a crucial influencing factor for inducing Internet use in a population (Hargittai et al., 2019; van Deursen & van Dijk, 2019). The same can be seen in different initiatives that have been taken across the African continent to boost digital participation and ultimately build a resilient digital economy. Some of those initiatives include the Google Digital Skills for Africa programme,[4] which aims to impart digital skills to at least a million youth on the continent. Furthermore, the Digital Economy for Africa (DE4A) initiative aims to digitally enable every African individual, business, and government by 2030. As well, ensure all adults possess basic digital skills competencies, and support at least 100,000 graduates in advanced digital skills programmes annually across the continent.[5]

Among the many applications of the Internet, social media provides an interface with which most people, especially marginalised ones, have their first interaction with the Internet (Correa, 2016). The social and, more often, the entertainment nature of social media platforms provide a less steep learning curve and reduce the adoption barrier in using the Internet. When studying participation in the digital space, studies have used either broader Internet use (Scheerder et al., 2017), social media (Correa, 2016), or both (Hargittai et al., 2019).

This study investigates the effect of social and digital skills on participation in the digital space in Tanzania. Specifically, participation in the digital space is proxied by the extensive and intensive use of social media. Furthermore, various skills – social, formal-business, and technical – are considered to better understand how skills affect participation in the digital space. This paper adds to the existing body of knowledge by providing empirical evidence from developing countries that are underrepresented in the literature. Furthermore, this paper introduces digital and non-digital skills as a unique perspective in skills required to overcome hurdles that individuals can face to increase digital space participation.
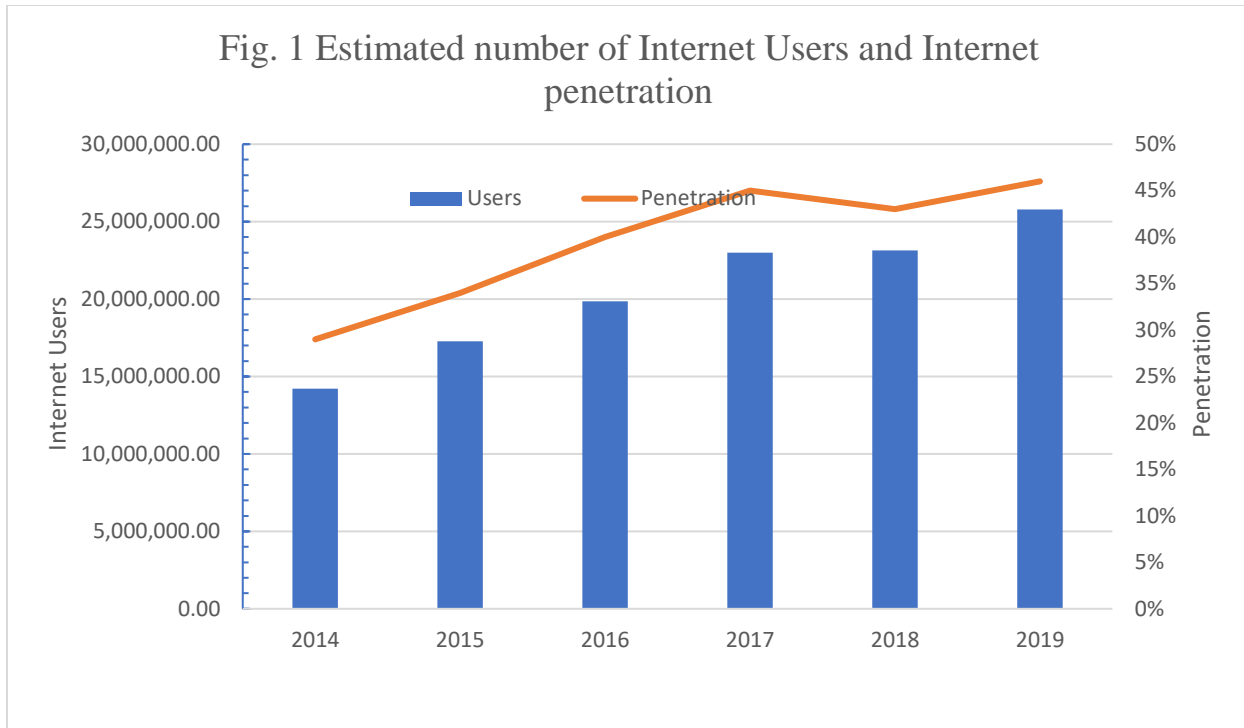
2. Digital space in Tanzania

According to the World Bank, Tanzania is the fifth-most populous nation in Africa, with an estimated population 60 million people, and the 10th largest economy in Africa by 2020. The country has one of the most vibrant telecommunication markets with seven mobile telecom market participants. Three of them, Vodacom, Airtel, and Tigo, also operate in more than five other African countries. According to the Tanzania Communications Regulatory Authority, the number of Internet users reached 25,794,560, representing 46% of the entire population, with almost all connections coming through mobile networks[6] as of 2019. Figure 1 shows the trend of increasing Internet penetration in the previous five years up to 2019, as reported by the country's regulator.

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[4] https://learndigital.withgoogle.com/digitalskills
[5] http://pubdocs.worldbank.org/en/312571561424182864/062519-digital-economy-from-africa-initiative-Tim-Kelly.pdf
[6] https://www.tcra.go.tz/statistic/2020%20Quarterly%20Statistics%20Reports/june

Fig. 1 Estimated number of Internet Users and Internet penetration

Source: TCRA (June, 2021)

The regulator does not report data on smartphone owners or social media users; however, country-representative data collected by Research ICT Africa in 2017[7] show that penetration of social media, as well as of smartphones, stood at 20.4%. The statistic suggests that almost all social media users are smartphone owners and vice versa. A key feature in developing countries is the limited access to the Internet through other means. The Pew Research Centre's global study on social media use, where Tanzania was one of the countries sampled, shows that social media continued to rise in developing countries. However, the digital divide persists (Poushter et al., 2018). Given that social media use in developing countries, including Tanzania, is rising, and given the scarcity of studies on social media use in developing countries, Tanzania is therefore an appropriate case study on social media use.

3. Literature review

Over the past decade, literature investigating the use of new media such as the Internet and social media, as a particular case of Internet usage, has increased tremendously. This phenomenon is a result of the increasing adoption of Internet around the globe. Scholars have moreover attempted to explore various determinants that affect digital space use. This section reviews important scholarly works, thereby aiming to provide a base for this study and to identify gaps in the literature and specify the contributions of this study for the existing body of literature.

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[7] https://www.datafirst.uct.ac.za/dataportal/index.php/catalog/765/study-description

3.1 Social media use

The emergence of social media as a particular segment of the Internet for online interpersonal interaction and mass communication has attracted both practitioners and scholars(Correa, 2016). While the initial wave of studies dwelt on adoption behaviour (Von Pape, 2009), recent studies have focused on various social media use dimensions among firms and individuals and its impact on organisations, individuals, and society. Regarding organisations, attention has been paid to the use of social media for commercial organisations as economic agents in society. In the aspect of business and organizational settings, most academic works on social media use have explored its use in boosting interaction between firms and prospective or current customers in industries such as the tourism and hospitality industry (Leung et al., 2013; Zeng & Gerritsen, 2014) and the banking industry (Mitic & Kapoulas, 2012). These studies have shown that social media is perceived as a strategic tool for increasing a firm's competitiveness, as it has a positive impact on brand awareness, customers loyalty, and purchase decisions (Annie Jin, 2012; Hutter et al., 2013; Sasmita & Mohd Suki, 2015).

On an individual level, similar to Internet usage, social media use is linked to positive societal outcomes such as positive economic and educational impacts in emerging economies (Silver,Laura and Johnson, 2018). Other studies have also shown that social media use positively influences political participation; hence, it influences the public's exercise of democratic liberties (Boulianne, 2015; Gil de Zúñiga et al., 2012). It further induces positive patients health care behaviour (Cheston et al., 2013; Smailhodzic et al., 2016) and promotes psychological well-being (Liu et al., 2019). However, social media use can also lead to undesirable outcomes, and thus it should be used with caution, especially with respect to children and young adults (Dyson et al., 2016; Keles et al., 2020).

There is no single agreed way of measuring the use of social media in society by academia and practitioners. Nevertheless, many attempts have been made to measure Internet use in general (Helsper, van Deursen, & Eynon, 2016), some of which can be extrapolated to social media use. Related work has investigated mobile phone use in low- and middle-income countries warned on the complex nature of technology diffusion in society (Haenssge2019). An earlier study (Correa, 2016) indicated that technology use had been investigated either in intensity or depth (measured by frequency of use; Kongaut & Bohlin, 2016), width or diversity (measured by different types of use; Boulianne, 2015), or both. When both intensity and diversity are used, an index is usually developed to cover both concepts (Correa, 2016; Haenssgen, 2019). Social media indices hide the complexity of various types of uses and the frequency of each to provide a simplified aggregated measure indicating the diversity and intensity of social media use.

3.2 Digital skills

Recently, there has been an upsurge in digital skills studies both by academicians and professional and multilateral bodies such as the OECD, World Bank, International Telecommunication Union (ITU), World Economic Forum, and the European Commission. It has been recently acknowledged that digital skills are necessary for citizens and workers to effectively and efficiently participate in the digital economy. For example, van Laar et al. (2017) explored the relationship between digital

skills and 21ˢᵗ-century skills. More specifically, Mwakatumbula & Moshi (2020) investigated the digital skills required for the population to participate in the digital economy, using the case study of transport digital platforms such as Uber and Lift in Tanzania.

The International Labour Organization defines skills as the ability to carry out the tasks and duties of a particular job.[8] As such, skills are available at various levels depending on the job's complexity and the solutions required. Concerning digital skills, the concept has been evolving (ECORYS, 2016). The evolution results from increasing scholarly work on the concept, the importance of adopting various technologies, and growth of the digital economy. Hargittai's (2002) study was among the first to coin the term digital skills. The author implied that digital skills refer to an Internet user's ability to locate information on the Internet. By contrast but in relation, Mossberger et al. (2004) explored technical competences but constrained the use of computers to 'the skills needed to operate hardware and software, such as typing, using a mouse, and giving instruction to the computer to type records a certain way.' Later, the concept of digital skills was defined more broadly and adaptively as the ability to respond efficiently and effectively to the Internet's challenges and opportunities (DiMaggio, 2004).

Recent studies have expanded the concept of digital skills to effectively introduce various categorisations regarding participation in the digital space, including social media. These categorisations differ depending on the scope explored, but the scope has usually been the personal use of the Internet or expanded to include productive purposes. For personal purposes, van Laar et al. (2017) explored four different digital skills: operational skills, information navigational skills, social skills, and creative skills as critical types of skills needed for participating in the Internet space. By contrast, few studies have been conducted on the other end of the spectrum (i.e., digital skills for productive purposes). For instance, the CapitalOne study focused solely on digital skills for productive purposes, categorizing those skills into productivity software skills, advanced digital skills, and occupationally specific digital skills (Burning Glass Technologies, 2015).

Some studies have taken a broad-spectrum approach to include various skills required for personal or social Internet uses on one end to productive uses on the other end, enabling individuals to participate in the digital economy effectively. Similarly, the ITU has been at the front of pushes for a comprehensive framework for digital skills. The ITU digital skills comprise basic and intermediary skills and advanced skills. Basic and intermediary skills cover the use of the Internet for personal and social purposes. Advanced skills comprise specialised skills such as skills in programming, artificial intelligence, robotics, and blockchain technologies to create products and services and specialised operations (ITU, 2018). The OECD has taken a similarly broad approach to incorporate digital skills required at home (for personal and social purposes), school (for learning both in formal schooling and for after-school purposes), and work (for productive purposes; OECD, 2019).

The UK Department of Education has established a comprehensive framework for measuring digital skills including foundational, life-essential, and work-essential digital skills. The foundational skills category has five subcategories of essential digital skills for its citizen who do

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[8] http://wcmsq3.ilo.org/public/english/bureau/stat/isco/isco88/publ2.htm

not use the Internet or use it in a limited way. Foundational skills identified include problem-solving, transacting, communicating, handling information and content, and being safe, legal, and confidential online (The Tech Partnership, 2018). There are other similar works (van Laar et al., 2017), most of which have been summarized by (Mwakatumbula & Moshi (2020) The latter study focuses on skills' impact on social media use and is thus constrained within the personal and social use spectrum.

Most studies have focused on the digital skills required for effective Internet use or general online experience (Hunsaker & Hargittai, 2018; Scheerder et al., 2017) rather than social media use. As shown earlier, while it is true that Internet includes social media, social media plays a critical role in introducing individuals to the Internet and sustainable use of online services. Thus, knowing the skills explicitly required for social media use is necessary for kickstarting and sustaining participation first in the digital space and, eventually, in the digital economy. Except for a few studies (Correa, 2016), the research area on the skills required for social media use in developing countries remains scarcely explored.

Motivated by the operational digital skills definition (DiMaggio, 2004), most studies have explored users' ability to successfully perform particular tasks (van Laar et al., 2017). One aspect is missing in such analysis: what does a user do when fail to perform a task? Answering this question provides a novel perspective on the spectrum of digital skills necessary for sustainable participation in digital spaces. This study contributes to the literature on digital skills by exploring skills related to social media use. Further, this study builds on the scarce literature on digital skills and social media use in developing countries, particularly in Africa.

4. Data and Methodology

4.1 Data

ICT Research Africa collected the data used in this study in eight African countries, including Tanzania, as part of the Global South project on ICT access and use. The dataset is available at the University of Cape Town's DataFirst open data portal (Research ICT Africa, 2020). As units of analysis, the project collected high-quality microdata on small and medium enterprises, households, and individuals. The project aimed to complement the national macro dataset collected and published by the ITU to understand in detail the decisions, behaviours, and attributes of identified units of analysis with respect to access to and the use of various ICT components such as communications devices, services, and applications. Data was collected through questionnaires collected in face-to-face interviews among the adult population (i.e., 15 years and older) in the summer of 2017.

The data sampling was targeted to achieve a nationally representative sample using a cluster stratified sampling design consisting of 1200 respondents. Two strata were used in urban and rural locations. After that, three random sampling stages were conducted for each stratum: the first was the enumeration-area stage, the second was the household stage, and the third was the individual stage. For urban areas, 30 enumeration areas were randomly selected. Twenty-four households were randomly sampled for each selected enumeration area, and lastly, one individual was randomly sampled from each selected household. The same was done for urban areas; however,

only for 20 enumeration areas. More enumeration areas from urban locations were included in stratification since access and ICT use is more intense in urban areas than in rural areas. As in many developing countries, Tanzania is no exception: there are more rural areas than urban areas. Therefore, weights to reflect the nation's rural-urban population structure were further computed to ensure that the analysis is not biased towards urban areas.

4.2 Model specification

A social media use index is used in this study to measure overall social media use. Unlike the simple dichotomy measure, which measures if an individual uses social media (Kongaut & Bohlin, 2016), the index used here incorporates breadth of use, meaning various types of use (Helsper et al., 2016), as well as intensity of use, as measured by how frequently each type of use is experienced. The study adopts the Haenssgen (2019) study, which argues that the construction of a use/utilisation index provides the possibility for understanding various dimensions of use and the possibility to quantify practical use. The social media use index comprises 14 components that measure various aspects of social media use. For each component, respondents had to choose among three answers: never, occasionally, or daily each mapped as 0, 1, or 2, respectively. Each type of use has equal weight in the index. Thus, the index ranges between 0 for those who do not use social media to 28 for those who use all components daily.

Independent variables consist of three categories of control variables: use skills, personality, and demographic factors. Social media skills were explored in detail since they are the primary determinant in question. Personality and demographic factors are used as control variables.

Social media use skills form the first group of independent variables. These include three types of skills to provide a broad spectrum of skills necessary for effectively use of social media. Respondents were asked what they do when they encounter a usability problem. The responses captured measured respondents' skills on three types of skills. First, using the social circle represented by whether an aspiring user asks a neighbour, friend, or call someone s/he know. The second option is to use formal business channels, such as calling technical support or going to the vendor's shop. The third option captures skills in using technology measured by looking for an answer on the Internet or fiddling until a solution is found. Thus, each option has two questions with dichotomy responses. Hence each option has a maximum of 2 and a minimum of 0.

Personal traits refer to another category of variables. Individuals who spend more time socializing, be it in local communities such as religious or sports groups, may be positively correlated with social media use (Choi & DiNitto, 2013). Thus, *hours_used_socializing* per day is used to proxy the socialising trait of a person. Furthermore, several studies (Moore & McElroy, 2012) have shown that personality traits of introversion and extroversion affect the extent to which one uses social media. The model includes a dummy variable for these traits, which was one if an individual considered themselves an extrovert and zero otherwise.

Furthermore, the individual network effect is expected to affect social media use (Sponcil & Gitimu, 2013). Various terminologies depict the concept of the personal network size in social media platforms. In most platforms, such as Facebook, it is the number of friends, but on Twitter, the same concept is portrayed as followers. The model categorized network effect in three folds;

small network with below 500 members, moderate network with members between 500 and 1,000, and large personal networks with more than 1,000 members. *Demographic variables* considered in the study are age (15 years and above), education, income, and gender. It is expected that younger ages will positively affect social media utilization (Holt et al., 2013), while higher education is expected to correlate with higher usage (Hargittai et al., 2019). Males are expected to use social media more, as extrapolated from phone and internet use (Correa et al., 2010); however, this is not conclusive in social media studies. Personal income is part of the model because it is a determinant in adopting social media (Correa et al., 2010). Immigration is also considered to positively affect social media use (Gintova, 2019), as it is a means for those who live away from their place of origin to communicate with their relatives.

4.3 Empirical model

Studies have shown that the determination of outcome variables on a sub-group of a population-representative sample can be a challenge (Winship & Mare, 1992), in particular when characteristics of the outcome in question are observed only for those in a sub-group who have adopted a particular intervention. More specifically, even though the present study's dataset comprises social media users and non-users, social media skills are observed only for individuals who use social media. While the entire dataset has been randomised, the occurrence of those who use social media is not random. The dataset is therefore susceptible to selection bias (Guo & Fraser, 2015). A naïve implementation of the model will include a dummy variable to denote users and non-users, assuming that the variable is exogenous. However, the decision to use social media is endogenous, as it is affected by several known factors that warrant modelling. Therefore, the normal ordinary least square estimation technique is likely to result in biased estimates (Aguirregabiria, 2009).

Several attempts have been made to estimate parameters for selection bias (Winship & Mare, 1992). Heckman selection models provide a two-step procedure with consistent estimators (Heckman, 1976, 1979). Three conditions necessary for applying a Heckman sample selection include the following. First, the sample has been inferred (social media users) has not been randomly generated. Second, the selection into the sample inferred can be modelled as a binary dummy. Third, sample selection should be part of the equation to estimate the outcome variable (Guo & Fraser, 2015).

Consider eq. (1), which estimates the regression with factors of interest, which estimates parameters for social media use.

$$y_i = \boldsymbol{X}_i \beta + u_{1j} \dots \dots \dots \dots \dots \dots \dots . eq\ 1$$

The dependent variable is only observed only when an individual has adopted social media. Since social media adoption is not random, consider eq. (2), which models the occurrence where the individual has adopted social media.

$$\boldsymbol{Z}_i \gamma + u_{2j} > 0 \dots \dots \dots \dots \dots \dots \dots, eq\ 2$$

where
$$u_i \sim N(0, \sigma\ );$$

$$u_i \sim N(0, 1\ ); \text{ and}$$

$$corr(u_1, u_2) = \ \rho.$$

Equation (2) is usually referred to as the selection equation, which is used to estimate the likelihood of an individual being selected in a particular sub-group of the population. In this case, it estimates the likelihood an individual has adopted social media. Once the probability that an individual has adopted social media is established following eq. (2), the Mills ratio, which corrects for the non-random selection of social media adaptors, is determined from eq. (2) and used in eq. (1) to estimate the dependent variable (Marra & Radice, 2013). One of the main advantages of using Heckman's two-step technique is that its estimators are consistent in parametric models with normal and homoscedastic error distributions. Furthermore, it can be extended into a semiparametric context with non-normal and heteroscedastic error distribution (Aguirregabiria, 2009; Marra & Radice, 2013).

5. Empirical results

Table 1 provides the results of the two models run following the Heckman selection model. The first model assessed the selection stage, which portrays the possibility that an individual has adopted social media. The selection model results are shown in the first two columns, with the coefficients and p-values in the first column and their corresponding standard errors in the second column. The outcome model results that focus on social media use are presented in the third and fourth columns of the regression results table. Since digital skills for problem solving when using social media cannot be observed when an individual is not using social media, such variables were left out in the selection model.

Table 1: Regression results for social media use and adoption in Tanzania

VARIABLE	ADOPTION (SELECTION STAGE)		USAGE (OUTCOME STAGE – SOCIAL MEDIA USE INDEX)	
	Coefficient	SE	Coefficient	SE
SKILLS				
SM.SOCIAL.SKILLS	-	-	1.570*	0.920
SM.BUSINESS.SKILLS	-	-	-0.314	1.562
SM.TECHNICAL.SKILLS	-	-	2.789**	1.398
PERSONALITY TRAITS				
HOURS.SOCIALIZING	-0.00659	0.012	0.260**	0.128
SM.FRIENDS	-	-	0.767	0.560
EXTROVERT	0.174**	0.691	0.163	0.527
DEMOGRAPHIC				
IMMIGRANTS	-0.117	0.256	1.483	1.091
GENDER	-0.236**	0.117	0.472	0.871
AGE	-0.0231***	0.004	0.0779*	0.041
EDUCATION	0.538***	0.538	0.0336	0.524
INCOME (TSH. MILLIONS)	0.99**	0.390	-	-
CONSTANT	-2.459***	0.273	10.84***	3.1
ATHRHO	-0.493***	0.166	-	-
LNSIGMA	1.688***	0.070	-	-

Significant level for each coefficient level is reported as ***, **, and * whereby ***, **, * represents significant level at 1%, 5% and 10% respectively.

First, the model provides results on variables in two groupings: personal traits and demographic characteristics. Regarding the personal traits, the results show that the amount of time a person spends socialising, measured in hours, did not predict whether a person adopts social media. However, the results show that extroverted individuals were more likely to adopt social media than their introvert counterparts, with a statistical significance $p < 0.1$. In examining demographic characteristics, the results show that gender is still a deciding factor. Men were more likely to adopt social media at $p < 0.05$, showing digital inequality in Tanzania.

Furthermore, individuals who are more educated and have higher incomes were more likely to adopt social media at $p < 0.01$ and $p < 0.05$, respectively. The model explored immigrant characteristics to see if individuals have their relatives in cities other than their then-current city. However, this factor did not show any effect on the adoption of social media.

Outcome model results were categorised into three groups of variables: social media problem-solving skills, personal traits, and demographic traits. The use of operators' kiosks and customer care lines for solving problems showed no effect on social media use. However, social skills, such as asking a friend, and personal technical skills, were positively related to social media skills, with a statistical significance at $p < 0.1$ and $p < 0.05$. Unlike in the adoption, time used for general

socialising had a positive effect on social media use, with a statistical significance at $p < 0.05$; nevertheless, the number of friends on social media and extrovert traits did not affect social media use. The demographic variables immigration, gender, and education showed no effect on the use of social media. Nonetheless, there is a positive relationship between age and social media use, with a statistical significance at $p < 0.1$.

6. Discussion

Social media adoption

As results on personality traits show, an individual's general level of socialising does not influence the decision to adopt social media. This finding contrasts with the prevailing literature, which suggests that individuals with general socializing behaviour are more likely to adopt social media (Horzum, 2016; Kircaburun et al., 2020). However, this study shows a positive effect of extroversion on the likelihood of adopting social media, which is in line with other existing literature (Correa et al., 2010). Furthermore, in accord with most prevailing literature (Sponcil & Gitimu, 2013), demographically, males are more likely to adopt social media. The most educated and high-income earners and younger people are more likely to adopt social media (Holt et al., 2013).

Social media use

This article's main contribution was to investigate skills to solve a problem when an individual encounters a challenge while using social media. More specifically, a range of skills were explored, particularly social skills, digital skills, and business support skills.

Results imply that social skills (social capital) are crucial to social media use. Individuals tend to turn to their social network when they experience a problem online. Thus, having social capital with people who have technical skills increases the likelihood of getting support when encountering problems online; hence, spurs social media use. The community's supportive environment is critical, especially when skilled social media users are in one's community.

 The finding on social skills is in line with other studies such as Choi & DiNitto (2013), which shows that having social capital among the elderly increases their social media use. This study suggests that having social capital, a supportive community, and the ability to access those around one for help when challenged in using social media increase both the width and depth of social media use.

An individual's ability to contact an operator's shop or call customer support, as proxied by the variable social media business skills, to solve user problems, did not affect social media use. This finding is understandable regarding visiting operator kiosks since these kiosks are only limited to urban areas serving only a fraction of the population in Tanzania. However, every mobile user can access the operator's customer service; calling customer care service does not seem to be the popular choice for solving technical problems when using social media. Most operators provide customer care services through social media platforms, yet most people still do not use this option. Perhaps operators can target their marketing to inform users of support types for their customers through their formal business support, primarily via customer support.

Technical skills used in solving problems in using social media is positively associated with social media use. Implying that individuals with technical skills are more likely to use social media more. This result resonates with most previous works that examined the digital skills necessary for citizens to participate in social media in particular and the digital economy at large (van Laar et al., 2017). The advantage of technical skills can be imparted to the population; several scholars have proposed that technical skills be included in modern curricula as part of the skills that are essential for creating a population ready for future jobs (Chaouchi & Bourgeau, 2020; Mwakatumbula & Moshi, 2020; Strack et al., 2019).

Personality traits showed different effects in the usage model compared to the selection models determined under Hackman modelling. In the usage model, time used in general socializing is positively associated with high social media usage when controlling for other factors; these results are in line with other studies (Amichai-Hamburger & Vinitzky, 2010; Skues et al., 2012). Surprisingly, the number of friends on social media platforms and extrovert traits are not associated with the extent of social media use, which contrasts with previous literature (Moore & McElroy, 2012). Regarding extroversion, Chorley et al. (2015) explored personality and location-based social networks and found similar results to this study.

Furthermore, this study explored socioeconomic factors effect on the extent of social media use. The analysis found, except for age, the extent of social media use is not correlated with demographic factors after controlling for adoption and other usage factors. This phenomenon is consistent with other studies on social media use (Correa, 2016), which indicate that, once one has adopted social media, there are no significant social media usage inequalities after controlling for skills and traits. However, as age increases, social media use increases. This observation in the Tanzanian data may be due to access to other resources such as connectivity, which adults enjoy more than younger generations.

7. Conclusion

This study explored the role of digital skills on social media use when user encounters a problem. The study differs from most previous studies and provides two new contributions. First, it developed a social media index that includes both extensive of use, as determined by the number of different types of use, and intensive use, which refers to the frequency of use. The composite social media use index is rich as it combines concepts that have only been explored separately by previous literatures. Second, regarding digital skills, the study explored a broad spectrum of skills that can sustain the continuous use of social media including, social skills, skills in reaching out to formal outlets, and technical skills. The study results show that social skills and technical skills positively corollate with broader social media use. In contrast, skills in reaching out to formal support services show no effect on the breadth of social media use.

Foremost, the study insists that social skills are crucial to sustaining social media usage, especially in developing countries. In most developing countries, due to low education levels, technical skills are limited. Thus, most users depend on their social network for support when encountering challenges online. Since most previous studies focus on technical skills to upsurge social media

use, this study concludes that while technical skills are necessary, social skills are also essential to increase Internet usability.

Secondly, the study is hammering on the vitality of digital skills to upsurge social media use as the gateway to internet use. Since, social media users mostly rely on their own technical skills or borrow skills within their social network. Thus, building a human capital with digital skills is crucial to unlock opportunities in the digital economy. As suggested by the ITU (2018) and other studies (including Mwakatumbula & Moshi (2020)), to leverage the digital economy's opportunity, developing countries may consider developing the digital skills strategy. The digital skills strategy should provide the roadmap to facilitate comprehensive digital skills development from the grassroots. The development process can involve all stakeholders, such as the private sector, policymakers, and academicians. The study is among the few studies attempting to explore social media use in developing countries using microeconomic country-representative data.

Despite worthwhile contributions to the extent body of knowledge, the study used a cross-sectional design with data collected in 2017. Thus, the study is limited to use 2017 data, also does not explore trends over time. Thus, future studies are encouraged to use updated data, in panel format to unveil current patterns and evolution of usage patterns over time.

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