

Factors influencing the acceptance and use of a South African online bank

**Authors:**Lizandr  Gertze¹ Fazlyn Petersen¹ **Affiliations:**

¹Department of Information Systems, Faculty of Economic and Management Science, University of the Western Cape, Bellville, South Africa

Corresponding author:

Fazlyn Petersen,
fapetersen@uwc.ac.za

Dates:

Received: 28 Aug. 2023

Accepted: 08 Dec. 2023

Published: 21 Feb. 2024

How to cite this article:

Gertze, L. & Petersen, F., 2024, 'Factors influencing the acceptance and use of a South African online bank', *South African Journal of Information Management* 26(1), a1759. <https://doi.org/10.4102/sajim.v26i1.1759>

Copyright:

  2024. The Authors.
Licensee: AOSIS. This work is licensed under the Creative Commons Attribution License.

Read online:

Scan this QR code with your smart phone or mobile device to read online.

Background: Online banking gained prominence during the coronavirus disease 2019 (COVID-19) pandemic as an alternative to traditional banking. However, limited studies have explored online banking acceptance in South Africa.

Objectives: This study investigates the factors that influence online banking acceptance among South Africans in a context where use is limited.

Method: Thematic content analysis examined 113 Google user reviews from South Africans using an exclusive online bank. Unified Theory of Acceptance and Use of Technology 3 (UTAUT3) was used as a theoretical framework, analysing factors such as performance expectancy (PE), effort expectancy (EE), facilitating conditions (FC), hedonic motivation (HM), price value (PV), trust, perceived risk (PR), habit, and social influence.

Results: Seven UTAUT3 constructs influenced online banking acceptance and use in South Africa during the pandemic: PE, EE, FC, HM, PV, trust, and PR. The influence of habit and social influence was not evident.

Conclusion: Understanding factors influencing online banking acceptance in South Africa is crucial for policymakers and institutions. Addressing information communication technology challenges can enhance accessibility and benefits, promoting financial inclusion, and empowerment.

Contribution: This research fills the gap by examining online banking acceptance in South Africa. Findings inform interventions and policies to improve access and adoption. Practical implications extend to institutions and policymakers, fostering financial inclusion.

Keywords: digital financial inclusion; developing countries; digital payments; traditional banking; online banking.

Introduction

A thriving economy is diverse and financially inclusive which entails providing everyone with affordable, efficient and secure financial services (Ozili 2018). The process of achieving digital financial inclusion starts with the presumption that those who are excluded or underserved already have formal bank accounts and only require access to the Internet to conduct simple financial operations (Ozili 2018). Electronic payments, mobile money, online accounts, insurance and credit, as well as combinations of these and newer fintech applications (hereafter referred to as apps), are examples of inclusive digital financial services that reach people who were previously excluded (World Bank 2018). According to Winston (2021), *online banking* is a broad phrase that includes Internet banking, mobile banking, and other banking services. It is the process of delivering banking services and products via electronic means such as the Internet and cell phones. Electronic banking (hereafter referred to as *e-banking*) is still a developing concept. The term *e-banking*, like online banking, refers to the process of automatically delivering products and services to customers via electronic communication channels (Rawwash et al. 2020). The term *e-banking* will be used interchangeably with *online banking* in this article. In the previous decade, the use of virtual platforms has evolved rapidly, with many businesses and service providers engaging with customers only via the digital realm (Betts, Hill & Gardner 2019). As a result of these changes, individuals are expected to gradually engage with technology to perform a wide range of day-to-day activities (Betts et al. 2019).

Globally, approximately 1.1 billion adults own mobile phones and yet are unbanked (World Bank 2018). A small minority of unbanked adults own a smartphone and have Internet access, whether through a home computer, an Internet caf , or another method (Demirg c-Kunt et al. 2020).

This suggests a significant opportunity for unbanked households to directly embrace mobile payments and the benefits of financial services. Furthermore, Hesse (2022) contends that some global statistical trends are intriguing. The author draws from a 2021 McKinsey report which notes that nearly 9 out of 10 consumers in developing and developed economies are actively utilising digital banking, and the majority are open to buying further banking services via digital platforms. Moreover, China and the Far East have seen the most widespread adoption of e-banking services: the region has 41% of the worldwide economy of about 2 billion active users, compared to 19% in Europe, 12% in the United States (US), and 3% in sub-Saharan Africa (Hesse 2022). A recent FinScope (2019) survey reports that 23% of South Africa's banked population used cell phone banking in 2019 (a 4% increase since 2018). Furthermore, more people used the application than their bank's website: 13% of consumers used their bank's application (a 5% increase since 2018), while 9% used Internet banking (an increase of 2% since 2018). The above percentages are likely much higher now based on the last year's increase (Hesse 2022).

The coronavirus disease 2019 (COVID-19) pandemic, including the regulations of physical distance and social isolation, highlighted the need for digital financial solutions (hereafter referred to as DFS). Digital financial solutions serve as a solution for obtaining the basic services required in daily life (Berdibayev & Kwon 2021). Because of the risk of COVID-19 transmission via cash handling, digital payments were required during the pandemic. In addition to expanding account ownership and usage, transitioning payments from cash to accounts is likely to usher in tremendous benefits. Digitalisation provides a secure method of payment and is linked to lower crime rates (Machasio 2020). Eriksson Von Allmen et al. (2020) noted that between 2014 and 2017, digitalisation increased financial inclusion even where traditional banking services were declining. They believe it has advanced even further in recent years (Eriksson Von Allmen et al. 2020). According to FinScope (2019), before COVID-19, approximately five in seven (70%) of the older population did not use their mobile phones or digital services to manage their financial lives. Khera, Ogawa and Sahay (2021) found that fintech usage is higher where people have greater financial literacy and trust in the financial system. Fintech access is 'filling the vacuum' left by traditional financial institutions, including a lack of Internet connectivity and competition. The United Nations (UN) explains that digital financial inclusion also holds the promise of solving the world's most difficult problems. For example, pay-as-you-go solar companies have used digital finance to provide affordable, modern energy to 10 million people for the first time in their lives (World Bank 2018).

Many frameworks have been developed to characterise variables that influence information communication technology (ICT) acceptance and usage. Among the most popular recent models is the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) which stems from the

original UTAUT model. This model is centred on what enables successful technology acceptance. According to Venkatesh et al. (2012), the goal of the extended UTAUT model, UTAUT2, is to investigate consumer technology acceptance and use.

Digital financial inclusion refers to the use of cost-effective digital means to reach populations with a variety of formal financial services customised to their needs. Formal financial services are delivered at a cost that is reasonable to customers and feasible for providers (World Bank Group 2022). However, there is little literature that highlights the acceptance and use of online banking in South Africa during the COVID-19 pandemic. Understanding the factors that contribute to low online banking acceptance and use in developing countries is critical for developing a framework for gaining access to a previously untapped market and the financial inclusion of this market (World Bank Group 2022).

Primary research question

The research questions for this study were:

- What factors influence the acceptance and use of online banking in South Africa?
- What challenges impact the acceptance and use of online banking in South Africa?

Research objectives

The research objectives were as follows:

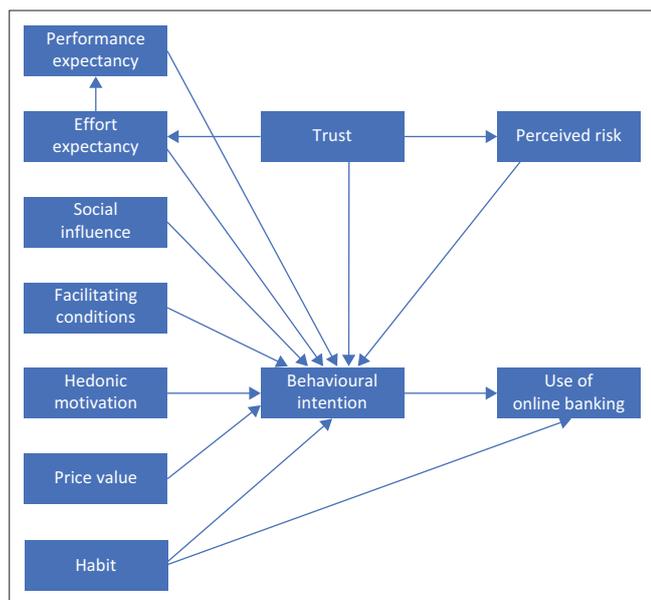
- To identify the factors influencing the level of acceptance of online banking.
- To determine the challenges for the acceptance and use of online banking in South Africa.

Literature review

This section examines the consumer technology acceptance models used in online banking, leading to the theoretical framework chosen for this study. Additionally, this section examines the factors influencing the level of acceptance and use of online banking, and challenges to acceptance and use of online banking in developing countries from the viewpoints of academics in this field.

Models of consumer technology acceptance

There are several theoretical models explaining the acceptance and use of technology, mainly based on theories of psychology and sociology (Berdibayev & Kwon 2021). Consumer acceptance is the foundation of e-commerce success. Unlike e-commerce, m-commerce customers use mobile information systems (IS) and related applications (Imtiaz 2018). According to Al-Saedi et al. (2020), several theories have been proposed to explain why consumers accept new technologies and intend to use them. A basic overview of the most well-known theories and models of technology acceptance is provided in Figure 1. As shown, several theories build upon existing theories and models.



Source: Penney, E.K., Agyei, J., Boadi, E.K., Abrokwah, E. & Ofori-Boafo, R., 2021, 'Understanding factors that influence consumer intention to use mobile money services: An application of UTAUT2 with perceived risk and trust', *SAGE Open* 11(3), 1–17. <https://doi.org/10.1177/21582440211023188>

FIGURE 1: Theoretical framework based on the Unified Theory of Acceptance and Use of Technology 3 model.

Theory of reasoned action (TRA): TRA – based on the interaction between attitudes, beliefs, intentions and behaviour – is a theory developed by Fishbein and Ajzen (1977). Human behaviour is identified in this model by three major cognitive components: attitudes (a person's negative or positive feelings towards a behaviour); social norms (social influence); and intentions (an individual's decision to do or not do a behaviour) (Taherdoost 2018).

Theory of planned behaviour (TPB): A new variable of perceived behavioural control (PBC) is added to this model to extend the TRA model. Perceived behavioural control is defined by the availability of resources, opportunities, and skills; as well as the significance of those resources in reaching results (Taherdoost 2018). In the TPB model, three major factors influence behavioural intention (BI): perceived behavioural control, subjective norm, and behavioural attitude (Taherdoost 2018).

Technology acceptance model (TAM): TAM, invented to forecast ICT acceptance and usage on the job, is customised to IS contexts (Venkatesh et al. 2003). Technology Acceptance Model describes user motivation in three ways: perceived usefulness, perceived ease of use, and attitude towards use (Taherdoost 2018). The Technology Acceptance Model does not address intrinsic motivations. However, its application extends to a customer context where the acceptance and use of technologies serve not only to fulfill tasks but also to meet emotional needs (Taherdoost 2018).

Task technology fit (TTF): TTF, developed by Goodhue and Thompson (1995), can explain technological innovation dynamics. The theory is critical in understanding the impact of technology on individual performance (Alshammari 2020).

Unified theory of acceptance and use of technology (UTAUT): After synthesising other TAMs, Venkatesh et al. (2003) developed the UTAUT (Alshammari 2020) with the influential constructs of performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC). Gender, experience, age and voluntariness of use were also identified as significant moderating variables (Taherdoost 2018). The model is used to explain a user's intention to use technology and behaviour; it depicts the technology acceptance process in detail (Alshammari 2020).

Unified theory of acceptance and use of technology 2 (UTAUT2): The extension of UTAUT, namely UTAUT2, is a further developed framework of UTAUT. By identifying key additional constructs and relationships to be integrated into UTAUT, it is tailored to a consumer use context (Venkatesh et al. 2012). Consequently, UTAUT2 includes constructs of hedonic motivation (HM), price value (PV) and habit, in addition to the four previously listed constructs included in UTAUT (Venkatesh et al. 2012). In comparison to the original UTAUT, the expansion offered by the UTAUT2 significantly increased the variance explained in BI (from 56% to 74%) and use behaviour (from 40% to 52%) (Tandon, Goel & Bishnoi 2016).

Extended unified theory of acceptance and use of technology 3 (UTAUT3): UTAUT3 expands the UTAUT2 by including trust and perceived risk (PR) as key drivers of BI (Penney et al. 2021). It is envisaged that trust and PR will be prominent factors for the acceptance and use of an online bank.

Each model listed above has variables that can be applied to technology acceptance and utilisation depending on the elements that determine its structure, from different perspectives. As a result, this study offers fresh perspectives on a critical situation but is not recognised as being worthwhile in terms of research into how customers intend to use and accept technology (Penney et al. 2021). The models of consumer technology acceptance mentioned above (Figure 1) are the foundation of the UTAUT3 framework, which serves as the theoretical basis for this study (as discussed in Section 'Theoretical framework' below).

Factors influencing the acceptance of online banking

Performance expectancy, FC, habit, PR and institution-based trust are all associated with millennials' intention to use mobile banking apps. Facilitating conditions, PR and BI have a direct and positive impact on millennials' use of mobile banking apps (Thusi & Maduku 2020). According to Thusi and Maduku (2020), millennials are more inclined to use mobile banking apps since they rely extensively on technology. However, the reasons why millennials utilise mobile banking apps have received little attention in the literature concerning mobile banking despite their importance. To make their

traditional financial services more affordable, quicker, convenient and safer than ever before, traditional banks have digitalised their consumer banking (Lee, Wewege & Thomsett 2020). According to Lee et al. (2020), the previous statement, written from the perspective of a banking customer of a financial institution, aims to lower costs and risks while investigating new channels for providing banking services and a more unique, client-centric banking experience. Moreover, digital finance may offer a more practical platform for people to engage in routine financial activities. These include paying for electricity and water and sending money to family and friends (Ozili 2018).

Facilitating conditions reflect consumer confidence in the availability of services and support networks for technological advances (Venkatesh et al. 2012). Facilitating conditions indicate the availability and accessibility of resources that promote the acceptance of specific behaviour, considering this study, and the availability of facilities to assist in the acceptance and use of online banking. To ensure that low-income and underprivileged people can access digital financial services anytime, anywhere and at any price, there must be quality and inexpensive, ready access to digital connections (Ozili 2018). The acceptance of the services is also influenced by education (Chikondi Daka & Phiri 2019). Moreover, millions of low-income consumers could benefit from recent advancements in the availability and affordability of formal digital financial services on secure digital platforms instead of informal cash-based transactions (Ozili 2018). To improve financial life and customer experience, banks can leverage their size, reputation and trust as well as ongoing technical improvements to raise the efficiency and accessibility of financial services (Lee et al. 2020).

Digital banking will continue to advance and upgrade with more security, delighting clients in an era of cloud and mobile banking with personalised banking experiences (Lee et al. 2020). In the context of mobile banking, customer assessments of how well banks can conduct successful mobile banking transactions could be characterised as institution-based trust (Thusi & Maduku 2020). The Internet environment, like economic activities, demands trust (Penney et al. 2021). Researchers found that building trust is essential for persuading new clients to embrace mobile banking choices. While progress and innovation continue, it is critical to protect consumer rights and responsible financial practices (World Bank Group 2018). Recent research on Internet banking revealed that one key reason why customers are still hesitant to conduct their financial activities online is precisely that – a lack of trust. Research has highlighted that consumers perceive differently depending on the type of product being evaluated (Chavali & Kumar 2018). According to some earlier studies, adoption process of a new product and BIs are related to trust (Kusumawati 2020). If digital finance platforms are easy to use, DFS users can educate and persuade their peers in the formal and informal sectors to benefit from DFS, increasing the number of individuals utilising digital finance and promoting financial inclusion (Ozili 2018).

The factors above contribute to the BI to use an online bank such as TymeBank, which is also part of the UTAUT3 framework. TymeBank is a challenger bank established with financial inclusion as its primary goal. According to previous case studies, customer acquisition expenses for digital banks can be as low as 5% – 15% of traditional retail bank expenditures (Jeník, Flaming & Salman 2020). While TymeBank is a new fintech entrant, this study aims to discover and discuss the factors influencing the acceptance and use of an exclusively online bank.

Challenges to the acceptance and use of online banking in developing countries

The COVID-19 crisis has had possible benefits for the market, but it also presents challenges for smaller fintech firms in terms of funding tightening, rising non-performing loans, a decline in transactions, and credit demand (Eriksson Von Allmen et al. 2020). Eriksson Von Allmen et al. (2020) suggest that widespread consolidation and retrenchment of start-ups would result in greater concentration in the sector, potentially slowing inclusion. While the numbers are impressive, the industry's effort to reach unbanked people, such as low-income workers, micro-entrepreneurs and rural dwellers, is even more interesting (World Bank Group 2018). World Bank Group (2022) highlights that there are unknown and unpredictable expenses to unskilled and vulnerable customers, and the new types and new uses of data further introduce new privacy and cybersecurity issues. Betts et al. (2019) suggest that although seniors include many digitally cognisant older-aged adults, it is important to be mindful that the ever-evolving and instantaneous shifts to technology may require that some of this group may require training to stay abreast of the emerging advances. In addition, there are numerous challenges to financial inclusion: international agreements, information sharing and competition rules to combat financial fraud and cyberattacks and to maintain a competitive market (Eriksson Von Allmen et al. 2020).

Often, people in underprivileged neighbourhoods do not believe bank marketers who try to convince them to utilise digital finance services; instead, they are more likely to believe recommendations they receive from friends and family who already use these services (Ozili 2018). In a similar vein, customers who are aware that their data is vulnerable to cyberattacks may lose faith in digital channels or refrain from utilising these channels to conduct crucial financial transactions until robust customer protection mechanisms are in place (Ozili 2018). Data for South Africa suggest that there are over 90 million mobile connections and that 20 to 22 million people use smartphones (Statista 2023). However, only 43% of this mobile population relies on mobile devices for financial activities (Thusi & Maduku 2020). The weak consumer trust in these financial channels makes it difficult for developing and emerging economies to implement digital banking inclusion initiatives (Ozili 2018). In an online platform maintaining a poised anticipation that despite potential risks, vulnerabilities will not be exploited, reflects a sense of confidence (Garepasha et al. 2020).

To effectively encourage early trust in online banking, all financial providers, merchants and partnered institutions could share client protection policies and declarations of guarantees in their marketing campaigns (Penney et al. 2021). Moreover, the increase in financial data inclusion does not aid financial inclusion when low-income individuals use digital systems but are unable to use point-of-sale (POS) systems to buy necessities from nearby small businesses (Ozili 2018). Retail banks must therefore prioritise the expansion of mobile banking services if they hope to cut costs and improve customer experience (Thusi & Maduku 2020). Often, the unbanked poor mired in poverty choose not to engage in the formal financial system because they are uneducated regarding the use, advantages, and risks of digital finance services (Ozili 2018).

Theoretical framework

The original UTAUT model encompasses four deciding factors – PE, EE, SI, and FC. However, gender, age, experience and voluntary use are also moderate variables in the model (Berdibayev & Kwon 2021). However, these factors are not included in the UTAUT3 model and will not be identified in this study because of secondary data collection.

There are nine constructs outlined in Figure 1 that are used in this study, as defined below:

1. *Performance expectancy* is defined as the extent to which technology will benefit consumers when performing specific activities (Venkatesh et al. 2012).
2. *Effort expectancy* is the degree of ease from efforts because of using new technology (Venkatesh et al. 2012).
3. *Social interaction*, according to Venkatesh et al. (2012), is the value consumers place on the viewpoints of close relatives when deciding whether to use a specific innovation.
4. *Facilitating conditions* reflect consumer confidence in the availability of services and support networks for technological advances (Venkatesh et al. 2012).
5. *Hedonic motivation* is the enjoyment gained from using technology (Venkatesh et al. 2012).
6. *Price value* is a person's psychological payoff analysis between both the user satisfaction with certain innovations and the financial cost of utilising those (Venkatesh et al. 2012).
7. *Habit* is defined as the extent to which people perform actions impulsively (Venkatesh et al. 2012).
8. *Trust* is a person's sense of security, confidence, and readiness to rely on a system, service or product to live up to their expectations and not let them down (Kim, Chung & Lee 2011; Penney et al. 2021).
9. Perceived risk is the level of uncertainty people expect concerning the effects of utilising a specific technology (Penney et al. 2021; Tan & Leby Lau 2016).

This methodology has already been applied to several studies on the acceptance of Internet banking (Eneizan et al. 2019; Owusu Kwateng, Osei Atiemo & Appiah 2019; Plender, Matias & Timosan 2020; Thusi & Maduku 2020). Extensions suggested in UTAUT2 are thought to have significantly

improved the variation explained in technological use (from 56% to 74%) and BI (40% to 52%) compared to UTAUT (Venkatesh et al. 2012), and thus have been chosen for this study. The next section details the research design and methodology used for this study.

Research methods and design

The following section details the research design, unit of analysis, data collection, data analysis, and ethical considerations applied to this study.

Research design

This study used a qualitative research method in the form of an exploratory case study. While quantitative studies using surveys are common in determining factors that influence the use of mobile banking (Baptista & Oliveira 2015; Yahaya & Ahmad 2019) and allow for generalisation, a case study allows for the identification of patterns in data in a specific geographical area (Yin 1984). Qualitative research allows for a nuanced understanding of participants' experiences and perceptions, offering insights into the nuances of online banking acceptance during the pandemic. Given the focus on South Africa and the limited existing studies on online banking acceptance in the region, qualitative methods provide an opportunity to capture the unique socio-economic and cultural context, contributing to a more holistic understanding (Hesse et al. 2019). Consumers and marketers now rely on online reviews as a source of important information (Robson et al. 2013). According to Pasmawati et al. (2020), there is a consensus that online customer reviews offer more information than traditional surveys because of their ability to overcome turnaround time and other limitations. A case study is a thorough analysis of a current occurrence in its actual setting (Schoch 2020). Therefore, based on the definition, this case study focusses on a single case exploring the TymeBank application, a South African exclusively online bank using online reviews.

Unit of analysis

The unit of analysis are individuals using TymeBank. TymeBank is a South African digital bank that focusses on making things simple, clear, and affordable. It is based in South Africa and is devoid of branches, meaning users pay significantly less for banking: no monthly fees and payment only for what is used (TymeBank 2022). The bank website link is <https://www.tybank.co.za/> and more information on this digital bank can be found here as well as the platform to download the application. Jeník et al. (2020) provide an overview of TymeBank:

TymeBank was founded and built to bank the unserved and underserved mass market. The core value proposition that brought 2 million customers to TymeBank in two years are simple products for daily use, such as checking accounts, savings accounts, and debit cards, that are more affordable than that of competitors, accessible where customers live, and bundled with nonfinancial incentives that resonate with customer lifestyle. TymeBank combines online experience through a mobile app

with offline experience through partner grocery stores and offline and online access through kiosks. (p. 11)

The primary research question aims to investigate the key factors contributing to the acceptance and use of online banks within South Africa. Thus, the appropriate unit of analysis is individuals who use an online South African bank.

Data collection

The sample is comprised of individuals who use online banking provided by an entirely online bank. Secondary data was obtained from Google reviews (<https://play.google.com/store/apps/details?id=consumer.cbsa.smartapp>). The average rating for the TymeBank app is 4.5 stars. In Taherdoost's (2016) view, purposive sampling can be used to draw conclusions about a population. This sampling method is best suited for this study because we investigated factors influencing the acceptance and use of an online banking in South Africa, specifically.

The collection period for the Google reviews ranges from March 2020 to 05 April 2022, when the COVID-19 regulations were lifted. A total of 113 Google reviews were collected for this study during the collection period.

Google reviews provide insights into user experiences; but it is important to acknowledge the limitations of using this data source. Since Google reviews are user-generated material, their objectivity and sincerity might vary. To address this concern, efforts were made to include a diverse range of reviews to capture a more comprehensive understanding of online banking acceptance in South Africa.

Data analysis

The study used thematic analysis. Thematic analysis, as described by Braun and Clarke (2006), is a process for finding, investigating, and reporting data patterns (themes). The analysis process used a deductive approach given that it was built on previously used theories in a top-down, deductive manner (Friese, Soratto & Pires 2018). Additionally, various factors and themes were identified. The data collected for this study were analysed by entering the extracted Google reviews into ATLAS.ti (ATLAS.ti Scientific Software Development GmbH, Federal Republic of Germany), a computer-assisted qualitative data analysis software (CAQDAS) to facilitate the analysis of qualitative data. Different theoretical stances and various data analysis techniques can be used with ATLAS.ti (Friese et al. 2018). Data were then coded into several themes based on the UTAUT3 framework used in this study.

Ethical considerations

The data used in the study is secondary data obtained from Google Play Store as customer reviews. The data are publicly available and anonymised, therefore requiring no ethical

approval for use: (<https://play.google.com/store/apps/details?id=za.co.shoprite.sixty60>).

Results and discussion

This study focussed on factors that influence the acceptance and use of a South African online bank to improve digital financial inclusion. The primary research questions of the study were: Which factors influence the acceptance and use of a South African online bank, and what challenges the acceptance and use of online banking by South Africans? Despite a dearth of research on the acceptance of online banking in South Africa, the UTAUT3 model has been applied to discover several themes in data analysis that highlight the factors that influence the acceptance and use of online banking. The themes determined by this study include the UTAUT3 model variables (refer to Figure 1) and the factors that influence the acceptance of online banking. The results in Figure 2 indicate the factors that influence the acceptance and use of a South African online bank.

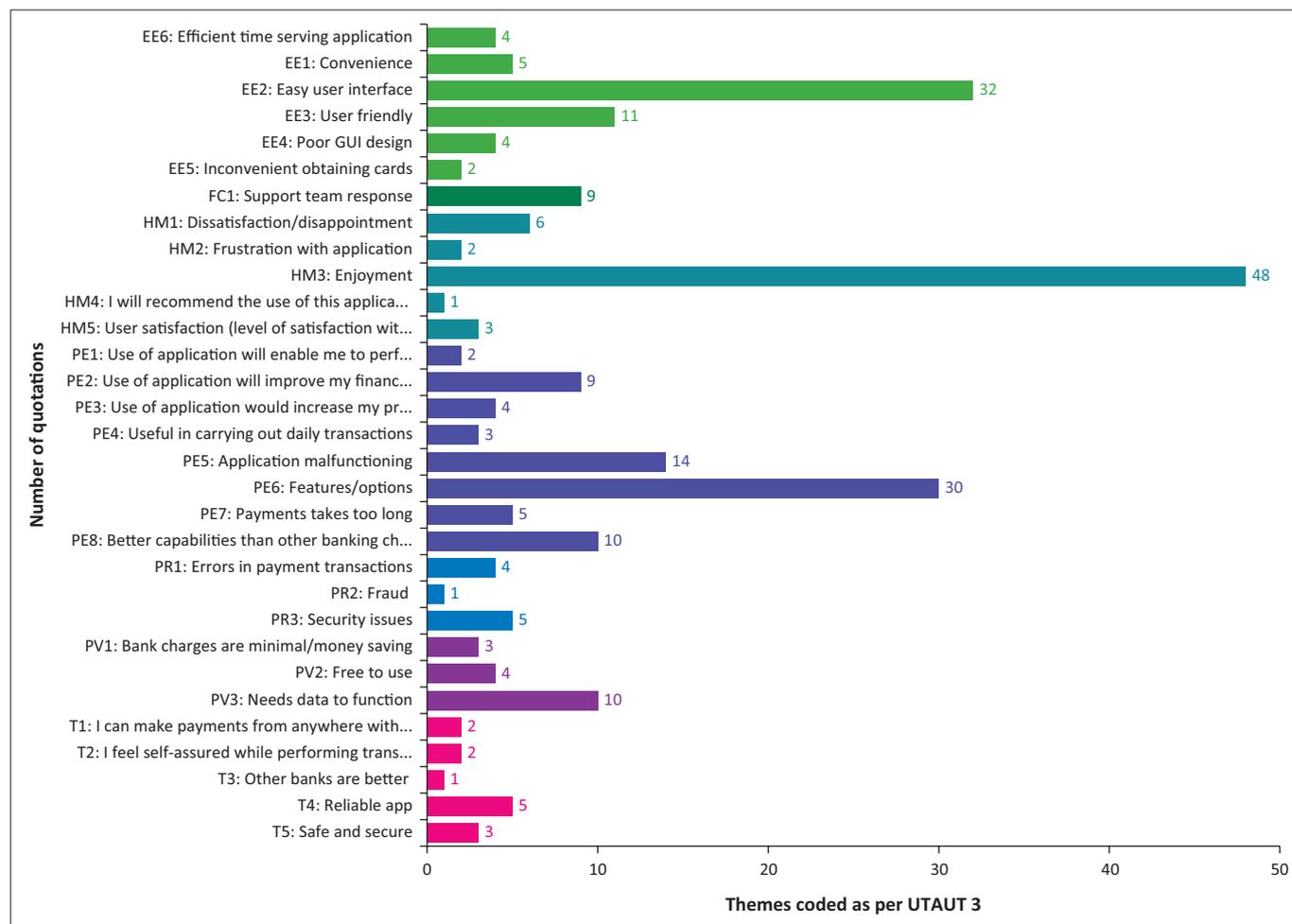
Themes identified from the Unified Theory of Acceptance and Use of Technology 3 model

Themes were coded following UTAUT3 constructs to achieve the goal. It was discovered that seven of the nine constructs adequately describe the factors influencing people's use and acceptance of online banking in South Africa, specifically during the COVID-19 pandemic level 5. Level 5 restrictions include some of the following (Department of Communications and Digital Technologies 2020):

- Stay-at-home orders: Citizens were compelled to spend as much time as possible at home, except for essential activities, such as going grocery shopping or getting medical attention.
- Non-essential businesses closed: Most non-essential establishments, including retail stores, entertainment venues, and recreational facilities, were no longer open to the public.
- Public gatherings, such as social events, religious ceremonies, and cultural activities, were outlawed or highly constrained in terms of attendance.
- Travel restrictions: Both domestic and international travel were hindered, with possible border closures to stop individuals from moving between regions and nations.
- School and university closures: Most educational institutions were closed, and virtual learning was used as an alternative.

Performance expectancy

Users claim that the banking application helps them perform banking tasks faster. One user noted they do not have to type the numbers to perform airtime purchases or make payments as the application suggests them based on their previous transactions. Another user says adding or changing their details to receive statements is approved in a minute, there is no need to wait for the bank to approve it, and the statement is sent via email immediately. This



EE, effort expectancy; FC, facilitating conditions; HM, hedonic motivation; PE, performance expectancy; PR, perceived risk; PV, price value; T, Trust.

FIGURE 2: Bar chart of findings.

participant's experience is consistent with the research that indicates that digitising traditional banking improves consumer banking experiences in terms of cost, speed, convenience and safety. Financial performance is important to online bank customers, especially for assistance in saving and additional cashback benefits. Several respondents stated that using the application improved their financial performance. One participant mentioned:

'Love TymeBank coach option gives you great suggestions on how to save your money and gives you a great understanding of how credit works. I'm impressed TymeBank team'. Another user mentioned, 'When you buy using your Tyme card ("I chose Pick 'n Pay [a South African retailer] because I use it frequently") you get points which you can use anytime.'

This quote explicitly highlights the financial advantages of using the banking application.

Participants believe the application has increased their productivity by allowing them to tap into the many benefits like the goal saver table and allowing them to use the rewards to shop at Pick n Pay. As many bankers use banking applications to carry out daily transactions, participants agreed that the application allowed them to perform daily transactions like buying airtime or data or several other

useful transactions. It is believed that an application with better capabilities than other banking channels is more likely to be accepted by potential users. Users claim that the interest savings are great. For example, one user stated, 'I love the interest rate and these options to hedge multiple goals save for just about all your specific needs'. Participants further expressed appreciation for the link between phone contacts and the application to make purchases. The uptime of the application is good; therefore, they are happy that they can transfer to another bank and there is a clear view point on the application. The fact that the app caters to users' specific needs is a positive factor that contributes to the use and acceptance of the banking application.

Previous research has proven that features and options of online banking could entice people to either accept or discard the idea of an app. Users have suggested features and options that would make the application more valuable and appealing to them, such as adding an option to withdraw a portion of saved money, adding a feature to buy lottery tickets, and an option to pay Netflix account. Users would also like to download transaction history in Excel format, shop online, increase the time a deposit PIN is valid, allow international transactions, show payments that still need to clear from the bank. Additionally, users would like to add an

immediate pay and clear option, allow a change of banking details, add a link to PayPal, reverse money, purchase electricity and airtime on the app, view the current interest rate, and send money to a TymeBank user. According to the literature, as mentioned earlier, millennial users explain that their acceptance of digital banking would come from new channels providing banking services and a more unique, client-centric banking experience, as highlighted in the above-mentioned findings.

However, an application that malfunctions may discourage potential users from accepting the banking application. According to the findings of this study, users were experiencing issues with this banking app: struggling to log in; periodic technical glitches; inability to use the application if phone contacts were inaccessible; transactions failing then returning to sender. Additionally, the inability to add beneficiaries; seeing a black screen when opening the application; interfering regular updates; inability to reset a PIN; and the application freezing and not functioning properly on weekends. These malfunctions likely deter users from accepting and using online banking. A few users indicated that payments take too long to reflect in the TymeBank account and the option Tymecode should be instant but also takes a while to reflect, including notifications when payments are made or received.

Effort expectancy

Numerous respondents shared that using the application was convenient and functional for performing transactions at any time of day, whenever convenient. This was highlighted by the following quotations:

'It is convenient'; 'It is useable to purchase utility any time of night or day'; and 'You can be able to do anything online without going to the bank'.

Respondents indicated that the application is user-friendly, clear and straightforward, with all the necessary features. Many respondents claim that this application has an easy user interface and is simple enough for both young and elderly to use. This is indicated by the following quotations:

'Even a 9-year-old can use this app'; and 'TymeBank is the best, quick and easy to use even by the elderly who are technology-wise. No complications. A transaction takes place under five minutes.'

Despite many users suggesting the application is user-friendly and convenient, other users were not entirely happy with the application's graphical user interface (GUI) design. One user advised that there is a continuous and ineffective pop-up that resists permanent closure by users, as evidenced by the following quotation:

'Every time you open the app, the open a business account feature pops up and you have to say I got it. This is a poor GUI design as there's not even an option to close this permanently.'

Another user expressed dissatisfaction about a certain value that is not displayed, remarking as follows:

'My only complaint is it's not displaying the current interest rate on goals. It only shows interest accumulated'.

Another respondent indicated that hiding their password each time they log in was an inconvenience, and it would have been better if there was an additional way to sign in, for example, a fingerprint sign-in option. Another user was unhappy because the application does not allow for landscape mode. Finally, users found that having the account but still not being able to obtain a card from Pick n Pay stores was an inconvenience.

The time-saving functionalities offered by the application is a key factor contributing to its usage. Some users praised it as one of the most effective time-saving applications they have ever used. They also mentioned that they no longer have to queue for banking needs as the application is so helpful. During COVID-19, long queues arose as people could only visit shops and banks at certain times of the day, in obedience to the time restrictions and curfews. A banking application such as TymeBank has made provision for any future pandemics and may minimise user inconvenience in the future.

Facilitating conditions

The inadequate app support team response was identified as a factor that contributed to some users' reluctance to use online banking. Users stated that, for the most part, customer service was quite bad. It seemed that the support team did not know how to assist users with certain issues and in other cases, support response time was extremely slow after users submitted a request or a complaint. In reference to the literature discussed earlier, it is important to provide decent and timely customer service, as this would encourage potential users to accept online banking as an integral part of their daily life.

Hedonic motivation

Users wrote that they had an amazing experience with the application. One respondent glowed, 'I experience a lot in this app. It's amazing I love it and I will always keep in touch with it'. Another respondent claimed that the app works better than FNB, and another mentioned that TymeBank keeps on surprising the users in a good way. In addition, users also reported that they are in love with TymeBank and Pick n Pay. Several users are satisfied with the application thus far, and enjoy the fact that it functions properly.

Contrary to the majority of users who enjoy the use of online banking, a few users, however, were unhappy and disappointed in the Goal save account; they felt it was not performing as it should and was wasting their time, because when they wanted to do partial disbursements, it withdrew the full amount instead, resulting in the need to create a new savings account to replace the remaining funds they did not need. Another user was adamant that using TymeBank has been the worst experience: 'Worst banking experience in 15 years'. Yet another user just stated frankly that they were not happy with TymeBank. In addition, a few users mentioned

their frustration with TymeBank from various experiences – annoying bugs, generating the business account feature, and constantly requiring updates – which interfere with application use.

Price value

Bank charges can be exorbitant when utilising some banks, so a bank positioned to offer low or minimal bank charges will increase the acceptance factors for potential users. Study participants stated that TymeBank is one such bank with minimal bank charges, with one user claiming, 'If you are looking for a bank with no/low monthly fees #TYMEBANK is the go-to bank/app'. Even more, a bank that is free to use will be more readily accepted by bankers as this will save money and allow extra funds for other costs. TymeBank application users are pleased that the use of the application is free for daily transactions, giving them value for price.

However, a few users were unhappy because the application on their side still needed data to function. One user said:

'But please make an app free for all networks because I want to buy airtime quickly and I have to go to local shops to buy airtime/data physically to buy airtime/data/electricity on the app, which doesn't make sense.'

This indicates that the application is only free for specific networks, but not all. Users were explaining that the app requires data even for essential functions and tools, hindering their daily use.

Trust

Feeling self-assured when performing transactions elevates a form of trust and confidence that an application will not let you down when needed. TymeBank banking app users believe the application works well, especially because it is in the early stages of development. It has also been proven that reliability is very important in influencing a potential user to trust the offered product. Study participants testified to this application being reliable for quite some time already. Adding to the safety and security aspects that are significant prerequisites for financial institutions, the users felt a sense of safety and security with this bank.

Previous findings indicated that users were happy in most cases with the use of the online bank in South Africa; however, some users found it difficult to trust the application as they were not able to access the application via Wi-Fi and at times, faced server connection timeouts that interfered with usage. One user felt that African Bank is better as it offers higher interest rates than TymeBank, discouraging this participant from partaking in TymeBank and choosing African Bank instead.

Perceived risk

Perceived risk has an influential effect on the use of online banking. A few respondents stated security concerns when

using TymeBank. Users advised that an access PIN should apply for the use of the application and should be complex; furthermore, a fingerprint lock should be introduced for the application. In addition, a user suggested that a PIN be required to tap to pay. Another user advised security for the application to prevent cyberattacks:

'Please secure this App with additional security services like Entersekt, to ensure customer's funds won't be at risk at all for cyber attackers. The last ☆ is for security measures only.'

Thereafter, a few respondents experienced errors in payment transactions that pose a risk for them and which will deter them from using the application. One user was unsuccessful in using the app to make international online purchases like Netflix; another could not transfer money to their other accounts like Capitec; another complained that most places do not have TymeBank listed to make payments; and lastly, one user could not use the card online – it simply did not work. The user argued that the bank has a fraud risk because of a delay in notifications: 'Message notifications are delayed which makes possible for fraud if notifications can be instant when you withdraw like when you deposit even the transfer does not notify'.

There are obvious opportunities with the banking application to develop digital banking, savings and credit products, as well as digitise value chain funding and vendor payments. This can significantly improve consumer benefits and usage, along with long-term provider sustainability (World Bank Group 2018). When user reviews were analysed regarding the use of TymeBank, many users appeared to enjoy the simplicity of the application; however, more than one user noted that the application is slow, and they would prefer a fingerprint unlock instead of a PIN because PINs are outdated. The above statements confirm that technology is moving at a rapid pace and for new digital banks to keep abreast of the pace and gain customers, they must improve apps at a faster rate than most are doing. Another review mentioned that the data use of the application can become too much, as there may be times when the preference is to use money in a certain situation, but a user is unable to do so because of data restraints. The request would be to make this function a zero-rated function as it is a function that can be used regularly. These factors above suggest that some users may not be attracted to TymeBank in South Africa because they may receive zero-rated functions from other banks that are not available from TymeBank.

Conclusion

This study investigates the factors impacting the acceptance and use of an online banking application to increase digital financial inclusion. The UTAUT3 model was utilised as a foundation for this investigation, drawing on the literature. Specifically, the UTAUT3 model's nine core constructs – PE, EE, SI, FC, HM, PV, habit, trust, and PR – were used to determine the factors that influence the user acceptance of

online banking to encourage digital financial inclusion, specifically during the COVID-19 pandemic. The results indicate that seven of the nine constructs of the UTAUT3 model can explain factors for user acceptance of online banking applications for individuals in South Africa as a developing country.

Despite the numerous difficulties, some respondents claimed that utilising TymeBank as their banking platform has provided them with more advantages than disadvantages. This is because the online banking application is more practical and has a simple user interface. Additionally, users reported fantastic experiences using TymeBank because of the unique features and advantages which other applications do not provide. Therefore, they suggested modifications like introducing a feature to make payments worldwide ought to be implemented.

The factors found in this study are specific to app users in the South African context and therefore, might not apply to the entire world's population.

To identify strategies to achieve improved digital financial inclusion, further investigation is needed into factors that contribute to users' and potential users' lack of social influence, habits, and perception of risk in low socioeconomic areas of South Africa. Engaging in a more thorough research study may potentially reveal additional challenges as well.

Acknowledgements

The National Research Foundation's (NRF) financial assistance towards this research is hereby acknowledged. Opinions expressed and conclusions arrived at, are those of the author and are not necessarily to be attributed to the NRF.

Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

F.P. conceptualised the research, found the data, validated the results and supervised the project. L.G. defined the methodology, completed the analysis, and wrote the original draft.

Funding information

This research received funding from the NRF.

Data availability

Data are publicly available Google reviews (<https://play.google.com/store/apps/details?id=consumer.cbsa.smartapp>).

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors, and the publisher.

References

- Al-Saedi, K., Al-Emran, M., Ramayah, T. & Abusham, E., 2020, 'Developing a general extended UTAUT model for M-payment adoption', *Technology in Society* 62, 101293. <https://doi.org/10.1016/j.techsoc.2020.101293>
- Alshammari, F.H., 2020, 'A review of theories and models of technology acceptance', *Journal of American Academic Research* 8(1), 60–70, viewed 15 July 2022, from <https://www.researchgate.net/publication/342217023>.
- Baptista, G. & Oliveira, T., 2015, 'Understanding mobile banking: The unified theory of acceptance and use of technology combined with cultural moderators', *Computers in Human Behavior* 50, 418–430. <https://doi.org/10.1016/j.chb.2015.04.024>
- Berdibayev, Y. & Kwon, Y., 2021, 'Fear of COVID-19, social isolation and digital financial services during the COVID-19 pandemic: The unified theory of acceptance and use technology (UTAUT) model', in *Kwon2Korea Advanced Institute of Science and Technology (KAIST), School of Business and Technology Management*, viewed 21 May 2022, from www.econstor.eu.
- Betts, L.R., Hill, R. & Gardner, S.E., 2019, "'There's not enough knowledge out there": Examining older adults' perceptions of digital technology use and digital inclusion classes', *Journal of Applied Gerontology* 38(8), 1147–1166. <https://doi.org/10.1177/0733464817737621>
- Braun, V. & Clarke, V., 2006, 'Using thematic analysis in psychology', *Qualitative Research in Psychology* 3(2), 77–101. <https://doi.org/10.1191/1478088706qp0630a>
- Chavali, K. & Kumar, A., 2018, 'Adoption of mobile banking and perceived risk in GCC', *Banks and Bank Systems* 13(1), 72–79. [https://doi.org/10.21511/bbs.13\(1\).2018.07](https://doi.org/10.21511/bbs.13(1).2018.07)
- Chikondi Daka, G. & Phiri, J., 2019, 'Factors driving the adoption of e-banking services based on the UTAUT model', *International Journal of Business and Management* 14(6), 43. <https://doi.org/10.5539/ijbm.v14n6p43>
- Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S. & Hess, J., 2020, 'The Global Findex database 2017: Measuring financial inclusion and opportunities to expand access to and use of financial services', *World Bank Economic Review* 34, 52–58. <https://doi.org/10.1093/wber/lhz013>
- Department of Communications and Digital Technologies, 2020, *Amendment of directions on the risk-adjusted sector issued under regulation 4(10) of the regulations made under section 27(2) of the Disaster Management Act, 2002 (Act no. 57 of 2002)*, Government Gazette No. 43351, pp. 3–4, viewed 15 April 2022, from https://www.gov.za/sites/default/files/gcis_document/202006/43411gon651.pdf.
- Eneizan, B., Mohammed, A.G., Alnoor, A., Alaboodi, A.S. & Eneizan, O., 2019, 'Customer acceptance of mobile marketing in Jordan: An extended UTAUT2 model with trust and risk factors', *International Journal of Engineering Business Management* 11(11), 1–10. <https://doi.org/10.1177/1847979019889484>
- Eriksson Von Allmen, U., Khera, P., Ogawa, S. & Sahay, R., 2020, *Digital financial inclusion in the times of COVID-19 – IMF blog*, viewed 23 May 2022, from <https://blogs.imf.org/2020/07/01/digital-financial-inclusion-in-the-times-of-covid-19/>.
- FinScope, 2019, *FinScope South Africa 2019 pocket guide*, Finmark, Midrand.
- Fishbein, M. & Ajzen, I., 1977, *Belief, attitude, intention, and behavior: An introduction to theory and research*, Addison-Wesley, Reading, MA, viewed 06 September 2022, from <http://people.umass.edu/ajzen/f&a1975.html>.
- Friese, S., Soratto, J. & Pires, D., 2018, *Carrying out a computer-aided thematic content analysis with ATLAS.ti*, 18, Göttingen, viewed 23 March 2022, from www.mmg.mpg.de/workingpapers.
- Garepasha, A., Aali, S., Bafandeh Zendehe, A.R. & Iranzadeh, S., 2020, 'Relationship dynamics in customer loyalty to online banking services', *Journal of Islamic Marketing* 12(4), 830–863. <https://doi.org/10.1108/JIMA-09-2019-0183>
- Goodhue, D. & Thompson, R., 1995, 'Task-technology fit and individual performance', *MIS Quarterly* 19(2), 213–236. <https://doi.org/10.2307/249689>
- Hesse, A., Glenna, L., Hinrichs, C., Chiles, R. & Sachs, C., 2019, 'Qualitative research ethics in the big data era', *American Behavioral Scientist* 63(5), 560–583. <https://doi.org/10.1177/0002764218805806>
- Hesse, M., 2022, *Digital disruption of banking has only just begun*, IOL, viewed 24 May 2022, from <https://www.iol.co.za/personal-finance/my-money/banking/digital-disruption-of-banking-has-only-just-begun-cc8335e0-bd5d-4a90-8b28-e094ff8a89fb>.
- Imtiazi, S., 2018, 'The studies of unified theory of acceptance and use of technology (UTAUT) in M-commerce context', *International Journal of Information Communication Technology and Digital Convergence* 3(1), 42–56, viewed 29 April 2022, from <https://www.researchgate.net/publication/344247614>.
- Jenik, I., Flaming, M. & Salman, A., 2020, *Inclusive digital banking: Emerging markets case studies consultative group to assist the poor*, Washington, DC, pp. 1–48, viewed n.d., from https://www.cgap.org/sites/default/files/publications/2020_10_Working_Paper_Inclusive_Digital_Banking.pdf

- Khera, P., Ogawa, M.S. & Sahay, M.R., 2021, *Is digital financial inclusion unlocking growth?*, International Monetary Fund, viewed 06 May 2022, from <https://www-elibrary-imf-org.library.svsu.edu/view/journals/001/2021/167/article-A001-en.xml?rskey=7sCRIJ&result=9>.
- Kim, M.J., Chung, N. & Lee, C.K., 2011, 'The effect of perceived trust on electronic commerce: Shopping online for tourism products and services in South Korea', *Tourism Management* 32(2), 256–265.
- Kusumawati, N., 2020, 'Trust role in acceptance of digital banking in Indonesia digital banking view project', *International Journal of Trade, Economics and Finance* 11(1), 13–18. <https://doi.org/10.13140/RG.2.2.32559.07843>
- Lee, J., Weewege, L. & Thomsett, M.C., 2020, *Disruptions and digital banking trends*, Scientific Press International Limited, viewed 14 June 2022, from <https://www.researchgate.net/publication/343050625>.
- Machasio, N., 2020, 'How to leverage digital technologies during the pandemic', *COVID-19 and Digital Financial Inclusion in Africa* 1(4), 1–7.
- Owusu Kwateng, K., Osei Atiemo, K.A. & Appiah, C., 2019, 'Acceptance and use of mobile banking: An application of UTAUT2', *Journal of Enterprise Information Management* 32(1), 118–151. <https://doi.org/10.1108/JEIM-03-2018-0055>
- Ozili, P.K., 2018, 'Impact of digital finance on financial inclusion and stability', *Borsa Istanbul Review* 18(4), 329–340. <https://doi.org/10.1016/j.bir.2017.12.003>
- Pasmawati, Y., Tontowi, A.E., Hartono, B. & Wijayanto, T., 2020, 'Exploiting online customer reviews for product design', *IOP Conference Series: Materials Science and Engineering* 909(1), 012080. <https://doi.org/10.1088/1757-899X/909/1/012080>
- Penney, E.K., Agyei, J., Boadi, E.K., Abrokwah, E. & Ofori-Boafo, R., 2021, 'Understanding factors that influence consumer intention to use mobile money services: An application of UTAUT2 with perceived risk and trust', *SAGE Open* 11(3), 1–17. <https://doi.org/10.1177/21582440211023188>
- Plender, J.L., Matias, J.B. & Timosan, J.Q., 2020, 'Adoption factors on online money transfer services in a developing country: A view on extended unified theory of acceptance and use of technology', *International Journal of Advanced Trends in Computer Science and Engineering* 9(1.1 S I), 129–137. <https://doi.org/10.30534/ijatse/2020/2491.12020>
- Rawwash, H., Masa'd, F., Enaizan, O., Eanizan, B., Adaileh, M.J., Saleh, A.M. et al., 2020, 'Factors affecting Jordanian electronic banking services', *Management Science Letters* 10(4), 915–922. <https://doi.org/10.5267/j.msl.2019.10.004>
- Robson, K., Farshid, M., Bredican, J. & Humphrey, S., 2013, 'Making sense of online consumer reviews: A methodology', *International Journal of Market Research* 55(4), 6. <https://doi.org/10.2501/ijmr-2013-046>
- Schoch, K., 2020, 'Case study research', in G.J. Burkholder (ed.), *Research design and methods: An applied guide for the scholar-practitioner*, pp. 245–258, SAGE, Los Angeles.
- Statista, 2023, *Smartphone users in South Africa 2014–2023*, viewed 14 July 2023, from <https://www.statista.com/statistics/488376/forecast-of-smartphone-users-in-south-africa/>.
- Taherdoost, H., 2016, *Sampling methods in research methodology; how to choose a sampling technique for research*, viewed 17 April 2022, from <https://hal.archives-ouvertes.fr/hal-02546796>.
- Tan, E. & Leby Lau, J., 2016, 'Behavioural intention to adopt mobile banking among the millennial generation', *Young Consumers* 17(1), 18–31.
- Tandon, A., Goel, M. & Bishnoi, S., 2016, 'Consumer awareness towards internet banking: a comparative study of public, private and foreign banks', *International Journal of Hybrid Information Technology* 9(6), 77–90.
- Taherdoost, H., 2018, 'A review of technology acceptance and adoption models and theories', *Procedia Manufacturing* 22, 960–967. viewed 17 April 2022, from <https://doi.org/10.1016/j.promfg.2018.03.137>
- Thusi, P. & Maduku, D.K., 2020, 'South African millennials' acceptance and use of retail mobile banking apps: An integrated perspective', *Computers in Human Behavior* 111, 106405. <https://doi.org/10.1016/j.chb.2020.106405>
- TymeBank, 2022, *Bank with South Africa's digital bank – TymeBank – South Africa*, viewed 02 September 2022, from <https://www.tybank.co.za/>.
- Venkatesh, V., Morris, M.G., Davis, G.B. & Davis, F.D., 2003, *User acceptance of information technology: Toward a unified view*, viewed 31 October 2022, from <https://www.jstor.org/stable/30036540>.
- Venkatesh, V., Thong, J.Y.L., Xu, X. & Walton, S.M., 2012, *Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology*, viewed 31 October 2022, from <https://www.jstor.org/stable/41410412>.
- Winston, J., 2021, 'A study on the impact of transformation from traditional banking to online banking among banking customers in Chennai', in *Modern banking system in India new trends & prospects*, p. 116, Nitya Publications, Bhopal.
- World Bank, 2018, *Igniting SDG process through digital financial inclusion*, pp. 1–45, viewed 23 May 2022, from https://sustainabledevelopment.un.org/content/documents/2655SDG_Compndium_Digital_Financial_Inclusion_September_2018.pdf.
- World Bank Group, 2018, *Digital access: The future of financial inclusion in Africa*, viewed 27 May 2022, from <https://www.ifc.org/en/insights-reports/2018/201805-report-digital-access-africa>.
- World Bank Group, 2022, *Digital financial inclusion*, viewed 27 May 2022, from <https://www.worldbank.org/en/topic/financialinclusion/publication/digital-financial-inclusion>.
- Yahaya, M.H. & Ahmad, K., 2019, 'Factors affecting the acceptance of financial technology among Asnaf for the distribution of Zakat in Selangor – A study using UTAUT', *Journal of Islamic Finance, Special Issue* 8, 35–46.
- Yin, R.K., 1984, *Case study research: Design and methods*, Sage, Beverly Hills, CA.