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Adopting the technology acceptance model: A Namibian perspective

Authors:
Mia Bothma[1]
Leandrie Mostert[1]

Affiliations:
[1]WorkWell Research Unit, Faculty of Economic and Management Sciences, North-West University, Potchefstroom, South Africa

Corresponding author:
Mia Bothma,
mia.bothma@nwu.ac.za

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Background: The adoption of online banking is still a concern in developing countries, with limited research in investigating the factors that can lead to the intention to use and the actual usage of online banking.

Objectives: This research aims to broaden the knowledge about technology adoption by applying the technology acceptance model (TAM) to the online banking environment in Namibia.

Methods: A descriptive, quantitative research design and structural equation modelling (SEM) were employed to analyse the data.

Results: The adopted TAM had good model fit if applied to online banking in Namibia. Nine of the 12 hypotheses were accepted.

Conclusion: System quality and social influence act as external factors that influence the level of trust, perceived ease of use and perceived usefulness. High levels of ease of use and usefulness of the online banking system result in a positive attitude towards the online banking system that in turn leads to the intention to use the system and then actual usage.

Contribution: This study adopted the TAM and included social influence, system quality and perceived trust as factors that can influence the usage of online banking. The study contributed towards the knowledge of technology acceptance from an online banking perspective and can aid the banking sector in increasing the adoption of online banking systems.

Keywords: online banking; technology acceptance model; the Namibian banking industry; perceived ease of use; perceived usefulness; attitude; behavioural intention; actual usage.

Introduction

Online banking services have been revolutionised because of the advancement in information and communication technologies within developing and developed countries (Patel & Patel 2018). Providing a more effective and simplistic way to conduct financial services, online banking overcomes the disadvantages of traditional banking and refers to the use of the Internet to perform banking tasks that increases access to financial systems and reduces poverty while providing opportunities to become part of the financial system (Fanta & Makina 2019; Safari, Bisimwa & Armel 2020). During the last 2-years, online banking users in the world have steadily risen from 1903 million users in 2020 to 2043 million users in 2021, and projections are that online banking users will reach 2551 million by 2024 (Norrestad 2022). Although various research within the online banking environment has been published, most research is conducted within developed countries or continents such as China, USA, Taiwan and Malaysia and limited studies that investigate developed countries/continents such as Africa and Namibia (Al-Emran & Granić 2020; Singh & Srivastava 2020). Namibia is viewed as a developing country and although all the major banks offer online banking, many Namibians are still hesitant to make use of online banking services and because of limited research conducted in developing countries, Namibian banks are in the dark in their quest to understand the drivers of online banking adoption of their client base (Amukeshe 2021).

When investigating the adoption and usage of information systems, intention-based models provide valuable information about an individual's behavioural intentions to predict their adoption rates and use of technology (Lee, Yiu & Cheung 2021). Various technology acceptance theories and models exist such as the theory of planned behaviour (Ajzen 1991), theory of reasoned action (Fishbein & Azjen 1975), technology acceptance model (TAM) (Davis, Bagozzi & Warshaw 1989), TAM2 (Venkatesh & Davis 2000), unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al. 2003), TAM3 (Venkatesh & Bala 2008) and UTAUT2

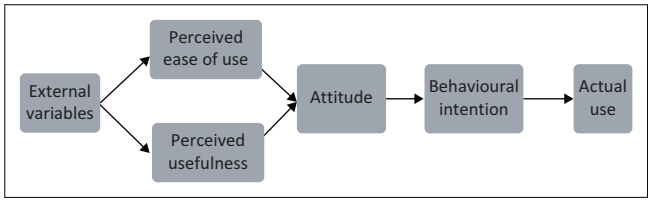
(Venkatesh, Thong & Xu 2012). However, there are different schools of thought about which model is the best to use, specifically within the online banking environment. In a study to determine whether the TAM is still valid and current, Al-Emran and Granić (2020) established that the application and extensions of the TAM are still valid across various applications and disciplines and that the TAM has been mostly employed in the banking domain. In addition to the popularity of using the TAM, the TAM predicts user's technology adoption behaviours by investigating the beliefs and attitudes of the users towards the technology and can be used to evaluate the desire of a customer to use any technology systems (Singh & Srivastava 2020; Zhang, Lu & Kizildag 2018). The TAM is furthermore robust and parsimonious for predicting consumer behaviour across a wide range variety of information technology systems and has been numerously validated by 'psychometric measurement scales' such as a Likert scale that is used to measure consumer attitudes and intentions in accepting (or rejecting) information technology systems (Venkatesh & Davis 2000; Venkatesh et al. 2003). For these reasons, the TAM was used to investigate the technology acceptance of Namibian online banking customers.

This research, therefore, aims to broaden the knowledge about technology adoption in developing countries by applying an extended TAM to the online banking environment in Namibia. In addition, the study aims to provide Namibian banks and banks of emerging economies with a better understanding of the drivers that will lead to online banking adoption within a developing county.

Literature review and conceptual model

An overview of the technology acceptance model

The TAM is based on the theory of reasoned action (Fishbein & Azjen 1975) and aims to better understand user acceptance or rejection of information technology systems by describing the motivational processes that mediate the system characteristics and user behaviour (Davis 1985). As presented in Figure 1, the TAM argues that a user's perception of the usefulness and ease of use of the system will influence their attitude towards the system, which will influence the user's behavioural intention to use the system and will result in the actual usage of the system (Davis et al. 1989). The external variables included refer to system characteristics, the nature of the implementation process, user participation design and user training (Venkatesh & Davis 1996). In addition to the variables included in the TAM of Davis et al. (1989), this research also investigated perceived trust as a higher level of trust increases a customer's certainty perceptions about a specific behaviour when using online services (Nguyen & Nguyen 2016). The online banking environment also includes sensitive information and trust might be a concern for consumers who might influence their behaviour towards online banking (Sharma & Sharma 2019). The TAM is presented in Figure 1.



Source: Davis, F.D., Bagozzi, R.P. & Warshaw, P.R., 1989, 'User acceptance of computer technology: A comparison of two theoretical models', *Management Science* 35(8), 982–1003. https://doi.org/10.1287/mnsc.35.8.982; Ajzen, I. & Fishbein, M., 1975, 'A bayesian analysis of attribution processes', *Psychological Bulletin* 82(2), 261–277; Hair, J.F., Ortinau, D.J. & Harrison, D.E., 2021, *Essentials of marketing research*, McGraw-Hill, New York, NY; Fornell, C. & Larcker, D., 1981, 'Evaluating structural equation models with unobserved variables and measurement error' 18(1), 39–50.

FIGURE 1: Technology acceptance model.

Using the TAM to better understand technology acceptance within the online banking environment is contemporary with various research that has adapted and extended the TAM in different parts of the world. Hossain et al. (2020), for example, extended the TAM by including governmental support and risk among online banking customers in Bangladesh were as Albort-Morant, Pedregosa and Paredes (2022) compared the factors that influence the adoption of online banking among Spanish online banking customers in towns and cities. Also, among Indian online banking customers, the various constructs of the TAM and also factors such as perceived security, self-efficacy, social influence and customer support proved to have a significant impact on customers' behavioural intention to use mobile banking (Singh & Srivastava 2020).

External variables

External variables are important to consider while investigating the adaption of a technology system and are the set of variables that are used to address the characteristics of a system and influence the perceived usefulness and ease of use of the system (Davis et al. 1989; Wahab & Azzman 2019). This study included two external variables, namely social influence and system quality. Relevant to the online banking environment, social influence is the process where individuals affect others' behaviour, feelings and beliefs and is a key determinant in individual behaviour intentions (Wang, Molina & Sundar 2020). Social influence is based on the social influence theory (Kelman 1958) and refers to compliance, identification and internalisation that change attitudes. Compliance refers to individuals accepting influences from others to achieve a favourable reaction, identification occurs when individuals accept influence because they want to maintain a relationship with others that defines them, and internationalisation refers to individuals accepting influences because it is rewarding and integrated into their belief system (Kelman 1958; Xu et al. 2017). All three elements of social influence are relevant to the online banking environment because the social context of an individual can act as a catalyst to adopt new technology and was therefore included in the conceptual model (Mohammadi 2015).

Malaquias and Hwang (2016) observe that if a consumer's social network perceives the risks of online banking to be low, their trust in these services will increase, which, in turn, will affect the consumer's likelihood of adopting the online banking services. In addition, Gong et al. (2019) established a positive correlation between the social influences and trust in the provider within an online health consultation services industry.

Consequently, it is plausible to argue that among Namibian online banking customers:

H1a: Social influence has a positive and significant effect on perceived trust

Perceived ease of use is the perceptions that an individual forms regarding the use of technology, how the use of the system could lead to a reduction in their mental stress levels as well as how efficiently their time will be spent in using the service (Raza, Umer & Shah 2017). Individuals will be more inclined to use online banking when they perceive the provided services are effortless, efficient and easy to use (Cho & Sagynov 2015; Davis et al. 1989). In addition, an individual's opinions formulated by important referents do impact their perceptions of the system or services at hand. Therefore, if family members, friends or important others perceive online banking to be easy to use, it is most likely that individuals will also adopt these services; therefore, social influences significantly affect perceived ease of use on internet of things and mobile commerce (Bashir & Madhavaiah 2015; Chaouali, Yahia & Souiden 2016; Tsourela & Nerantzaki 2020).

Consequently, it is plausible to argue that among Namibian online banking customers:

H1b: Social influence has a positive and significant effect on perceived ease of use

Perceived usefulness is an important concept in user acceptance or rejection of systems and relates to the degree that an individual feels his or her job performance is enhanced by engaging in the usage of the system at hand (Davis 1985). Perceived usefulness is an important contributing factor in Internet banking adoption because of the flexibility of internet banking services and that these services are becoming more superior to traditional banking services resulting in an increase in Internet banking adoption (Rawwash et al. 2020). If an individual believes that his or her social context (family, peers, colleagues) assumes that they should make use of a system, the beliefs of the social circle are incorporated into their own beliefs and as such they perceive the specific system to be useful (Abdullah, Ward & Ahmed 2016).

Consequently, it is plausible to argue that among Namibian online banking customers:

H1c: Social influence has a positive and significant effect on perceived usefulness

System quality

System quality relates to the system's overall performance following the needs and expectations of the consumer (Um 2021). Improving a retail bank's online system quality increases customers' trust perception (Namahoot & Laohavichien 2018). In addition, Ryu and Ko (2020) established that customers' trust levels increase if the system provides them with credible and reliable information, whereas customers start to doubt the competence of a bank when they receive poor system quality. Also, good system quality within an online shopping environment results in higher trust in the online store (Qalati et al. 2021).

Consequently, it is plausible to argue that among Namibian online banking customers:

H2a: System quality has a positive and significant effect on perceived trust

System quality has a positive and significant influence on perceived ease of use and perceived usefulness (Fearnley & Amora 2020; Koukopoulos et al. 2020). System quality characteristics such as reliability, availability, usability and adaptability influence the perceptions of customers relating to usefulness and the ease of use of a system as customers are more likely to find systems to be useful and easy to use when the system quality provided is acceptable (Mahande, Jasruddin & Nasir 2019). Therefore, if consumers receive the desired level of system quality, they are more likely to view the system as useful and easy to use (Fearnley & Amora 2020).

Consequently, it is plausible to argue that among Namibian online banking customers:

H2b: System quality has a positive and significant effect on perceived ease of use

H2c: System quality has a positive and significant effect on perceived usefulness

Perceived trust

Trust forms an integral part of developing and maintaining successful relationships in the online banking environment. It is based on customer expectations, refers to the degree to which the system performs as expected and reinforces the intention to use the system (Bashir & Madhavaiah 2015; Chatzoglou et al. 2020). Consumers who perceive the bank and the online services provided as trustworthy will be more likely to engage in transactions because of the positive attitude formed towards the service that contributes to the adoption of e-commerce (Indarsin & Ali 2017; Marakarkandy, Yajnik & Dasgupta 2017). More recently, within the social media environment, Naqvi et al. (2020) determined that when customers use social media and trust the platform, they also have a positive attitude towards adopting social media services.

Consequently, it is plausible to argue that among Namibian online banking customers:

H3: Perceived trust has a positive and significant effect on customer attitude

Perceived ease of use and perceived usefulness

Perceived ease of use relates to the assessments made by individuals on the difficulty or ease of using a system with the focus on the process that leads to the outcome of using the specific system (Cho & Sagynov 2015; Lazard & King 2020). At the beginning of the century, Venkatesh and Davis (2000) established that perceived ease of use directly affects the perceived usefulness of technology because individuals who perceive the system to be effortless will most likely use the system more often. Subsequent to this research, various researchers such as Cho and Sagynov (2015) and more recently, Jatimoyo, Rohman and Djazuli (2021), established that the easier it is to use the system, the more useful users perceive the system to be.

Consequently, it is plausible to argue that among Namibian online banking customers:

H4a: Perceived ease of use has a positive effect on perceived usefulness

Consumer attitude refers to the negative or positive feelings towards performing a specific behaviour (Elkheshin & Saleeb 2020). Consumer attitude towards online banking services depends on the perceptions formed while using the services; however, consumer perceptions are subject to change (Verma & Kumar 2020). If individuals believe that online banking services have attributes that could improve their job performance and increase their productivity, they will develop favourable attitudes towards using such services (Matikiti, Mpinganjira & Roberts-Lombard 2018). In addition to the usefulness of the system, when online banking customers perceive the system to be easy to use, they will also form positive attitudes towards the system (Normalini 2019; Rasull et al. 2020).

Consequently, it is plausible to argue that among Namibian online banking customers:

H4b: Perceived ease of use has a positive effect on customer attitude

H5: Perceived usefulness has a positive effect on customer attitude

Attitude

The TAM consists of a core relationship that determines the acceptance of a technology, and that core relationship is between an individual's attitude and intention towards using a technology (Davis et al. 1989). Specifically, within an online banking environment, the key predictors that influence an individual's acceptance or rejection of online banking services are the attitudes and intentions towards such services and are important to consider when evaluating the adoption of an online system (Ahmad, Bhatti & Hwang 2020; Mohammadi 2015; Rahi, Ghani & Alnaser 2017).

Consequently, it is plausible to argue that among Namibian online banking customers:

H6: Customer attitude has a positive and significant effect on behavioural intention

Behavioural intention

Actual use is defined as the degree or way that individuals capitalise on the capabilities of an information system or the time spent using and interacting with the system (Amin et al. 2019) compared with behavioural intention that is the subjective probability that an individual will engage in a specific behaviour (Ajzen & Fishbein 1975).

In an online environment, behavioural intention directly influences the use of technology and information systems (Mashroofa, Jusoh & Chinna 2019). Therefore, when an online banking customer intends to use the online banking system, they will use it (Ahmad et al. 2020; Marakarkandy et al. 2017).

Consequently, it is plausible to argue that among Namibian online banking customers:

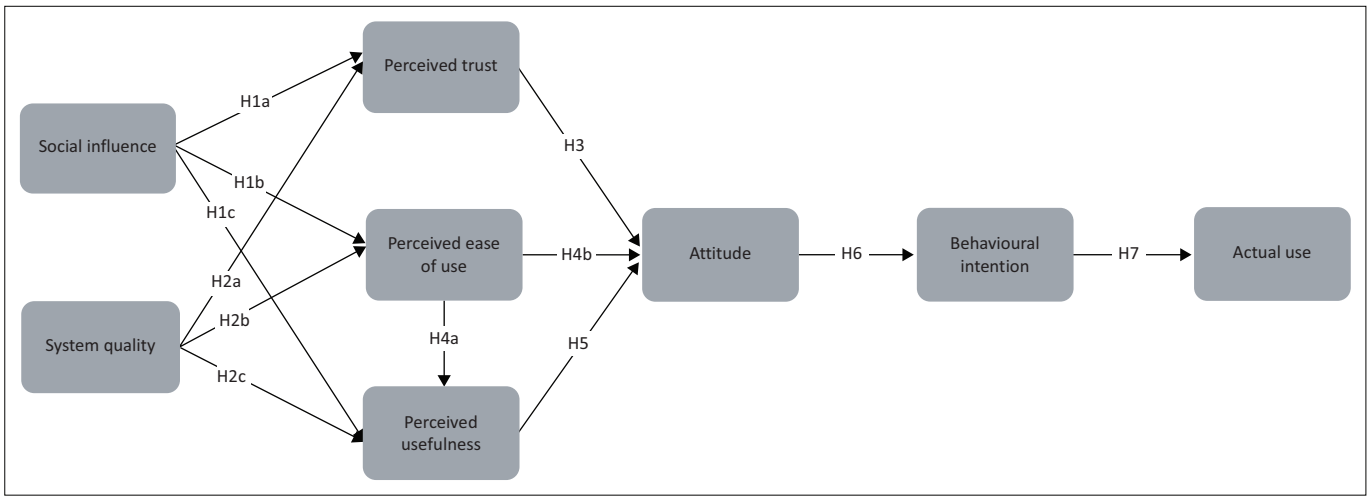


FIGURE 2: Conceptual model.

H7: Behavioural intention has a positive and significant effect on actual usage

Based on the hypotheses formulated, the conceptual model of this study is presented in Figure 2.

Methodology

A descriptive research design was followed that included quantitative, primary data collection. Self-administrated questionnaires were used to collect data through a link to the questionnaire posted on Facebook, which individuals could follow to complete the questionnaire. The population of this study included males and females born between 1966 and 2002 who reside in Namibia and are making use of online banking. A sample frame could not be obtained because of the confidentiality agreements between banks and their clients, and therefore non-probability sampling, which included quota and convenience sampling, was used. The demographic profile of the respondents included in this study were well represented amongst different demographic variables, as indicated in Table 2. The realised sample size of this study was 441, which is based on the recommendations of Hair et al. (2019) and followed the observations per variable ratio of at least 20:1. The study had a total of eight constructs. No respondents' personal information was collected, thus ensuring their anonymity and confidentiality. Structural equation modelling (SEM) was used to test the study's hypothesis using MPlus (Version 8.7).

Measurement instrument

The questionnaire included five sections: the preface, screening questions, construct measurement, demographic information and postscript. The preface explained the aim of the study and indicated how the data would be used. The screening questions were used to confirm that the respondents were older than 18 years, used online banking and resided in Namibia. The constructs were measured using existing and reliable measurement statements. Respondents had to indicate their level of agreement with each of the statements using a six-point labelled Likert scale, where '1' indicated strongly disagree and '6' indicated strongly agree. Table 1 indicates the measurement statements' sources for each of the constructs.

TABLE 1: Sources of the measurement statements for constructs.

Construct	Number of statements	Sources
Social influence	5	Bashir and Madhavaiah (2015) and Chaouali et al. (2016)
System quality	5	Sharma and Sharma (2019) and Tam and Oliveira (2016)
Perceived trust	5	Bashir and Madhavaiah (2015) and Sharma and Sharma (2019)
Perceived ease of use	5	Bashir and Madhavaiah (2015) and Sharma and Govindaluri (2014)
Perceived usefulness	5	Bashir and Madhavaiah (2015) and Sharma and Govindaluri (2014)
Attitude	5	Bashir and Madhavaiah (2015) and Sharma and Govindaluri (2014)
Behavioural intention	5	Bashir and Madhavaiah (2015), Sharma and Govindaluri (2014) and Sharma and Sharma (2019)
Actual use	5	Sharma and Sharma (2019) and Tam and Oliveira (2016)

Ethical considerations

This study was approved as a minimal risk study by the Economic and Management Sciences Research Ethics Committee (EMS-REC) of the North-West University on 15 February 2022 (No. NWU-00888-20-A4).

TABLE 2: Demographic profile of respondents.

Demographic variables	Count (*N*)	Percentage (%)
Gender		
Female	202	45.8
Male	239	54.2
Age groups		
Between 1966 and 1985	231	52.4
Between 1986 and 2002	210	47.6
Employment status		
Self-employed	86	19.5
Full-time employed by an organisation	246	55.8
Part-time employed by an organisation	17	3.9
Full-time student	35	7.9
Housewife or Househusband	8	1.8
Retired	0	0.0
Unemployed	46	10.4
Other	3	0.7
Home language		
Afrikaans	198	44.9
Damara/Nama	18	4.1
English	65	14.7
German	23	5.2
Kavango	12	2.7
Oshiwambo	97	22.0
Otjiherero	14	3.2
Other	14	3.2
Marital status		
Married	241	54.6
Living together (like married partners)	31	7.0
Never married	17	3.9
Widow or widower	0	0.0
Separated	1	0.2
Divorced	10	2.3
Single	141	32.0
Monthly income		
No income	68	15.4
N$0 – N$25 000	196	44.4
N$25 001 – N$50 000	88	20.0
N$50 001 – N$150 000	52	11.8
N$150 001 – N$250 000	11	2.5
N$250 001 – N$400 000	20	4.5
N$400 001 – N$750 000	3	0.7
N$750 001 and above	3	0.7
Education level		
Primary school	0	0.0
Secondary school	6	1.4
Matric (grade 12)	101	22.9
Certificate	54	12.2
Diploma	73	16.6
Degree	145	32.9
Postgraduate degree	62	14.1

Results

Demographic profile

A total of 441 usable questionnaires were obtained. The demographic profile of the Namibian banking customers who participated in this study is presented in Table 2.

It is evident from Table 2 that a good spread among the different demographic variables participated in this research.

Reliability and validity of the measurement instrument

The reliability and validity of the measurement instrument were determined by calculating the Cronbach's alpha values and performing a confirmatory factor analysis (CFA). The Cronbach's alpha values of all the measurement constructs were greater than 0.70, indicating satisfactory internal consistency (Hair et al. 2021:178). As indicated in Table 3, the Cronbach's alpha values ranged between 0.83 and 0.97.

Convergent and discriminant validity were tested through a CFA. Convergent validity was tested by calculating the standard factor loadings, average variance extracted (AVE) and the construct reliability (CR) values of the measurement model (Hair et al. 2019:676). The factor loadings of Social influence 3 (SOCIF 3), Perceived ease of use 3 (PEOU 3) and Actual usage 2 (USAGE 2) were lower than 0.50; therefore, these items were omitted from the data analysis. As indicated in Table 3, the AVE values of the measurement model's constructs were above the recommended cut-off value of 0.50, thus indicating acceptable convergence of the measured statements. It is furthermore evident from Table 3 that internal consistency is present for all the measured constructs, and the CR values of the measurement model's constructs were above the recommended cut-off value of 0.70. Based on the examination of the standardised factor loadings, the calculation of the AVE and CR values of the measurement model, it can be concluded that all eight constructs of the measurement model have convergent validity.

TABLE 3: Reliability and convergent validity of the measurement model.

Construct	Cronbach's alpha	Construct reliability (CR)	Average variance extracted (AVE)
Social influence	0.83	0.92	0.75
System quality	0.95	0.96	0.84
Perceived trust	0.93	0.94	0.85
Perceived ease of use	0.93	0.94	0.80
Perceived usefulness	0.96	0.98	0.89
Attitude	0.97	0.98	0.92
Behavioural intention	0.96	0.98	0.90
Actual usage	0.90	0.96	0.86

The Fornell and Larcker criterion (1981) and the heterotrait–monotrait (HTMT) ratios were accessed to test for discriminant validity. For the Fornell and Larcher criterion, AVE of any two constructs was compared with the squared correlation (R^2) estimate between the two constructs and should the AVE of two constructs is greater than the squared correlation between them, discriminant validity is confirmed (Hair, Page & Brunsveld 2020). The results obtained from the correlation matrix (AVE and squared correlation values) are presented in Table 4. The HTMT ratio values are presented in Table 5. Heterotrait–monotrait ratio values higher than the threshold indicates a lack of discriminant validity. This study used a threshold of 0.85 (Kline 2015).

It is evident from Table 4 and Table 5 that the discriminant validity was achieved.

Model fit statistics

The measurement model was tested by using a two-step SEM process. The model fit was tested through a CFA, and once

TABLE 4: Correlation matrix for the latent variables with average variance extracted.

Latent variable	SOCIF	SYSQ	PERTR	PEOU	PERUSE	ATT	INTENT	USAGE
Social influence (SOCIF)	(0.75)	-	-	-	-	-	-	-
System quality (SYSQ)	0.64	(0.84)	-	-	-	-	-	-
Perceived trust (PERTR)	0.60	0.78	(0.85)	-	-	-	-	-
Perceived ease of use (PEOU)	0.58	0.84	0.84	(0.80)	-	-	-	-
Perceived usefulness (PERUSE)	0.67	0.69	0.79	0.80	(0.89)	-	-	-
Attitude (ATT)	0.65	0.68	0.73	0.81	0.88	(0.92)	-	-
Behavioural intention (INTENT)	0.52	0.50	0.60	0.62	0.76	0.84	(0.90)	-
Actual use (USAGE)	0.56	0.57	0.67	0.68	0.75	0.79	0.83	(0.86)

The correlations are all significant at $p < 0.001$.

Note: The average variance extracted values of the constructs are indicated on the diagonal in brackets.

TABLE 5: Heterotrait–monotrait ratio values.

Latent variable	SOCIF	SYSQ	PERTR	PEOU	PERUSE	ATT	INTENT	USAGE
Social influence (SOCIF)	1	-	-	-	-	-	-	-
System quality (SYSQ)	0.65	1	-	-	-	-	-	-
Perceived trust (PERTR)	0.633	0.764	1	-	-	-	-	-
Perceived ease of use (PEOU)	0.588	0.823	0.836	1	-	-	-	-
Perceived usefulness (PERUSE)	0.717	0.649	0.776	0.750	1	-	-	-
Attitude (ATT)	0.655	0.592	0.679	0.733	0.784	1	-	-
Behavioural intention (INTENT)	0.472	0.442	0.551	0.531	0.606	0.781	1	-
Actual use (USAGE)	0.547	0.518	0.643	0.617	0.678	0.765	0.807	1

TABLE 6: Structural model fit indices.

Indexes	χ^2	df	χ^2/df	RMSEA	CFI	TLI
Structural model	4021	1401	2.87	0.09	0.96	0.97
Recommended cut-off values	-	-	≤ 5.0	< 0.08	> 0.90 > 0.95	> 0.90 > 0.95

RMSEA, Root mean square error of approximation; CFI, Comparative fit index; TLI, Tucker-Lewis index.

TABLE 7: Hypotheses testing results.

Hypotheses	Relationship	β weights	SE	*p**	Results
H1a	Social influence → Perceived trust	0.402	0.086	0.000	Significant
H1b	Social influence → Perceived ease of use	0.252	0.068	0.000	Significant
H1c	Social influence → Perceived usefulness	0.373	0.079	0.000	Significant
H2a	System quality → Perceived trust	0.627	0.075	0.000	Significant
H2b	System quality → Perceived ease of use	0.731	0.063	0.000	Significant
H2c	System quality → Perceived usefulness	0.082	0.123	0.503	Non-significant
H3	Perceived trust → Attitude	0.091	0.053	0.088	Non-significant
H4a	Perceived ease of use → Perceived usefulness	0.503	0.159	0.000	Significant
H4b	Perceived ease of use → Attitude	0.114	0.102	0.263	Non-significant
H5	Perceived usefulness → Attitude	0.731	0.071	0.000	Significant
H6	Attitude → Behavioural intention	0.863	0.024	0.000	Significant
H7	Behavioural intention → Actual usage	0.912	0.022	0.000	Significant

*Significant at $p < 0.001$.
SE, standard error.

and acceptable model was obtained, the structural model was tested. Structural equation modelling was used to examine the interrelationships and hypotheses between the constructs of the measurement model (Hair et al. 2019:703). Google forms were used to collect the data, and therefore there were no missing values to manage. Table 6 provides the model fit statistics of the structural model. The model fit indices revealed that the model has an acceptable fit.

Hypotheses testing

Using SEM, the theoretical relationships were transformed into hypotheses and empirically tested. The standardised regression weights (standardised path coefficients) and structural parameter estimates of the structural paths in the model were investigated, and the results of the hypotheses testing are presented in Table 7.

Based on the results presented in Table 7, the structural model for this study is shown in Figure 3.

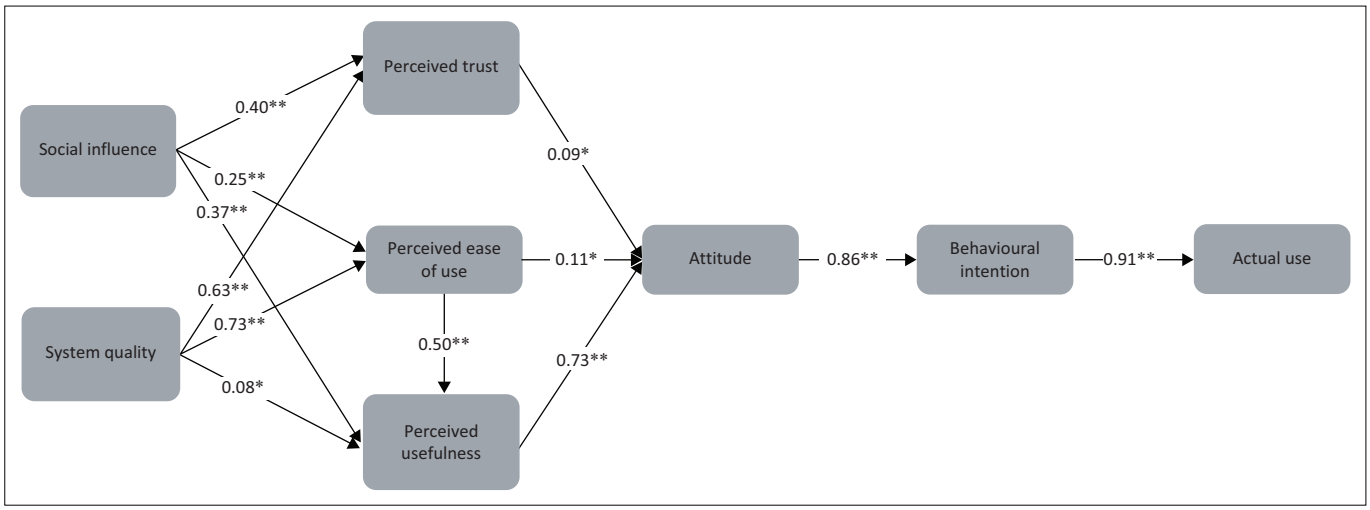
Discussion and conclusion

The study adopted the TAM of Davis et al. (1989) and also added social influence, system quality and perceived trust to the model. Consistent with the findings of Bashir and Madhavaiah (2015), Chaouali et al. (2016), Rawwash et al. (2020) and Saprikis, Avlogiaris and Katarachia (2021), this research confirmed that social influence has a positive and significant effect on ease of use, perceived usefulness and perceived trust of Namibian online banking customers. When Namibian online banking customers experience social influence from their social group, they perceive online banking to be easy to use, they believe online banking will improve the functionality of the banking activities and be more convenient. In addition, the social influence experienced by Namibian online banking customers will result in these customers perceiving online banking services as safe, reliable and trustworthy.

The research determined that system quality has a positive and significant effect on perceived trust and ease of use, corresponding with research by Namahoot and Laohavichien (2018). When Namibian online banking customers perceive online banking systems as flexible to interact with, easy to navigate and well-structured, these individuals will perceive such systems' to be trustworthy, safe, reliable, easy to use and do not require any additional effort to learn to use the system. However, among Namibian online banking customers, system quality has a positive but insignificant effect on perceived usefulness that does not agree with the results obtained by Fearnley and Amora (2020). Therefore, Namibian online banking customers might feel that having good system quality will not necessarily mean that they experience the system as useful.

The implication of including perceived trust in this study holds evidence in the findings by Ibrahim and Chandra (2015) that trust is developed based on service expectations (Marakarkandy et al. 2017). Although Vejacka and Štofa (2017) and Liébana-Cabanillas et al. (2018) confirmed a positive and significant relationship between perceived trust and attitude, this study established a positive relationship; however, the relationship is not significant. The non-significant relationship might be because the respondents are already accustomed to the use of online technology systems and automatically trust these systems; therefore, their attitude towards online banking systems is not affected. Perceived trust was a novel addition to the model of Davis et al. (1989), and social influence had the strongest effect on perceived trust and system quality had the strongest effect on perceived ease of use. To create trust, retail banks should focus on motivating the social groups of their customers to use the system.

Davis (1985) believed that user attitude is influenced by two beliefs, namely perceived ease of use and perceived usefulness, and that perceived ease of use will have a direct effect on perceived usefulness. Various researchers also investigated the relationship between perceived ease of use and usefulness and found a significantly positive effect between the constructs (Cho & Sagynov 2015; Jatimoyo et al. 2021; Venkatesh & Davis 2000). This research supports these findings, which determined that perceived ease of use positively and significantly affects perceived usefulness among Namibian online banking customers. Therefore, when Namibian online banking users are of the opinion that online banking services are easy to use, such services are also deemed useful.



Source: Davis, F.D., Bagozzi, R.P. & Warshaw, P.R., 1989, 'User acceptance of computer technology: A comparison of two theoretical models', *Management Science* 35(8), 982–1003. https://doi.org/10.1287/mnsc.35.8.982

*, Positive relationship; **, Positive and significant relationship.

FIGURE 3: Structural model.

It is postulated that perceived ease of use and usefulness positively and significantly affect consumer attitudes within the online environment (Cho & Sagynov 2015; Matikiti et al. 2018; Normalini 2019; Rasull et al. 2020). In agreement with these researchers, this research determined that among Namibian online banking customers perceived usefulness has a positive and significant effect on consumer attitude towards online banking services. If Namibian online banking customers experience improved banking functionality and convenience when conducting banking activities, they also think that it was a good and wise decision to make use of online banking and will have favourable attitudes towards online banking services.

Although various researchers have established a positive and significant relationship between perceived ease of use and attitude (Linh 2021; Normalini 2019), this research established that the relationship among Namibian online banking customers is positive but not significant. These findings could be attributed to the respondents who grew up in an era where technology is already advanced and were familiar with it and therefore it does not influence their attitude towards online banking.

This research supports the findings by Ahmad et al. (2020), Bashir and Madhavaiah (2015) and Rahi et al. (2017) that a significantly positive relationship exists between customer attitude and behavioural intention. Namibian online banking consumers are more likely to have the intention to use online banking services when they have a positive and favourable attitude towards the online services provided. In addition, researchers Ahmad et al. (2020) and Marakarkandy et al. (2017) established a positive and significant relationship between individuals' behavioural intention towards online banking services and the actual use of the system. In agreement with these findings, this research determined a positive and significant relationship between Namibians' intentions to use online banking services and actual use. Therefore, when Namibian online banking customers have a high intention to use online banking, they will make use of the online banking services.

The TAM applies to the online banking environment and can be used by retail banks in developing countries to increase customer acceptance of online banking services. Retail banks should direct their marketing communication to motivate their customers' social groups to use online banking and must promote their good quality online banking system to increase trust, ease of use and usefulness among their customers. Marketing strategies should focus on the reliability and security of the systems and should communicate to customers that online banking will increase their functionality and be convenient to use.

Limitations and suggestions for future studies

Owing to confidential agreements between clients and banks, the study did not have a sample frame, and thus probability sampling was not possible. The researchers did not focus on the various dimensions of perceived value; however, the most applicable dimension, that is, the utilitarian value dimension was further investigated in this study. Future studies may also include other value dimensions to extend the current knowledge about this topic. The model employed in this study only focused on specific external variables, which could influence customers' perceptions regarding online banking services. Future research may consider including other external variables that could impact customers' perceptions and are relevant to online banking services.

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The authors have declared that no competing interest exists.

Authors' contributions

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Data availability

The authors confirm that the data that support the findings of this research are available, if requested.

Disclaimer

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