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Research on Influencing Factors of Online Banking Acceptance: A Case Study of Commercial Banks in Kampala

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Abstract
The study evaluates the effect of customer attitude (influenced by perceived security, perceived usefulness and perceived ease of use), client knowledge and interest and quality of online banking service and the relationship of these factors with online banking acceptance in commercial banks in Kampala.

This study adopted a mixed method of data collection to achieve the study's objectives. A sample of respondents was taken from 6 commercial banks in Uganda including; ABSA Bank, Centenary Bank, Stanbic Bank, Standard Chartered Bank, Pride Microfinance Banks and Finca Bank and 200 people participated as respondents. Both purposive and simple random sampling methods were used to select participants. The study used structural equation model analytical tool to observe the correlations between the variables. The findings affirmed that online banking uptake in Uganda is significantly influenced by consumer attitudes, client knowledge and interest as well as quality of online banking service. The findings of the study will help management of organisations like commercial banks regulators to review the issues that need to be addressed in order to increase the acceptance of online banking, It will help in modernizing the operation of the Central bank to support automated clearing service and update supervisory and regulatory rules for absorbing ICT-based banking and also it will help commercial banks in creating an awareness campaign through workshops and seminars on the importance and business value of online banking in commercial banks.

1. Introduction
In the current context, technology has a significant qualitative and quantitative impact on every person's life. The rapid development of information technology has profoundly altered the global corporate and economic landscape and touched the lives of millions of people (Josefsson, 2017) [10]. Throughout the world, banking services have expanded thanks to information technology. These technical developments had an impact on the banking industry, which was forced to create novel ideas like e-finance, e-money, and e-banking in order to maximise profit and draw in more clients (Priyangika, *et al*., 2016) [11]. The nationwide interconnection of home computers and the international connections made possible by the internet have created a variety of opportunities for daily activity (Jasmine & Pavithra, 2018). Internet technology has an impact on banks' changes, ending outdated approaches for the creation and delivery of banking services. E-banking is the term for this use of the internet for banking services. By using Internet banking, banks attempt to change the mix of financial services provided and how they deliver these services (Srikanth & Rao, 2013).

E-banking has been widely used in developed countries and its steadily spreading to developing economies too. As suggested by (Chen, 2016) developing countries in general have an advantage as they can learn from the experience of advanced economies. In the last few years, banks have been witnessing tremendous success in the delivery of a wide range of value-added products and services through e-banking and there have been evidences on increasingly acceptance of e-banking (Ayo, 2014).

Customer attitude is important because it influences how customers behave and make decisions (Zhang *et al*., 2018) [16]. Customers with a positive attitude towards a product or service are more likely to purchase it, use it regularly, and recommend it to others and the reverse is true. The attitude theory suggests that the more favourable attitude a person has towards a given product or service, the more likely that person is to buy or use the product or service, (Ajzen & Fishbein, 2010). Attitudes are

said to develop over time through a learning process affected by reference group influences, past experience and personality (Assae, 2016). Byers & Lederer (2001) [4] concluded that changing consumer attitudes rather than bank cost structure determine the adoption of online banking.

In addition, Raza *et al.* (2020) [12] found that service quality can influence the adoption of online banking because it offers a basis for how online banking will be perceived in different cultures and organisations. Similarly, Hammoud *et al.* (2020) proved that there was a positive link between service quality and adoption of online banking services. When customers are satisfied with the online banking services given to them, they are more inclined to continue using internet banking. In line with this Sikdar *et al.* (2015) [13] and Toor *et al.* (2016) [14] found that people who were satisfied with internet banking processes and those who found the e-services better than what they expected were more inclined to continue using e-banking services. In another study by Firdous & Farooqi (2017) [6] to assess predictors of customer satisfaction with online banking, respondents from this study mentioned that satisfaction is derived from quick banking timelines and processing time alongside other factors like courtesy and quality of products. This study proved that when online banks were able to offer fast transaction completion timeframes, people were more inclined to use the service.

Several studies have shown that customer knowledge of internet can increase their chances of adopting e-banking. For instance, Inegbedion (2018) [9] established that customers who had knowledge of computers and internet were inclined to adopt internet banking. For people with knowledge in Microsoft word and internet, those who have undertaken online purchases, and those with online social networks. These experiences made them interested in learning more about internet banking and also gave them more knowledge on online banking. Banu *et al.* (2019) established that there is a relationship between knowledge of the internet and intentions to adopt internet banking.

According to Yiga & Cha (2016) [15], the rate of internet banking adoption in Uganda is not rising strongly in comparison to other countries like Kenya, South Africa, China and the western world. The slow rate of adoption is linked to distrust of online banking systems, lack of knowledge, and illiteracy among others. The research on the acceptance of online banking by customers has been vast, while there has been very limited research on the relationships between customer's attitude, client knowledge and interest, quality of online banking service and acceptance of online banking especially in the Uganda context. Thus, this study sought to explore this relationship. In addition, unlike the previous studies, this study undertook a mixed method which collected both qualitative and quantitative findings thus robust outcomes maybe anticipated when employing these findings.

2. Conceptual Framework and Hypothesis
The Conceptual Framework
Fig 1 Shows the conceptual framework which is based on the 3 main influencing factors of online banking acceptance
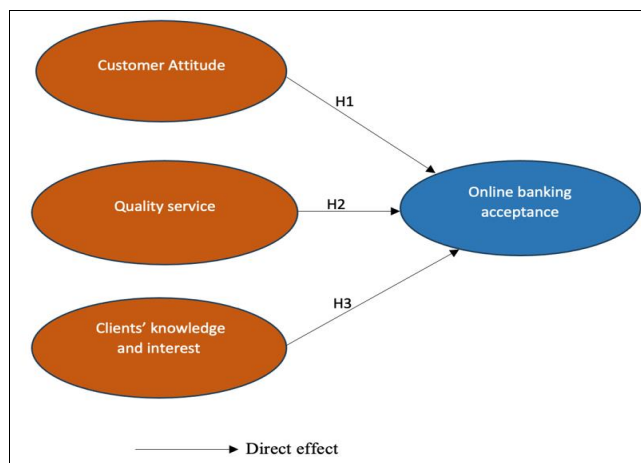

Fig 1: The conceptual frame work

The study put forward several hypotheses as follows;
H1= There is a significant and positive relationship between customer attitude and online banking acceptance.
H2= There is a significant and positive correlation between quality Services and online banking acceptance.
H3=There is a significant and positive relationship between client Knowledge and Interest and online banking acceptance.

3. Materials, Methodology and Data Analysis
This study adopted a mixed method of data collection which included use of questionnaires, key informant interviews and desk reviews to collect primary data from 6 licensed commercial banks in Uganda including; ABSA Bank, Centenary Bank, Stanbic Bank, Standard Chartered Bank, Pride Microfinance Banks and Finca Bank between the period of January 2021 to April 2023 and 294 respondents provided feedback. The researcher used scales such as; a Likert scale, a semantic differential scale, and a Unified Theory of Acceptance and Use of Technology (UTAUT) scale. For secondary data collection the researcher used literature limited to 10 years' time-frame. The structural equation model analytical tool was used to observe the correlations between variables coded as follows: customer attitude-CA; Quality service-QS; Client knowledge and interest-CKI.

4. Results
4.1 Evaluation of the Measurement Model
Internal consistency and reliability assessments of the data collected for this study were part of the measurement model analysis. As indicated in Table 1, these tests comprised Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE).
Factor loadings, Cronbach's alpha, composite reliability (CR), average variance extracted (AVE), and collinearity statistics (VIF) analyses were used to examine the convergent validity of the model. The validity test used the Heterotrait-Monotrait ratio and the Fornell-Larcker criterion (HTMT). Cronbach of 0.8 or higher indicates very strong dependability, and a Cronbach alpha of 0.6–0.7 indicates an adequate level (Ursachi *et al.*, 2015) [60]. The Table 2

elements were over the threshold of 0.7, and the Cronbach's alpha, which is a measure of the set's internal consistency, was higher than the recommended value of 0.7. The average variance extracted, which depicts the measure of variance in the latent structure indicators exceeded the value of 0.5, while the composite reliability value of the construct indicators which indicate the latent construct exceeded the threshold value of 0.7, supporting those of Ursachi *et al.* (2015) [60] and Tackie *et al.* (2020) [57].

Table 1: Construct Reliability and Validity

constructs	Notations	Loadings	Cronbach's alpha	Composite reliability	(AVE)
CA	CA1	0.857	0.874	0.874	0.726
	CA2	0.848			
	CA3	0.859			
	CA4	0.844			
QS	QS1	0.845	0.852	0.853	0.692
	QS2	0.834			
	QS3	0.825			
	QS4	0.824			
CKI	CKI1	0.893	0.82	0.874	0.647
	CKI2	0.761			
	CKI3	0.774			
	CKI4	0.783			
OBA	OBA1	0.831	0.862	0.862	0.707
	OBA2	0.841			
	OBA3	0.86			
	OBA4	0.831			

Table 2: Collinearity Statistics (VIF)-Outer VIF Values

items	VIF
CA1	2.2
CA2	2.088
CA3	2.218
CA4	2.074
QS1	2.022
QS2	1.933
QS3	1.902
QS4	1.923
CKI1	2.089
CKI2	1.646
CKI3	1.651
CKI4	1.683
OBA1	1.903
OBA2	2.013
OBA3	2.24
OBA4	1.95

The VIF values for all of the constructs are lower than the threshold value of 5, as indicated in Table 2, which indicates that the model is good.

Table 3: Discriminate Validity

Constructs	1	2	3	4
Customer attitude	0.852			
Quality service	0.829	0.832		
Client knowledge and interest	0.748	0.802	0.805	
Online banking acceptance	0.802	0.822	0.785	0.841

Note: The off-diagonal values represent correlations, whereas the values on the diagonal (bolded) are the square root of the AVE

Table 4: Heterotrait-Monotrait Ratio (HTMT)

Constructs	Customer attitude	Quality service	Client knowledge and interest	Online banking acceptance
Customer attitude				
Quality service	0.862			
Client knowledge and interest	0.851	0.871		
Online banking acceptance	0.856	0.881	0.898	

Note: The HTMT procedure's standard reporting format is represented by the shaded boxes

As can be seen in Table 4, the diagonal values of each construct's AVE square root are higher than their associated correlation coefficients, suggesting the sufficient discriminative validity indicated by (Fornell and Larcker, 1981) [24]. But some recent criticisms of the Fornell and Larcker (1981) [24] criteria demonstrate that they do not consistently indicate the absence of discriminant validity (Henseler *et al.*, 2015) [28].

Fornell and Larcker's reported discriminant validity criterion was disputed by (Henseler *et al.*, 2015) [28], who introduced the Heterotrait-Monotrait (HTMT) Ratio. It is proposed that this new approach is sufficient for evaluating the discriminative validity of research variables. Fornell-Larcker's criterion is therefore shown in Table 4, while Henseler's HTMT criterion is shown in Table 5, where the HTMT value is higher than the threshold of 0.85 (Henseler *et al.*, 2015) [28].

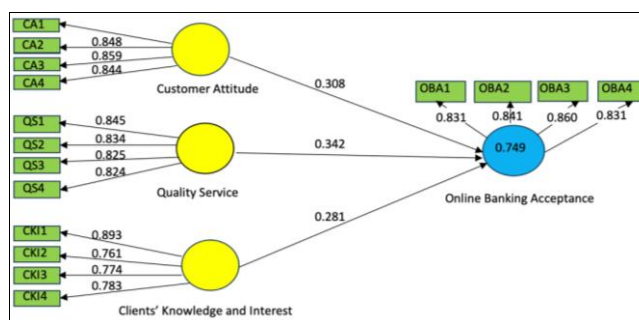## 4.2 Evaluation of the Structural Model and Hypothesis Testing

Fig 2: structural Model

Table 5: Testing for Hypothesis

Hypothesis	Path coefficient (β)	t-statistics	p-values	Decision
H1: customer attitude -> online banking acceptance	0.308	6.292	0	supported
H2: Quality service -> online banking acceptance	0.342	7.326	0	supported
H3: Client knowledge and interest -> online banking acceptance	0.281	7.181	0	supported

Note: $p < 0.05$

Table 6: Effect Size and Predictive Relevance

Relationship	F-square(f^2)		Effect size
CA->OBA	0.11		Medium
QS->OBA	0.111		Medium
CKI->OBA	0.105		Medium
Predictive Relevance			
construct	**R-Square(R^2)**	**R-Square adjusted**	**Q^2**
	0.749	0.747	0.746

We used the bootstrapping method recommended by (Hair Jr and Sarstedt, 2019) [26] to measure the R2, path coefficient (β), and corresponding t-values for the structural model. The predictive significance (Q2) and effect sizes (f2) were also calculated to determine the study model's relevance. First of all, we evaluated the affiliation between the variables. Customer attitude significantly and positively influenced online banking acceptance (β = 0.308, t-statistics = 6.292, p < 0.05), the quality service significantly and positively influenced online banking acceptance (β = 0.342, t-statistics = 7.326, p < 0.05), and client knowledge and interest also significantly and positively influenced online banking acceptance (β = 0.281, t-statistics = 7.181, p < 0.05). Thus, H1, H2, and H3 were all supported (refer to Table 5). Furthermore, customer attitude, quality service and client knowledge all contributed to the 7.49% variance in online banking acceptance. As a result, R2 = 0.749, which is greater than the threshold value of 0.26 recommended by Cohen (1988) [19], suggests that the model is significant.

Next, we evaluated how the effect sizes (f2) correlated to one another. Readers may find it difficult to comprehend the data and findings because the p-value only demonstrates the relationship's significance, not its impact. Consequently, it is essential to report statistical significance (p) as well as substantial significance (f2). As proposed by Hair Jr and Sarstedt (2019) [26], we evaluated how the effect sizes (f2) correlated to one another recommended by Cohen (1988) [19]. Table 6 shows the results of the f2 assessment model. As proposed by Cohen (1988) [19], the estimate values of 0.02 are for small effects, 0.15 are for medium effects, and 0.35 are for large effects. Therefore, from Table 6, the relationship between online banking acceptance and customer attitude had a medium f2 value of 0.11; the relationship between online banking acceptance and quality service had a medium f2 value of 0.111; and the relationship between online banking acceptance and client knowledge and interest had a medium f2 value of 0.105.

Blindfolding re-use technique Q2, with the size effect R2, is basically to effectively demonstrate predictive relevance (Chin, 1998) [18]. As a result, Q2 illustrates how well data may be reconstructed analytically using the model and the partial least squares (PLS) parameters based on the blindfolding technique. The Q2 for this study was obtained using cross-validated redundancy techniques. According to (Chin, 1998) [18], if the Q2 value is greater than zero (0), the model has predictive relevance; if the Q2 value is lower than zero (0), the model does not. As can be seen in Table 6, the model's Q2 score of 0.746 indicated that it had respectable predictive relevance, supporting those of Ahakwa *et al.* (2021a) [4], Korankye *et al.* (2021) [37], and Ying *et al.* (2021) [66].

4.3 Discussion
In Table 5, there is a strong and positive correlation between customer attitude and online banking acceptance. According

to the findings of this study, positive customer attitudes are consistently accompanied by increased acceptance of online banking. This is comparable to some previous studies (Technology acceptance model, Davis 1993; Lockett and Litter, 1997; Zhang *et al*., 2018 [16]; Ahmad *et al*., 2020) [1]. Banks can try to influence customer attitude by providing high-quality services, offering excellent customer service, and communicating effectively with their customers (Gharaibeh, 2013; Zhang *et al*., 2018) [7, 16].

Table 5 once again demonstrates a significant and positive correlation between quality service and online banking acceptance (Raza *et al*. (2020) [12]; Hammoud *et al*. (2020); Sikdar *et al*. (2015) [13] and Toor *et al*. (2016) [14]; Ejigu (2016); Bressolless *et al*. (2014); Black *et al*., 2014; Amin (2016) [5]; Firdous & Farooqi (2017) [6]. Raza *et al*. (2020) [12] found that service quality can influence the adoption of online banking because it offers a basis for how online banking will be perceived in different cultures and organisations.

Additionally, Table 6 demonstrates that client knowledge and interest and online banking acceptance are positively and significantly related, and earlier research has validated the study's findings (Inegbedion (2018) [9]; Banu *et al*. (2019). The results demonstrate that customer knowledge and interest is crucial to ensuring online banking acceptance. This study highlighted that Increased knowledge sharing also has the ability to improve people's attitudes toward online banking.

5. Conclusion and Policy Implications
This study concludes that customer attitudes, quality service and client knowledge and interest have a significant influence on the adoption of online banking in Uganda. This study proved that when customers are given knowledge and information about online banking, their attitudes toward online banking will improve and the reverse is true. Increased knowledge sharing has the ability to improve the Perceived Usefulness of internet banking and Perceived Ease of Use. Therefore, indigenous banks should share knowledge about online banking services with their clients and find ways to partner with banks that have e-banking systems in order to provide their clients with online banking experiences.

Even though international commercial banks already have platforms that give out knowledge and information regarding online banking, they need to work on more efficient ways of communicating especially during maintenance. Clients need to be communicated to before commencing maintenance works to prevent any inconveniences to service users. This will increase the rates of adoption of online banking services.

In order to improve quality service, there is need to create customer care teams exclusively for online bank users. Banks should decrease the response time frame for client complaints. There is need to create user friendly online banking apps that create better user experiences. Indigenous banks need to adopt the use of e-banking systems in order to promote the adoption of e-service users.

6. Limitations and Future Directions
A random sampling method was used to select the study's sample, which does not fairly represent the entire population. For the results to be extended to a larger population, we advise that the factors employed in this

research be retested with a larger sample size. Second, the study was conducted in Kampala which excluded data from other banks located in other parts of the country. To achieve wide generalization of the study, we recommend that any future research may also need to be conducted to address the factors stated by expanding the research to different settings and locations.

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