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Is Digital Trust Irrelevant in Digital Banking Adoption? Examining The Role of Digital Security Risk in Gauteng

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Abstract

This study examines the key factors influencing digital banking adoption in Gauteng, South Africa, with a particular focus on digital trust and digital security risk. It aims to analyse the relationships between these variables and their impact on user adoption. A quantitative research approach was employed, utilising self-administered online and paper-based surveys to collect data from 393 participants. Structural equation modeling (SEM) was used for data analysis, supplemented by a comprehensive review of relevant literature on digital banking adoption in South Africa and other developing economies. The findings indicate a significant negative relationship between adoption and digital security risk, highlighting security concerns as a major barrier to adoption. However, no significant relationship was found between adoption and digital trust, suggesting that trust perceptions may not be a primary driver of digital banking adoption in this context. The study recommends that banks implement robust security measures to enhance user confidence, ultimately supporting financial institutions and policymakers in strengthening digital banking ecosystems for sustainable growth and customer engagement.

Keywords: adoption; digital banking; digital trust; digital security risk; South Africa

1. Introduction

Internet market penetration is a critical indicator of a country's progress in Information and Communication Technology (ICT) development (Wijayanti et al., 2024). Furthermore, advancements in ICT can drive economic growth, enhance the production of goods and services, and foster educational development (Belloumi & Touati, 2022; Bi et al., 2022). Within the financial sector, digital banking has emerged as a transformative innovation, largely driven by improvements in ICT infrastructure (Wijayanti et al., 2024).

The rapid evolution of digital technologies in recent years has significantly reshaped the banking landscape, offering unparalleled convenience and accessibility through digital banking (DB) services. South Africa, like many developing countries, has experienced a notable shift towards the adoption of these innovations in response to the growing demands of its increasingly tech-savvy population (Cele & Kwenda, 2024). The rise of digital-only banks such as Tyme Bank, Bank Zero, and Discovery Bank marks a profound shift in South Africa's banking landscape, highlighting the growing prominence of digital platforms in financial services.

Digital banking, underpinned by internet capabilities, enables consumers to access their accounts 24/7 and perform transactions without the need to visit physical branches (Lottu et al., 2023). This form of banking has the potential to reach previously underserved groups, including unbanked individuals, low-income earners, and those in rural areas (Ofori-Okyere, Edghiem & Kumah, 2022). By overcoming the limitations of traditional brick-and-mortar branches, digital banking expands access through the use of retail agents and mobile money services.

Despite these advancements, the continued reliance on cash in the South African economy (National Treasury Report, 2020) highlights the challenges still faced in promoting digital financial services. This persistent reliance underscores the need for targeted educational efforts to raise awareness of the risks associated with cash usage and the advantages of electronic payments.

Against this backdrop, the present study seeks to analyse the relationship between digital banking adoption and digital security risk, as well as the relationship between adoption and digital trust in South Africa. While the significance of digital banking innovation in the country is evident, there is a lack of empirical research exploring the moderating effects of trust and perceived risk on digital banking adoption, particularly in the post-Covid-19 era. Bridging this knowledge gap is essential for accelerating the widespread adoption of digital banking solutions. This research will provide insights that can aid banks and policymakers in developing innovative strategies to promote the adoption of digital banking, ensuring that these solutions are accessible and inclusive for all segments of society.

The remainder of the paper is organised as follows: The subsequent section provides a literature review and hypothesis development, offering a detailed analysis of the relationship between digital banking adoption, digital security risk, and digital trust. This is followed by an outline of the research methodology in the next section, which details the steps taken to conduct the study. The following section presents findings of the study, while the subsequent section discusses those findings. Finally, the concluding section summarises the key insights and implications of the study.

2. Literature Review and Hypothesis Development

The study model illustrated in Figure 1 incorporates independent variables and examines their impact on the dependent variable. These variables were identified through newly developed constructs aimed at addressing challenges with the initial model (extended TAM). To enhance the framework, an exploratory factor analysis (EFA) was conducted, leading to the identification of new constructs. This process facilitated a comprehensive revision of the conceptual model and the formulation of revised hypotheses, reflecting the relationships between digital security risk, convenience, digital access efficiency, digital trust, perceived costs, digital self-efficacy, and digital banking adoption.

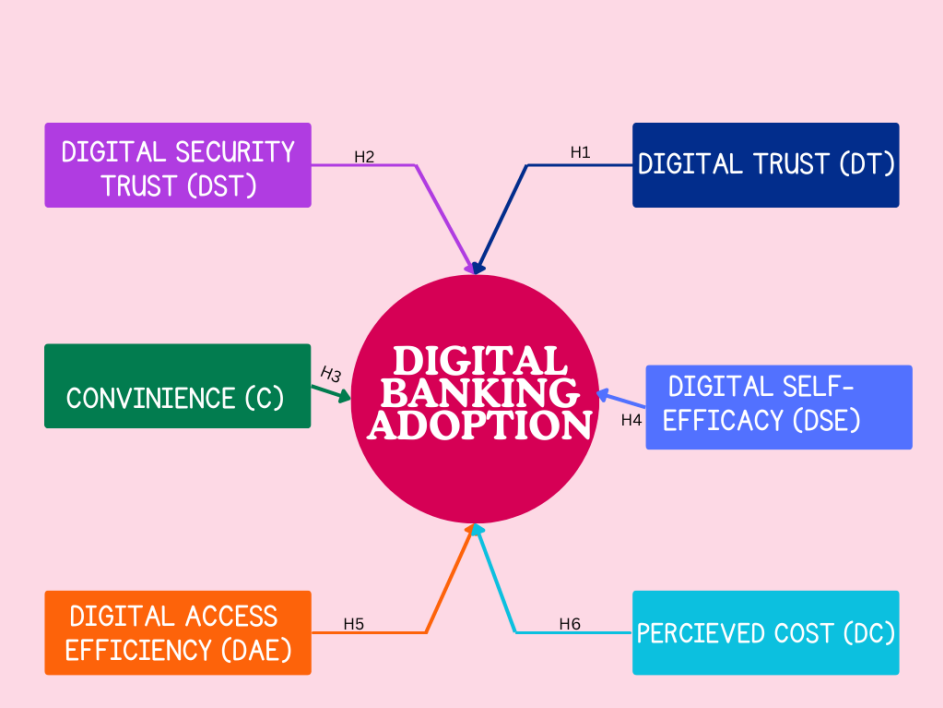

Figure 1: Research Model
Source: (Authors)

2.1 Adoption and Digital Trust

Trust is widely recognised as a fundamental factor influencing consumer adoption of digital banking services. Chauhan et al., (2022) define trust as the willingness to sustain a long-term relationship based on expected norms, emphasising its role in mitigating perceived risks associated with digital banking usage. This aligns with broader literature asserting that trust reduces uncertainties in digital environments, particularly where concerns about privacy and security act as barriers to adoption (Nohumba et al., 2020).

In the digital banking ecosystem, trust plays a dual role: it not only fosters confidence in the security of financial transactions but also enhances consumer willingness to engage with digital platforms. A significant challenge in digital banking adoption is the lack of trust, which discourages users from fully embracing these services. However, Asante and Baafi (2022) argue that trust becomes less critical in contexts where actions can be performed with minimal risk and uncertainty, suggesting that its influence may vary depending on the level of perceived risk.

Several studies reinforce the notion that trust is a key determinant of digital banking adoption. Hidayat et al., (2021) assert that building consumer trust in online transactions is crucial for fostering confidence in digital financial services. Similarly, Solomon (2021) identifies trust as a core driver of technology adoption, while Omar Ali et al., (2020) emphasise its significance within the e-commerce framework. Al-Hattami et al., (2021) further argue that trust positively influences users' intentions to continue using internet banking, with higher trust levels correlating with increased user satisfaction.

Despite this broad consensus, contrasting findings highlight the complex nature of trust in digital banking. Naseri et al., (2022) contend that risk aversion negatively impacts customer trust, suggesting that individuals who are more risk-averse may remain skeptical of digital banking services despite security assurances. This contradicts earlier studies that position trust as a facilitator of adoption. Additionally, Kumar et al., (2023) emphasise that trust

enhances the likelihood of converting behavioural intention into actual usage, reinforcing its role in bridging the gap between intention and action.

Another dimension of trust is its institutional aspect. Maduku and Thusi (2023) suggest that institutional trust confidence in regulatory frameworks, banking institutions, and cybersecurity mechanisms plays a crucial role in shaping attitudes toward digital banking adoption. This expands the discussion beyond personal trust in technology to the broader ecosystem in which digital banking operates.

Cross-cultural differences significantly affect how digital trust is formed and exercised. In collectivist cultures, such as those found in many parts of Asia and Africa, trust is often rooted in social networks and institutional reputation, making institutional trust more influential than individual perceptions of technology. In contrast, individualist cultures tend to place higher emphasis on user autonomy and personal control over digital interactions, which can shift the trust dynamic toward interface usability and data control mechanisms. These variations underscore the need to contextualise trust-building strategies in digital banking to align with cultural expectations and norms.

Moreover, the level of digital literacy and exposure to digital financial tools across regions can further influence trust perceptions. For instance, users in developed economies with advanced digital infrastructure may demonstrate higher baseline trust in online banking platforms, whereas users in developing regions, despite increased access, may remain cautious due to historical institutional weaknesses or limited consumer protection. This indicates that trust is not a universally stable construct but one shaped by socio-cultural and institutional factors, warranting nuanced approaches to enhancing adoption across diverse environments.

Based on the preceding discussions, the following hypothesis is proposed:

H1: *There is no significant relationship between digital trust and digital banking adoption*.

2.2 Adoption and Digital Security Risk

Uncertainty regarding the potential consequences of using a digital banking service significantly influences adoption decisions (Adrian & Mancini-Griffoli, 2019). While individuals inherently consider risk when engaging in any activity, financial transactions are often perceived as carrying an elevated level of risk due to the possibility of fraud, data breaches, and financial loss (Habbal et al., 2024). In this study, risk is defined as the likelihood of financial or data-related losses when using electronic banking services.

Several studies have consistently highlighted the role of risk perception as a barrier to digital banking adoption. Nwankwo et al., (2021) argue that concerns over security vulnerabilities deter potential users, reinforcing resistance to adopting new financial technologies. Similarly, Giovanis et al., (2019) and Wijayanti et al., (2024) assert that negative risk perceptions directly hinder the adoption of digital banking technologies. In Nigeria, Cavus et al., (2021) found that security concerns related to mobile banking apps significantly influenced customers' attitudes, suggesting that risk perception is a key determinant in mobile banking adoption.

However, research on the interplay between perceived risk and perceived benefits presents a nuanced perspective. Jain and Raman (2022) argue that while perceived risk remains a deterrent, perceived benefits such as convenience, efficiency, and accessibility can outweigh these concerns, ultimately driving adoption. This suggests that mitigating security risks alone

may not be sufficient; financial institutions must also actively highlight the advantages of digital banking to shift consumer behaviour.

Security remains a fundamental factor in banking transactions, particularly in digital banking, where ensuring transaction safety is a core responsibility of service providers (Indriyarti et al., 2023). Almaiah et al., (2023) identify perceived security, trust, and service quality as key determinants of digital banking adoption, reinforcing the argument that security concerns must be addressed to build customer confidence. Furthermore, Tran et al., (2024) emphasise that customers are only likely to adopt digital banking if they are assured of the security of their transactions.

Choudhuri et al., (2024) extend this argument by asserting that robust security measures do more than protect users they actively shape consumer confidence and trust in digital banking platforms. This perspective aligns with previous studies suggesting that while convenience and efficiency attract users, security remains the cornerstone of sustained adoption.

Based on the preceding discussions, the following hypothesis is proposed:

H2: *There is a significant relationship between digital banking adoption and digital security risk.*

3. Research Methodology

3.1 Research Design and Sample

This study employs a quantitative research approach, utilising a survey as the primary data collection method. The survey aimed to capture individual perceptions, preferences, and barriers to adopting digital banking services. A convenience sampling method was employed, and the sample consists of retail bank users across Gauteng, South Africa, aged 18 years and above, including active users, passive users, and non-users.

To ensure the reliability and accuracy of the research instrument, both offline (paper-based) and online survey methods were provided for convenience. The online survey was distributed via LinkedIn and WhatsApp, while the paper-based option accommodated respondents without internet access. The survey was designed to be easily accessible, anonymous, engaging, and structured with an even scale to encourage honest responses. Participants also had easy access to information about the research findings.

3.2 Statistical Methods

The primary statistical techniques used to analyse the collected data include descriptive statistics. Percentages, mean, and standard deviation were computed to summarise the demographic characteristics of respondents and to examine the variables influencing digital banking adoption. Additionally, the independent variable was analysed in relation to these factors.

Pearson's correlation analysis was conducted to assess the relationship between the dependent and independent variables. Quantile regression analysis was employed to evaluate how various predictor variables influence attitudes toward digital banking and adoption intention. Furthermore, SEM was utilised to test the proposed research model.

4. Results

4.1 Respondents

A total of 393 respondents participated in this study, with a final realised sample of 362 after data cleaning. The respondents were retail banking users across Gauteng. The researchers analysed their demographic characteristics based on various identifiers, including education level, age, income, and employment status. The sample appears diverse, as no restrictions were placed on profession or income during selection.

The primary characteristics of the respondents indicate that they have experience using South African retail banks, including Capitec, FNB, Standard Bank, Nedbank, ABSA, Tyme Bank, Discovery, African Bank, Investec, Old Mutual, RMB, Sasfin, and Bank Zero. Table 1 presents the demographic distribution of the respondents.

Table 1: Respondent Demographics

Information	Frequency	Percentage (%)
Gender		
Female	193	53.31
Male	163	45.03
Other	6	1.66
Age		
18-30 years	164	45.30
31-40 years	128	35.36
41-50 years	42	11.60
51-60 years	21	5.80
>60 years	7	1.93
Education		
Doctoral Degree (NQF 10)	7	1.93
Master's Degree (NQF 9)	22	6.08
Honours Degree/ Post Graduate Diploma (NQF 8)	26	7.18
Bachelor's degree/ Advanced Diploma (NQF 7)		
National Diploma/ Diploma (NQF 6)	73	20.17
N6 Certificate (NQF 5)	59	16.30
Grade 12/ Matric (NQF 4)	25	6.91
	147	40.61
Employment Status		
Employed (full-time)	143	39.50
Employed (part-time)	42	11.60
Retired	9	2.49
Self employed	53	14.64
Unemployed	29	8.01
Student	86	23.76
Monthly Income		
<R 10 000	194	53.59
R11 000 - R20 000	82	22.65
R21 000 - R30 000	33	9.12
R31 000 - R40 000	25	6.91
R40 000 - R50 000	14	3.87
>R60 000	14	3.87

Source: (Authors)

These findings suggest that digital banking users in Gauteng are predominantly young, educated individuals, with a significant representation of students and early-career professionals. The income distribution further indicates that digital banking services cater to a broad range of economic groups, making accessibility and affordability key considerations in adoption trends.

4.2 Validity and Reliability

Validity and reliability tests are essential in this study to ensure that the instruments used to assess respondents' preferences are suitable, allowing the results to be generalised (Nurdany, Banna, Wijayanti, Qoyum 2023). The validity test was conducted to ensure that the instrument accurately measures the intended parameters of a concept, while the reliability test was performed to assess the consistency and dependability of the tool (Mellinger &Hanson, 2020). According to Hair (2011), an indicator is considered valid if its AVE value is greater than 0.5, while it is deemed reliable if the composite reliability value exceeds 0.7 and Cronbach's alpha is greater than 0.6.

The results of the validity and reliability tests are presented in Table 2 below.

Table 2: Validity and Reliability Testing

Variables	Loadings	AVE	Composite Reliability	Cronbach's Alpha
Convenience (C)		0.64	0.91	0.93
C1	0.71			
C2	0.64			
C3	0.69			
C4	0.68			
C5	0.73			
C6	0.75			
C7	0.73			
C8	0.72			
C9	0.69			
C10	0.76			
C11	0.62			
Digital Access Efficiency (DAE)		0.65	0.90	0.95
DAE1	0.64			
DAE2	0.72			
DAE3	0.70			
DAE4	0.72			
DAE5	0.68			
DAE6	0.75			
DAE7	0.72			
DAE8	0.64			
DAE9	0.63			
DAE10	0.61			
DAE11	0.56			
Adoption (AD)		0.68	0.91	0.95
AD1	0.73			
AD2	0.72			
AD3	0.70			
AD4	0.73			
AD5	0.71			
AD7	0.76			
AD8	0.76			
AD9	0.63			
AD10	0.73			
Digital Trust (DT)		0.63	0.88	0.92
DT1	0.69			
DT2	0.70			
DT3	0.78			
DT4	0.78			
DT5	0.75			
DT6	0.74			

Variables	Loadings	AVE	Composite Reliability	Cronbach's Alpha
Perceived Costs (PC)		0.70	0.85	0.87
PC1				
PC2	0.85			
PC3	0.80			
PC4	0.80			
	0.61			
Digital Security Risk (DSR)		0.68	0.84	0.87
DSR1	0.76			
DSR2	0.81			
DSR3	0.80			

Source: (Authors)

Based on the information in Table 2, it is identified that almost all indicators are valid and reliable. The validity test shows that all factor loadings are greater than 0.7 and the AVE value exceeds 0.5, indicating that all the indicators listed in Table 2 are valid. Additionally, the results of the reliability test revealed that the composite reliability values are greater than 0.7 and Cronbach's alpha exceeds 0.6, confirming that all these indicators are reliable. Therefore, the indicators for all variables in the study meet the necessary criteria for both validity and reliability.

4.3 Confirmatory Factor Analysis: Measurement Model Assessment

This analysis evaluates the relationships between observed variables and their corresponding latent constructs, assessing the extent to which each observed variable accurately represents its underlying factor. Confirmatory Factor Analysis (CFA) is employed when a researcher has a well-defined theoretical framework for formulating hypotheses and examining relationships between variables (Luis et al., 2023:18). In this study, CFA was used to test the hypothesised model, validate the measurement model, and establish latent constructs (Sari & Komarudin, 2021:12).

Table 3: Confirmatory Factor Analysis (CFA 2) results for the Digital trust (DT) construct

DT	Factor loading	Std. error	P value	Factor loading measurement ≥0.5
Q13	0.746	0.025	0.000	Yes
Q14	0.802	0.021	0.000	Yes
Q15	0.861	0.016	0.000	Yes
Q16	0.861	0.016	0.000	Yes
Q17	0.858	0.016	0.000	Yes
Q18	0.830	0.019	0.000	Yes
AVE	**0.685**			**Convergent validity achieved**

Source: (Authors)

The Confirmatory Factor Analysis results for the Digital Trust construct, as shown in Table 3, reveal strong statistical properties across all six items. Factor loadings ranged from 0.746 (Q13) to 0.861 (Q15 and Q16), all exceeding the recommended threshold of 0.5. Standard errors were low, between 0.016 and 0.025, with all p-values significant at 0.000. The Average Variance Extracted (AVE) value of 0.685 exceeded the minimum requirement of 0.5, confirming convergent validity for the construct. This indicates that 68.5% of the variance in the observed variables is explained by the latent construct. Overall, the results show that the measurement model for Digital Trust is robust, reliable, and effectively measures the intended construct.

Table 4: Confirmatory Factor Analysis (CFA 2) results for the Digital trust (DT) construct

DSR	Factor loading	Std. error	P value	Factor loading measurement ≥0.5
Q19	0.857	0.021	0.000	Yes
Q20	0.809	0.024	0.000	Yes
Q21	0.858	0.021	0.000	Yes
AVE	**0.709**			**Convergent validity achieved**

Source: (Authors)

The Confirmatory Factor Analysis results for the Digital Security Risk construct, as shown in Table 4, demonstrate strong statistical properties across all three items. Factor loadings ranged from 0.809 (Q20) to 0.858 (Q19 and Q21), all exceeding the 0.5 threshold. Standard errors were low, ranging from 0.021 to 0.024, with p-values of 0.000 for all items. The Average Variance Extracted (AVE) value of 0.709 exceeded the 0.5 threshold, confirming convergent validity. This means 70.9% of the variance in the observed variables is explained by the latent construct. Overall, the results support the robustness and reliability of the measurement model for Digital Security Risk.

The results showed strong statistical significance and high factor loadings across several constructs, including Digital Trust, Perceived Costs, and Digital Security Risk, all surpassing the recommended thresholds for factor loadings and convergent validity. These findings confirm that the revised measurement models for all constructs are both reliable and valid, with AVE values consistently above the 0.5 threshold, indicating that the observed variables accurately reflect the underlying factors. The next section presents the goodness-of-fit assessment following the CFA results.

4.4 Model Fit Assessment

The Goodness-of-Fit Index (GoF) assesses how well the hypothesised model fits compared to a baseline model, typically the independence model, where variables are assumed to be unrelated. It gauges the proportion of variance and covariance in the observed data that is explained by the hypothesised model. The GFI ranges from 0 to 1, with higher values indicating a better fit (Sathyanarayana & Mohanasundaram, 2024). In Confirmatory Factor Analysis (CFA), commonly used fit indices include the chi-square degrees of freedom ratio (CMIN/df), the Goodness-of-Fit (GoF) index, the TLI, the CFI, and the RMSEA (Sathyanarayana & Mohanasundaram, 2024:562; Hair, Black et al., 2019), all of which were applied in this study.

Table 5: Measurement model: Goodness-of-fit assessment

Index	Value	Acceptable levels of fit indices	Results
Chi-square	2.95	Value must be below 3	Accepted
RMSEA	0.07	Value must fall below 0.08 for acceptable fit, for goodness of fit below 0.	Accepted
CFI	0.870	Values must meet or exceed 0.9 preferably ≥ 0.95	Accepted
TLI	0.862	Values of ≥ 0.95 indicates a goodness fit.	Accepted
SRMR	0.050	Values must fall below 0.8 for acceptable fit, for goodness of fit it must fall below 0.05	Accepted

Source: (Authors)

The goodness-of-fit indices for the measurement model indicate an overall acceptable fit. The Chi-square value of 2.95 is below the recommended threshold of 3, suggesting a good fit. The RMSEA value of 0.07 is within the acceptable range, with values below 0.08 considered satisfactory. The CFI (0.870) and TLI (0.862) are slightly below the ideal thresholds of 0.9

and 0.95, respectively, but still within acceptable ranges. The SRMR value of 0.050 meets the requirement for a good fit, with values below 0.05 considered ideal. Overall, the CFA model demonstrates a satisfactory fit, achieving a reliable and valid measurement model with acceptable goodness-of-fit indices

4.5 SEM Model Analysis

After conducting the validity and reliability tests, along with the CFA, the model construct was evaluated to assess the support for the hypothesis. This study employed SEM to determine the path coefficient values or t-values, which provided insight into the significance of the results. Figure 2 presents the outcome of testing the structural model.

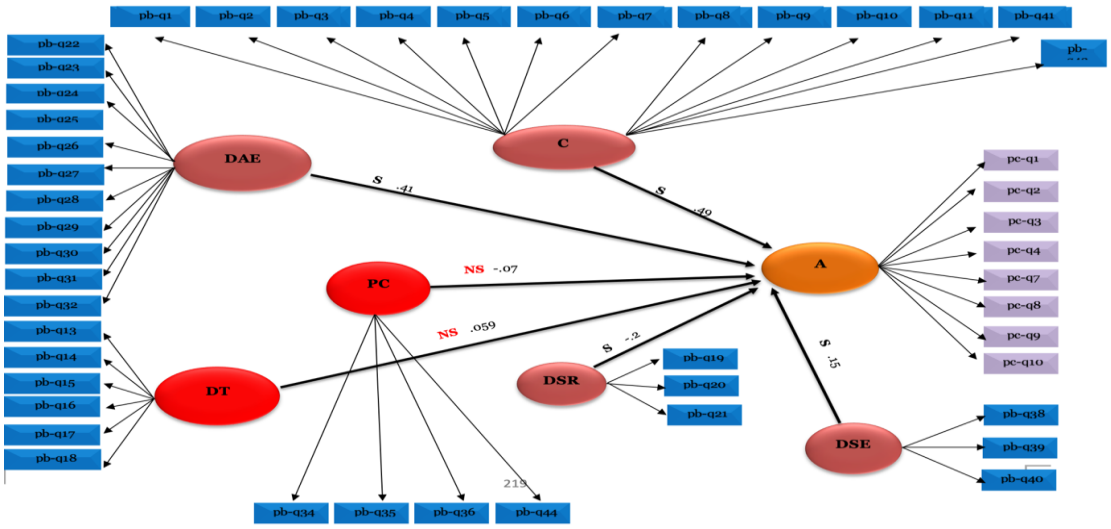

Figure 2: SEM Analysis
Source: (Authors)

The structural model test results, as shown in Figure 2, reveal several key relationships. There is a significant positive association between adoption (AD) and convenience, with a path coefficient of 0.352. A negative relationship was found between adoption and digital security risk, with a path coefficient of -0.160. Additionally, adoption is positively linked to digital access efficiency, with a path coefficient of 0.313. However, no significant relationships were found between adoption and perceived costs, or adoption and digital trust. Finally, a positive relationship between adoption and digital self-efficacy was supported with a path coefficient of 0.144. These findings provide valuable insights into the factors influencing the adoption of digital services.

A summary of hypothesis testing is illustrated the Table 6:

Table 6: Hypothesis Test

Path	t Value	P-Value	Standard Error	Conclusion
H1 (DT → AD)	1.26	1.26	0.05	Not supported
H2 (DSR → AD)	-4.56	<.01	0.04	Supported
H (C → AD)	6.33	<.01	0.06	Supported
H (DAE → AD)	5.68	<.01	0.06	Supported
H (PC → AD)	-0.88	0.38	0.04	Not supported
H (DSE → AD)	3.52	0.00	0.04	Supported

Source: (Authors)

5. Discussion

This paper examines the influence of digital security risk (DSR) and digital trust (DT) on individuals' willingness to adopt digital banking services in Gauteng. The findings reveal no significant relationship between DT and adoption, as the corresponding paths did not achieve statistical significance within the SEM model. This suggests that trust perceptions may not be the primary determinant of digital banking adoption in this context.

This result contrasts with prior research that identifies trust as a key factor influencing adoption behavior (Al-Hattami et al., 2021; Ali et al., 2020; Alnemer, 2022; Astuti et al., 2023; Capistrano, 2021; Juliani et al., 2021; Kumar, 2023; Krishna Murthy & Varalakshmi, 2021; Kusumawati & Rinaldi, 2020; Maduku & Thusi, 2023; Wahyudi & Kempa, 2023). However, the findings are consistent with studies by Nguyen (2020), Ali et al. (2022), and Solomon (2021), which suggest that trust may not always play a decisive role in digital banking adoption. These discrepancies highlight the contextual nature of trust and its varying impact on consumer behavior.

Conversely, the study confirms a significant negative association between DSR and adoption, as indicated by a path coefficient of -0.160. This finding underscores the deterrent effect of security concerns on digital banking adoption, reinforcing the need for stringent security measures to build user confidence and encourage adoption.

Existing literature supports the view that security concerns significantly shape consumer attitudes toward digital banking (Cavus et al., 2021). Several studies align with these findings, demonstrating a negative correlation between DSR and adoption (Ighomereho & Sajuyigbe, 2022; Aboobucker, 2018; Alalwan et al., 2018). However, some studies (Jahan et al., 2020) suggest that security concerns do not always play a pivotal role in adoption decisions, highlighting the complexity of this relationship.

The study's findings on risk perception are consistent with prior research showing that heightened risk perceptions negatively affect technology adoption (Kanapathipillai et al., 2023; Khedmatgozar, 2021; Khan, 2023). Similar patterns have been observed in various contexts, including AI in banking, mobile banking, and internet banking. However, contrasting studies (Madusanka & Kumari, 2021; Rubab et al., 2023) report either a positive or negligible relationship between risk perception and adoption, further illustrating the contextual variability in risk-adoption dynamics.

While security concerns are critical in influencing adoption behavior, their impact may be moderated by factors such as institutional trust and perceptions of security measures. These findings highlight the nuanced interplay between risk, security concerns, and adoption intentions. They also emphasise the importance of implementing effective security safeguards to mitigate consumer apprehensions and foster greater acceptance of digital banking services.

6. Conclusion and Recommendations

The study yielded mixed results regarding the factors influencing consumer adoption of digital banking services in Gauteng. While certain hypotheses were supported by the data, others were not. The research model demonstrated factors such as digital security risk, perceived cost, convenience, digital trust and digital access efficiency. Notably, while digital security risk, showed significant associations with adoption intention, the study did not find significant relationships between adoption and factors such as and digital trust. Overall, these findings suggest that while certain traditional factors such as perceived risk and attitude remain influential in the adoption of digital banking, new factors such as convenience and

digital security risk also play crucial roles in shaping consumer behaviour in the digital banking landscape.

6.1 Recommendations

The findings offer valuable insights into customer resistance to digital banking adoption and provide best practice recommendations for banks. Understanding these factors enables bank managers to design effective strategies for expanding their customer base through targeted marketing and promotional initiatives.

1. Enhancing Security Measures: Given the strong influence of security concerns on adoption, banks should prioritise robust security frameworks, including multi-factor authentication, encryption protocols, and proactive fraud detection systems. Strengthening these measures can mitigate risks, reassure users about transaction safety, and foster a secure digital banking environment.
2. Building Trust and Transparency: Establishing trust requires clear communication and user engagement. Banks should provide transparent information on data privacy policies, security measures, and fraud resolution processes to enhance consumer confidence. By promoting openness and accountability, banks can strengthen customer relationships and encourage greater adoption of digital banking services.

6.2 Limitations and Future Research

Despite its contributions, this study has certain limitations. The use of convenience sampling may affect the overall representativeness of the research sample. Additionally, the study is geographically limited to the Gauteng region. However, the findings open new avenues for future research in neighbouring regions and other developing countries facing challenges in digital adoption. Based on these insights, the authors propose several recommendations to enhance digital banking adoption within South Africa's commercial banking sector.

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