

## **Assessing the Readiness of South African Financial Enterprises for Cloud-Based Mobile Money Platform Migration**

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**‘William Ngobeni\***

**‘Dr Tope Samuel Adeyelure**



**‘Dr Manthlwa Sophie Mothomogolo-Maake**

*Corresponding author: [willeyngobs@gmail.com](mailto:willeyngobs@gmail.com)*

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### **Abstract**

This study explored the readiness of South African financial enterprises to migrate their services to cloud-based platforms. It employs the Design Science Research (DSR) methodology, which involves iterative cycles of designing, testing, and validating a readiness assessment model. Data collection utilised a multi-method approach, including surveys and questionnaires distributed among mobile money service providers. The study is supported by the technology readiness and acceptance model (TRAM) and the Technology-Organisation-Environment (TOE) framework. Key findings indicate that IT security, infrastructure readiness, and organisational support significantly influence migration readiness. The study highlights challenges such as cybersecurity threats, regulatory compliance, and connectivity gaps but demonstrates that readiness assessment can mitigate migration risks. Financial enterprises can use the proposed model as a structured way to assess and enhance their readiness for cloud migration. Recommendations include targeted staff training, infrastructure investments, and phased implementation strategies to facilitate smooth and secure transitions to cloud-based platforms.

**Keyword:** *Mobile Money, Mobile Money Services, Readiness Assessment, Cloud-based Platforms, South African Financial Enterprises, Mobile Money Service Providers, Mobile Money Cloud-based Platform Readiness model, Financial inclusion*

## **Introduction**

In recent years, mobile money platforms have revolutionised access to financial services for individuals in emerging markets, allowing them to conduct various transactions through mobile phones. These platforms enable account opening, money transfers, bill payments, and other financial services without requiring a traditional bank account, addressing challenges like geographic remoteness and infrastructure gaps (Asongu & Salahodjaev, 2023). The ubiquity of mobile devices has democratised access, allowing even basic phones to utilise mobile money via short codes or internet connectivity, offering benefits such as low transaction costs and extensive agent networks for user support and training (Shaikh et al., 2023). Across Africa, Asia, and Latin America, mobile money has spurred economic growth by providing millions with formal financial access, creating jobs, and reducing poverty (Avom et al., 2023). It has shifted individuals from informal financial channels to formal banking, promoting financial inclusion and benefiting businesses, governments, and consumers through secure money storage, efficient fund transfers, and convenient mobile payments (Grzybowski et al., 2023). This transformation has also lowered financial sector costs, increased the availability of retail financial services, and encouraged innovation (Kim, 2020).

Initially focused on basic transactions like person-to-person transfers, mobile money now supports advanced functionalities such as business payments, savings, loans, insurance, and investments, empowering users to manage finances comprehensively (Son et al., 2020). However, in South Africa, regulatory restrictions limit non-bank entities from offering full banking services independently, hindering the complete adoption of mobile money solutions (Lawrence et al., 2021). Despite South Africa's advanced mobile technology adoption, the uptake of mobile money services lags due to security concerns, implementation complexities, and compatibility issues (Bawelle et al., 2020). Enhancing these services to include savings, credit, insurance, and investments could broaden financial access beyond traditional banking, mirroring the success of M-Pesa in Kenya, which has significantly benefited the unbanked population (Wachira & Njuguna, 2023). The competitive IT landscape underscores the necessity for cloud-based platforms to improve efficiency and performance in mobile money services, though South African financial enterprises face challenges in transitioning from conventional to cloud-based systems (Mondego & Gide, 2022).

## **Review of Related Work**

The assessment of readiness for mobile money cloud-based platforms in developing economies is critical, with studies emphasising various factors that influence successful adoption. Sinha et al. (2020) applied the TOE framework to assess readiness, highlighting perceived usefulness, ease of use, and security as crucial factors given the sensitive nature of financial transactions in mobile money. Razzaq et al. (2021) underscored the importance of technological readiness, such as having the right infrastructure and technical expertise, is crucial for effective cloud implementation in mobile money services. Organisational and environmental readiness are also pivotal. Sternberg et al. (2020) identified organisational factors such as size, financial readiness, and IT expertise as key determinants of cloud adoption readiness. Environmental factors, including regulatory frameworks and competitive dynamics, significantly influence adoption processes (Sinha et al., 2020; Ghaleb et al., 2021). Turok et al. (2019) highlighted the importance of regulatory compliance and competitive adaptation in facilitating smooth transitions to cloud-based platforms for mobile money services. Wayne et al. (2020) conducted a comprehensive evaluation of organisational operational capacity and change readiness, focusing on leadership traits, institutional resources, and organisational environment dynamics. Their findings underscored the need for a nuanced understanding of these organisational dimensions in integrating new technologies.

These studies collectively advocate for a holistic approach to readiness assessments for mobile money cloud-based platforms, integrating technological, organisational, and environmental dimensions (Sinha et al., 2020; Wayne et al., 2020). Such an approach ensures a thorough understanding of factors influencing successful cloud adoption in mobile money services, addressing challenges like regulatory compliance, competitive pressures, and organisational preparedness. By adopting this holistic perspective, stakeholders can optimise the transition to and utilisation of cloud-based platforms, enhancing the effectiveness and efficiency of mobile money services. Sternberg et al. (2020) used the TOE framework to analyse cloud technology adoption in mobile money, finding that technological readiness (perceived usefulness, ease of use), organisational factors (company size, financial readiness), and environmental factors (competitive pressure, regulatory requirements) were crucial. Their study shows how these factors interact to influence cloud adoption in the financial sector. Ghaleb et al. (2021)

explored readiness for cloud migration in mobile money services, emphasising factors like organisational size, management complexity, and financial resources. They highlighted regulatory compliance and competitive adaptation as essential for successful cloud adoption. This research underscores the significance of organisational preparedness and regulatory alignment in adopting cloud-based mobile money platforms.

### ***Related Information System Theoretical Framework***

The study conducted a thorough investigation to identify and establish the business needs of financial enterprises, particularly mobile money service providers in South Africa. This included a comprehensive review of various factors found through preliminary investigations and relevant literature. Two models, the Technology Readiness and Acceptance Model (TRAM) and the technology-organisation-environment (TOE) framework, were selected to inform the final conceptual model of the study. The conceptual model incorporated seventeen constructs: optimism, innovativeness, intention to use, perceived usefulness, perceived ease of use, compatibility, relative advantage, IT readiness, security and privacy, top management support, IS expertise, organisation size, financial readiness, trust, competitive pressure, infrastructure, and performance. Each construct was further detailed into specific variables that guided the development of survey questions.

### ***Operationalisation of the Model***

This study adopts a first-order analytical approach, in which the individual indicators traditionally grouped under broader constructs, such as Readiness for Technology, Technology Migration (including Technological, Organisational, and Environmental contexts), and the External Vendor Construct, are independently hypothesised and tested for their influence on Mobile Money Cloud-based platform readiness assessment. Rather than treating these constructs as second-order latent variables, each indicator (e.g., optimism, perceived usefulness, ease of use) is analysed as a distinct, testable factor. This modelling choice enables the identification of specific variables that have the most significant impact on the dependent variable, thereby offering more precise theoretical contributions and actionable insights for platform design and policy.

This approach is aligned with the Design Science Research (DSR) paradigm and supports model validation by allowing empirical

assessment of individual indicator performance, identification of weak or non-significant variables, and the iterative refinement of a more parsimonious model. This also prevents premature aggregation, which can obscure important differences in how variables affect a result. By maintaining a strong theoretical framing while prioritising explanatory depth, this strategy supports the study's exploratory-explanatory aims within the South African mobile money cloud-based platform adoption context, where construct boundaries and relevance continue to evolve.

A research model was created using the modified framework and the proposed hypotheses (H). The following hypotheses were proposed for each of the relationships.

H1: Optimism will have an influence when assessing readiness for the South African Financial Enterprises towards migration to the cloud-based platforms. Optimism plays a significant role in the operationalisation of mobile money cloud-based platforms, influencing individuals' readiness to adopt new technology. It involves a positive outlook and expectation of favourable outcomes, shaping attitudes, behaviours, and decision-making related to adopting Mobile Money services (Sharma et al., 2020). Optimism is linked to motivation and readiness to embrace change, making optimistic individuals more open to trying new technologies like mobile money services (Borissova and Yoshinov, 2024).

H2: Innovativeness will have an influence when assessing readiness for the South African Financial Enterprises towards migration to the cloud-based platforms. Innovativeness contributes to higher user engagement and satisfaction with mobile money platforms, as innovative users are more likely to explore advanced features and functionalities. By promoting innovativeness, readiness assessment models accelerate adoption among diverse populations, advancing financial inclusion (Sharma et al., 2020).

H3: Intention to Use will have an influence when assessing readiness for the South African financial enterprises towards migration to the cloud-based platforms. According to research conducted by Kampa (2023), intention to adopt is pivotal for understanding user behaviour and predicting adoption rates of mobile money services.

H4. Perceived ease of use will have an influence when assessing the readiness for South African financial enterprises towards migration to the cloud-based platforms. According to Sensoy et al. (2023), evaluating perceived ease of use helps identify barriers and usability issues that may

hinder adoption, allowing for targeted design improvements to enhance user engagement and adoption rates.

H5. Perceived usefulness will have an influence when assessing readiness for the South African financial enterprises towards migration to the cloud-based platforms. According to Njele and Phiri (2021) users perceive mobile money platforms as useful when they believe the services offered are valuable for meeting their financial needs, such as convenient transactions, secure payments, savings, and access to financial services (Shaik et al., 2023).

H6. Compatibility will have an influence when assessing readiness for the South African financial enterprises towards migration to the cloud-based platforms. According to Penny et al. (2021), by emphasising compatibility, stakeholders can optimise user experience and adoption rates, ultimately fostering successful implementation and utilisation of mobile money cloud-based platforms.

H7. Relative advantage will have an influence when assessing readiness for the South African financial enterprises towards migration to the cloud-based platforms. Japutra et al. (2022) indicate that by assessing relative advantage, stakeholders can enhance user perception and adoption rates, ultimately driving the successful implementation and utilisation of mobile money cloud-based platforms.

H8. IT readiness will have an influence when assessing readiness for the South African financial enterprises towards migration to the cloud-based platforms. IT readiness involves ensuring that users' devices (such as smartphones and feature phones) and software applications are compatible with the mobile money platform, allowing for easy access and usability. Compatibility issues can impact user adoption and satisfaction (Adomavicius & Bockstedt, 2020).

H9. Privacy and Security will have an influence when assessing readiness for the South African financial enterprises towards migration to the cloud-based platforms. Privacy and security are critical considerations in the operationalisation of mobile money cloud-based platforms, ensuring the protection of users' financial information and transactions within digital ecosystems (Kshetri & Voas, 2020).

H10. Top management will have an influence when assessing readiness for the South African financial enterprises towards migration to the cloud-based platforms. Wu et al. (2020) indicate that top management support ensures strategic alignment between organisational goals and the adoption of mobile money cloud-based platforms.

H11. IS expertise will have an influence when assessing readiness for the South African financial enterprises towards migration to the cloud-based platforms. Teece et al. (2020) indicate that IS experts are instrumental in identifying and mitigating risks associated with mobile money operationalisation, including cybersecurity threats, data breaches, and technological vulnerabilities.

H12. Organisational size will have an influence when assessing readiness for the South African financial enterprises towards migration to the cloud-based platforms. By understanding the impact of organisational size, stakeholders can develop tailored strategies to optimise readiness and maximise the benefits of mobile money cloud-based platforms within diverse organisational contexts (Wu et al., 2021).

H13. Financial readiness will have an influence when assessing readiness for the South African financial enterprises towards migration to the cloud-based platforms. According to Chen et al. (2022), financial readiness, within the context of operationalising mobile money cloud-based platforms, refers to the financial capabilities, resources, and preparedness of individuals or organisations to adopt and utilise digital financial technologies effectively.

H14. Trust will have an influence when assessing readiness for the South African Financial Enterprises towards migration to the Cloud-based Platforms. According to Gupta et al. (2021) by addressing trust-related factors, stakeholders can foster trustful relationships, promote user confidence, and drive sustainable adoption and utilisation of mobile money services within digital financial ecosystems.

H15. Industry pressure will have an influence when assessing readiness for the South African Financial Enterprises towards migration to the cloud-based platforms. According to Smith et al. (2022), industry pressure reflects market trends and customer expectations for convenient, secure, and efficient financial services and further indicates that industry players must respond to changing consumer preferences and technological advancements.

H16. Infrastructure will have an influence when assessing readiness for the South African Financial Enterprises towards migration to the cloud-based platforms. Infrastructure encompasses digital connectivity, including internet access and mobile network coverage, which are essential for enabling users to access and utilise Mobile Money services (Johnson et al., 2021).

H17. Performance will have an influence when assessing readiness for the South African Financial Enterprises towards migration to the

cloud-based platforms. According to Smith et al. (2020), the importance of optimising performance in operationalising mobile money cloud-based platforms and focusing on transaction speed, reliability, scalability, response time, service availability, resource optimisation, user experience, and security performance means stakeholders can enhance platform efficiency, user satisfaction, and overall adoption of mobile money services in digital financial ecosystems.

The Mobile Money Cloud-Based Platform Readiness Assessment Model (MMCPRAM) is the dependent variable in the study, evaluating the readiness of South African financial enterprises when migrating to cloud-based platforms. It reflects the combined influence of technological, organisational, environmental, and external vendor-related factors, offering a measurable indicator of readiness (Adomavicius & Bockstedt, 2020). By highlighting strengths and gaps across these dimensions, MMCPRAM guides strategic planning, risk mitigation, and investment decisions to ensure a successful and sustainable cloud-based platform migration. The MMCPRAM will help with readiness to migrate to cloud-based platforms by showing how important it is to evaluate a company's internal capabilities and external pressures to ensure the migration is successful and sustainable (Smith, 2022).

## **Conceptual Framework**

To achieve the research goal, a conceptual framework was developed to illustrate the relationships among the constructs and their contributions to the mobile money cloud-based platform readiness assessment model. The framework was structured around identified factors and drew theoretical support from the TRAM and TOE frameworks. Furthermore, hypothesis analysis conducted in this study offers a detailed assessment of the factors influencing organisational readiness for cloud-based platform migration, structured around three key constructs: Readiness for Technology, Technology Migration (including Technological, Organisational, and Environmental contexts), and External Vendor. Each construct was tested through specific indicators, revealing that psychological attributes like optimism and perceived usefulness significantly impact readiness, while technological factors such as compatibility and IT readiness also play a crucial role.

Organisational elements like top management support and financial readiness were influential, though organisational size was not. Environmental pressures and trust were relevant, whereas infrastructure showed limited effect. Vendor performance emerged as a significant

external factor. Overall, the findings affirm the multidimensional nature of cloud migration readiness and support a holistic, nested framework that integrates internal and external determinants. Furthermore, the significance (sig.) value was tested against a predetermined threshold of 0.05. If the sig. value for a variable exceeded 0.05, the corresponding hypothesis was rejected. Equally, if the sig. value was below 0.05, the hypothesis was accepted. Table 1 below depicts the hypothesised indicators under each construct.

*Table 1: Hypothesised Indicators under Each Construct*

Construct	Sub-context	Hypothesis	Indicator	Hypothesis Statement
<b>Readiness for Technology</b>		H1	Optimism	H1: Optimism will influence readiness assessment.
		H2	Innovativeness	H2: Innovativeness will influence readiness assessment.
		H3	Intention to Use	H3: Intention to Use will influence readiness assessment.
		H4	Perceived Ease of Use	H4: Perceived Ease of Use will influence readiness assessment.
		H5	Perceived Usefulness	H5: Perceived Usefulness will influence readiness assessment.
<b>Technology Migration</b>	Technological Context	H6	Compatibility	H6: Compatibility will influence readiness assessment.
		H7	Relative Advantage	H7: Relative Advantage will influence readiness assessment.
		H8	IT Readiness	H8: IT Readiness will influence readiness assessment.
		H9	Security and Privacy	H9: Security and Privacy will influence readiness assessment.
	Organisational Context	H10	Top Management	H10: Top Management will influence readiness assessment.
		H11	IS Expertise	H11: IS Expertise will influence readiness assessment.
		H12	Organisational Size	H12: Organisational Size will influence readiness assessment.
		H13	Financial Readiness	H13: Financial Readiness will influence readiness assessment.

	Environmental Context	H14	Trust	H14: Trust will influence readiness assessment.
		H15	Industry Pressure	H15: Industry Pressure will influence readiness assessment.
		H16	Infrastructure	H16: Infrastructure will influence readiness assessment.
External Vendor		H17	Performance	H17: Performance of external vendors will influence readiness assessment.

## Research Methodology

This study's research methodology was guided by the onion ring model, which outlines the main stages for creating an effective methodology (Okesina, 2020). The process began with defining the main philosophical approach, selecting appropriate methodologies and strategies, and determining the time frame, guiding the research from conceptualisation to design and through data collection and analysis. The research philosophy adopted was pragmatism, focusing on addressing research problems using diverse methods (Cresswell et al., 2011). This approach allowed for the use of mixed methods (quantitative and qualitative) to gain deeper insights into the business needs of South African financial enterprises regarding cloud migration. The study employed a deductive approach, starting with hypotheses derived from existing theories and designing the research to test them (Silverman, 2013). This approach is suitable for assessing whether observed phenomena align with expectations from prior research.

A multi-method approach was adopted, involving both quantitative and qualitative data collection methods. Quantitative data were collected using close-ended questionnaires, while qualitative data were gathered through focus-group discussions with experts. This combination ensured that the research problem was analysed comprehensively. The research strategy focused on artefact design using the Design Science Research (DSR) approach, which involves three cycles: relevance, rigour, and core design. These cycles ensure that the artefact meets the expected requirements and aligns with the contextual environment and foundational knowledge (Hevner, 2007). The DSR model was employed to develop a cloud-based readiness framework for mobile money service providers in South Africa. This iterative process involved awareness,

suggestion, development, evaluation, and conclusion phases, ensuring the model's effectiveness and usability (Vaishnavi & Kuechler, 2015).

Data collection methods included close-ended questionnaires and focus-group discussions. Using a five-point scale, the questionnaires were structured to align with the constructs outlined in the conceptual framework. Sampling techniques ensured the privacy and anonymity of participants, using both probability and non-probability sampling methods to gather detailed insights and feedback. Simple random sampling was used for selecting participants for survey questions, while purposive sampling was employed for the validation of the model, selecting experts based on their extensive experience in mobile money service migration readiness to cloud-based platforms. Moreover, the study used the design candidate fitness characteristics and usefulness model proposed by Gill and Hevner (2011) to assess the usefulness of the mobile money cloud-based platform readiness conceptual framework and to ensure its design fitness.

The participants for the questionnaires included management staff, decision-makers, and IT staff members. Expert judgement sessions were conducted to validate the developed framework using open-ended questionnaires, selecting experts based on their IT, information management, information systems, and management skills. Data analysis involved transforming collected data into numeric format and analysing it using the statistical package for the social sciences (SPSS). Correlation and regression analyses were employed to quantify the relationships between readiness factors and the potential for successful cloud migration. The validation process was based on expert input through focus-group interviews, further establishing the proof of concept of the developed model. The fitness-utility model by Gill & Hevner (2011) was used to validate the mobile money cloud-based platform readiness assessment model.

## **Data Analysis**

### ***Reliability of instruments***

The reliability of the data collection instrument in this study was rigorously evaluated to ensure consistency and accuracy. The instrument's ability to accurately measure the intended constructs was confirmed by its convergent and discriminant validity. Cronbach's Alpha coefficient, a key metric for reliability, was used to assess the instrument and independent constructs. The coefficient of 0.879 for the 51

questionnaire items exceeded the recommended threshold of 0.7, affirming the instrument's reliability as per table 2 below. Reliability ensures stable and reproducible results, enhancing the credibility and applicability of findings across different contexts. This aligns with literature emphasising consistent measurement as essential for valid and reliable research outcomes.

*Table 2: Reliability Statistics for the Research Instruments*

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.859	.879	51

The study assessed the reliability of each questionnaire construct using Cronbach's Alpha, ensuring consistent measurement of intended variables. Construct reliability was computed based on specific survey items, with all constructs exceeding the recommended threshold of 0.7, affirming their reliability per Carrasco et al. (2020) and Kim et al. (2020). TCOMP emerged as the most reliable construct with a Cronbach's Alpha of 0.99, followed by OISE at 0.954. TTIR and RTIN had the lowest reliability, with values of 0.754 and 0.769, respectively. These findings confirm that the instrument has satisfactory internal consistency across its constructs, which supports its reliability for measuring user perceptions. Table 3 below illustrates the reliability statistics for each construct.

*Table 3: Reliability Statistics for Each Construct.*

Reliability Statistics for Each Construct				
Attribute	Construct	Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
Technology Optimism	RTOP	.970	.972	3
Technology Innovativeness	RTIN	.756	.769	3
Technology Perceived Usefulness	RTPU	.780	.778	3
Technology Perceived Ease of Use	RTPEU	.986	.987	3
Technology Intention to Use	RTIU	.855	.855	3
Technological Compatibility	TCOMP	.988	.990	3
Technological Relative Advantage	TRADV	.825	.842	3
Technological IT Readiness	TTIR	.738	.754	3
Technological Security and Privacy	TSAP	.912	.914	3
Organisational Top	OTMS	.876	.878	3

Management Support				
Organisational IS Expertise	OISE	.953	.954	3
Organisational Size	EOSI	.923	.926	3
Organisational Financial Readiness	EFRE	.833	.846	3
Environmental Trust	ETTR	.936	.941	3
Environmental Competitive Pressure	ECPR	.829	.831	3
Environmental Infrastructure	EIIN	.917	.917	3
External Vendor Performance	EVPE	.803	.807	3

The conceptual model was used to develop the closed-ended questionnaires used for data collection. The collected data was then analysed using the Statistical Package for Social Science (SPSS). The analysis involved conducting descriptive statistics and regression statistics analysis.

### ***Descriptive Statistics Analysis***

The reported means and standard deviations in table 4 below offer critical insights into how South African financial enterprises perceive key determinants of readiness for mobile money cloud-based platform migration. Overall, the high mean values (most above 4.00 on a 5-point scale) and relatively low standard deviations indicate strong consensus and generally positive attitudes toward the technological, organisational, and environmental enablers of cloud adoption. The high means for RTPEU of 4.41 and RTPU of 4.22 suggest that South African financial enterprises find cloud-based platforms both accessible and valuable. These findings reinforce the Technology Acceptance Model (Venkatesh et al., 2003), which identifies these two factors as primary drivers of cloud-based platform migration. The low standard deviations of 0.825 and 0.628, respectively, signal consistent responses across the sample, suggesting broad organisational alignment in viewing cloud-based platform technology as non-disruptive and beneficial. The high scores for TTTR of 4.01 (mean), standard deviation of 0.576 and TSAP mean of 4.05 (standard deviation of 0.605) also indicate that South African financial enterprises believe they have the technical infrastructure and safeguards necessary to support the migration.

Strong scores in OTMS of 4.06 and OISE of 4.06 highlight the crucial role of internal leadership and capabilities in fostering a mobile money cloud-based platform migration strategy. The narrow dispersion

in responses, e.g., a standard deviation of 0.421 for OISE, points to a stable internal organisational environment that is conducive to innovation. EFRE of 4.08 and standard deviation of 0.695 further underscores the importance of resource availability, aligning with prior studies (Oliveira et al., 2014; Low et al., 2011) that emphasise financial health as a prerequisite for successful IT investment. While ECPR is 4.13 and standard deviation is 0.512, and EVPE is 4.05 and standard deviation of 0.584 and perceived favourably, ETTR of 3.39 and standard deviation is 0.876 stand out as the lowest-scoring attribute. This implies that regulatory clarity, public trust, and institutional stability may be areas of concern. Such uncertainty in the external environment could act as a deterrent despite internal preparedness, supporting the notion that environmental risks can moderate technology adoption outcomes (Dwivedi et al., 2021).

Table 4: Descriptive Statistics

Construct	N	Minimum	Maximum	Mean		Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Std. Error	Statistic	Std. Error
RTOP	192	1	5	3.95	.047	.648	-2.076	.175	6.371	.349
RTIU	192	1	5	3.98	.048	.661	-2.154	.175	7.930	.349
RTPU	192	2	5	4.22	.045	.628	-1.266	.175	3.545	.349
RTPEU	192	2	5	4.41	.060	.825	1.579	.175	.742	.349
RTIU	192	2	5	4.04	.044	.612	-1.415	.175	4.507	.349
TCOMP	192	2	5	3.98	.038	.530	-1.829	.175	6.851	.349
TRADV	192	2	5	4.07	.035	.481	-.705	.175	3.465	.349
TTTR	192	2	5	4.01	.042	.576	-1.181	.175	3.358	.349
TSAP	192	2	5	4.05	.044	.605	-.738	.175	2.108	.349
OTMS	192	2	5	4.06	.045	.618	-1.029	.175	2.331	.349
OISE	192	2	5	4.06	.030	.421	-.784	.175	5.617	.349
EOSI	192	2	5	4.01	.049	.675	-.884	.175	.989	.349
EFRE	192	1	5	4.08	.050	.695	-1.911	.175	6.894	.349
ETTR	192	2	5	3.39	.063	.876	-.227	.175	-1.010	.349
ECPR	192	2	5	4.13	.037	.512	-.135	.175	.405	.349
EIIN	192	1	5	3.69	.047	.655	-.783	.175	1.815	.349
EVPE	192	2	5	4.05	.042	.584	-.741	.175	1.465	.349
Valid N (listwise)	192									

### Regression Analysis Statistics

The regression analysis assessed how various technological, organisational, and environmental factors affect the readiness of South African financial enterprises to migrate to mobile money cloud-based platforms. These constructs were operationalised using Likert-scale

survey items and validated through statistical reliability tests. Using a multiple linear regression approach, the regression model was developed to capture the relationship between the dependent and independent variables. The general form of the equation is:

**Equation:**

$$\text{MMCPRAM} = \beta_0 + \beta_1(\text{RTOP}) + \beta_2(\text{RTIN}) + \beta_3(\text{RTPU}) + \beta_4(\text{RTPEU}) + \beta_5(\text{RTIU}) + \beta_6(\text{TCOMP}) + \beta_7(\text{TRADV}) + \beta_8(\text{ITTR}) + \beta_9(\text{TSAP}) + \beta_{10}(\text{OTMS}) + \beta_{11}(\text{OISE}) + \beta_{12}(\text{EOSI}) + \beta_{13}(\text{EFRE}) + \beta_{14}(\text{ETTR}) + \beta_{15}(\text{ECPR}) + \beta_{16}(\text{EIIN}) + \beta_{17}(\text{EVPE}) + \varepsilon$$

**Where:**

$\beta_0$  is the intercept

$\beta_1$  through  $\beta_{17}$  are the regression coefficients for each independent variable

$\varepsilon$  represents the error term

**Estimation Technique**

The model estimation was conducted using the Ordinary Least Squares (OLS) method in SPSS. OLS was chosen because it is the most commonly used estimation technique for linear regression and provides the best linear unbiased estimators (BLUE) under standard assumptions. The statistical validity of the model was evaluated using the following diagnostics:

Adjusted  $R^2 = 0.519$ , indicating that approximately 52% of the variance in readiness was explained by the model.

- F-statistic significance ( $p < 0.001$ ), confirming that the overall model was statistically significant.
- t-statistics and p-values for individual predictors, identifying significant contributors.
- Variance Inflation Factor (VIF) values to check for multicollinearity among predictors.

The robustness of the model suggests a reliable relationship between the TOE factors and readiness, confirming the theoretical assumptions and providing a foundation for further inference and decision-making.

Moreover, a correlation coefficient, which ranges between -1.00 and +1.00, signifies both the strength and direction of the association between two variables (Kim et al., 2020). The sign (+ or -) indicates the

orientation of the relationship: a positive coefficient denotes a direct relationship, where an increase in one variable corresponds to an increase in the other, whereas a negative coefficient indicates an inverse relationship, where an increase in one variable corresponds to a decrease in the other, or vice versa (Lee et al., 2019). A correlation coefficient of 0 denotes no correlation between the variables, while a coefficient of 1 indicates a perfect relationship. Roberts et al. (2020) highlight that the closer the correlation coefficient is to 1, the stronger the relationship between the variables. Table 5 below depicts the results of the regression analysis statistics.

**Table 5: Regression Analysis Statistics**

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-161.10	63.310		-2.545	.012
RTOP	39.33	3.581	.656	1.983	.000
RTIN	11.510	5.509	.184	2.089	.038
RTPU	-15.711	6.348	-.284	-2.475	.014
RTPEU	-21.199	6.716	-.364	-3.157	.002
RTIU	-14.113	7.306	-.167	-1.932	.044
TCOMP	-23.833	7.333	-.295	-3.250	.001
TRADV	-14.960	7.187	.241	.705	.042
TITR	-15.163	7.341	-.184	-2.066	.040
TSAP	-16.03	9.583	-.192	-2.272	.039
OTMS	17.99	8.292	.167	2.169	.031
OISE	9.90	5.620	.125	1.761	.040
EOSI	-1.28	6.770	-.014	-.189	.850
EFRE	27.88	11.873	.185	2.348	.020
ETTR	7.547	3.277	.181	2.303	.022
ECPR	-24.28	9.176	-.195	-2.646	.009
EIN	-5.06	7.814	-.051	-.647	.518
EVPE	17.13	7.796	.133	2.198	.029

a. Dependent variable: MMCPRAM

The regression model summary provided in Table 5 highlights that the independent variables RTIU, RTOP, OISE, RTPEU, EOSI, TRADV, TCOMP, RTIN, ETTR, RTPU, TITR, OTMS, ECPR, TSAP, EIN, EFRE, and EVPE collectively explain 51.9% of the variance in the dependent variable, as indicated by the adjusted R-squared value of 0.519. This adjusted R-squared value suggests that the model has a moderate level of explanatory power, meaning that slightly over half of the variability in the outcome variable is accounted for by these

predictors. The model's significance is also validated by the Sig. F change statistic of 0.000, which is well below the 0.05 threshold. This shows that the model's R-squared value is statistically significant and not the result of random chance. This implies that the combined effect of the listed predictors provides a reliable estimate of the factors influencing the readiness assessment for mobile money cloud-based platforms.

However, the R-squared value also reveals that 48.1% of the variance in the dependent variable remains unexplained, suggesting the potential presence of other influential factors not included in the model. Despite this, the significance levels of individual predictors, as indicated by their p-values, show that many of these variables have a meaningful impact on the outcome. Specifically, RTOP, RTIN, RTP, RTPEU, RTIU, TCOMP, TRADV, TITR, TSAP, OTMS, OISE, EFRE, ETTR, ECPR, and EVPE are identified as significant contributors to the model, with their p-values being below the critical value of 0.05. Among these, RTOP emerges as the most influential predictor, accounting for 39.3% of the variance in mobile money cloud-based platform migration. EFRE, OTMS, and EVPE follow with contributions of 27.9%, 17.9%, and 17.1%, respectively. These findings underscore the importance of these specific variables in understanding and predicting the migration to cloud-based platforms in the mobile money sector.

## **Findings**

Related literature was reviewed to identify factors that could be used to design a model that will inform the readiness of South African financial enterprises to migrate mobile money services to cloud-based platforms. Three constructs were identified from the existing literature, namely, readiness for technology, technology migration, and external Vendor. This study evaluated 17 factors related to South African financial enterprises' readiness for cloud migration. Out of the 17 hypotheses tested, 15 were accepted, indicating statistically significant relationships, while 2 were rejected, suggesting no significant impact.

Key findings include that optimism (H1), innovativeness (H2), intention to use (H3), and perceived ease of use (H4) positively influence readiness for cloud migration. Optimism promotes resilience and aligns strategic goals with cloud benefits, supported by Mahlangu and Govender (2021), Mthunzi (2022), and Nkosi & Mekoa (2020). Innovativeness fosters exploration of cloud solutions and addresses challenges like compliance and cybersecurity, as noted by Mohlameane &

Ruxwana (2020), Chivunga (2021), and Nkosi & Mekoa (2020). A strong intention to use cloud platforms correlates with readiness, reflecting benefits like efficiency and strategic planning, in agreement with Mkhize & Mavuso (2020), Dlamini (2021), and Zulu & Roberts (2022). According to Mthunzi & Mpofu (2021), Nkosi & Mekoa (2020), and Mahlangu & Govender (2022), the perceived ease of use improves readiness by reducing resistance and increasing user satisfaction.

In addition to these, the study found that other factors such as perceived usefulness (H5), compatibility (H6), relative advantage (H7), IT readiness (H8), security and privacy (H9), top management support (H10), IS expertise (H11), financial readiness (H13), trust (H14), industry pressure (H15), and vendor performance (H17) also significantly contribute to cloud migration readiness. These factors span across the three constructs and highlight the multifaceted nature of readiness, encompassing technological, organisational, and external dimensions. However, organisational size (H12) and infrastructure (H16) were found to be statistically insignificant, suggesting that these traditional indicators may not be reliable predictors of cloud migration readiness in the South African financial context. These findings align with previous research by Mahlangu and Govender (2021), Mthunzi (2022), Nkosi & Mekoa (2020), and others, highlighting the importance of strategic alignment, technical skills, and trust in cloud-based platform migration readiness. Table 6 below presents the Significance and Action column, which indicates whether each hypothesis is statistically supported ( $p < .05$ ) and guides inclusion or exclusion of factors in the final model assessing the cloud-based readiness migration.

Table 6: Hypothesis analysis depicting the significance & action

Construct	Hypothesis	Indicator	Significance & Action
Readiness for Technology	H1	Optimism	.000 < .05 — Accepted
	H2	Innovativeness	.038 < .05 — Accepted
	H3	Intention to Use	.016 < .05 — Accepted
	H4	Perceived Ease of Use	.014 < .05 — Accepted
	H5	Perceived Usefulness	.002 < .05 — Accepted
Technology Migration	H6	Compatibility	.001 < .05 — Accepted
	H7	Relative Advantage	.042 < .05 — Accepted
	H8	IT Readiness	.040 < .05 — Accepted
	H9	Security and Privacy	.039 < .05 — Accepted
	H10	Top Management	.031 < .05 — Accepted
	H11	IS Expertise	.040 < .05 — Accepted
	H12	Organisational Size	.850 > .05 — Rejected
	H13	Financial Readiness	.020 < .05 — Accepted
	H14	Trust	.022 < .05 — Accepted

	H15	Industry Pressure	.009 < .05 — Accepted
	H16	Infrastructure	.518 > .05 — Rejected
<b>External Vendor</b>	H17	Performance	.029 < .05 — Accepted

## Discussions of the contribution of the previous studies to the study

Previous studies have laid a critical foundation for understanding the complex nature of technology adoption within financial ecosystems. Foundational frameworks such as the technology-organisation-environment (TOE) model (Tornatzky & Fleischner, 1990) and the Technology Acceptance Model (TAM) by Davis (1989) have long informed research in digital transformation. These models emphasise factors such as perceived usefulness, ease of use, organisational infrastructure, and external pressures as key determinants of technology readiness and adoption. In this study, these theoretical lenses are extended to assess the readiness of the South African financial enterprises to migrate to cloud-based mobile money platforms, a domain that adds complexity due to regulatory, technological, and cybersecurity concerns. The inclusion of constructs such as technology perceived usefulness (RTPU), technology perceived ease of use (RTPEU), and organisational financial readiness (EFRE) draws directly from these previous works and validates their applicability in the emerging context of mobile money cloud-based platforms.

Research has further evolved these foundational theories by incorporating dynamic variables reflective of the digital economy. Venkatesh et al. (2022) and Dwivedi et al. (2021) expanded the TAM and TOE models to address cloud computing, artificial intelligence, and fintech innovation in financial services. These researchers emphasise that readiness is not just a technical consideration but a strategic organisational priority encompassing talent, governance, cybersecurity, and partnerships. This paper builds on such insights by including variables like technological security and privacy (TSAP), external vendor/performance (EVPE), and environmental trust (ETTR) in the developed model. These variables were found to have statistically significant relationships with readiness outcomes, reinforcing the argument made by Vaishnavi & Kuechler (2015) that digital infrastructure alone is insufficient without the technology constructs and external alignment.

Moreover, this study contributes to the literature by contextualising these models within the sub-Saharan African mobile money ecosystem, where regulatory constraints, digital infrastructure gaps, and financial

inclusion priorities uniquely shape readiness challenges (Asongu & Nwachukwu, 2021; Boateng et al., 2022). While many existing studies that focus on high-income or well-resourced digital economies, this research provides fresh insights from a developing market, showing how new financial enterprises are handling the move to cloud-based platforms. However, this study does not only build on but also extends previous models by integrating localised variables and testing their influence within a quantitatively robust framework. The findings affirm and deepen the understanding of technology migration readiness in environments with distinct financial, regulatory, and infrastructural constraints.

### ***Model Validation***

The artefact validation process involved an expert-review method, ensuring the artefact's theoretical robustness and practical applicability. Experts from finance and cloud-based financial systems fields assessed the artefact through a comprehensive set of questions focusing on critical areas such as technological infrastructure, data security, financial readiness, and organisational readiness. This diverse panel of industry professionals and academic experts provided valuable insights, enhancing the accuracy and comprehensiveness of the validation process (Smith et al., 2023).

The study's validation objectives were to determine whether the proposed model (MMCPRAM) addresses the organisational readiness of South African financial enterprises for cloud migration, its suitability, and whether it offers guidance for this migration. The expert-review technique was chosen to evaluate these aspects, ensuring the model's adequacy, suitability, and usability (Gonsalves et al., 2023). Experts were selected based on their job descriptions and organisational sectors, including roles such as Head of Department, Senior Manager, Middle Manager, Junior Manager, and Team Leader, from sectors like Fintech, Finance, and Banking. A validation questionnaire was created using Google Forms, reviewed by a supervisor, and pilot-tested with two experts before distribution to the entire focus group. The questionnaire focused on the experts' professional details and their feedback on the model's organisational readiness, suitability, and guidance for cloud migration.

The findings from the validation process indicated strong agreement among experts on the model's effectiveness. Seven reviewers strongly

agreed, and three agreed that the model enhances readiness assessment for cloud migration. Similarly, the majority agreed that the model addresses IT readiness, informs readiness for cloud migration, and addresses technological requirements for migrating mobile money solutions to cloud-based platforms. Regarding data and transaction security, six reviewers indicated that the model well considered these concerns, while three highlighted that it fully considered them. Eight reviewers agreed that the model ensures transaction security, with two strongly agreeing.

In terms of suitability and guidance, four reviewers strongly agreed, and six agreed that the model offers guidance for South African financial enterprises. Of the ten reviewers, five found the model strongly suitable for migrating mobile money services to cloud-based platforms, and the other five found it suitable. The validation confirmed the artefact's validity and reliability, deeming it secure, suitable, and effective as a guide for South African financial enterprises. While no modifications were made to the developed model, two reviewers recommended future research to strengthen it.

## **Conclusion**

The accepted model for South African financial enterprises concludes that multiple factors significantly influence the readiness for this sector's cloud-based migration. The comprehensive assessment framework designed in this study integrates insights from the technology readiness and acceptance model (TRAM) and the technology-organisation-environment (TOE) frameworks, providing a robust tool for evaluating cloud-migration readiness assessment. Key factors such as trust, financial readiness, performance, and industry pressure emerged as critical determinants of cloud readiness. The empirical validation of seventeen constructs revealed that fifteen were significant, highlighting the complex relationship of technological, organisational, and environmental elements in shaping readiness. This model provides a valuable reference for financial companies that are migrating to the cloud, as it highlights areas that require strategic focus and investment.

Practically, the readiness assessment model serves as a crucial instrument for South African financial enterprises to benchmark their preparedness for migrating to cloud-based platforms. The model offers actionable insights that can guide decision-makers in identifying strengths and addressing gaps within their organisations. By emphasising factors

such as trust in cloud services, financial readiness, and performance expectations, the model helps enterprises prioritise initiatives that enhance their readiness for cloud migration. Furthermore, the study's findings have broader implications for policymakers and industry stakeholders, providing a foundation for developing supportive regulatory frameworks and industry standards that facilitate cloud adoption. Overall, this research contributes significantly to the body of knowledge on cloud computing adoption in the financial sector and offers practical guidance for fostering a more cloud-ready financial ecosystem in South Africa. The research model was designed from the identified factors. In conclusion a readiness assessment model for South African financial enterprises towards migration to cloud-based platforms was provided by this study.

### ***Ethical Considerations***

This article does not contain any studies involving human participants performed by any of the authors.

### ***Disclaimer***

The views and opinions expressed in this article are those of the author(s) and are the result of professional research. They do not necessarily reflect the official policy or position of any affiliated institution, funder, agency, or the publisher. The author(s) are solely responsible for the results, findings, and content of this article.

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