

Factors Affecting Financial Inclusion of Female Micro-Entrepreneurs in the Adoption of Mobile Money Services at Chainda Market in Lusaka-Zambia

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ABSTRACT

Financial inclusion remains a critical development challenge in Zambia despite the rapid expansion of mobile money services, with female micro-entrepreneurs continuing to face barriers to effective utilisation of digital financial services. This study examined mobile money adoption and use as the pathway through which financial inclusion is advanced for female micro-entrepreneurs, applying the Unified Theory of Acceptance and Use of Technology (UTAUT), with evidence from Chainda Market in Lusaka, Zambia. A quantitative research design was employed, and data were collected from 130 female micro-entrepreneurs using a structured questionnaire. Descriptive statistics and multiple linear regression analysis were used to analyse the data. Internal consistency reliability of the UTAUT constructs was confirmed using Cronbach's Alpha, with all constructs exceeding the acceptable threshold of 0.70. Two regression models were estimated: the first examined the effects of Performance Expectancy, Effort Expectancy and Social Influence on Behavioural Intention, while the second assessed the influence of Behavioural Intention and Facilitating Conditions on actual System Use. The descriptive findings indicated that respondents generally perceived mobile money services positively with respect to functionality, credibility and trust. Regression results revealed that Effort Expectancy was the only significant positive predictor of Behavioural Intention ($\beta = 0.409$, $p < 0.001$), while Performance Expectancy was not significant and Social Influence had a significant effect in the opposite direction to that hypothesized. Furthermore, Behavioural Intention and Facilitating Conditions did not significantly predict actual System Use. The study concludes that although female micro-entrepreneurs generally recognise the benefits of mobile money services, ease of use remains the principal driver of adoption intention, whereas actual usage may be influenced by broader contextual and operational factors beyond the traditional UTAUT constructs examined here. The study recommends that mobile money service providers improve platform usability, service reliability and digital financial literacy programmes while policymakers strengthen the supporting digital financial ecosystem to advance financial inclusion among female micro-entrepreneurs in Zambia.

Key Terms: Financial Inclusion; Mobile Money; Female Micro-Entrepreneurs; UTAUT; Zambia.

INTRODUCTION

In broad terms, financial exclusion has been referred to as developments that prevent poor and disadvantaged social groups from gaining access to the mainstream financial system (Chant Link & Associates, 2004). Specifically, financial exclusion reflects particular circumstances such as geographic exclusion; exclusion due to prohibitively high charges; exclusion from marketing segmentation; or even exclusion based on self-beliefs (Kempson, 2006). However, because the nature and drivers of financial exclusion vary across different factors in different countries, it is important that its definition be situated within the specific financial development context of a country.

According to the FinScope study (2015), since 2009 financial inclusion increased by 25.4 percent, from 37.3 percent to 59.3 percent. Although this is a rapid increase in financial inclusion, there still remains

approximately 40.7 percent of the population, particularly female-led households and rural areas, which are financially excluded. Between 2009 and 2015, financial inclusion rates for women increased from 33.9 percent to 57.4 percent, while during the same period financial inclusion for men increased from 40.85 percent to 61.2 percent. Financial inclusion of women has been increasing more quickly in recent years (FinScope, 2015). Women make up 48% of the labour force in Zambia and own about 36% of small businesses and 42% of micro enterprises in the country, according to the World Bank (2021).

Although Zambia has taken great strides to reduce the gender finance gap, with 58% of women reported as being financially included in 2020, as compared to 33% in 2015 according to the 2020 FinScope study, the gender gap persists on several fronts. Despite overall financial inclusion progress, including reducing the gender gap in access to formal financial services from 9.9% in 2015 to 5.8% in 2020, there are still opportunities to shorten the gender gap. This gap could be attributed to women not knowing how to use all the functionality mobile money services offer (Grameen Foundation, 2014) and women, on average, being less financially literate (Alliance for Financial Inclusion, 2016).

In addition, any expansion of female autonomy, whether this entails a business venture, education, or health decision, could pose a potent threat to husbands and boyfriends who have been conditioned by traditions of patriarchy to expect total control in the relationship: male vulnerability in contexts of chronic poverty reinforces such concerns (Silberschmidt, 2005). Keeping control of a wife's mobile phone communication is a regular male endeavour in many households (Burrell, 2010). Lack of access to financial services reduces women's ability to climb out of poverty; increases their risk of falling into poverty; contributes to women's marginalization to the informal sector; and reduces their ability to fully engage in measurable and productive economic activities (IFC, 2016). Furthermore, studies point to the difficulties that women still face in job search and building businesses, despite phones, due to a mix of male control and intense market competition [Abraham (2009); Burrell (2010); Tawah (2013)].

Despite women having lower access than men to mobile technology, they tend to be responsible for the vast majority of care work for children, the elderly and the sick in the home, and often run informal microbusinesses from domestic settings (GSMA, 2020). According to Daniels (2014), there is plenty of compelling evidence that women are a powerful driver of economic growth. Hence, ensuring women can access mobile technology is now more important than ever, for the sake of the well-being of themselves and their families, and for society as a whole. However, it can be observed that despite the exponential growth in the use of mobile money in Zambia, there is little to no knowledge about mobile money and financial exclusion of women-led small enterprises. It is for this reason that this study empirically explores the factors affecting the financial inclusion of female micro-entrepreneurs in the adoption of mobile money services in Zambia.

This study treats the adoption and use of mobile money as the operational pathway through which financial inclusion is examined, rather than measuring financial inclusion outcomes directly, such as account ownership, savings, or access to credit. This framing follows the wider literature, in which mobile money adoption is treated as the primary channel of financial inclusion in Sub-Saharan Africa, given that mobile money accounts substantially outnumber formal bank accounts in the region (Demirgüç-Kunt et al., 2022; GSMA, 2020). Accordingly, the UTAUT constructs examined in this study (Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Behavioural Intention and System Use) are used as indicators of the adoption process through which female micro-entrepreneurs may become financially included, and the study's conclusions about financial inclusion should be read as inferences from adoption behaviour rather than as direct measurements of financial inclusion status.

LITERATURE REVIEW

The global financial landscape has undergone significant transformation in the past two decades, with mobile money services emerging as a key driver of financial inclusion, particularly in developing economies (Demirgüç-Kunt et al., 2022). Yet, despite this advancement, women—especially female micro-entrepreneurs—remain disproportionately excluded from digital financial ecosystems. Studies using the Unified Theory of Acceptance and Use of Technology (UTAUT) have consistently demonstrated that behavioural intention toward technology adoption is influenced by constructs such as performance

expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003; Venkatesh et al., 2012). However, global analyses indicate that these constructs do not equally predict adoption behaviour among women entrepreneurs, primarily due to socio-economic and gender-based constraints (Abed, 2021). Global scholarship also underscores the critical role of digital literacy and education in shaping female entrepreneurs' engagement with mobile financial services. Empirical studies reveal that women in developing and emerging economies often exhibit lower levels of digital literacy, limiting their capacity to navigate mobile interfaces and understand transaction processes (Asongu & Odhiambo, 2019; Boateng et al., 2022). A study by Suri and Jack (2016) on Kenya's M-Pesa diffusion revealed that educational attainment significantly influenced adoption, yet such findings have not been consistently replicated in global contexts. Similarly, Jha and Dangwal (2025) demonstrated that while UTAUT's effort expectancy construct partially explains usage behaviour, its predictive power increases when digital literacy and self-efficacy are incorporated as moderating variables. From a global perspective, this signals the necessity of extending UTAUT's explanatory scope to encompass digital skill disparities, particularly among women entrepreneurs in informal economies. Moreover, the intersection of literacy, access, and social norms represents a multidimensional barrier that current UTAUT applications inadequately capture. As global economies transition toward digital ecosystems, addressing these gendered literacy gaps becomes a precondition for sustainable financial inclusion and entrepreneurial empowerment.

The reviewed African-based literature reveals no clear consensus on the impact of mobile money services on financial inclusion, with outcomes differing across models, contexts, and variables considered. Some studies, such as Shaikh et al. (2023), highlight the importance of mobile money agents' credibility and service quality in driving continuous usage and enhancing financial inclusion. Ahmad et al. (2020) emphasize the broader economic implications of mobile money, noting unresolved issues such as adoption, regulation, and its relationship with traditional banking systems. Empirical evidence from Sub-Saharan Africa (Nyimbiri, 2021) shows that an increase in mobile money agents significantly improves access to financial services. Similarly, studies in Zimbabwe (Thulani et al., 2014) indicate high usage of mobile money among rural populations, although savings and credit functions remain underutilized. Further studies reveal that mobile money positively influences savings behaviour, consumption smoothing, and poverty reduction, particularly among vulnerable groups (Skogqvist, 2019; Abiona & Koppensteiner, 2018). However, structural and socio-economic barriers such as low income, limited education, and inadequate awareness still constrain adoption in some regions (Coulibaly, 2020). While mobile money has proven effective in reducing financial exclusion and transaction costs, it is not a complete solution to poverty and requires complementary interventions such as financial literacy and supportive infrastructure. Overall, the literature suggests that mobile money is a powerful but context-dependent tool for advancing financial inclusion in Africa.

The Zambian literature indicates a notable lack of empirical studies examining the relationship between mobile money and financial inclusion among female entrepreneurs. Existing studies, such as Chimfwembe (2022), show that financial inclusion has improved significantly, with mobile money emerging as a key driver, particularly in rural areas where banking access is limited. Similarly, Mkalipi (2020) and Kabala et al. (2021) find that mobile money services enhance financial inclusion by offering accessible, affordable, and convenient financial solutions to previously unbanked populations. However, research also highlights gaps in the uptake of more advanced financial services such as insurance, credit, and pensions. Other studies (Kawimbe, 2020) emphasize that research on mobile financial services in Zambia remains limited and biased toward institutional factors rather than user-level impacts. Evidence from SME-focused studies suggests that access to finance remains constrained by factors such as collateral requirements, high interest rates, and limited managerial capacity (Chilembo, 2021; Muchoka, 2020). Additionally, tax compliance challenges and informality continue to hinder financial sector development, despite the introduction of e-tax systems. While digital financial services and e-tax platforms have improved efficiency and compliance to some extent, adoption is still influenced by factors such as perceived usefulness, ease of use, and social influence. Overall, although mobile money and digital innovations show strong potential to enhance financial inclusion in Zambia, significant structural, institutional, and knowledge gaps persist, particularly regarding their impact on specific groups such as female entrepreneurs. This raises the need to empirically investigate the factors that affect financial inclusion of female micro-entrepreneurs in the adoption of mobile money services in Zambia. Thus, this is the gap the research intends to fill.

METHODOLOGY

This study used a quantitative research design. This design is appropriate for this research as the method allows for the use of statistical data as a tool for saving time and resources. Bryman (2001) argues that the quantitative research approach is research that places emphasis on numbers and figures in the collection and analysis of data. The use of scientific methods for data collection and analysis makes generalisation possible with this type of method, and the interpretation of research findings need not be seen as a mere coincidence (Williams and May, 1998). Replicability is another benefit derivable from the use of this research approach (Daniel, 2016). Since the research approach relies on hypothesis testing, the researcher followed clear guidelines and objectives (Lichtman, 2013), meaning the study can be repeated at any other time or place and still yield the same results (Shank and Brown, 2007).

The target population was estimated to be 192 from the total registered women micro-entrepreneurs at Chainda Market in Lusaka Township, from which a sample was estimated using the Yamane (1967) formula for sample size determination, as applied in the works of Khamis and Gumawa (2020), with a 95% confidence level giving an error precision of 5% ($e = 0.05$). Therefore, 130 respondents from the study population were selected to participate in this study, all of whom were registered businesses at Chainda Market in Lusaka Township.

The sample was selected using a non-probability sampling method called purposive sampling. Purposive sampling involves choosing information-rich cases to help a researcher conduct an in-depth study of the cases under consideration, without the need or desire to generalize to all such cases (McMillan and Schumacher, 2006). Purposive sampling is done to increase the utility of information obtained from a small sample. In this study, the researcher purposefully sampled SMEs in Chainda Market in Lusaka Township.

Research Model

The literature shows that TAM, TRA, and TPB have been widely used to study technology acceptance, but they are limited by a relatively low explanatory power of about 30–40% for behavioural intention. In contrast, the UTAUT model demonstrates stronger explanatory power, accounting for up to 70% of behavioural intention (Venkatesh et al., 2003). UTAUT is also significant because it integrates eight major technology acceptance models and has been empirically validated across various contexts. Empirical studies consistently find performance expectancy and effort expectancy as key drivers of technology adoption, while the influence of social factors varies across contexts and cultures. Cross-country validations further confirm that UTAUT is robust, reliable, and applicable across different cultural and linguistic settings. Overall, the evidence supports the adoption of the UTAUT model as a comprehensive and reliable framework for analysing technology acceptance, making it suitable for examining mobile money adoption among female-led SMEs in Zambia.

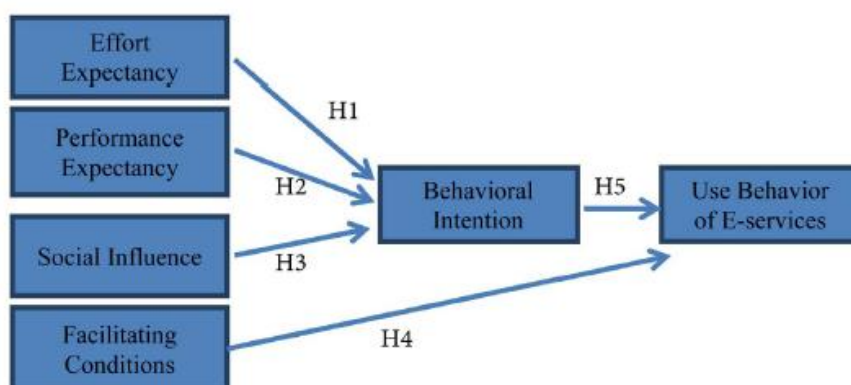


Figure 1: Adopted Conceptual Framework Based on the UTAUT Model by Venkatesh et al. (2003)

The variables considered in this research are clearly defined and explained below:

Performance expectancy is defined as the degree to which individuals believe that using the system will help them improve their job performance (Venkatesh et al., 2003). Five variables comprise the performance

expectancy construct: perceived usefulness, extrinsic motivation, job-fit, relative advantage, and outcome expectations (Venkatesh et al., 2003).

Effort expectancy is the degree of ease associated with the use of the system (Venkatesh et al., 2003). The UTAUT model identifies three constructs which make up the concept of effort expectancy: perceived ease of use, complexity, and ease of use (Venkatesh et al., 2003).

Social influence is the degree to which an individual perceives that others who are deemed important to them believe that they should use the system (Venkatesh et al., 2003). Social influence is comprised of subjective norms, social factors, and image. The construct name “social norms” has been used in prior literature and is similar to “subjective norm” within the Theory of Reasoned Action (Thompson et al., 1991).

Facilitating conditions are the degree to which an individual believes that organizational and technical infrastructure exist to support the system (Venkatesh et al., 2003). Facilitating conditions comprise three root constructs: perceived behavioural control, facilitating conditions, and compatibility, each operationalized to include aspects of the technological and/or organizational environment meant to remove barriers to use (Venkatesh et al., 2003).

Behavioural intention refers to a person's desire or plan to perform a specific behaviour. It is a motivational factor that indicates the likelihood of someone engaging in a particular action and reflects a person's willingness to perform a behaviour. Behavioural intention is often considered a precursor to actual behaviour and is frequently used to predict and understand future actions.

Research Hypotheses

The UTAUT model was therefore adopted in generating the hypotheses used in this study. The main predictors were PE, EE, SI, FC and BI. The following research hypotheses were tested, guided by Venkatesh et al. (2003):

H1: Performance Expectancy has a statistically significant positive influence on Behavioural Intention to adopt mobile money services among female micro-entrepreneurs in Chainda Market.

H2: Effort Expectancy has a statistically significant positive influence on Behavioural Intention to adopt mobile money services among female micro-entrepreneurs in Chainda Market.

H3: Social Influence has a statistically significant positive influence on Behavioural Intention to adopt mobile money services among female micro-entrepreneurs in Chainda Market.

H4: Behavioural Intention has a statistically significant positive influence on the actual use of mobile money services among female micro-entrepreneurs in Chainda Market.

H5: Facilitating Conditions have a statistically significant positive influence on the actual use of mobile money services among female micro-entrepreneurs in Chainda Market.

Model Testing

To test the hypothesized relationships between the independent and dependent variables, this study employed multiple linear regression analysis. Multiple regression is an inferential statistical technique used to examine the simultaneous influence of two or more independent variables on a single dependent variable while controlling for the effects of the other predictors (Field, 2018; Hair et al., 2019). The technique was considered appropriate because the study sought to determine the relative contribution of the UTAUT constructs in explaining behavioural intention and actual system use of mobile money services among female micro-entrepreneurs.

Consistent with the objectives of the study, two regression models were estimated. The first model examined the effects of Performance Expectancy (PE), Effort Expectancy (EE), and Social Influence (SI) on Behavioural Intention (BI), while the second model assessed the effects of Behavioural Intention (BI) and Facilitating Conditions (FC) on System Use (SU). Multiple regression was selected because it estimates the individual

effect of each predictor while simultaneously assessing the overall explanatory power of the model through measures such as the coefficient of determination (R^2), the F-statistic and the regression coefficients (β) (Hair et al., 2019). Furthermore, the statistical significance of each predictor was evaluated using t-tests and corresponding p-values at the 5% significance level.

Before estimating the regression models, the underlying assumptions of multiple linear regression were assessed. Specifically, tests for normality, linearity, homoscedasticity, independence of errors and multicollinearity were conducted to ensure that the estimated regression coefficients were unbiased, efficient and reliable (Field, 2018; Gujarati & Porter, 2009). Satisfying these assumptions enhances the validity of the regression results and the robustness of the study's conclusions.

Regression Models

The regression models estimated in this study were specified as follows:

Model 1

$$BI = \beta_0 + \beta_1 PE + \beta_2 EE + \beta_3 SI + \varepsilon$$

Where: BI = Behavioural Intention, PE = Performance Expectancy, EE = Effort Expectancy, SI = Social Influence, β_0 = Constant (Intercept), β_1 – β_3 = Regression coefficients and ε = Error term.

Model 2

$$SU = \beta_0 + \beta_1 BI + \beta_2 FC + \varepsilon$$

Where: SU = System Use, BI = Behavioural Intention, FC = Facilitating Conditions, β_0 = Constant (Intercept), β_1 – β_2 = Regression coefficients and ε = Error term.

Reliability and Validity

The internal consistency reliability of the research instrument was assessed using Cronbach's Alpha, computed separately for each construct in SPSS. As shown in Table 1, all six constructs met or exceeded the generally accepted threshold of 0.70 (Field, 2018), indicating that the items within each construct reliably measured the same underlying concept. During data cleaning, three data-entry errors were identified in one System Use item (SU4), where three respondents' values had been mistakenly double-keyed (recorded as 44 and 55 instead of 4 and 5). These were corrected to their intended values prior to the reliability and regression analyses reported in this article.

Table 1: Reliability Statistics (Cronbach's Alpha)

Construct	Number of Items	Cronbach's Alpha	Verdict
Performance Expectancy (PE)	4	0.790	Good
Effort Expectancy (EE)	4	0.729	Acceptable
Social Influence (SI)	5	0.725	Acceptable
Facilitating Conditions (FC)	5	0.752	Good
Behavioural Intention (BI)	5	0.816	Good
System Use (SU)	8	0.778	Good

Content and construct validity were addressed by adapting the questionnaire items directly from the validated UTAUT instrument developed and empirically tested by Venkatesh et al. (2003) and subsequently applied by Venkatesh et al. (2012), rather than developing new, unvalidated items. The questionnaire was further reviewed by a research methodology expert at the Graduate School of Business, University of Zambia, prior to data collection to confirm the clarity, relevance and logical sequencing of the items.

Ethical Considerations

The researcher ensured that basic ethical principles guiding the research were observed, including honesty, openness, informed consent, privacy and confidentiality. Ethical clearance and permission to collect data were obtained prior to fieldwork, and respondents participated voluntarily after being informed of the purpose of the study. Ethical considerations such as confidentiality, consent and debriefing were applied throughout the study to ensure it was conducted in the best interest of the respondents. No data relating to the identity of individual respondents or their businesses is disclosed in this article.

RESULTS

Demographic Profile of Respondents

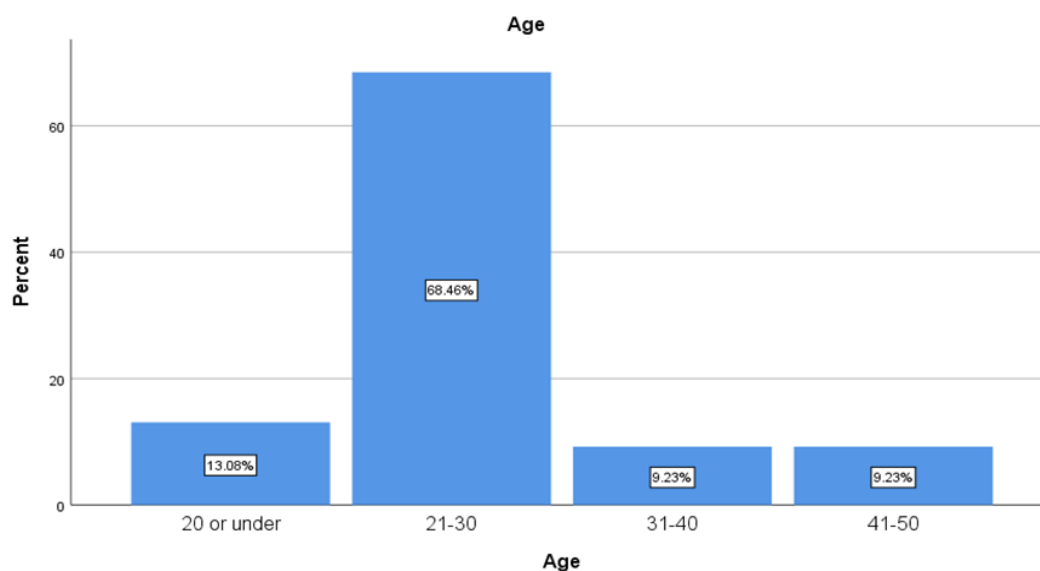


Figure 2: Age

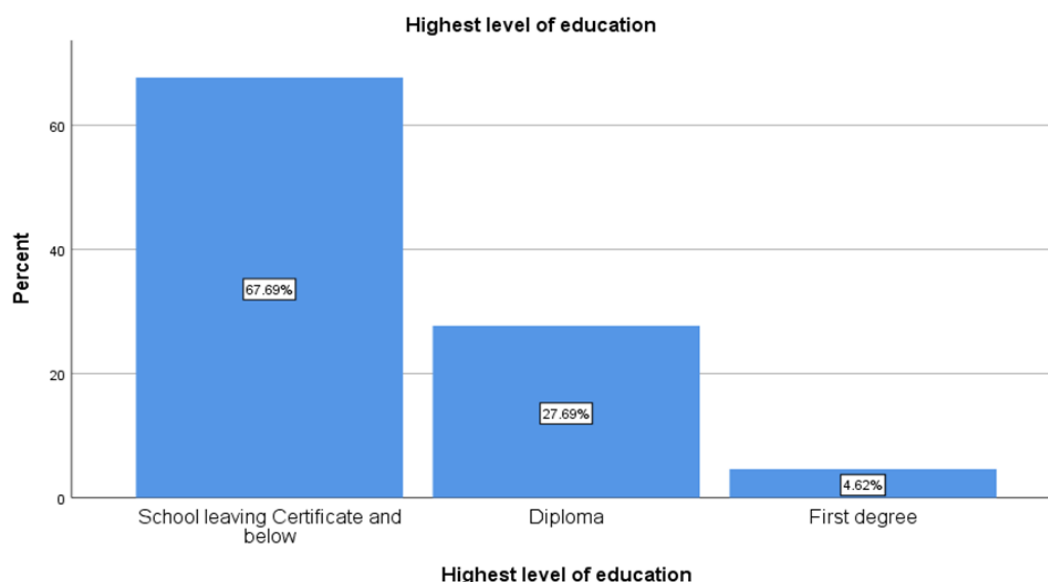


Figure 3: Level of Education

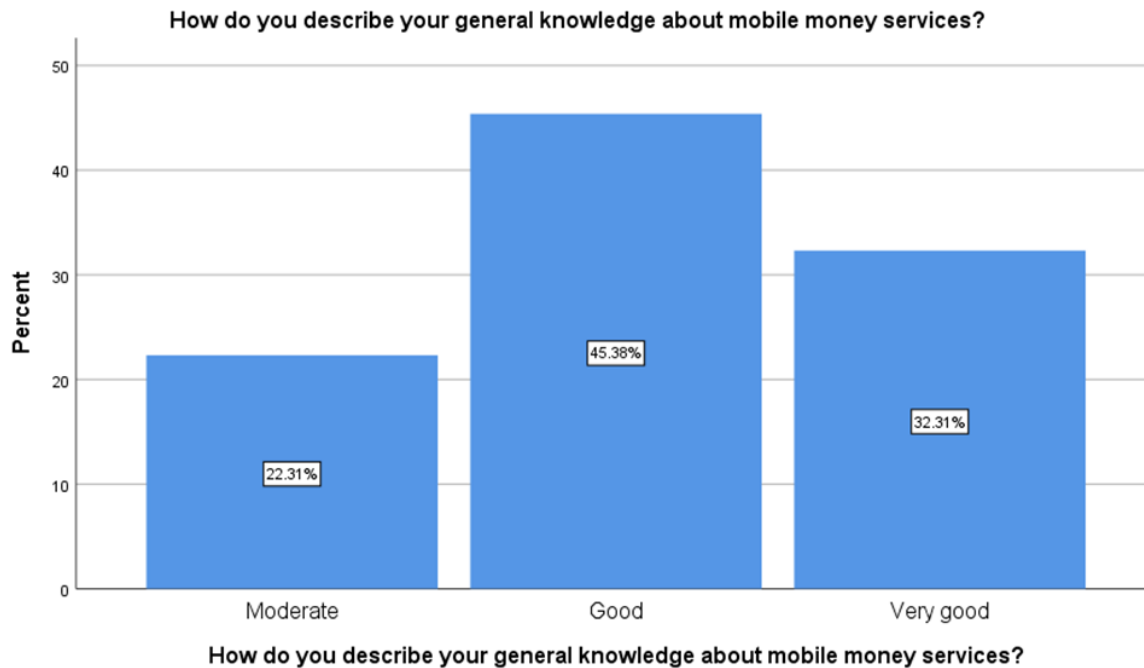


Figure 4: General Knowledge about Mobile Money Services

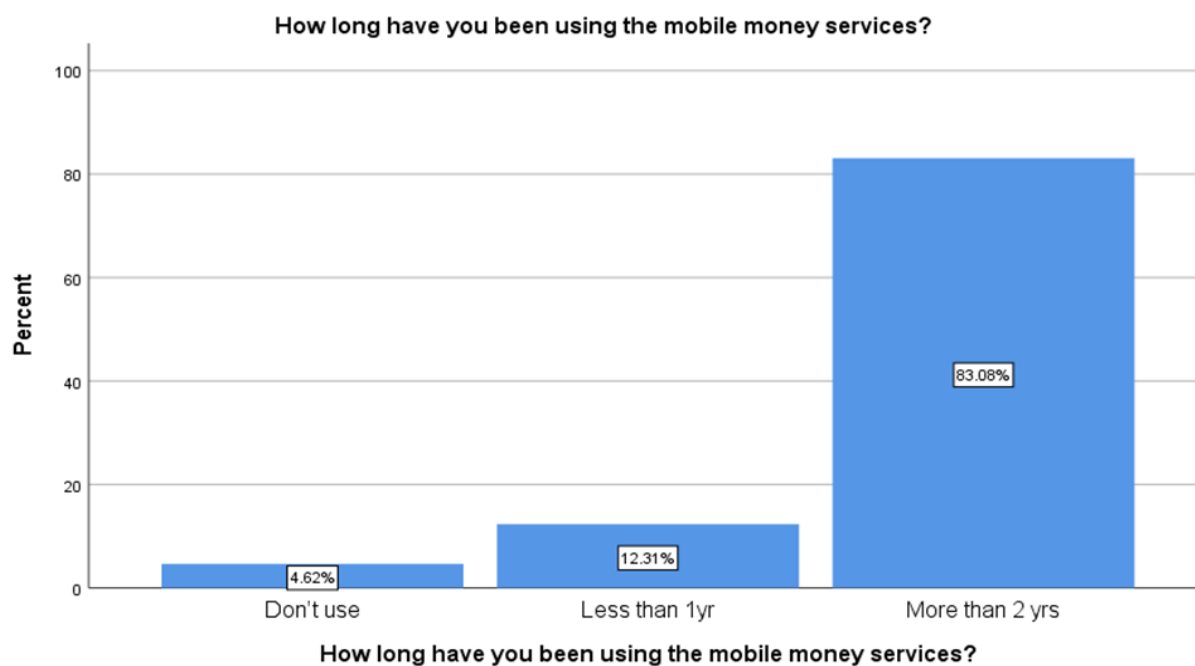


Figure 5: Length of Time in Using Mobile Money Services

Figure 2 shows that the majority (68.46%) of the respondents were between the ages of 21–30 years, 13.08% were 20 or under, and 9.23% were each for 31–40 years and 41–50 years. Figure 3 shows that the majority (67.69%) of the respondents stated that they had attained a School Leaving Certificate and below as the highest level of education, 27.69% had a Diploma and 4.62% had a first degree. Figure 4 shows that the majority (45.38%) of the respondents stated that their general knowledge about mobile money services was good, 32.31% was very good and 22.31% was moderate. Figure 5 shows that the majority (83.08%) of the respondents stated that they had been using mobile money services for more than 2 years, and 12.31% stated that they had used it for less than 1 year.

Regression Results

Table 2: SPSS Multiple Regression Model 1 and 2 Results Summary

Model	Dependent Variable	Predictors	R	R ²	Adjusted R ²	F Statistic	p-value	Model Fit
Model 1	Behavioural Intention	Performance Expectancy, Effort Expectancy, Social Influence	0.412	0.170	0.150	8.576	<0.001	Significant
Model 2	System Use	Behavioural Intention, Facilitating Conditions	0.177	0.031	0.016	2.042	0.134	Not Significant

Table 2 above summarises the overall performance of the two regression models. Model 1 was statistically significant ($F = 8.576$, $p < 0.001$) and explained 17.0% of the variation in Behavioural Intention, indicating that the selected UTAUT constructs provided a modest explanation of users' behavioural intention. In contrast, Model 2 was not statistically significant ($F = 2.042$, $p = 0.134$) and explained only 3.1% of the variation in System Use, suggesting that additional factors beyond Behavioural Intention and Facilitating Conditions may better explain actual mobile money usage. Detailed coefficient-level results for both models are presented below.

Table 3: Summary of Hypotheses Results

Hypothesis	Path	β	p-value	Decision
H1	Performance Expectancy → Behavioural Intention	-0.003	0.976	Not Supported
H2	Effort Expectancy → Behavioural Intention	0.409	<0.001	Supported
H3	Social Influence → Behavioural Intention	-0.272	0.002	Not Supported (significant negative effect, opposite of hypothesized direction)
H4	Behavioural Intention → System Use	0.014	0.880	Not Supported
H5	Facilitating Conditions → System Use	-0.180	0.051	Not Supported

As shown in Table 3, H2 was the only hypothesis fully supported in its hypothesized direction. H3 was not supported: although the relationship between Social Influence and Behavioural Intention was statistically significant, it was negative rather than the positive relationship that was hypothesized, and is therefore reported as an unexpected finding rather than as support for H3.

Table 4: Summary of Regression Diagnostic Tests

Assumption	Test	Acceptable Threshold	Model 1	Model 2	Conclusion
Independence of Errors	Durbin-Watson	1.5–2.5	1.948	1.836	Assumption satisfied
Multicollinearity	VIF	<5 (or <10)	1.028–1.146	1.098	No multicollinearity

Assumption	Test	Acceptable Threshold	Model 1	Model 2	Conclusion
Multicollinearity	Tolerance	>0.20	0.873–0.973	0.911	Assumption satisfied
Normality	Histogram & P-P Plot	Approximately normal	Satisfied	Satisfied	Assumption satisfied
Homoscedasticity	Scatterplot	Random dispersion	Satisfied	Satisfied	Assumption satisfied
Linearity	Scatterplot	Linear relationship	Satisfied	Satisfied	Assumption satisfied

Prior to interpreting the regression coefficients, diagnostic tests were performed to verify that the assumptions of multiple linear regression were satisfied. As summarised in Table 4, the Durbin–Watson statistics for both models were close to 2.0, indicating independence of residuals. The Variance Inflation Factor (VIF) and tolerance values confirmed the absence of multicollinearity. Furthermore, visual inspection of the histograms, Normal P–P plots and scatterplots indicated that the assumptions of normality, homoscedasticity and linearity were reasonably satisfied. Therefore, both regression models met the underlying assumptions required for multiple linear regression, and the estimated coefficients are considered reliable for interpretation.

Mobile Money Service Attributes and the Adoption of Mobile Money for Financial Inclusion

The Involvement, Functionality, Credibility and Trust items presented in this subsection were measured using single-item, study-specific response categories rather than a standardised, equidistant Likert scale, and their response options were not fully parallel across items (for example, the Credibility and Trust items each included an affirmative “Yes” category alongside separate rating-style labels such as “very good” and “not trustworthy”). These items are therefore reported descriptively as indicative findings on respondents' perceptions of mobile money service quality, and were not included as predictor or outcome variables in the regression models reported in Section 4.2.

Are you involved in any changes being made on the use of Mobile money transfer services by Mobile money service providers?

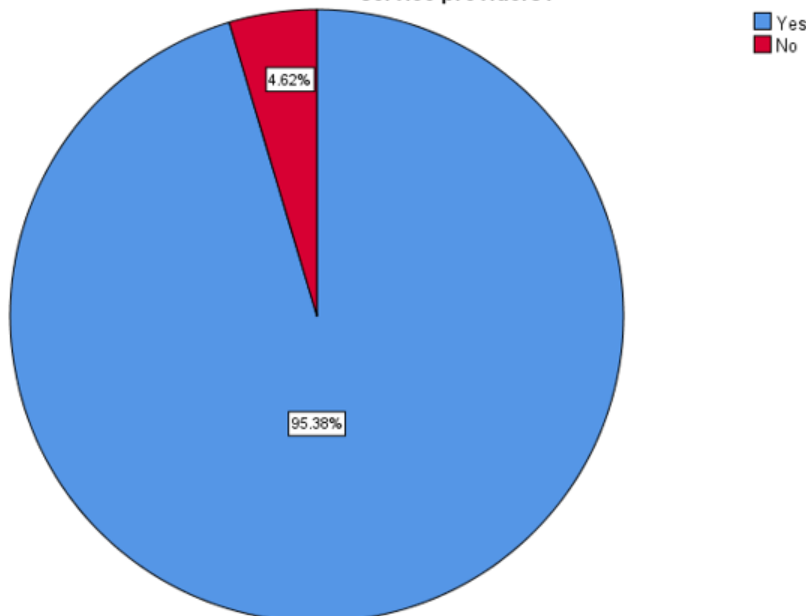


Figure 6: Involvement in Any Changes Being Made on the Use of Mobile Money Transfer Services

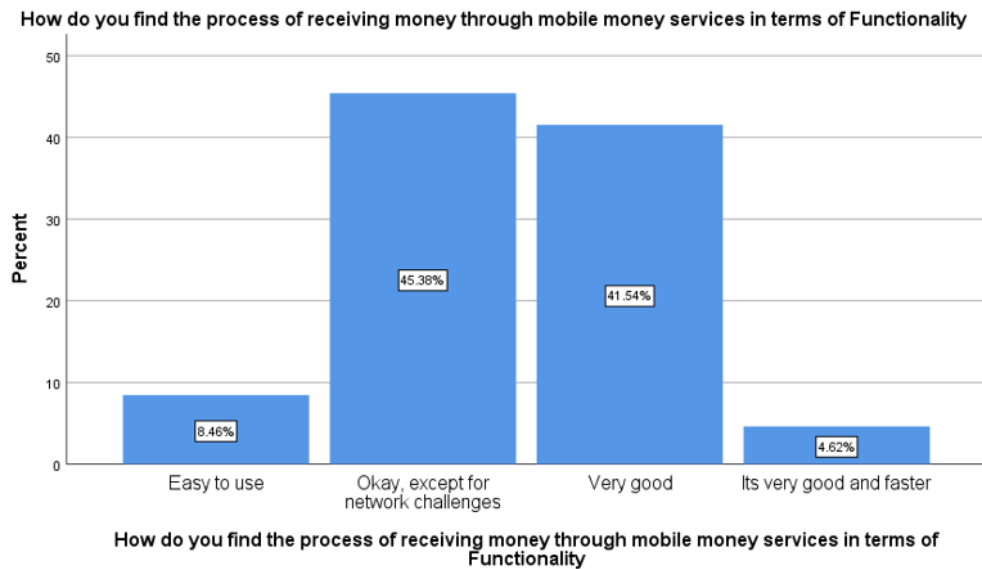


Figure 7: Functionality

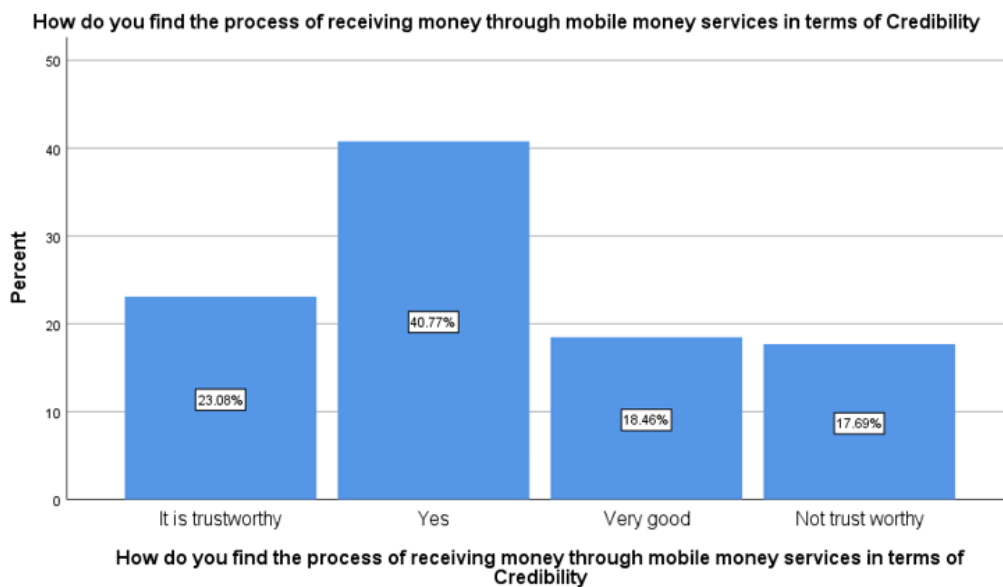


Figure 8: Credibility

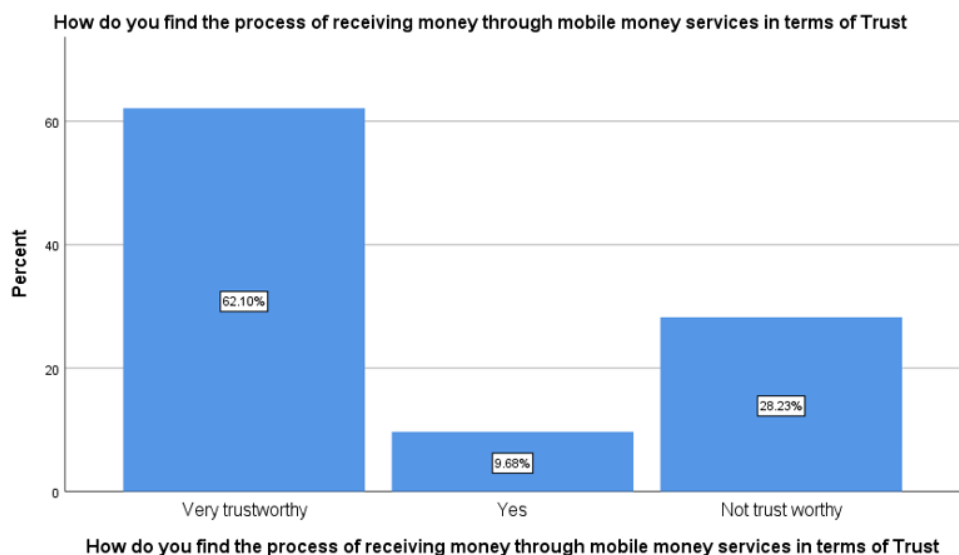


Figure 9: Trust

Figure 6 shows that the majority (95.4%) of the respondents stated Yes to being involved in changes made to the use of mobile money transfer services by mobile money service providers, while 4.62% stated otherwise. This involvement is important for financial inclusion because it shows how micro-entrepreneurs are increasingly integrating digital financial services into their regular business operations. The World Bank (2018) states that digital financial services like mobile money are essential for increasing financial access for marginalized groups, especially women and small business owners in developing nations.

Figure 7 shows that the majority (45.4%) of respondents stated that the process of receiving money through mobile money services in terms of Functionality was relatively okay except for network challenges, 41.5% stated very good, 8.5% stated easy to use and 4.6% stated very good and faster. This outcome is in line with Jack and Suri's (2014) research on mobile money systems, which found that while mobile money platforms greatly improve transaction efficiency and economic participation, they may still be limited by network reliability and other technological infrastructure constraints. For micro-entrepreneurs who depend on frequent and timely transactions, network disruptions can temporarily undermine the convenience that mobile money services are designed to provide.

Figure 8 shows that the majority (40.8%) of respondents stated Yes regarding the Credibility of receiving money through mobile money services, 23.1% stated it is trustworthy, 18.5% stated very good and 17.7% stated not trustworthy. The high degree of trust expressed by respondents implies that mobile money providers have succeeded in boosting the confidence of female micro-entrepreneurs, perhaps as a result of safe transaction procedures, reliable service, and platform familiarity. According to earlier research, trust is a major factor in promoting the use of mobile financial services in developing nations (Donovan, 2012).

Figure 9 shows that the majority (62.1%) of respondents stated that the process of receiving money through mobile money services in terms of Trust was very trustworthy, 28.2% stated not trustworthy and 9.7% stated Yes. Some research, however, offers findings that run counter to these conclusions. For example, research by Aker and Mbiti (2010) indicates that even where mobile money is widely used, some consumers remain sceptical about the security and dependability of digital financial services, especially in rural or low-literacy settings.

DISCUSSION

This section discusses the findings obtained from the regression analysis in relation to the study's hypotheses and existing literature on the UTAUT model and mobile money adoption. The findings are discussed under the two estimated models before their theoretical and practical implications, the limitations of the study, and directions for future research are considered.

Determinants of Behavioural Intention (Model 1)

Table 2 shows that the regression model was statistically significant ($F = 8.576$, $p < 0.001$) and explained 17.0% of the variation in Behavioural Intention ($R^2 = 0.170$), indicating that Performance Expectancy, Effort Expectancy and Social Influence jointly provide a modest explanation of female micro-entrepreneurs' intention to adopt mobile money services. Diagnostic tests confirmed that the assumptions of multiple linear regression were satisfied; therefore, the estimated coefficients are considered reliable for interpretation.

Performance Expectancy did not significantly influence Behavioural Intention ($\beta = -0.003$, $p = 0.976$), suggesting that perceived usefulness was not a key determinant of respondents' intention to adopt mobile money services. This finding contradicts the UTAUT model (Venkatesh et al., 2003) and studies by Oliveira et al. (2016) and Alalwan et al. (2017), which identified perceived usefulness as a significant predictor of technology adoption. However, it agrees with Chimfwembe (2022) in Zambia, who observed that among experienced users, usefulness becomes less influential because mobile money is already perceived as an essential business tool. This suggests that female micro-entrepreneurs in Chainda Market no longer question whether mobile money is useful but instead focus on how efficiently it supports their daily business operations.

Effort Expectancy was the strongest positive predictor of Behavioural Intention ($\beta = 0.409$, $p < 0.001$), implying that respondents were more willing to adopt mobile money when they perceived it as easy to learn and operate. This finding supports the UTAUT framework and is consistent with studies conducted by Venkatesh et al. (2003), Oliveira et al. (2016), Raza et al. (2019) and Chimfwembe (2022) in Zambia. Collectively, these studies demonstrate that reducing technological complexity enhances digital financial inclusion. The finding therefore suggests that mobile money providers should continue simplifying user interfaces and improving customer education to encourage wider adoption.

Social Influence exhibited a significant negative relationship with Behavioural Intention ($\beta = -0.272$, $p = 0.002$). H3 had hypothesized a positive relationship, and this finding is therefore reported as not supported, with the direction of the effect treated as an unexpected result rather than as confirmation of the hypothesis. This finding contradicts the positive relationship proposed by Venkatesh et al. (2003), Zhou et al. (2010) and Oliveira et al. (2016). Nevertheless, it is partly consistent with Chimfwembe (2022), who argued that experienced users increasingly rely on personal experience rather than recommendations from peers. Within the context of Chainda Market, this finding suggests that female micro-entrepreneurs make technology adoption decisions independently, based on business needs and previous experience rather than social pressure; the mechanism behind the negative direction was not directly tested in this study and is offered as a plausible explanation rather than an empirically confirmed one.

Overall, Model 1 partially supports the UTAUT framework: H2 (Effort Expectancy) was supported, while H1 (Performance Expectancy) and H3 (Social Influence) were not supported in their hypothesized direction, with H3 producing a statistically significant effect in the opposite direction to that hypothesized.

Determinants of System Use (Model 2)

The second regression model examined whether Behavioural Intention and Facilitating Conditions predicted actual System Use. Although the regression assumptions were satisfied, the model was not statistically significant ($F = 2.042$, $p = 0.134$) and explained only 3.1% of the variation in System Use ($R^2 = 0.031$). Given this very low explanatory power, the coefficients in this model should be interpreted with caution and are reported descriptively rather than as confirmed predictive relationships.

Behavioural Intention did not significantly predict System Use ($\beta = 0.014$, $p = 0.880$), suggesting that favourable intentions did not necessarily translate into actual use of mobile money services. This finding contradicts the UTAUT model and studies by Venkatesh et al. (2003), Oliveira et al. (2016) and Zhou et al. (2010), which found Behavioural Intention to be the strongest predictor of technology use. It is consistent, however, with Chimfwembe (2022), who reported that actual use is often constrained by practical factors such as network reliability, transaction costs, agent liquidity and access to digital infrastructure; these factors were not directly measured in this study and their role here remains a plausible explanation rather than a tested finding. The results imply that positive attitudes alone are insufficient to promote sustained mobile money usage among female micro-entrepreneurs.

Facilitating Conditions also failed to significantly predict System Use ($\beta = -0.180$, $p = 0.051$), although the relationship approached statistical significance. This finding differs from Venkatesh et al. (2003), Oliveira et al. (2016) and Raza et al. (2019), who found facilitating conditions to positively influence technology use. Respondents in this study generally reported favourable facilitating conditions, which may partly explain the limited variation available for the model to detect an effect; this is offered as a possible explanation rather than an empirically confirmed one.

In summary, given its non-significance and very low R^2 , Model 2 does not provide support for the UTAUT proposition that Behavioural Intention and Facilitating Conditions predict actual system use in this sample. This should be treated as an inconclusive result rather than evidence that these constructs are unimportant; contextual factors not measured in this study, including transaction costs, service reliability, network quality, trust and agent availability, may play a role in determining actual mobile money usage and warrant direct empirical testing in future research.

Theoretical Implications

The findings offer a partial validation of the UTAUT model within the context of female micro-entrepreneurs in an informal African market setting. While Effort Expectancy behaved as the original model predicts, the non-significance of Performance Expectancy and the negative effect of Social Influence suggest that the standard UTAUT constructs do not operate uniformly across all user populations. This points to the need for context-specific extensions of UTAUT, particularly for experienced users of a mature technology, where perceived usefulness may already be assumed rather than actively evaluated, and where social referents play a diminished role relative to personal experience. The weak explanatory power of Model 2 further suggests that Behavioural Intention and Facilitating Conditions, as originally conceptualised in UTAUT, are insufficient on their own to explain actual system use in informal-sector, women-led enterprise settings, reinforcing calls in the literature for the model to be extended with constructs such as trust, transaction cost and network reliability, tested directly rather than inferred.

Practical Implications

For mobile money service providers, the dominance of Effort Expectancy as the principal driver of adoption intention implies that continued investment in simplifying interfaces, registration procedures and transaction steps will yield more adoption benefit than campaigns focused solely on communicating usefulness. The gap between favourable intention and actual system use also implies that providers and policymakers should look beyond encouraging positive attitudes toward mobile money and instead investigate directly the operational conditions, such as network reliability, agent liquidity and transaction costs, that may determine whether intention is converted into sustained use. For policymakers, the findings support continued investment in the digital financial ecosystem and in financial literacy programmes that target female micro-entrepreneurs specifically, given their central role in Zambia's informal economy.

LIMITATIONS

This study is limited to women-led SMEs at Chainda Market and does not extend to other markets or surrounding areas, which limits the generalisability of the findings to female micro-entrepreneurs elsewhere in Zambia. The purposive, single-market sampling approach means the results should be interpreted as descriptive of this context rather than generalised broadly. The study also relied on a quantitative approach using a structured questionnaire; consequently, it did not capture the deeper meanings, experiences and contextual explanations that respondents themselves attach to their use, or non-use, of mobile money services. A modified, partial application of the UTAUT model was used, focused on Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Behavioural Intention and System Use; established UTAUT moderators such as age, gender, experience and voluntariness of use were not included, and this exclusion should be treated as a scope decision rather than an oversight. In addition, the two regression models explained a modest proportion of the variance in Behavioural Intention (17.0%) and a limited proportion of the variance in System Use (3.1%), indicating that important explanatory factors beyond the core UTAUT constructs examined in this study remain unaccounted for. The Involvement, Functionality, Credibility and Trust items used non-uniform, study-specific response categories rather than a single consistent ordinal scale; for instance, the Credibility and Trust items each combined an affirmative “Yes” category with separate rating-style labels, and the Trust item included a “Neutral” category that no respondent selected. These items should therefore be read as indicative, single-item descriptive findings rather than validated ordinal measures, and were not used in the inferential regression analysis. Finally, because financial inclusion itself (e.g., account ownership, savings or access to credit) was not measured directly, the study's conclusions about financial inclusion are inferences drawn from mobile money adoption behaviour rather than direct measurements of financial inclusion outcomes.

FUTURE RESEARCH DIRECTIONS

Future studies should extend the analysis to other informal markets and provinces in Zambia to enhance the generalisability of the findings. Comparative studies involving male and female entrepreneurs could also be undertaken to establish whether gender moderates the determinants of mobile money adoption and usage.

Because the regression models explained only a modest proportion of the variation in Behavioural Intention and actual System Use, future research should incorporate additional explanatory variables beyond the traditional UTAUT constructs, such as digital financial literacy, perceived trust, perceived security, transaction costs, network reliability, agent liquidity, financial capability and government policy support, measured and tested directly, which may improve the explanatory power of future models. Future researchers may also employ mixed-methods or qualitative approaches to gain deeper insight into the behavioural, cultural and institutional factors influencing mobile money adoption among female entrepreneurs, and longitudinal studies would be valuable in examining how adoption behaviour changes over time as digital financial technologies continue to evolve. Future instruments should also standardise the Involvement, Functionality, Credibility and Trust items onto a single, consistent ordinal (e.g., five-point Likert) scale with mutually exclusive and equidistant categories, to allow these attributes to be analysed statistically alongside the core UTAUT constructs rather than only descriptively. Finally, future research would benefit from directly measuring financial inclusion outcomes, such as account ownership, savings behaviour or access to credit, alongside mobile money adoption, to test empirically the relationship between adoption and financial inclusion that this study infers rather than measures directly.

CONCLUSION

This study investigated mobile money adoption and use as a pathway to financial inclusion for female micro-entrepreneurs in Zambia, using the Unified Theory of Acceptance and Use of Technology (UTAUT), with evidence drawn from female traders operating in Chainda Market. The descriptive findings revealed that respondents generally held favourable perceptions of mobile money services across the key dimensions investigated, including functionality, credibility and other service quality attributes measured in the study; these attribute-level items used study-specific response categories and are reported descriptively. Overall, respondents acknowledged that mobile money provides a convenient, efficient and accessible platform for conducting business transactions, indicating that digital financial services have become an integral part of their commercial activities.

The multivariate regression analysis, however, demonstrated that favourable perceptions alone do not fully explain technology adoption. The first regression model established that Effort Expectancy was the only significant positive predictor of Behavioural Intention, highlighting the importance of ease of use in influencing female micro-entrepreneurs' willingness to adopt mobile money services. Conversely, Performance Expectancy did not significantly influence Behavioural Intention, while Social Influence exhibited a significant negative relationship, contrary to the hypothesized direction, suggesting that adoption decisions are increasingly shaped by individual experience rather than external social pressure. The second regression model further revealed that neither Behavioural Intention nor Facilitating Conditions significantly predicted actual System Use, and given the low explanatory power of this model, the result should be treated as inconclusive rather than as evidence that these constructs are unimportant. These findings suggest that although female micro-entrepreneurs generally recognise the benefits of mobile money and express favourable intentions towards its use, actual utilisation may be influenced by broader operational and contextual factors beyond those captured by the UTAUT constructs examined here.

Overall, the study concludes that mobile money has made an important contribution to promoting financial inclusion among female micro-entrepreneurs in Zambia. However, increasing adoption alone is insufficient to guarantee sustained usage. To realise the full benefits of digital financial services, stakeholders must complement user-friendly technologies with interventions that address practical constraints affecting day-to-day utilisation. Consequently, this study contributes to the growing body of knowledge by demonstrating that while behavioural intention is largely driven by perceived ease of use, actual mobile money usage depends on a wider range of contextual factors that extend beyond the traditional UTAUT constructs and that warrant direct empirical investigation in future research.

RECOMMENDATIONS

- **Enhance the usability of mobile money platforms:** Mobile network operators and mobile money service providers should simplify mobile money interfaces, registration procedures and transaction processes to

improve ease of use, since Effort Expectancy was found to be the strongest predictor of behavioural intention.

- **Strengthen the reliability and functionality of mobile money services:** Service providers should improve network stability, minimise transaction failures, ensure adequate agent liquidity and reduce service interruptions to encourage sustained usage among female micro-entrepreneurs.
- **Improve the credibility and security of digital financial services:** Mobile money providers should strengthen transaction security, protect customer data and provide timely resolution of customer complaints to enhance users' confidence and trust in the system.
- **Expand digital financial literacy programmes:** The Government, the Bank of Zambia, financial institutions and development partners should implement regular training programmes that equip female micro-entrepreneurs with practical knowledge and skills for effectively using mobile money in their businesses.
- **Strengthen the mobile money ecosystem:** Policymakers should continue investing in supportive digital infrastructure, improve network coverage, promote affordable transaction charges and strengthen consumer protection policies to facilitate wider financial inclusion.
- **Develop products tailored to female micro-entrepreneurs:** Mobile money providers should design affordable and flexible financial products and services that address the unique financial needs and business operations of women in informal markets.
- **Promote continuous customer engagement:** Mobile money service providers should regularly collect customer feedback and monitor user experiences to identify operational challenges and continuously improve service quality, functionality and customer satisfaction.

REFERENCES

1. Abed, S. S. (2021). Women entrepreneurs' adoption of mobile applications for business sustainability. *Sustainability*, 13(21), 11627. <https://doi.org/10.3390/su132111627>
2. Abiona, O., & Koppensteiner, M. F. (2018). Financial inclusion, shocks, and poverty: Evidence from mobile money in Africa. *World Development*, 111, 114–130.
3. Abraham, R. (2009). Mobile phones and economic development: Evidence from the fishing industry in India. *Information Technologies & International Development*, 5(1), 5–17.
4. Ahmad, A. H., Green, C., & Jiang, F. (2020). Mobile money, financial inclusion and development: A review with reference to African experience. *Journal of Economic Surveys*, 34(4), 753–792.
5. Aker, J. C., & Mbiti, I. M. (2010). Mobile phones and economic development in Africa. *Journal of Economic Perspectives*, 24(3), 207–232. <https://doi.org/10.1257/jep.24.3.207>
6. Alalwan, A. A., Dwivedi, Y. K., & Rana, N. P. (2017). Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust. *International Journal of Information Management*, 37(3), 99–110. <https://doi.org/10.1016/j.ijinfomgt.2017.01.002>
7. Asongu, S. A., & Odhiambo, N. M. (2019). How enhancing information and communication technology has affected inequality in Africa for sustainable development: An empirical investigation. *Sustainable Development*, 27(4), 647–656.
8. Bank, W. (2021). Zambia country overview. Washington, DC: World Bank.
9. Bank, W. (2018). The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution. Washington, DC: World Bank.
10. Boateng, R., Olumide, L., Isabalija, S. R., & Budu, J. (2022). Digital financial services adoption in Africa: The role of digital literacy. *Information Development*, 38(3), 389–402.
11. Bramantyo, A. (2020). The influence of facilitating conditions and self-efficacy on behavioral intention to use e-services. *International Journal of Scientific & Technology Research*, 9(3), 456–462.
12. Bryman, A. (2001). *Social research methods*. Oxford: Oxford University Press.

13. Burrell, J. (2010). Evaluating shared access: Social equality and the circulation of mobile phones in rural Uganda. *Journal of Computer-Mediated Communication*, 15(2), 230–250.
14. Chant Link & Associates. (2004). A report on financial exclusion in Australia. Melbourne: ANZ Bank.
15. Chilembo, T. (2021). Financial inclusion and SMEs performance in Zambia. *Journal of Small Business and Enterprise Development*, 28(5), 789–805.
16. Chimfwembe, C. (2022). Digital financial services and financial inclusion in Zambia. Lusaka: University of Zambia.
17. Coulibaly, D. (2020). Mobile banking and financial inclusion in West Africa: Barriers and opportunities. *African Finance Journal*, 22(1), 45–67.
18. Daniel, E. (2016). The usefulness of qualitative and quantitative approaches and methods in researching problem-solving ability in science education curriculum. *Journal of Education and Practice*, 7(15), 91–100.
19. Daniels, S. (2014). Women's economic empowerment and growth. Washington, DC: World Bank.
20. Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2022). The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19. Washington, DC: World Bank. <https://doi.org/10.1596/978-1-4648-1897-4>
21. Donovan, K. (2012). Mobile money for financial inclusion. In T. Kelly & M. Minges (Eds.), *Information and communications for development 2012: Maximizing mobile* (pp. 61–73). Washington, DC: World Bank.
22. Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). Los Angeles: SAGE.
23. FinScope. (2015). *FinScope Zambia 2015 survey report*. Lusaka: FSD Zambia.
24. FinScope. (2020). *Financial Sector Deepening Zambia. FinScope Zambia 2020 survey report*. Lusaka: FSD Zambia.
25. Foundation, G. (2014). *Mobile financial services and the poor: Case studies*. Grameen Foundation. Washington, DC: Grameen Foundation.
26. GSMA. (2020). *Connected women: The mobile gender gap report 2020*. London: GSMA.
27. Gujarati, D. N., & Porter, D. C. (2009). *Basic econometrics* (5th ed.). New York: McGraw-Hill.
28. Gutierrez-Leefmans, C., & Olaleye, S. A. (2021). Adoption of mobile payment systems using UTAUT: Evidence from developing countries. *Journal of Enterprise Information Management*, 34(1), 1–20.
29. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Boston: Cengage Learning.
30. IFC. (2016). *Banking on women: Business case update*. Washington, DC: World Bank Group, International Finance Corporation.
31. IFC. (2016). *Women-owned SMEs: A business opportunity for financial institutions*. Washington, DC: World Bank Group.
32. Inclusion, A. f. (2016). *Financial inclusion for women: A framework for action*. Alliance for Financial Inclusion. Kuala Lumpur: AFI.
33. Jack, W., & Suri, T. (2014). Risk sharing and transactions costs: Evidence from Kenya's mobile money revolution. *American Economic Review*, 104(1), 183–223. <https://doi.org/10.1257/aer.104.1.183>
34. Jha, S., & Dangwal, R. C. (2025). Extending UTAUT with digital literacy and self-efficacy: Evidence from emerging economies. *Information Technology for Development*, 31(1), 1–20.
35. Kabala, E., Phiri, J., & Bwalya, K. (2021). Mobile money services and financial inclusion in Zambia. *International Journal of Economics and Finance Studies*, 13(1), 45–60.
36. Kawimbe, M. (2020). *Adoption of mobile financial services in Zambia: A user perspective*. Lusaka: Mulungushi University.
37. Kempson, E. (2006). *Policy level response to financial exclusion in developed economies: Lessons for developing countries*. Bristol: Personal Finance Research Centre, University of Bristol.
38. Khamis, F. M., & Gumawa, A. M. (2020). Sample size determination using Yamane formula in research studies. *International Journal of Scientific Research*, 9(3), 45–50.
39. Lichtman, M. (2013). *Qualitative research in education: A user's guide* (3rd ed.). Thousand Oaks, CA: Sage Publications.
40. Marandu, E. E., Mjema, G. D., & Lundberg, J. (2022). An empirical investigation of factors affecting mobile banking adoption using TAM. *Information Development*, 38(2), 245–258.

41. McMillan, J. H., & Schumacher, S. (2006). *Research in education: Evidence-based inquiry* (6th ed.). Boston, MA: Pearson.
42. Mkalipi, A. (2020). *The role of mobile money in promoting financial inclusion in Zambia*. Lusaka: University of Zambia.
43. Muchoka, J. (2020). Barriers to SME growth in Zambia: Evidence from Lusaka. *African Journal of Business Management*, 14(3), 55–65.
44. Nyimbiri, H. (2021). Mobile money agents and financial inclusion in Sub-Saharan Africa. *African Development Review*, 33(2), 250–262.
45. OECD. (2012). *Closing the gender gap: Act now*. Paris: OECD Publishing.
46. Oliveira, T., Thomas, M., Baptista, G., & Campos, F. (2016). Mobile payment: Understanding the determinants of customer adoption and intention to recommend the technology. *Computers in Human Behavior*, 61, 404–414. <https://doi.org/10.1016/j.chb.2016.03.030>
47. Penney, E. K., Wilcox, H., & Grover, V. (2021). Understanding behavioral intention toward mobile financial services: Extending UTAUT2 with trust and risk. *Journal of Financial Services Marketing*, 26(3), 123–138.
48. Raza, S. A., Shah, N., & Ali, M. (2019). Acceptance of mobile banking in Islamic banks: Evidence from modified UTAUT model. *Journal of Islamic Marketing*, 10(1), 357–376. <https://doi.org/10.1108/JIMA-04-2017-0038>
49. Shaikh, A. A., Karjaluoto, H., & Chinje, N. B. (2023). Mobile money services adoption and continued usage: Evidence from developing economies. *Telecommunications Policy*, 47(2), 102–118.
50. Shank, G. D., & Brown, L. (2007). *Exploring educational research literacy*. New York: Routledge.
51. Silberschmidt, M. (2005). Poverty, male disempowerment, and male sexuality: Rethinking men and masculinities in rural and urban East Africa. In L. Ouzgane & R. Morrell (Eds.), *African masculinities* (pp. 189–203). New York: Palgrave Macmillan.
52. Skogqvist, H. (2019). Mobile money and financial inclusion in developing countries. *Journal of Development Studies*, 55(4), 789–806.
53. Suri, T., & Jack, W. (2016). The long-run poverty and gender impacts of mobile money. *Science*, 354(6317), 1288–1292. <https://doi.org/10.1126/science.aah5309>
54. Tawah, R. (2013). Mobile phones and women's empowerment in Africa. *Journal of African Development Studies*, 5(2), 45–60.
55. Thompson, R. L., Higgins, C. A., & Howell, J. M. (1991). Personal computing: Toward a conceptual model of utilization. *MIS Quarterly*, 15(1), 125–143.
56. Thulani, D., Tofara, C., & Langton, R. (2014). Adoption and use of mobile money transfer services in Zimbabwe. *European Journal of Business and Management*, 6(6), 22–32.
57. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478. <https://doi.org/10.2307/30036540>
58. Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1), 157–178. <https://doi.org/10.2307/41410412>
59. Williams, M., & May, T. (1998). *Introduction to the philosophy of social research*. London: UCL Press.
60. Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). New York: Harper & Row.
61. Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. *Computers in Human Behavior*, 26(4), 760–767.