



The Controversy of Mobile Money E-Levy in Ghana: the Sweet, Sour and Switches of Customers

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Abstract: This study investigates how electronic levy (e-levy) influence mobile money (MM) users' continuous usage intention. Using theory of reasoned action and stimulus-organism-response theories, the study identified security and economic concerns, knowledge, beliefs regarding e-levy, and actual usage behaviour as potential influencers of continuous usage intention of MM. The hierarchical regression analysis results from 246 Ghanaian MM users show that economic concern, knowledge, and beliefs about e-levy, and actual use behaviour of MM significantly influence continuous usage intention. While income negatively affects the continuous usage intention, the number of years of use significantly moderates the relationship between actual use behaviour and continuous usage intention of MM. Our findings suggest that diversified awareness creation about e-levy for MM users that are found at different stages of MM adoption lifecycle is critical. Furthermore, unintended economic consequences, such as inflation, should be considered when determining the rate and taxable number of transactions for e-levy.

Keywords: E-levy, mobile money, continuous use intention, Ghana

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INTRODUCTION

Mobile money (MM) is a transformative technology and platform that changes the dynamics of financial inclusion of the unbanked and underbanked in Africa (Shaikh, Glavee-Geo, Karjaluto, & Hinson, 2023); (Olaleye, Oyelere, Sanusi, & Agbo, 2018); (Olaleye, Sanusi, & Ukpabi, 2018). This innovation has transformed how people access and manage their money, especially in regions with limited access to traditional banking services (Olaleye, Sanusi, & Oyelere, 2023); (Tetteh, Amoah, Kwablah, Asiama, & Ahiabor, 2023). MM services have not only facilitated international remittances, enabling individuals in one country to send money to family members or friends in another country quickly and cost-effectively, but they also extend their utility to businesses, particularly microenterprises, aiding in payment acceptance and financial management (Koomson, Martey, & Etwire, 2023); (Tetteh et al., 2023). The MM industry has experienced rapid growth in recent years, marked by the emergence of multiple providers offering services across various regions, fostering healthy competition that drives innovation and enhances service quality. Moreover,

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these services operate under regulatory oversight in many countries, ensuring consumer protection, preventing money laundering, and contributing to the financial system's stability.

The surge of MM in Africa is propelled by enhanced technology accessibility, challenges in accessing conventional financial services, and the rise of contactless payments due to the COVID-19 pandemic. These services, typically offered by telecommunications firms through licensed agents, enable registered users to deposit physical cash into a digital wallet, which can then be utilized for various transactions, including peer-to-peer payments, thus fostering financial inclusion and flexibility (Taylor, 2023).

Ghana was conspicuous in the MM picture of Africa. From 2018 to 2023, there has been a remarkable progression in adopting MM accounts in Ghana. In 2018, only 13% of the population aged 15 years and older had a MM account. However, this figure experienced substantial growth in the following years, between 2019 to 2020 witnessing a 39% increase, followed by a 38.9% surge from 2021 to 2022. The most significant leap occurred in 2023, with 59.7% of the population having MM account.

Several gaps in the literature emerge from the studies related to MM taxes and the e-levy. Firstly, while there is growing acknowledgement of the introduction of MM taxes in low-income countries to generate revenue, there is limited empirical evidence on the actual effects of these taxes, particularly. (Anyidoho, Gallien, Rogan, & van den Boogaard, 2022) emphasize this gap by highlighting the absence of a robust evidence regarding the impacts of MM taxes on informal workers despite the increasing prevalence of such taxes. Secondly, there needs to be more research exploring the perception and response of individuals to these taxation policies, as evidenced by (Djokoto et al., 2022) and (Nutassey, Agyei, Frimpong, & NoKoe, 2023). The studies discuss Ghanaians' resistance to the e-levy and their willingness to pay, indicating a need for further investigation into the factors shaping public perception and behaviour in response to these levies.

Additionally, while there is some analysis of the regressive nature of the e-levy and its impact on equity (Anyidoho et al., 2022), further research could delve deeper into the differential effects of the tax across various income groups, occupations, and genders, providing a more comprehensive understanding of its implications. Moreover, there is a lack of research examining potential strategies to mitigate the adverse effects of MM taxes and e-levy policies. (Amoah, Kwablah, Amoah, & Adjei-Mantey, 2023) briefly suggest a comprehensive dialogue between the government and stakeholders to determine an acceptable levy rate. This recommendation highlights the absence of detailed practical alternatives in the existing literature. The literature on MM taxes and the e-levy in Ghana indicates gaps in empirical evidence, limited exploration of public perceptions, and a need for more nuanced analyses of the equity and potential mitigation strategies associated with these taxation policies. Therefore, these gaps motivate the needs to investigate the controversy of MM e-levy in Ghana. Specifically, this study intends to answer the following research question: What factors affect MM users' continuous use intention in response to the recent introduction of the e-levy in Ghana? The following section reviews existing literature and then explains the employed methodology and data analysis techniques. Subsequently, the results and discussion are presented sequentially, followed by an exploration of theoretical and managerial implications. Finally, the study concludes with a discussion of its limitations and suggests areas for future research.

LITERATURE REVIEW

Integrated theories

Theory of Reasoned action (TRA) and Stimulus-Organism-Response (SOR) were used to provide a comprehensive framework for assessing the factors influencing MM users' reactions to e-levy and their continuous use intention. Utilizing this integrated model helps to gain a deeper understanding of the sweet and sour aspects of customer perceptions and identify potential switches in behaviour regarding the MM e-levy in Ghana. As a foundational theory, TRA highlights the importance of customer beliefs concerning e-levy and actual use behaviour in predicting future behavioural intentions. It underscores the significance of assessing customers' beliefs regarding how the e-levy impacts their personal finances and overall attitudes. Despite the critics of the TRA theory, it remains a valuable tool for understanding and predicting various behaviours, particularly those driven by beliefs and attitudes.

The SOR model accentuates the external stimuli, internal processes, and responses associated with the MM e-levy. External stimuli, such as perceived trust, perceived risk, and perceived usefulness, play a pivotal role in influencing customers' attitudes and intentions. These attitudes and intentions lead to a spectrum of customer responses, encompassing acceptance, resistance, and potential shifts to alternative financial solutions. Within the SOR framework,

economic and security concerns, serving as external stimuli, directly influence customers' attitudes and intentions, whether economic or security-related, negative concerns can lead to unfavourable attitudes and intentions regarding the e-levy. In this integrated model, economic and security concerns, serving as external stimuli, influence customers' knowledge and beliefs regarding e-levy. MM actual use behaviour is considered a direct response within the SOR model.

Hypotheses Development

E-levy perceived concern and MM continuous use intention :Although the negative consequences of electronic/digital taxes on the general macroeconomy are manifold, there are two perceived economic concerns from consumers' perspective. First, consumers perceive electronic tax as a burden for businesses as it may pass on the additional costs in the form of higher prices for goods and services (Mpofu & Mhlanga, 2022), as it leads to increased transactional cost which in turn negatively impacts savings. Secondly, when electronic taxes are imposed on business transactions, the burden may pass to consumers through increased prices. This direct effect potentially contributes to inflation as it raises the overall price level in the economy (Ahmad, Green, & Jiang, 2020). E-levy has a potential to cause high inflation expectations among consumers as Ghana's inflation rate edged more than 43% since 2022 from where it remained in single digit before that (Anyidoho et al., 2022). Hence, we hypothesised that:

H₁: Economic concern on e-levy has a negative effect on MM us continuous use intention.

Security concerns in the context of electronic tax (e-tax) in general, are important considerations for both taxpayers and tax authorities. Data privacy, identity theft, data breaches, among others, are the major security concerns electronic taxpayers face ((Bassey, Mulligan, & Ojo, 2022). Extant research (e.g. (Akram, Malik, Shareef, & Goraya, 2019); (Ramdhony, Liébana-Cabanillas, Gunesh-Ramlugun, & Mowlabocus, 2023) discover security concern is a critical determinant of adoption and continuous use intention of a technology. Specifically, (Susanto, Chang, & Ha, 2016), and (Chen, 2012) found that security concern significantly affects continuous use intention of MM money users in the context of South Korea and Taiwan respectively. More importantly, the introduction of e-levy to MM users involves a third-party increasing security and privacy vulnerability further (Akram et al., 2019). Based on this notion, the following hypothesis is drawn.

H₂: Security concern of e-levy negatively affects MM continuous use intention.

E-levy knowledge and MM continuous use intention :Shaped by learning and experience, knowledge refers to the competence of the user to understand and be able to work with the technology (Lim, Kim, Hur, & Park, 2019). Knowledge of a technology is often associated with the adoption and usage in the field of information technology and systems research. This is because personal knowledge on a particular technological tool impacts compliance intention and behaviour of an individual (Abdul Rahim, Jaaffar, Sarkawi, & Shamsuddin, 2021). (Lim et al., 2019) found that knowledge on fintech services affects consumer satisfaction and continuous use intention through perceived security. More recently, (Pejić Bach, Topalović, & Turulja, 2023) discovered that knowledge (employee expertise) is a critical determinant of organisational readiness and usage intensity of data mining technologies among Italian SMEs. (Acikgoz, Filieri, & Yan, 2023) also confirmed this notion as they found subjective knowledge as a significant predictor of behavioural intention to use fitness apps through perceived usefulness and perceived ease of use. On the other hand, knowledge gap in understanding a technology undermines the digitalization of firms (Ghobakhloo, Iranmanesh, Vilkas, Grybauskas, & Amran, 2022). In our context, knowledge of the taxes imposed on MM transactions are crucial in sustaining and shaping attitudes, and future continual intention of MM services. Therefore, we hypothesise that:

H₃: Knowledge on e-levy positively affects continuous use intention of MM.

E-levy belief and MM continuous use intention :Adoption and continuous/use intention of information technology is dependent on belief which is a function of two "salient" variables i.e., perceived usefulness and perceived ease of use (Gwebu, Wang, & Guo, 2014). The role of belief in technology adoption is explained by multiple theories. For instance, the expectation-confirmation model (ECM) postulates that continuous use behaviour in information technology is often explained by cognitive and instrumentality beliefs (Jumaan, Hashim, & Al-Ghazali, 2020). Lee and Lee (2020) discovered that belief on healthcare wearable devices positively affects individuals' continuous use intention. (Qin, Osatuyi, & Xu, 2021) argues consumer belief, instigated by perceived value, is an important factor for purchase intention and continuous use of a technology. (Hsu & Lin, 2020) discovered that belief related factors are important determinants of users' continuance intention of online to offline (O2O) apps. (Nelson & Hawk, 2020) found that belief on the importance and utility value determines the intention to use a technology in the case of the education

sector. Cognitive belief on the importance and negative consequences of e-levy is critical for continual use intention of MM service as it influences users' attitude and level of satisfaction. Hence, we hypothesize that:

H₄: Belief on e-levy positively affects continuous use intention of MM.

MM actual use behaviour and continuous use intention Reflecting the real-world experience, actual use behaviour measures the usage frequency, practical interaction experience, and the extent of tasks users can perform with a particular technology (Veeramootoo, Nunkoo, & Dwivedi, 2018). Actual use experience determines overall service value and satisfaction towards the technology directly affecting continuous use intention of users (Li & Shang, 2020). Prior studies (e.g., (Lee & Lee, 2020) have confirmed the significant effect of actual use behaviour on continuous use intention of a technological innovation. Worth mentioning, (Westmattelmann, Grotenhermen, Sprenger, Rand, & Schewe, 2021) operationalized actual use behaviour as a second order factor with three dimensions (duration of use, frequency of use, and extent of use) and found a positive relationship with continued use intention in the context of sports platforms. In case of e-levy, users' confirmation of their expectation, their level of satisfaction, and as a result their attitude towards e-levy on MM determines their future decision whether to continue using the technology. Based on this notion, we hypothesise as follows.

H₅: MM actual use behaviour positively affects continuous use intention.

METHODOLOGY

Measurement and Data Collection

The study relied on survey data collected from 246 Ghanaian MM actual users. Questionnaire items were adopted from prior studies. Economic and security concern of e-levy were measured using three items each. Measures of economic concern were adopted from (Shankar & Kumari, 2019) and items include "How concerned are you about the increase in the cost of living due to the e-levy?". Items of e-levy security concern include "How concerned are you about transparency of e-levy?" (Akram et al., 2019). Knowledge on e-levy was measured using three items, e.g., "I am familiar with the MM e-levy policy of Ghana" (Lim et al., 2019). Belief on e-levy was measured using three items adopted from (Lee & Lee, 2020). Items include, "I believe MM e-levy is important to curb informal sector transactions compared with conventional taxation". Actual use behaviour of MM, on the other hand, was measured using four items such as "I often use the mobile money for my financial transactions", which are derived from (Qin et al., 2021). Finally, four items, e.g., "I intend to stop using mobile money services because of e-levy", were used to measure participants' intention for continuous use of MM (Akram et al., 2019); (Li & Shang, 2020). Data was collected online via Google Forms from August 25, 2022, to October 5, 2022. The online survey aimed to reach 400 participants. However, only 246 usable questionnaires were collected, resulting in a 61.5% response rate.

Sample Characteristics

Demographic information of respondents is presented in Table 1 which shows the appropriateness and their ability to understand the variables of interest and provide appropriate answers. Looking at the gender distribution, 67% of the survey participants are male while the remaining 33% are female. Similarly, most of the respondents (60%) hold a Bachelor's degree while the minimum education qualification is a high school diploma. About 36% of the respondents are working either in the private or public sector and 14% are self-employed, whereas 30% of them identify themselves as students. Finally, the income distribution of those who participated in the survey shows that more than half (54%) of them earn less than Ghanaian Cedi 100,000.

Table 1 CHARACTERISTICS OF RESPONDENTS (N = 246)

Demographics	Frequency	Percentage
Gender Female	82	33 %
Male	164	67 %
Level of education No formal qualification	0	0 %
High School/Diploma	71	29 %
Bachelor's Degree	148	60 %
Master's Degree	19	8 %
Doctorate Degree	8	3 %
Occupation Public Sector	30	12 %
Private Sector	59	24 %
Self-Employed	34	14 %
Student	74	30%
Other	49	20 %
Monthly income (in GHC) Less than 100,000	132	54 %
100,000-200,000	80	33 %
200,001-300,000	34	14 %
More than 300,000	0	0 %

RESULTS

Measure Assessment

Before proceeding to hypothesis testing, the reliability and validity of data was assessed. To this end, a confirmatory factor analysis (CFA), using AMOS 29 was used. The overall fitness of the measurement model was assessed using the generated fit indices. As presented in Table 5, fit indices including CFI = 0.968, TLI = 0.962, IFI = 0.969, SRMR = 0.080, and RMSEA = 0.047 demonstrated a good fit with the data.

Harman's single factor method was used to assess for the common method bias of the survey instruments used. Accordingly, the one factor model provided worse results compared to the original model the former provided the following fit indices: $\chi^2 = 1,138$, $df = 213$, $2/df = 5.349$, CFI = 0.693, TLI = 0.497, IFI = 0.615, SRMR = 0.108, RMSEA = 0.263. Therefore, we can safely conclude that the common method bias was not a serious issue in our study.

Table 2 CONFIRMATORY FACTOR ANALYSIS RESULTS (N = 246)

Construct	Measure	Standard estimate	Coefficient	AVE	Alpha
e-levy economic concern	ECCO1	0.933	0.933***	0.898	0.939
	ECCO2	0.934	0.934***		
	ECCO3	0.881	0.881***		
e-levy security concern	SECO1	0.886	0.886***	0.859	0.892
	SECO2	0.824	0.824***		
	SECO3	0.865	0.865***		
e-levy knowledge	KNG1	0.848	0.848***	0.85	0.841
	KNG2	0.841	0.841***		
	KNG3	0.713	0.713***		

Model fit statistics: $\chi^2 = 297.69$, $df = 193$, $2/df = 1.54$, CFI = 0.968, TLI = 0.962, IFI = 0.969, RMR = 0.080, MRSEA = 0.047, ** $p < 0.001$; AVE, average variance extracted; CR, composite reliability.

Table 3 CONT...

Construct	Measure	Standard estimate	Coefficient	AVE	Alpha
e-levy belief	BEL1	0.896	0.896***	0.876	0.887
	BEL2	0.896	0.896***		
	BEL3	0.765	0.765***		
MM actual use behaviour	BEH1	0.867	0.867***	0.89	0.921
	BEH2	0.904	0.904***		
	BEH3	0.868	0.868***		
	BEH4	0.809	0.809***		
MM Continuous use intention	CUI1	0.556	0.556***	0.735	0.836
	CUI2	0.738	0.738***		
	CUI3	0.782	0.782***		
	CUI4	0.681	0.681***		
	CUI5	0.668	0.668***		
	CUI6	0.645	0.645***		

Model fit statistics: $\chi^2 = 297.69$, $df = 193$, $2/df = 1.54$, $CFI = 0.968$, $TLI = 0.962$, $IFI = 0.969$, $RMR = 0.080$, $MRSEA = 0.047$, $**p < 0.001$; AVE, average variance extracted; CR, composite reliability.

To determine the reliability of data, Cronbach's alpha values were calculated, and the values ranged between 0.8 and 0.9, showing a substantial internal consistency among items of a latent variable. A value of alpha greater than 0.7 is considered acceptable. Test for convergent validity was conducted using both the factor loading and average variance extracted (AVE) approaches. All loading of items were found to be greater than the 0.6 minimum threshold. Similarly, AVE values were well above the minimum acceptable cutoff point of 0.6 (Hair, Black, Babin, & Anderson, 2014), ranging between 0.6 and 0.7. On the other hand, discriminant validity was assessed by comparing the bivariate correlation coefficients of the latent variables against the squared roots of respective AVE values (Hair et al., 2014). The result (presented in Table 4) shows that all the correlation coefficients of a latent variable were less than the root square AVEs, hence, discriminant validity was established.

Table 4 CORRELATIONS AND DESCRIPTIVE STATISTICS (N = 246)

Construct	1	2	3	4	5	6
Economic concern (1)	0.948					
Security concern (2)	0.499	0.927				
e-levy knowledge (3)	0.071	-0.04	0.922			
e-levy belief (4)	0.085	-0.166	0.26	0.936		
MM actual use behaviour (5)	0.038	0.119	0.17	-0.017	0.943	
MM continuous use intention (6)	-0.221	-0.185	0.256	0.297	0.162	0.857

Multicollinearity across the latent variables was diagnosed using variance inflation factor (VIF) values. As presented in Table 5, all VIF values were between 1.7 and 2.3, which is below the maximum threshold of 10 (Hair et al., 2014). A Shapiro-Wilks non-normality test was used to check, and the null hypothesis was not rejected at $p = 0.102$ level of significance. Furthermore, visual inspection of the normality diagnostics (P-P and Q-Q) plots of residuals was conducted for all the models and the results showed that the distributions are nearly normal, with insignificant extreme values.

Hierarchical Regression

Users' continuous use intention of MM was regressed on the predictors in a sequential manner with external concern variables being analysed first, followed by the users' knowledge and belief on e-levy. Actual use behaviour and demographic variables (gender, monthly income, education level) were added to the third and fourth models. A summary of the results is presented in Table 6. The first block of the hierarchical regression model was run to evaluate

the effect of external variables i.e., economic concern and technological concern of e-levy on continuous use intention of MM. At this stage, the model was significant ($F = 16.687, p < 0.001$). Economic concern of e-levy on continuous use of MM was significant at $\beta = -0.077$ and $p = 0.018$, hence H_1 was supported. The relationship between security concern of e-levy and continuous use intention of MM (H_2) was also significant at $\beta = -0.134$ and $p < 0.001$, which can be supported at 5% level of significance. R^2 value, 0.121, was below satisfactory at this stage (Jobson, 2012) indicating that the variables at this stage have very low explanation power.

In model 2, the previous model was extended by including users' knowledge and belief towards e-levy. Consequently, overall model fit indices showed improvement ($\Delta F = 14.302, p < 0.001; \Delta R^2 = 0.093$). Users' knowledge about e-levy significantly predicts MM continuous use intention with $\beta = 0.129, p < 0.001$, supporting H_3 . Similarly, belief was also found to be a significant determinant of continuous use intention of MM ($\beta = 0.160, p < 0.001$), hence there is enough statistical evidence to support H_4 . Model 3 was run by adding actual usage of MM to model 2 with the intention to see if continuous use intention of MM is further influenced by participants actual use experience of M, alongside their knowledge and belief on e-levy. In support of our hypothesis, H_5 , actual use behaviour significantly influences continuous use intention of MM with $\beta = 0.118, p < 0.001$. At this iteration, the model fit indices showed further improvement with $\Delta F = 4.157, p = 0.043; \Delta R^2 = 0.013$.

In the last model, three key demographic variables, i.e., gender, monthly income, and level of education were included. The model fitness indices showed a slight but statistically significant improvement ($\Delta R^2 = 0.018; F = 1.867, p = 0.136$). Of the three demographic variables, monthly income has a positive significant negative effect on continuous use intention of MM with $\beta = -0.145, p = 0.048$, whereas the effect of age and level of education were insignificant.

Table 5 HIERARCHICAL REGRESSION RESULTS (N = 246)

	Model 1	Model 2	Model 3	Model 4	VIF
External concern on e-levy					
Economic concern	-0.077*	-0.116**	-0.111***	-0.179**	1.826
Security concern	-0.134***	-0.068	-0.069	-0.137*	1.826
Internal factors					
E-levy knowledge		0.129***	0.143***	0.123**	1.902
E-levy belief		0.160***	0.240**	0.239**	1.988
Actual usage of MM					
MM use behaviour			0.118**	0.116**	1.149
Demographic variables					
Gender				-0.089	1.581
Education				-0.099	1.083
Income				-0.145**	1.696
Model fit indices					
R_2	0.121	0.214	0.227	0.245	
ΔR_2	0.121	0.093	0.013	0.018	
ΔF	16.687	14.305	4.157	1.867	
Df	2	4	5	8	
ΔF significance	***	***	**	0.136	

-Df, degrees of freedom; *, $p < 0.1$; **, $p < 0.05$; ***, $p < 0.001$

In H_6 , we predicted that the number of years of use positively moderates the relationship between actual use and continuous use intention of MM. However, the number of years of use has a significant negative moderating effect ($\beta = -0.152$ and p -value = 0.002) on the relationship between actual usage and continuous use intention of MM. This indicates that the effect of actual usage on continuous use of MM decreases as the number of years of usage of the technology increases. Figure 1 illustrates the interaction. In other words, the effect of actual usage on continuous use intention is stronger in case of early-adopters than late-adopters.

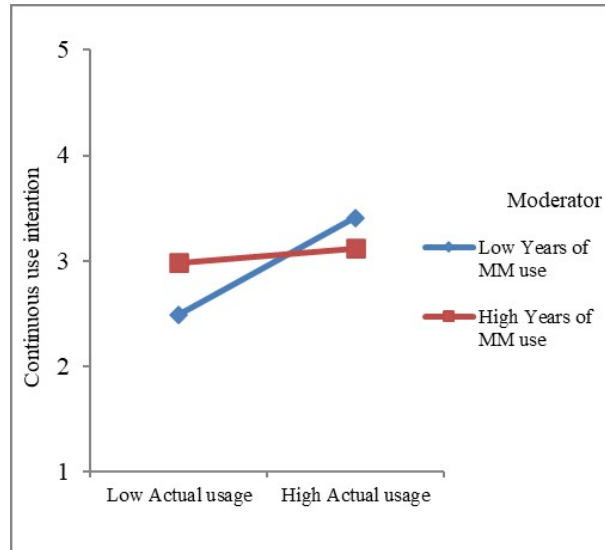


Figure 1 The moderation effect of year of MM use on the relationship between actual use behaviour and future continuous use intention

Following our finding on the significant moderation role of year of use of MM on the effect of actual usage on continuous use intention of the technology under e-levy, we further tested if there is a mean difference among MM users who adopted the technology in different times. To this end, the total sample was categorised in five categories as innovators, early adopters, early majority, late majority, and laggards using 2.5%, 13.5%, 34%,34%, and 16% proportion based on number of years of usage (Rogers, Singhal, & Quinlan, 2014). Next, we run a one-way ANOVA to see if there exists a significant mean difference across the diffusion lifecycle. The assumptions and fit indices were not satisfied at this stage, indicating that there is no statistically significant mean difference among any group users. After trying different alternatives, a grouping where early majority and late majority were merged (renamed the group as majorities) provided a statistically significant but insightful result for both theory and practice. At this stage, the ANOVA F- test was significant with $F = 3.054$ and $p = 0.029$.

In all comparisons, the Post Hoc test (Tukey HSD test)(Sharma, Shukla, & Raj, 2023) demonstrated that mean continuous use intention for innovators was significantly less than all other categories (early adopters, majorities, and laggards). There is no significant difference among any other combinations. A summary of the one-way ANOVA results is presented in Table 6.

Table 6 ANALYSIS OF VARIANCE FOR DIFFERENT GROUPS OF ADOPTERS

MM continu- ous use inten- tion	Innovators (1), n = 13	Early adap- tors (2), n = 46	Majorities (3), n = 150	Laggards (4), n = 37	F	Tukey Post Hoc test
Mean (std)	3.795 (0.752)	3,127 (0.826)	3.204 (0.755)	3.059 (0.836)	3.054**	(1) < (2), (3), (4)

DISCUSSION

We developed an integrated research model to investigate the impact of e-levy economic and security concern, knowledge, and attitude on e-levy among MM users, and actual use behaviour of MM on continuous use intention of MM in Ghana by proposing. Results showed that economic concern of e-levy had a significant negative effect on continuous use intention of MM users supporting H_1 and consistent with the findings of prior studies (Amoah et al., 2023); (Tetteh et al., 2023). The hypothesis on security concern (H_2) can also be accepted at 10% level of significance in the final model of the hierarchical regression analysis. While studies such as (Moqbel, Hewitt, Nah, & McLean, 2022) have found a negative significant prediction role of security concern on continuous use intention of a technology, others (e.g., (Aprilia & Amalia, 2023)) discovered that security concern is insignificant in continuous use intention. They claim that security concern is critical in the pre-adoption stage and its role becomes negligible in influencing post

adoption behaviour.

Consistent with our hypothesis and the findings of prior studies (e.g. (Acikgoz et al., 2023); (Lim et al., 2019), users' knowledge on e-levy significantly predicts their intention to continue using MM (H₃). The result implies that MM users with a better understanding of the functionality, operation as well as the pros and cons of e-levy intend to continue using the MM service. Other studies that found similar results include (Mombeuil, 2020), (Okello Candiya Bongomin, Ntayi, Munene, & Malinga, 2018), (Kim, Kim, Kim, & Kim, 2016). Belief, as a combination of perceived ease of use and perceived usefulness in the TAM, was also found to be a significant predictor of continuous use intention of MM, supporting H₄ and in confirmation of empirical evidence in the existing literature (e.g., (Shiau, Liu, Zhou, & Yuan, 2023); (Senyo & Osabutey, 2020).

Three unexpected yet interesting findings were revealed in this study. First, security concern on e-levy does not significantly predict continuous use intention of MM in the final model (although it can still be supported at 10% level of significance). Secondly, among demographic variables, monthly income negatively influences MM continuous use intention in this study. The result is inconsistent with the findings of prior studies in the context of mobile payments (Pal, Herath, De', & Rao, 2020) ; (Yuan, Lai, & Chu, 2019). One likely reason is that e-levy in Ghana only applies for MM transactions amounting 100 Ghanaian cedi and above. Any daily transaction less than this amount is exempted. The remaining two demographic variables, age and level of education showed insignificant relationship with continuous use intention of MM. Finally, the number of years of use negatively moderates the relationship between actual usage and continuous use intention of MM. This is possibly because of the reason that early adopters of MM who encountered initial bugs and usability are more likely to return to the conventional bank transfer. Late majority and laggards in the technology lifecycle, however, often encounter more user friendly, and stable services as MM technology evolves overtime. The one-way ANOVA analysis partially confirms this notion. As the Tukey Post – Hoc analysis shows, mean of innovators is significantly lesser than that of early adopters, majorities, and laggards.

IMPLICATIONS

Theoretical Implications

Four theoretical implications are gleaned from this study. First, we address a key but overlooked topic of how to drive innovation performance through designing business models. Several studies examined antecedents of MM adoption (Meli, Djoumessi, & Djiogap, 2022) ; (Koomson, Bukari, & Villano, 2021) and usage (Ahmad et al., 2020); Bongomin & Ntayi, 2020; (Glavee-Geo, Shaikh, Karjaluoto, & Hinson, 2020) in African contexts previously. However, to the best of the knowledge of the authors, this is the first study that has drawn on the role of e-levy concern, knowledge, belief, and actual use behaviour on users' decision whether to continue using MM. Hence, this research presents empirical support and a theoretical explanation for the effect of enabling and hindering e-levy related factors on post-adoption behaviour of MM users.

Secondly, the findings of this study also provide insights for future theory development in three ways. 1) The study is among the first to incorporate actual use behaviour in predicting future continuous use intention of MM. Unlike behavioural intentions, actual use behaviour, predicts future use intention better as it reflects users' experience and satisfaction with the technology (Westmattmann et al., 2021). 2) Although our finding contradicts with the hypothesis and the discovery of some studies (e.g., (Moqbel et al., 2022)), another group of researchers also found similar results. Taking the side of (Aprilia & Amalia, 2023), the findings imply that security concern is critical in pre-adoption stage and its importance decreases in the post-use studies of technology - user behaviours. 3) Prior studies demonstrated gender (e.g., (Chawla & Joshi, 2018); (Dzobenuku, Amoako, Kumi, & Bonsu, 2022), age (e.g., (Ndassi Teutio, Kala Kamdjoug, & Gueyie, 2023); (Dzobenuku et al., 2022); (Chawla & Joshi, 2018), generation e.g., (Okello Candiya Bongomin, Yourougou, Yosa, Manzi, & Ntayi, 2022) moderate the relationship between adoption/ use of MM and its antecedents. We extend the existing literature by investigating the moderating role of years of use of MM on the relationship between actual use behaviour and intention for continuous use of the technology as it gives insight on dynamics of users' behaviour along the technology lifecycle (Brown & Venkatesh, 2005).

Managerial implications

The study has three major implications for practice. First, overall economic concern about the negative impact of e-levy is detrimental for users' continuous use of MM. Therefore, although e-levy is considered as an important alternative form of national revenue, policy makers should give priority to making sure that such regulatory measures

will not drive MM users back to physical cash transactions. To address these security concerns, tax authorities should implement strong cybersecurity measures, regularly update their systems, and educate taxpayers about safe online practices. Despite the contextual differences, similar regulations implemented by countries such as Uganda have led to backlash and forced regulators to reconsider and reduce the e-levy rate by more than 150%.

Second, MM users' knowledge and belief are also significant predictors of intention to continue using the technology. Banks and fintech firms need to increase their effort to enhance the awareness among their subscribers regarding the advantages of MM that still outweighs the cost of e-levy. Awareness creation efforts on e-levy are critical for the proliferation of MM. In addition, continuous use intention of MM is affected by actual use behaviour of subscribers. Creating more engaging conditions for actual users of MM is important for service providers to increase retention of current subscribers.

Lastly, it is important for MM providers to diversify their engagement and intervention with their MM subscribers as future intention to use the technology is affected by users' level of income. One of the key advantages of MM is increasing financial inclusion by enhancing access and affordability of the service even to those marginalised by the traditional financial and banking services (Shaikh et al., 2023). Therefore, such regulatory measures must be devised in a way that does not contradict with national umbrella policies about financial inclusion and empowerment.

LIMITATIONS AND FUTURE RESEARCH

This study contributes to the literature on the role of perceived economic and security concern, knowledge, and belief of e-levy on continuous use intention of MM basing on a combination of post-adoption behavioural theories. However, some limitations of this study must be acknowledged and should be addressed in future research. First, the study relied on a cross-sectional survey, data collected at one point in time cannot be used to examine the trends on a long-term basis. Therefore, a longitudinal design is recommended for future studies to show trends of MM users' behaviour over time. In addition, MM users were the only source of data in this study. However, since implementation of e-levy involves other stakeholders, mainly, tax authorities, banks, and mobile network providers, future studies may incorporate the view of key stakeholders for a holistic understanding on the role of e-levy on MM usage.

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