



Forging financial inclusion through psychological ownership of Fintech innovations: Evidence from an emerging economy

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Received: 14 August 2025 / Accepted: 18 May 2026
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Abstract

Past studies on psychological ownership and financial technology (Fintech) innovation have typically examined these domains separately, providing limited insight into how psychological ownership of Fintech innovation influences financial inclusion. This study integrates the Customer Value Theory (CVT), Self-determination Theory (SDT), and the Theory of Planned Behaviour (TPB) to explore how psychological ownership of Fintech innovations affects financial inclusion through socio-economic engagement. Data were gathered from 630 mobile money (MoMo) users in Ghana through a survey and 23 interviews. The findings show that continued use of MoMo promotes psychological ownership and positively influences social, economic, and financial engagement. However, these benefits are undermined by the perceived government policy (electronic levy), which negatively affects socio-economic engagement. The findings call for Fintech stakeholders to enhance users' psychological ownership and encourage the government to adopt pro-poor policies to improve financial inclusion. This study uniquely combines the CVT, SDT, and TPB to investigate the role of psychological ownership in Fintech diffusion and its socio-economic impact.

Keywords Psychological ownership · Fintech innovations · Financial inclusion · Socio-economic engagement · Mobile money payment · Government policy

JEL G03 · O33 · 039

Responsible Editor: Katharina Ebner

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Introduction

The psychological ownership concept is well established in the academic literature and has been widely used in psychology, marketing, organisational behaviour, and sociology (e.g., Ambuehl et al., 2022; Hingston & Whelan, 2024; Wang et al., 2023; Zhang et al., 2021). In recent years, financial technology (Fintech) solutions and financial inclusion have also been gaining attention, especially in developing countries, attracting the attention of scholars, practitioners, and governments. Within this emerging context, psychological ownership provides a valuable lens for understanding how individuals perceive, adopt, and engage with financial technologies.

Psychological ownership is an individual's sense of possession and attachment towards a particular object, idea, or even another person (Morewedge et al., 2021; Wang et al., 2023). It is a subjective experience that involves feelings of control, responsibility, and identity that individuals associate with their possession (Zhang et al., 2023). On the other hand,

Fintech uses innovative technology to provide financial services and solutions to consumers and businesses (Banna et al., 2022; Jourdan et al., 2023; Werth et al., 2023). Fintech solutions have disrupted traditional financial services industries by offering faster, more convenient, and often more affordable alternative products and services (Lyons et al., 2022; Ngo & Nguyen, 2024; Jourdan et al., 2023). As a result, several Fintech solutions, such as mobile payment, digital banking, and robo-advisory, have emerged (Ngo & Nguyen, 2024) with the potential to enhance financial inclusion and socio-economic development, especially in developing economies.

The continued use of mobile money can strengthen psychological ownership by deepening users' familiarity, control, and personal connection with the technology. As users repeatedly perform transactions, navigate platform features, and rely on mobile money (MoMo) for daily financial activities, the service becomes integrated into their routines and identity, fostering a sense that the platform "belongs" to them (Peck & Luangrath, 2023; Sharma et al., 2021). When users experience psychological ownership, they tend to engage actively with financial services (financial engagement), participate in social and community-based exchanges facilitated by mobile money (social engagement), and leverage the platform to create or enhance economic opportunities (economic engagement) (Beverungen et al., 2019; Peck & Luangrath, 2023; Sharma et al., 2021).

The study context, Ghana, is important because the country's introduction of electronic levy (e-levy) unexpectedly altered the transaction-cost landscape for MoMo users (Okello Candiya Bongomin et al., 2020; Pobee et al., 2023; Tetteh et al., 2023). The change directly affects users' incentives to engage with the platform and provides insights into how psychological ownership and continuous usage behaviours respond when external constraints disrupt established financial behaviours (Pobee et al., 2023; Tetteh et al., 2023). This study aligns with recent studies (Meafa et al., 2024; Qrunfleh et al., 2023; Sreenivasan et al., 2023) showing how unexpected disruptions reshape system behaviours and user responses. For example, Qrunfleh et al. (2023) explore supply chain mitigation and resilience research during the COVID-19 pandemic. Similarly, the present study extends the conversation into the Fintech domain by investigating how policy-induced shocks, such as the e-levy, interact with psychological ownership and continuous use to influence financial inclusion.

Financial inclusion is the access and availability of financial services to individuals and communities historically excluded from mainstream financial services (Ashenafi & Dong, 2022; Ediagbonya & Tioluwani, 2023). This includes access to primary financial products and services such as bank accounts, credit, insurance, and other financial tools (Banna et al., 2022). In the context of Fintech solutions and financial inclusion, psychological ownership can

facilitate individuals' engagement with financial services and promote financial well-being. Fintech solutions, such as mobile banking apps, digital wallets, and online investment platforms, can improve financial inclusion by increasing access to financial services and promoting financial literacy (Coffie et al., 2021; Gupta & Kanungo, 2022; Shaikh et al., 2023). However, successful adoption and sustained use often depend on individuals' psychological ownership, as individuals can use and benefit from Fintech when they perceive control and personal connection, which may promote empowerment and increased engagement with financial services.

Psychological ownership of Fintech solutions is particularly relevant in emerging economies such as Ghana, where access to financial services is often limited, and financial exclusion is a significant issue (Banna et al., 2022; Coffie & Hongjiang, 2023; Osabutey & Jackson, 2024). Besides, there is a need to investigate how government policies, such as the recent introduction of the e-levy on mobile money transactions, influence financial inclusion in Ghana and, by extension, in other developing countries that have or intend to introduce similar policies.

A review of the literature reveals that studies have focussed primarily on Fintech adoption and financial inclusion only (e.g., Avom et al., 2023; Charfeddine & Zaouali, 2022; Coffie & Hongjiang, 2023; Shaikh et al., 2023), with little evidence explaining how Fintech adoption may also create socio-economic engagement and inclusion through psychological ownership of the Fintech solution. For instance, Shaikh et al. (2023) examined how mobile money services influence digital financial inclusion and the role played by mobile money agents. Similarly, Avom et al. (2023) employed parametric and nonparametric methods on panel data from 50 African countries between 2004 and 2020 to examine the impact of Fintech solutions, such as mobile money, on financial inclusion. The current study extends this literature by moving beyond adoption effects to investigate how continuous use of Fintech influences social, economic, and financial inclusion through psychological ownership. Additionally, the literature provides limited evidence on how the continuous use of mobile payments, psychological ownership, and taxation policies, such as the e-levy, would influence financial inclusion in emerging economies such as Ghana. This gap in the literature on psychological ownership, electronic levy or taxation and financial inclusion is addressed in the present study. Hence, the current study examines how continuous use of mobile payments influences, and how both psychological ownership and the e-levy policy subsequently impact socio-economic engagement and inclusion.

Previous studies on mobile money in developing economies have predominantly relied on single theoretical frameworks. For instance, Amoah et al. (2020), Kelly and

Palaniappan (2023), and Tiwasing et al. (2024) employed the Technology Acceptance Model (TAM). Rahman et al. (2024) used the Technology Continuation Theory (TCT), while Pobee et al. (2023) and Sharma et al. (2024) grounded their studies on the Unified Theory of Acceptance and Use of Technology (UTAUT). Some studies, such as Asongu et al. (2021), have integrated multiple theories, such as the TPB, TAM, and the Theory of Reasoned Action (TRA). However, limited studies have tested an integrated model combining CVT, SDT, and TPB. For example, Tiwasing et al. (2024) only combined the Transaction Cost Theory (TCT) and TAM theories to investigate mobile money and financial inclusion in developing countries.

To date, limited research has examined the continuous use of MoMo as an antecedent of psychological ownership of MoMo. While studies such as Asongu et al. (2021), Narteh et al. (2017), and Osabutey and Jackson (2024) have explored MoMo and financial inclusion, financial inclusion has rarely been conceptualised as a multi-faceted construct comprising economic, social, and financial engagement, an approach adopted in this study. To address this gap, the study aims to answer the following research questions:

- 1) How does the continuous use of mobile money influence users' psychological ownership of Fintech solutions like MoMo?
- 2) How does users' sense of ownership of Fintech solutions, such as MoMo, affect financial inclusion through financial, social, and economic engagement?
- 3) What is the impact of electronic tax (e-levy) on MoMo users' financial, social, and economic engagement?

Consequently, this study develops and tests a framework that explains how continuous use of MoMo, psychological ownership, and government policy (e-levy) influence financial inclusion in a developing country context.

This study provides both theoretical and managerial perspectives. Theoretically, this study contributes to scholarship on Fintech solutions and financial inclusion by extending psychological ownership, rooted in social psychology and organisational behaviour theories, into the Fintech context, thereby providing new insights into how individuals perceive and use digital financial services. Managerially, the study provides practical implications for promoting Fintech solutions and financial inclusion. By understanding how psychological ownership and the e-levy drives financial inclusion, policymakers and industry stakeholders can develop more effective strategies to expand access to financial services and improve financial outcomes.

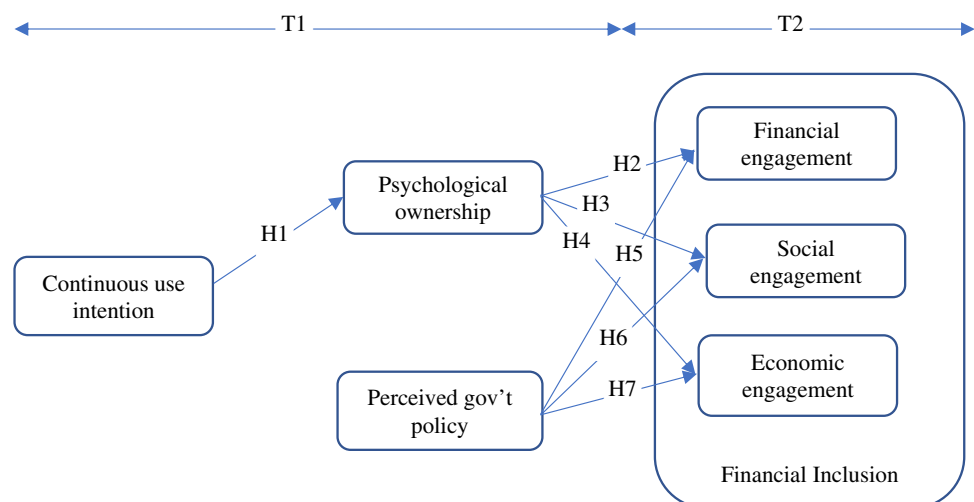
The rest of the paper is organised as follows. The next section presents the theoretical foundation and the development of hypotheses. This is followed by the methodology, including data collection and analysis. The findings are then presented, followed by a discussion of the key results. The concluding section outlines the theoretical contributions and practical implications.

Theoretical background and hypotheses development

Theoretical foundation

The study is underpinned by three complementary theories that inform the conceptual framework (Fig. 1): Customer Value Theory (CVT), Self-determination Theory (SDT), and Theory of Planned Behaviour (TPB). CVT explains how individuals assess an offering by comparing what they receive with what they give, such as money, time, and effort (Amegbe et al., 2023; Ng et al., 2024; Wallace et al., 2022). In a digital financial context, perceived value reflects the extent to which users experience the mobile wallet as

Fig. 1 Psychological ownership of technology and socio-economic inclusion



convenient, reliable, safe, and cost-effective relative to cash or traditional banking (Obuobi et al., 2025; Saeed et al., 2024). When the perceived benefits of MoMo outweigh perceived costs, users are more likely to adopt and continue using the service (Behera et al., 2023; Obuobi et al., 2025). From a CVT perspective, sustained use of Fintech solutions signals that MoMo users in Ghana repeatedly experience positive value from the service. Over time, these valuable experiences can promote a deeper psychological connection to the technology. As users increasingly rely on MoMo for transactions, they may come to view the service as “theirs” and integrate it into their financial routines and broader life projects. CVT therefore provides a value-based explanation for how continuous use of MoMo can gradually influence psychological ownership of the Fintech solution.

Complementing this value perspective, SDT posits that human motivation and well-being are affected by the fulfilment of three basic psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 2000). Autonomy refers to experiencing one’s actions as self-endorsed; competence involves feeling effective and capable; and relatedness concerns feeling connected to significant others. When these needs are supported, individuals internalise these behaviours and sustain them over time (Howard et al., 2025; Olafsen et al., 2025). In the Fintech and financial inclusion context, MoMo can satisfy these needs in several ways. First, MoMo enhances autonomy by allowing users to initiate and control financial transactions from their phones without visiting a bank or relying on intermediaries (Japutra et al., 2024; Wang et al., 2024). Second, it strengthens competence as users learn to manage balances, track transfers and plan payments, thereby building confidence in handling finances digitally (Inan et al., 2023; Wang et al., 2024). Third, MoMo can nurture relatedness by enabling users to support family and friends, contribute to social events, and participate in group savings or welfare schemes (Neiva et al., 2025; Wang et al., 2024). When MoMo helps users feel more autonomous, competent, and socially connected in managing money, they may develop a sense of ownership and responsibility towards the service. Hence, SDT helps explain how psychological ownership can emerge as users experience MoMo as a tool and an extension of their financial agency and social relationships.

Building on these insights, the TPB explains behaviour as a function of behavioural intention, which is influenced by attitudes, subjective norms, and perceived behavioural control (Ajzen, 1991; Ivanov et al., 2024). In this study, attitudes represent positive or negative evaluations of MoMo usage; subjective norms reflect perceived social pressure to use or avoid MoMo; and perceived behavioural control reflects users’ beliefs about their ability to use MoMo effectively, given skills, resources and infrastructural conditions (Ajzen, 1991; Ivanov et al., 2024). In Ghana, TPB is particularly

relevant because MoMo usage is embedded in strong social networks and community expectations (Amankwa et al., 2023; Hanu et al., 2024; Obuobi et al., 2025). Family members, friends, and business partners encourage the use of MoMo for remittances, school fees, or group contributions, reinforcing subjective norms around digital transactions. Likewise, network quality, agent liquidity, and fee structures affect perceived behavioural control and attitudes (Arkorful & Lugu, 2023; Awuah-Gyawu et al., 2025). When attitudes are favourable, social norms are supportive, and perceived control is high, individuals can form strong intentions to adopt and continue using MoMo. TPB therefore complements CVT and SDT by specifying the attitudinal, social and control-related mechanisms through which perceived value and need satisfaction translate into sustained behavioural intentions towards MoMo.

Individually, CVT, SDT and TPB highlight different facets of Fintech adoption and use. They explain how continuous MoMo use in Ghana may promote psychological ownership and, ultimately, multidimensional financial inclusion. CVT suggests that users continue using MoMo when its perceived benefits outweigh its costs. At the same time, TPB adds that favourable attitudes, supportive social norms and high perceived behavioural control strengthen intentions to keep using the service. As users repeatedly experience value under these conditions, SDT mechanisms become salient. Thus, continuous MoMo use may enhance feelings of autonomy, competence and relatedness, making MoMo feel personally meaningful and under one’s control, and thereby nurturing psychological ownership. Once users perceive MoMo as “my” financial tool, they would use it for a broader range of financial, social and economic activities to advance financial inclusion. Perceived government policy, particularly the e-levy, would intervene in this chain by altering the value calculus, perceived control and norms. Higher transaction taxes can weaken perceived value, reduce perceived control and signal that small-value digital transactions are discouraged, thereby undermining both continuous use and the engagement benefits that flow from psychological ownership.

Ghanaian mobile money context and boundary conditions

The Ghanaian context provides key boundary conditions for the theoretical framework. First, financial exclusion remains a challenge, particularly for low-income and informal sector individuals who face barriers to traditional bank accounts (Ofori-Okyerere et al., 2023; Yakubu et al., 2025). In this environment, MoMo now functions as a *de facto* basic account, enabling people to store value, transfer money, and make payments without entering the formal banking system. This makes its relative value (CVT) especially salient when alternatives are costly, inconvenient, or inaccessible.

Second, Ghana's extended family structures and dense social networks create strong expectations to support relatives and contribute to funerals, weddings and community projects (Amos et al., 2025; Neiva et al., 2025; Wang et al., 2024). These obligations generate subjective norms that favour MoMo for frequent, often small-value transfers. Hence, the norm component of TPB is likely more pronounced than in more individualistic, high-income settings. Finally, many MoMo users operate under tight liquidity constraints, which makes transaction fees and, crucially, the e-levy on electronic transfers significant. Policy-induced cost increases can quickly reduce the perceived value of MoMo and push users back to cash or informal mechanisms, making CVT's cost-benefit logic and TPB's perceived behavioural control particularly relevant (Anyidoho et al., 2023; Carreras et al., 2024; Lotto, 2025).

These features suggest that the theorised relationships may be strongest in emerging-market settings that resemble Ghana, where MoMo substitutes for formal banking, social obligations drive frequent transfers, and transaction-level taxes are salient for low-income users. Making these boundary conditions explicit clarifies that the hypotheses are not intended to hold uniformly across all markets but are affected by the institutional and socio-economic context in which MoMo is embedded.

Hypotheses development

Continuous use intention and psychological ownership

Research on continuous use intention and psychological ownership in the Fintech context provides insight into how users engage with and become attached to digital financial tools (Kwon, 2020; Liang et al., 2024; Shiau et al., 2020). Continuous use intention refers to users' sustained and ongoing use of Fintech solutions, including mobile money services, which are recognised as critical drivers of financial inclusion and enhanced customer outcomes (Kelly & Palaniappan, 2023; Nguyen et al., 2021; Shaikh et al., 2023; Yang et al., 2023). Previous studies emphasise user-centric factors (e.g., satisfaction, trust, perceived usefulness), system-level features (e.g., service quality, usability) and contextual influences (e.g., regulation, infrastructure) as key determinants of continued Fintech use (Hassan et al., 2022; Laksamana et al., 2022; Prentice et al., 2019). In Ghana specifically, mobile money technology adoption and continuous use are influenced by socio-economic factors and trust in the service provider (Dorfleitner et al., 2023; Thomas, 2023), as well as service quality and the regulatory environment (Blay & Caesar, 2022; Yeboah et al., 2020). Recent pandemic-era

evidence also shows that intensive use of digital payments contributed to resilience in the face of income and mobility shocks in comparable contexts (Kumar et al., 2023; Meafa et al., 2024; Sreenivasan et al., 2023).

Psychological ownership refers to the sense of possession and attachment that users feel towards a technology, reflected in feelings of personal control, investment and identification with the Fintech solution (Dawkins et al., 2017; Peck & Shu, 2009; Wang et al., 2023; Seo & Park, 2024). Empirical studies show that psychological ownership emerges through repeated interactions, personal investment, and integration of the technology into daily routines, and that it can lead to extra-role behaviours such as advocacy, helping others, and voluntary contributions (Beverungen et al., 2019; Zhang et al., 2021). In consumer contexts, psychological ownership has been used to explain individual and contextual variation in how strongly users feel that digital platforms "belong" to them, with consequences for engagement and loyalty (Peck & Luan-grath, 2023; Sharma et al., 2021).

The relationship between continuous use intention and psychological ownership can be understood through the perspectives of perceived value and technology readiness (Kirk, 2019; Li & Shang, 2020; Shiau et al., 2020). As users become more familiar with and derive consistent value from Fintech services, their psychological ownership typically increases, reinforcing their intention to continue using the technology. For example, evidence from digital payment users in India shows that satisfaction, effort expectancy, and performance expectancy significantly influence behavioural intention to adopt and continue using Fintech services, suggesting that satisfying experiences underpin continuous use intention and deeper attachment (Srivastava et al., 2024). Similarly, integrating the UTAUT with a trust-based model indicates that higher trust strengthens continuous use intention and can promote a feeling of ownership (Amnas et al., 2023), while studies on emerging digital environments (e.g., metaverse applications) underline the role of technology readiness, attitude, engagement and trust in linking intention and psychological ownership (Devlin et al., 2025; Cha et al., 2024; Laksamana et al., 2022; Werth et al., 2023). In Ghana's cash-constrained context, where mobile money often functions as a primary financial tool and is central to coping with shocks, frequent and sustained use of MoMo is expected to be especially conducive to developing a sense of psychological ownership. Hence,

H1: In cash-constrained emerging economies such as Ghana, users' continuous intention to use mobile money will have a significant positive effect on their psychological ownership of MoMo.

Psychological ownership and financial, social, and economic engagement

Financial inclusion is commonly understood as the availability and affordability of useful financial services, such as payments, savings, credit, and insurance, which are tailored to meet the needs of individuals and businesses (Bisht & Mishra, 2016; Coffie & Hongjiang, 2023; Mansoor et al., 2024). In emerging economies such as Ghana and Kenya, digital financial policies and financial inclusion strategies have become key drivers of growth and formalisation, contributing to notable increases in access to formal financial services (Coffie et al., 2021; Sarpong & Nketiah-Amponsah, 2022; Wamba-Taguimdje & Kala Kamdjoug, 2025). Fintech innovations, including mobile money, have played a central role by enabling basic financial activities, including saving and transferring funds (Khetawat, 2022). In this study, financial inclusion is conceptualised in terms of three interrelated forms of engagement: financial, social, and economic.

Financial engagement refers to the extent to which individuals actively manage their finances, including money management, planning and investment-related decisions (Liu & Lin, 2021). Higher financial engagement is associated with improved savings behaviour, greater access to credit and enhanced financial well-being, and contributes to economic growth, poverty reduction and financial stability (Coffie et al., 2021; Khan & Shahid, 2025; Sarpong & Nketiah-Amponsah, 2022). Fintech services can stimulate financial engagement by promoting a savings culture among lower-income groups, easing transaction frictions and expanding the financial system's resource base (Khan & Shahid, 2025).

Social engagement in the context of financial inclusion captures participation in social and community-oriented financial practices, such as supporting relatives, contributing to collective events and engaging in group-based financial arrangements. Fintech solutions can strengthen social capital and socio-economic security by facilitating these interactions and improving access for underserved communities (Dillahun, 2014; Khan & Shahid, 2025). Social engagement helps integrate marginalised groups into the financial system and promotes social cohesion and empowerment (Birkenmaier et al., 2019; Burchi & Roscioli, 2022; Kanungo & Gupta, 2021; Kim & Duvendack, 2024). The rise of mobile money and related Fintech services enables individuals to contribute financially to community activities and support others via digital channels (Kshetri, 2017), while trust-based interactions within social networks have been linked to improved financial outcomes in entrepreneurial settings (Dai et al., 2018).

Economic engagement refers to individuals' active involvement in productive economic activities using financial services, for example, saving, borrowing, investing

and making business-related payments, aimed at income generation, asset accumulation and entrepreneurial development (Alshebami & Al Marri, 2022; Fisch & Seligman, 2022). The adoption of mobile money has been shown to promote economic empowerment, particularly for informal businesses, by facilitating access to start-up capital, easing day-to-day transactions and creating new employment opportunities (Senyo et al., 2022). Fintech solutions that offer innovative, equitable and sustainable products can thus enhance economic engagement for diverse populations. In many African markets, MoMo is closely linked to social entrepreneurship and efforts to address social problems while generating profit, thereby contributing to digital financial inclusion and wider economic participation (Natile, 2020).

Within this multidimensional view of inclusion, psychological ownership of Fintech solutions is expected to play an important role in deepening engagement. Studies across digital and service settings show that when users feel that a platform, brand or technology is "theirs", they are more willing to invest time and effort, expand usage to additional activities and advocate for the service (Beverungen et al., 2019; Peck & Luangrath, 2023; Sharma et al., 2021; Zhang et al., 2021). In financial services, the higher psychological ownership of money and financial institutions have been associated with more engaged financial behaviour, including closer monitoring and control of finances and greater openness to using credit and other financial products (Cubaka, 2022; Khan & Belk, 2024; Peck & Luangrath, 2023; Sharma et al., 2021). In low- and middle-income countries, digital financial tools perceived as personally meaningful and controllable have been associated with improved financial decision-making and resilience, especially when they support everyday transactions and social obligations (Meafa et al., 2024; Sreenivasan et al., 2023).

In Ghana, MoMo is deeply embedded in financial, social and economic practices: it is used to pay bills and school fees, send remittances, support relatives and community events, and for transactions by micro and small enterprises. Psychological ownership of MoMo is therefore expected to translate into higher financial engagement (e.g., more frequent and diverse financial transactions), stronger social engagement (e.g., supporting family and community activities), and greater economic engagement (e.g., business-related payments and receipts). In line with this literature, psychological ownership is treated as a mechanism through which perceived value and intrinsic motivation (CVT, SDT) are converted into multidimensional engagement in an emerging-market context where a single Fintech tool underpins multiple aspects of everyday life. Accordingly, the following hypotheses are proposed:

H2: Psychological ownership of MoMo will have a significant positive effect on financial engagement among Ghanaian MoMo users.

H3: In the Ghanaian context, where social obligations are frequently mediated through mobile transfers, psychological ownership of MoMo will have a significant positive effect on social engagement.

H4: In emerging-market contexts where MoMo supports everyday livelihoods, psychological ownership of MoMo will have a significant positive effect on economic engagement.

Digital taxation, e-levy policy, and financial inclusion

Digital financial policies play an ambivalent role in financial inclusion: supportive regulation and digital public infrastructure can expand access and resilience (Desai et al., 2023; Tay et al., 2022; Yakubi et al., 2022), whereas poorly designed fees or taxes may discourage usage, especially among low-income users (Desai et al., 2023; Foerster, 2022; Lotto, 2025). Pandemic-era studies show that digital financial inclusion cushioned the impact of shocks by enabling remote transactions, access to transfers and continuity of business operations (Meafa et al., 2024; Sreenivasan et al., 2023). Similarly, higher transaction costs have been shown to reduce usage intensity, increase cash-outs and limit the depth of engagement with digital financial tools (Anyidoho et al., 2023; Carreras et al., 2024; Lotto, 2025). In this broader context, Ghana's e-levy, first proposed in 2021 at 1.75% on a wide range of electronic transactions and later reduced to 1% in 2023, exemplifies the tension between raising tax revenues from the digital economy and preserving the inclusion benefits of mobile money (Apeti & Edoh, 2023; Gilbert, 2023; PYMNTS, 2022). Similar concerns have been raised in Kenya, where taxing mobile money platforms such as M-PESA is seen as a potential threat to the sustainability of services central to financial inclusion (Bleach, 2023).

Empirical evidence from Ghana indicates that the e-levy has materially affected user behaviour. Studies report substantial reductions in mobile money usage following the levy's introduction, with many users decreasing transaction volumes or ceasing use altogether, underscoring the high sensitivity of mobile money use to transaction costs (Okello Candiya Bongomin et al., 2020; Pobee et al., 2023; Tetteh et al., 2023). These patterns suggest that digital taxes can hinder both adoption and continued use, particularly among lower-income individuals for whom the levy represents a relatively larger financial burden. From a CVT perspective, the e-levy directly lowers the perceived net value of MoMo, especially for small, frequent transfers that are central to poor and informal-sector users. From a TPB perspective,

the levy may reduce perceived behavioural control and alter social norms by signalling that small digital transfers are penalised, thereby discouraging reliance on MoMo for routine financial, social and economic activities and pushing users back towards cash or informal mechanisms. In a setting where MoMo is critical for managing shocks, supporting relatives and sustaining micro and small enterprises, such policy-induced changes in perceived value and control are likely to weaken the inclusion benefits associated with continuous use and psychological ownership. Accordingly, the following hypotheses are proposed:

H5: In Ghana, the perceived imposition of the e-levy transaction tax on mobile money transfers will have a significant negative effect on users' financial engagement via MoMo.

H6: In Ghana, the perceived imposition of the e-levy transaction tax on mobile money transfers will have a significant negative effect on users' social engagement via MoMo.

H7: In Ghana, the perceived imposition of the e-levy transaction tax on mobile money transfers will have a significant negative effect on users' economic engagement via MoMo.

Conceptual framework

Figure 1 presents the study's conceptual model and hypotheses. It draws on CVT to posit that continuous use of the Fintech solution such as MoMo leads to users' value assimilation and psychological ownership of the mobile payment (m-payment) solution (H1). Based on SDT and the Theory of Planned Behaviour, psychological ownership of the Fintech solution such as MoMo is expected to promote continued use to enhance financial inclusion through financial engagement (H2), social engagement (H3) and economic engagement (H4). The study further posits that government policy, such as the electronic tax (e-levy), may discourage the use of the Fintech solution such as MoMo, thereby reducing financial engagement (H5), social engagement (H6), and economic engagement (H7).

To synthesise these streams of empirical evidence, Table 1 provides an integrative overview that maps the study's core constructs (continuous MoMo use, psychological ownership, financial/social/economic engagement, perceived e-levy) to their main predictors and expected effects. This summary clarifies how the theoretical mechanisms proposed by CVT, SDT and TPB align with existing findings and where the present study extends prior work, particularly in the Ghanaian mobile money context.

Table 1 Integrative overview of constructs, predictors, and expected effects

Construct	Key predictors	Expected effect	Theoretical lens	Supporting literature
Continuous use intention	Perceived value (benefits vs. costs), favourable attitudes, supportive social norms, high PBC	Continuous intention to use when benefits outweigh costs and norms/control are supportive	CVT, TPB	Bhattacharjee (2001), Amegbe et al. (2023), Hassan et al. (2022), Laksamana et al. (2022)
Psychological ownership of MoMo	Continuous use; perceived value; autonomy, competence, relatedness; personal investment and control	Psychological ownership as users repeatedly experience value, control and need fulfilment	CVT, SDT	Dawkins et al. (2017), Peck and Shu (2009), Wang et al. (2023), Beverungen et al. (2019)
Financial engagement	Psychological ownership; continuous use; access to convenient, secure and low-cost digital financial services	Active money management, saving and use of MoMo for payments and transfers	SDT, CVT	Liu and Lin (2021), Khetawat (2022), Coffie et al. (2021), Khan and Shahid (2025)
Social engagement	Psychological ownership; social norms around remittances and contributions; relatedness and social capital	Increased support for family, community events, peer-to-peer and group contributions	SDT, TPB	Dillahun (2014), Birkenmaier et al. (2019), Dai et al. (2018), Kshetri (2017)
Economic engagement	Psychological ownership; continuous use in business; perceived usefulness for trade	Increased use for business payments, savings, investment and income-generating activities	CVT, SDT	Senyo et al. (2022), Alshebami and Al Marri (2022), Fisch and Seligman (2022), Natile (2020)
Financial engagement (e-levy effect)	Perceived e-levy; higher transaction costs; reduced perceived value and control	Reduced use for transactions; substitution towards cash/informal means	CVT, TPB	Okello Candiya Bongomin et al. (2020), Anyidoho et al. (2023), Carreras et al. (2024), Lotto (2025)
Social engagement (e-levy effect)	Perceived e-levy burden on small transfers; shifting norms around digital giving	Decreased use for remittances, gifts and community contributions for low-income users	TPB, CVT	Okello Candiya Bongomin et al. (2020), Pobee et al. (2023), Tetteh et al. (2023)
Economic engagement (e-levy effect)	Perceived e-levy on business transfers; lower perceived control over working capital and margins	Reduced use for business payments, wage transfers and micro-investments; retreat to cash	CVT, TPB	Apeti and Edoh (2023), Senyo et al. (2022), Carreras et al. (2024)

Methodology

This study employed a sequential explanatory mixed-method research approach. It prioritises quantitative analysis to evaluate the research model and supplements it with qualitative interviews to elucidate the survey findings and understand the reasons for the established relationships.

Study 1 (quantitative): Method and procedure

The survey data were collected in two stages to incorporate multiple dimensions of financial inclusion, psychological ownership, and continuous usage while controlling for common method bias. The first stage (T1) focussed on psychological ownership, continuous use intention, and perceptions of the e-levy. The second stage (T2) measured the financial inclusion dimensions. Data were collected using a cross-sectional survey administered at two time points (T1 and T2), separated by a 3-week time lag, consistent with the data of De Clercq et al. (2019). Informed consent was obtained from all respondents, and anonymity and confidentiality were maintained throughout the study. The sampling frame comprised 1,000 respondents, of which 630 provided valid responses at both T1 and T2 after screening for completeness, yielding a response rate of 63%. Structural equation modelling (SEM) was then used to test the hypotheses.

Instrumentation

Established scales were adapted to fit the MoMo usage context. The items were anchored on a 5-point Likert scale ranging from “Strongly disagree” (1) to “Strongly agree” (5), providing a gradient of agreement levels. The complete set of items is presented in Appendix A.

Continuous use intention was assessed, with three items adapted from Bhattacharjee’s (2000) seminal work. An example is “I intend to continue using mobile money payment systems rather than discontinue its use”. Psychological ownership was rated through three items adapted from Peck and Shu (2009). A representative item is “Although I do not legally own the MoMo services, I feel like the MoMo on my phone is ‘mine’”. Perceived government e-levy policy was measured with five items adapted from Wang et al. (2018). A sample item is “The Government’s proposed e-levy policy encourages me to use MoMo”.

Financial inclusion was conceptualised as comprising three dimensions: financial, social, and economic engagements. Financial engagement was evaluated using five items adapted from Khetawat (2022), including “I can use mobile money anywhere and anytime to send/receive money”.

Social engagement was measured using four items adapted from Khetawat (2022), such as “MoMo helps me to engage in social activities with my peers”. Economic engagement was assessed using five items adapted from Khetawat (2022), Hart and Northmore (2011), and Talebzadehosseini et al. (2019). An example item is “With MoMo, I can make some investments and earn profits”.

Common method bias and nonresponse bias

Both procedural and statistical methods were used to address common method bias (CMB). Procedurally, the temporal separation of measurements across constructs reduced the risk of common-method bias. Besides, questionnaire items were kept as simple and concise to minimise ambiguity (Podsakoff et al., 2012). Item orders were also randomised or spaced to reduce respondents’ ability to infer relationships between constructs (Podsakoff et al., 2003). Additionally, respondents were assured of anonymity and confidentiality to mitigate social desirability bias.

Statistically, CMB was assessed using Harman’s single-factor test (Podsakoff et al., 2003). The results showed that a single factor accounted for 32.6% of the variance, which is below the 50% threshold, indicating no serious common method bias (Malhotra et al., 2006). Non-response bias was also examined by comparing the first 10% of responses with the last 10%. The results revealed no significant differences across the constructs or demographic profiles between the two groups compared ($p > 0.05$), suggesting that non-response bias was not a concern. Since Harman’s test is a diagnostic check rather than definitive, a full collinearity assessment was also conducted during the SEM analysis. As shown in Table 8 (Appendix C), the highest variance inflation factor (VIF) among all latent variables was 1.306, which is below the threshold of 5 (Hair et al., 2011), indicating that the model is free from serious common method bias. VIF values were not computed for the outer model indicators because the measurement items used were reflective rather than formative (Hair et al., 2011, 2022).

Study 2 (qualitative): Method

A qualitative study was conducted to explain the reasons behind the relationships observed in the hypotheses tested in Study 1. The study used an interview protocol to ensure standardisation among participants (Ratten, 2024). The protocol guided the order and structure of the questions (Sandelowski, 2000). Questions were drawn from the Study 1 survey and focussed on continuous use intentions, psychological ownership, perceived government policy (e-levy), and the engagement dimensions of financial inclusion (see Appendix B). To protect anonymity, only general

information about the participants was reported (Bazeley & Jackson, 2013; Ratten, 2024).

Participants were recruited through an open call on social media platforms similar to the approach used for Study 1. The research team conducted semi-interviews via phone calls, WhatsApp, and Zoom video calls with 23 participants in November and December 2023. Interviews, averaging 45 min, were audio-recorded with consent and transcribed verbatim. To enhance data quality, the research team clarified key concepts and ensured participants understood the study objectives, and used follow-up prompts to encourage collaboration. To mitigate interpretive bias, responses were summarised before coding and then synthesised with the main quantitative findings to support the interpretation of Study 2.

Data were analysed using NVIVO 12 (Garrido-Moreno et al., 2024). Thematic analysis was employed due to its flexibility and robustness in identifying patterns across a qualitative dataset (Garrido-Moreno et al., 2024; Hanu et al., 2024). The study team transcribed all interviews, producing 252 single-spaced pages of text, which were stored securely in accordance with research ethics protocols. Analysis followed an iterative process beginning with open coding, in which transcripts were reviewed line-by-line to identify meaningful segments and generate categories without reliance on a predetermined framework (Mergel, 2024). Codes were then refined and organised into higher-order themes capturing recurring relationships and cross-case similarities. Credibility and rigour were enhanced through Lincoln and Guba's (1985) criteria for naturalistic inquiry. Triangulation involved comparing patterns across interviews and validating interpretations with three independent qualitative analysts. Member validation was conducted by sharing emerging insights with selected participants and integrating their feedback to strengthen the thematic structure (Blocker et al., 2025; Mergel, 2024). To enhance transferability, rich participant descriptions align with those of Cypress (2017) and Von Koskull (2020). Data adequacy and theoretical saturation were confirmed when no new categories emerged during the final coding cycle. Figure 2 provides an overview of the explanatory sequential mixed-design used to collect and analyse the study's data.

The two-stage or time-lagged survey (T1 and T2) was conducted first (Study 1) to collect, analyse, and test the study hypotheses. This was followed by Study 2, which collected qualitative data through interviews to explain the observed relationships in Study 1. The results of the studies are reported in Section 4.

Results

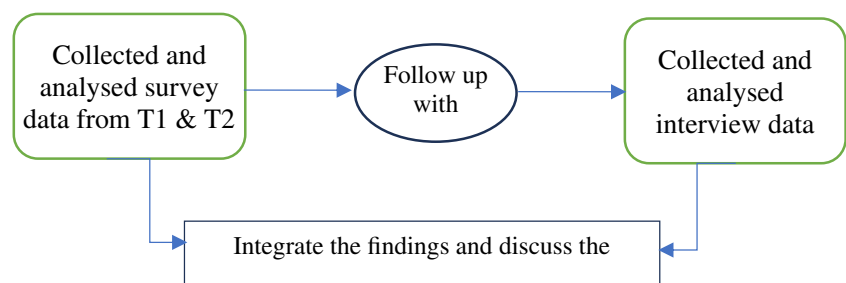
Study 1—Quantitative

The respondents comprised 374 males (59.4%) and 256 females (40.6%) (Table 2). Most respondents were young adults, with 37.6% aged 21–30 and 28.9% aged 31–40. Representation from older age groups was limited, with only 13.7% of respondents aged 61 years or older. About one-third of the respondents were self-employed (30.5%),

Table 2 Characteristics of the MoMo users ($N = 630$)

Gender	Frequency	Percentage
Male	374	59.4
Female	256	40.6
Age		
21–30 yrs	224	35.6
31–40 yrs	182	28.9
41–50 yrs	108	17.1
51–60 yrs	30	4.8
61 + yrs	86	13.7
Employment status		
Self-employed	192	30.5
Employed	219	34.8
Volunteer/Intern/NSP	55	8.7
Other	106	16.8
Unemployed	58	9.2
MoMo_type		
MTN MoMo	366	58.1
Airtel-Tigo Cash	172	27.3
Vodafone Cash	92	14.6

Fig. 2 Explanatory sequential mixed-method design approach (adapted from Creswell and Clark, 2007)



while another one-third were employed in either the public or private sector (34.8%). Most respondents (58.1%) used the MTN MoMo service, whereas 14.6% used the Vodafone Cash.

The data on the key constructs were examined for model fitness and subjected to both measurement and structural model assessments. Model fit was assessed using standard indices, including SRMR (0.062), d_ULS (2.935), and d_G (2.278). All fit indices were within acceptable thresholds (e.g., $SRMR < 0.08$; Hu & Bentler, 1998; Henseler et al., 2014), indicating that the model adequately represents the relationships among the key constructs. The R^2 results were 0.646 (64.6%) for economic engagement, 0.607 (60.7%) for financial engagement, 0.271 (27.1%) for psychological ownership, and 0.772 (77.2%) for social engagement (Fig. 3), suggesting that the independent variables explain a substantial proportion of the variance in the respective dependent variables.

Additionally, the Q^2 values showed low predictive relevance for economic engagement (0.021), moderate for financial engagement (0.146) and social engagement (0.150), and high predictive relevance for psychological ownership (0.269). Thus, the model demonstrates strong predictive power, especially in predicting MoMo's psychological ownership. Model quality criteria, including R^2 , adjusted R^2 and f^2 , are reported in Tables 11–13.

Measurement model assessment

An exploratory factor analysis (EFA) with cross-loadings was first conducted to identify problematic items (see Tables 9a and 9b in Appendix C). Items with factor loadings below 0.70 were removed. For example, in the financial engagement, only three of the five items (FE3, FE4,

and FE5) were retained. The retained factor loadings were significant at $p < 0.001$ (two-tailed) and ranged from 0.736 to 0.997. Table 3 presents the results of the data quality assessment. All retained factor loadings met acceptable levels, indicating satisfactory indicator reliability (Hair et al., 2017). Cronbach's alpha and composite reliability (CR) values for all constructs exceeded the 0.70 threshold, demonstrating adequate internal consistency and reliability (Hair et al., 2019; Sarstedt et al., 2017). In addition, the average variance extracted (AVE) values were above 0.50, indicating strong convergent validity.

Discriminant validity was assessed using the Fornell and Larcker criterion and the HTMT inference approach. The Fornell–Larcker results showed that the square roots of the AVE values exceeded the inter-construct correlations (Table 4). The HTMT analysis, based on 5,000 bootstrap samples (Ringle et al., 2024), produced values ranging from 0.098 to 0.998, all below the recommended threshold of 1.00 (Gaskin et al., 2018; Henseler et al., 2014). Although the HTMT value between social and economic engagement was high (0.998), the constructs were conceptually distinct and reflect the dual social and economic roles of mobile money in Ghana. Overall,

Table 3 Summary results of reliability and convergent validity test

Constructs	Cronbach's alpha	CR	AVE
Continuous use of momo	0.936	0.958	0.884
Economic engagement	0.912	0.934	0.739
Financial engagement	0.837	0.899	0.749
Perceived gov policy (e-levy)	0.832	0.880	0.788
Psychological ownership	0.977	0.985	0.957
Social engagement	0.870	0.920	0.794

Fig. 3 Path model with path coefficients

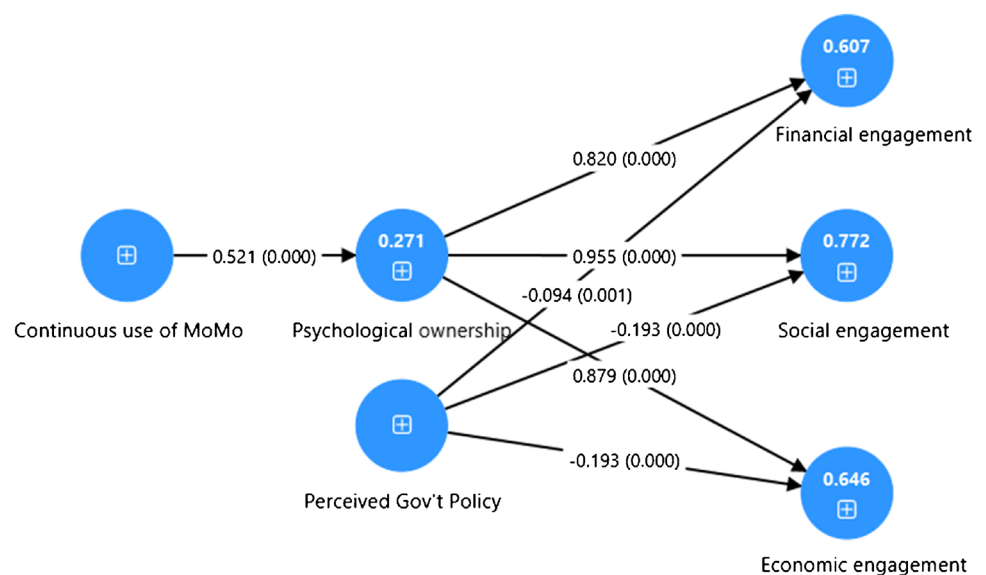


Table 4 Fornell and Larcker values and HTMT ratios

Constructs	1	2	3	4	5	6
Continuous use of momo (1)		0.204	0.131	0.801	0.524	0.404
Economic engagement (2)	0.204		0.355	0.211	0.695	0.998
Financial engagement (3)	0.131	0.355		0.342	0.098	0.332
Perceived e-levy policy (4)	0.801	0.211	0.342		0.372	0.211
Psychological ownership (5)	0.524	0.695	0.098	0.372		0.877
Social engagement (6)	0.404	0.998	0.332	0.211	0.877	

NB Heterotrait–monotrait (HTMT) ratios are shown above the diagonal

discriminant validity was satisfactory (Table 4; Table 10 in Appendix C).

Structural model assessment

The results (Table 5) show that continuous use of m-payment has a significant positive influence on m-payment psychological ownership ($\beta=0.521$; $t=16.964$; $p=0.000$), supporting H₁. The results also show that psychological ownership of m-payment has a significant positive impact on financial engagement ($\beta=0.820$; $t=41.902$; $p=0.000$), social engagement ($\beta=0.955$; $t=52.198$; $p=0.000$), and economic engagement ($\beta=0.879$; $t=51.017$; $p=0.000$), supporting H2, H3 and H4, respectively.

Additionally, the results (Fig. 3) reveal a negative but significant effect of perceived government policy (e-levy) on financial engagement ($\beta=-0.094$; $t=3.476$; $p=0.001$), social engagement ($\beta=-0.193$; $t=6.012$; $p=0.000$), and economic engagement ($\beta=-0.193$; $t=8.101$; $p=0.000$), thus confirming H5, H6, and H7, respectively.

Study 2—Qualitative

Study 2 was designed as a follow-up to the quantitative phase to explain the reasons for the observed relationship between the key constructs. Consequently, the qualitative findings largely corroborated and reinforced the results from the quantitative study, thereby strengthening the overall validity of our conclusions.

The interview participants were 9 females and 14 males engaged in various occupations, ranging from retail

businesses to IT professionals (Table 6). The participants had considerable experience using mobile money payment, having done so for at least 3 to over 11 years.

Continuous use of MoMo and motivation for using MoMo

The interviewees shared their views on the continuous use of MoMo and their motivation for using it. Participant #15 (male, bookseller, 6 years' experience) said, "I will continue to use MoMobecause it makes life easier. For instance, when you are making payments to people". Participant #20 (female, trader, > 6 years' experience) mentioned, "Oh, well, I see myself using it, but not as frequently as before because of the e-levy". Participant #23 (female, student, 7 years' experience) said, "Definitely, because it's easy and convenient". Participant #16 (male, IT professional, 6 years' experience) mentioned, "I will continue usingMoMobecause it makes payment easier without having to carry cash and also easy, fast track payments". Participant #22 (male, student, 10 years of experience) indicated, "Very much, because it's such a reliable means of getting my funds, like, actually not going to the bank every day since I can transact from a vendor who is closer to me. I also know that's safe and reliable".

The interview responses reveal that continuous use of mobile money (MoMo) in Ghana is largely influenced by its perceived convenience, ease of use, safety, and reliability. Many participants expressed strong intentions to continue

Table 5 Summary results of structural model path coefficients

Path	β	T	p	f^2	Decision
Continuous use of momo → psychological ownership	0.521	16.964	0.000	0.372	H1 = supported
Psychological ownership → financial engagement	0.820	41.902	0.000	1.316	H2 = supported
Psychological ownership → social engagement	0.955	52.198	0.000	3.074	H3 = supported
Psychological ownership → economic engagement	0.879	51.017	0.000	1.678	H4 = supported
Perceived gov policy (e-levy) → financial engagement	-0.094	3.476	0.001	0.017	H5 = supported
Perceived gov policy (e-levy) → social engagement	-0.193	6.012	0.000	0.126	H6 = supported
Perceived gov policy (e-levy) → economic engagement	-0.193	8.101	0.000	0.081	H7 = supported

Table 6 Background of the interviewee

#	Gender	Occupation	Years of using MoMo
#1	Female	Retailer–mothercare–products	More than 10 years
#2	Female	Businesswoman	11 years
#3	Male	Student	5 years
#4	Female	Counsellor	3 years
#5	Male	National service personnel	5 years
#6	Male	NSP	5 years
#7	Female	Businesswoman	9 years
#8	Male	Teacher	More than 10 years
#9	Female	Office assistant	More than 6 years
#10	Female	Retailer	More than 10 years
#11	Male	Student	7 years
#12	Male	IT professional	5 years
#13	Male	MoMo vendor	4 years
#14	Male	Book seller	6 years
#15	Male	IT professional	5 years
#16	Male	IT professional	6 years
#17	Female	Student	4 years
#18	Male	Chef	5 years
#19	Male	Insurance	More than 10 months
#20	Female	Trader	More than 6 years
#21	Male	Instructor	7 years
#22	Male	Student	10 years
#23	Female	Student	7 years

using MoMo because it simplifies financial transactions and reduces the need to carry cash or physically visit banks. Several participants, such as the bookseller (Participant #15) and the IT professional (Participant #16), emphasised that MoMo makes life easier, especially for making payments and completing transactions quickly. Similarly, students like Participant #23 and Participant #22 highlighted MoMo's convenience and reliability, noting that it allows them to access funds easily and avoid frequent trips to the bank.

Psychological ownership of MoMo and financial inclusion

The study also explored customers' sense of ownership of their MoMo accounts. Participant #19 (male, insurance employee, 10 months' experience) expressed a strong sense of personal ownership, stating, "Yes, the account is mine. Once it's on my phone, it's mine. I don't share my PIN with anyone, ensuring it remains solely mine". Similarly, Participant #21 (male, instructor, 7 years' experience) felt ownership over his account, saying, "So far, nothing has made me doubt that the account is mine". Participant #22 (male, student, 10 years' experience) shared a sense of ownership despite security concerns, mentioning,

"Even with instances of fraud, I feel secure if I keep my PIN private. Keeping my PIN safe gives me that sense of ownership". These sentiments highlight varying perceptions of ownership among MoMo users. While most interviewees' responses revealed a sense of psychological ownership, a few did not. For example, Participant #15 (male, IT Professional, 5 years' experience) remarked, "I don't feel like I own the account. If the network is down, I can't transact, which makes me feel less in control".

The study also explored how MoMo usage influences customers' sense of control over their finances. Participant #19 (male, insurance, more than 10 months) indicated that "Oh, I have control. It's my money, and it's on my phone. So, as I said earlier, if I don't give my PIN to anyone, then I have control. I must key in my PIN before a transaction can go through. So even if someone takes my phone and wants to withdraw money from my account, once a person doesn't know my PIN, the person cannot do it. So yes, I have full control over my money. No one can have access to it". Participant #14 (male, book seller, 6 years) said, "I have control because so long as the money is in my MOMO wallet, I can use it for whatever I want to do".

Regarding inclusion in Ghana's financial system through MoMo, responses were positive. Participant #17 (female, student, 4 years' experience) mentioned, "Using MoMo for transactions, even internationally, makes me feel integrated into the financial system". Participant #19 (male, insurance employee, > 10 months' experience) elaborated, "Just like banks, MoMo transactions involve charges, which signifies my active participation in the financial system, making me feel included and satisfied". Participant #21 (male, instructor, 7 years' experience) added, "MoMo providers recognise me as a customer because I perform various transactions. By extension, I am actively involved in the financial system".

Overall, users in Ghana generally reported strong psychological ownership of their MoMo accounts, driven by personal control over their phones, secure PIN practices, and positive daily experiences. Participants like P#19, P#21, and P#22 noted that exclusive PIN control strengthens their sense of security and ownership. However, a few users, such as P15, reported weaker ownership when network failures limit their ability to access or manage their accounts, showing that service reliability directly affects feelings of control. MoMo also enhances users' perceived financial control. Many participants explained that having money accessible on their personal devices gives them autonomy and confidence in managing their finances. Finally, MoMo contributes significantly to financial inclusion. Users feel recognised and integrated into the financial system locally and globally, with some (e.g., Participant# 17) highlighting that MoMo enables participation in international transactions, reinforcing a sense of belonging to the global financial community.

Government policy of e-levy, MoMo usage, and financial inclusion

The study examined the impact of the e-levy on mobile money (MoMo) usage and financial inclusion, revealing widespread concerns among participants. Many respondents emphasised that the high e-levy charges had negatively influenced their transactional behaviour. For example, Participant #13 (male, MoMo vendor, 4 years' experience) noted, "The e-levy has reduced the frequency with which I send money", highlighting a direct decline in personal usage. Similarly, Participant #9 (female, office assistant, > 6 years' experience) remarked, "The e-levy is too high, and I'm considering stopping MoMo usage because the deductions are too much", suggesting that the cost implications were prompting some users to reconsider their reliance on MoMo services.

In addition to individual users, service providers also reported significant challenges. Participant #13 (Male, MoMo Vendor, 4 years' experience), who operates as a MoMo vendor, described the following business implications: "The e-levy has discouraged people from sending money, affecting our operations. Despite this, we have no choice but to continue using MoMo for its convenience and security. We hope for a reduction in the e-levy". This perspective illustrates how reduced customer transactions have created operational strain for vendors whose livelihoods depend on MoMo activity.

Collectively, these insights demonstrate that the e-levy has had a measurable adverse effect on MoMo usage patterns and, by extension, on financial inclusion. Users appear to be reducing their transaction frequency, reconsidering the use of digital financial services, or facing business constraints due to decreased customer activity. These findings lend support to Hypotheses 5, 6, and 7, which posit that increased transaction costs undermine digital financial engagement and impede financial inclusion outcomes.

In conclusion, the interview responses under the themes Continuous Use of MoMo and Motivation for Using MoMo, Psychological Ownership of MoMo and Financial Inclusion, and Government Policy (E-Levy), MoMo Usage, and Financial Inclusion, collectively reinforce and validate our quantitative results. The qualitative insights deepen our understanding of the complex relationships between user behaviour, policy interventions, and financial inclusion outcomes, providing a more comprehensive interpretation of the overall findings.

Discussion and implications

This study examined how continuous use of Fintech solutions affects users' psychological ownership and, in turn, how psychological ownership relates to the economic,

financial, and social dimensions of financial inclusion. It also assessed whether perceived e-levy policy undermines these engagements. A seven-hypothesis model was tested, and all hypotheses were supported. Interpreted through the integrated lens of CVT, SDT, and the TPB, the results suggest that continued mobile money use reflects users' perceived benefit–cost evaluations (CVT), strengthens feelings of autonomy, competence, and relatedness that underpin psychological ownership (SDT), and translates into tangible inclusion behaviours influenced by attitudes, subjective norms, and perceived behavioural control (TPB).

Hypothesis 1 was supported, indicating a significant positive relationship between continuous use intention and psychological ownership, consistent with previous studies (Lara-Rubio et al., 2021; Amnas et al., 2023; Cha et al., 2024; Laksamana et al., 2022; Srivastava et al., 2024). This result suggests that repeated, value-reinforcing interactions can deepen users' sense of attachment to mobile payment tools. This pattern aligns with evidence that Fintech services can deliver personalised experiences that foster familiarity and trust (Devlin et al., 2025; Dorfleitner et al., 2023; Senyo et al., 2022; Thomas, 2023; Were et al., 2022). This personalisation may create a sense of ownership as users feel the technology has been tailored to their specific needs and preferences, leading to confidence in the financial system and a stronger attachment.

Hypothesis 2 was supported: psychological ownership positively and significantly increased financial engagement, consistent with prior studies that stronger feelings of ownership over financial tools are associated with more active financial behaviours (Khan & Shahid, 2025; Were et al., 2022). This result suggests that when users perceive an m-payment tool as "theirs", they actively manage their finances, including saving, investing, borrowing, and budgeting, because ownership strengthens attention, effort, and routine use (Khan & Shahid, 2025; Were et al., 2022). In contexts where formal financial services are limited or costly, this ownership effect can meaningfully deepen financial inclusion by sustaining participation in accessible digital financial practices.

Hypothesis 3 proposed a significant positive relationship between psychological ownership of MoMo and social engagement. The results from both the survey and the interviews align with research linking digital finance to social capital and network support (Birkenmaier et al., 2019; Dai et al., 2018; Kshetri, 2017). This result shows that psychological ownership increases users' willingness to use MoMo for socially embedded obligations, such as supporting relatives, contributing to community events, and participating in group arrangements, because the Fintech platforms feel personally meaningful and controllable. In a context, such as Ghana, where community ties drive economic life, psychological ownership of Fintech solutions may strengthen

socially mediated inclusion through low-friction transfers and reciprocal support.

Hypothesis 4 was also supported, showing that psychological ownership significantly enhances economic engagement, consistent with evidence on mobile money's role in productive activity and entrepreneurship (Sarpong & Nketiah-Amponsah, 2022). This result implies that users who see Fintech as "my tool" are more likely to leverage or integrate it into livelihood-related or economic transactions, including business payments, receipts, saving for inputs, and investment. This engagement thereby increases participation in income-generating activities, underscoring psychological ownership as a practical mechanism linking Fintech use to broader economic participation.

Additionally, the study proposed a negative association between perceived e-levy policy and users' engagement: financial (Hypothesis 5), social (Hypothesis 6), and economic engagement (Hypothesis 7). The results showed that the e-levy policy has a negative but significant effect on users' financial, social, and economic engagements, supporting these hypotheses. Previous studies have reported similar effects in different contexts (Okello Candiya Bongomin et al., 2020; Pobe et al., 2023; Tetteh et al., 2023). The introduction of e-levy may increase transaction costs, prompting users to reduce transaction frequency, split payments, or revert to cash. Users who once felt confident and in control may perceive the system as less aligned with their financial expectations, potentially weakening their sense of ownership and attachment to the platform.

Liquidity needs also influence how users perceive and use MoMo amid the e-levy. Individuals who require frequent access to cash, such as traders, informal-sector workers, or remittance-dependent households, may feel particularly constrained by increased transaction costs. Because these users often operate within tight financial margins, levies that reduce net liquidity can undermine trust in digital channels. When users experience a diminished capacity to meet their cash-flow needs, psychological ownership of MoMo may decline because the platform no longer fully supports their financial autonomy or competence. As a result, users may reframe MoMo from an enabling tool to an external constraint on economic agency. When e-levy increases transfer cost, users may rely more on agents for cash-based transactions; however, limited agent availability, long queues, or inconsistent liquidity at agent points can compound frustrations.

Overall, these results suggest that the introduction of the e-levy policy may have had unintended consequences on individuals' willingness and ability to engage in financial activities. A plausible interpretation is that the e-levy is perceived as an added cost on m-payment transactions, reducing use and, in turn, lowering economic, financial, and social engagement.

Theoretical implications

This study provides an integrated view of CVT, SDT, and TPB in the context of Fintech and digital taxation. CVT is reflected in how continuous use and reactions to the e-levy track users' perceived benefits-cost trade-offs; SDT is reflected in psychological ownership as an expression of autonomy, competence, and relatedness in financial technologies; and TPB is reflected in how attitudes, norms, and perceived control contribute to financial, social, and economic engagement. These perspectives jointly account for users' evaluations, motivations and behaviours, suggesting that Fintech and digital taxation benefit from treating CVT, SDT, and TPB as complementary rather than competing theories.

Building on this integrative perspective, the study advances Fintech adoption and psychological ownership research by positioning psychological ownership as a central mechanism linking value perceptions and motivation to multidimensional engagement. It extends the CVT beyond Dzandu et al. (2022) by showing how value perceptions interact with ownership feelings and engagement in the context of digital taxation. It also extends SDT-based work on digital payments and mobile banking (Manrai et al., 2021; Inan et al., 2023; Amalia, 2023) by examining how need fulfilment shapes psychological ownership of Fintech solutions, such as MoMo, in support of socio-economic and financial inclusion, drawing on evidence from an emerging-economy context.

The study further strengthens TPB's relevance in Fintech and inclusion research by consolidating prior TPB applications to digital currency implementation, continuous use of e-money, and mobile payment adoption (Hazarika et al., 2023; Hoque et al., 2023; Muchran et al., 2024). By linking TPB's attitudinal, normative, and control pathways to observable engagement outcomes, it provides a more comprehensive account of behavioural mechanisms in developing-country settings.

Additionally, the strong association between continuous use and psychological ownership indicates that repeated engagement with MoMo strengthens users' sense that the service is part of their personal domain, extending psychological ownership from physical goods to digital financial platforms. The significant effects of psychological ownership on multiple engagement outcomes underscore its theoretical importance for explaining deeper, more meaningful participation in financial technologies. Finally, the negative effect of perceived e-levy policy on engagement provides a counterpoint to ownership-based mechanisms, indicating that external interventions can weaken engagement and potentially disrupt the ownership–engagement effect in Fintech use.

Practical implications

The strong positive relationship between continuous MoMo use and psychological ownership suggests that service providers prioritise user experience improvements that encourage continued use. This can be achieved through regular updates, personalised features, and responsive customer service and support. Service providers should also implement user feedback loops to refine and improve the platform based on users' needs and preferences.

Given the positive effects of psychological ownership on financial and social engagement, service providers should adopt strategies that increase users' sense of "my platform", including customisable interfaces, targeted financial education, and participatory feature development. Incorporating social functionality like peer-to-peer payments, group savings, and fundraising options may further reinforce socially embedded usage and engagement.

The negative relationships between perceived e-levy policy and social and economic engagement indicate that transaction taxes can deter meaningful usage. Policymakers should therefore balance revenue objectives with inclusion goals by engaging stakeholders and considering alternative tax approaches that minimise deterrence effects (Okello Candiya Bongomin et al., 2020). Fintech service providers support this process by collaborating with policymakers on mitigation options that reduce user burden (Gilbert, 2023).

Finally, because financial and economic engagements are key outcomes of continuous use and psychological ownership, Fintech service providers should reduce friction in high-frequency transactions by simplifying workflows, lowering fees where feasible, and strengthening security (Pren-tice et al., 2019). Developing features that support small businesses, such as micro-loan facilities or integrated payment solutions for business operations, may further enhance engagement (Dzandu et al., 2022).

Limitations and future direction

This study has limitations that open avenues for future research. First, the findings are based on data from Ghana, and relationships may differ across contexts with distinct regulatory regimes, cultural norms, competitive dynamics, and levels of digital financial maturity. Future studies may examine whether the proposed relationships replicate in other countries and compare markets with and without transaction taxes to understand better how policy conditions affect digital wallet use. In addition, integrating platform-derived usage logs with survey-based psychological ownership measures could improve measurement validity and reduce reliance on perceptual reports alone.

Second, while efforts were made to reduce common method bias, key constructs rely on self-reported measures,

and causal inference remains limited. Future research could complement survey measures with behavioural indicators (e.g., transaction frequency, value, and retention) and may leverage policy changes as natural experiments to strengthen causal interpretation.

Third, the study reflects relationships at a specific point in time and does not directly examine longer-term outcomes. Future work may explore how psychological ownership evolves and how it relates to downstream impacts such as sustained financial inclusion, MSME performance, or household financial resilience. Longitudinal designs could also reveal whether psychological ownership reduces (or increases) the behavioural effects of policy frictions such as the e-levy across different stages of users' Fintech experience.

Building on these limitations, future research may explore questions such as (1) How do perceptions of transaction levies influence engagement and continuous use over time? (2) Under what conditions do users substitute across cash, mobile money, and alternative digital channels in response to policy frictions? (3) Which user groups (e.g., by age, gender, income, or urban–rural location) experience stronger or weaker effects? (4) What platform features (e.g., personalisation, feedback, goal setting, social functionalities) are associated with stronger feelings of psychological ownership and sustained engagement? Data sources that could support such work include longitudinal surveys, transaction-level records (when available), and qualitative interviews that capture users' lived experiences with digital payments under changing regulatory conditions.

Conclusion

The study investigated how continuous use of mobile money and the e-levy policy influence users' psychological ownership and their financial, social, and economic engagement, and whether psychological ownership mediates the relationship between continuous use and these engagement outcomes. Drawing on CVT, SDT, and TPB, the study combined a survey (Study 1) and an interview (Study 2) to understand how mobile money and e-levy policy influence the financial inclusion dimensions. The study also tested psychological ownership as a mediating mechanism linking continuous use to financial, social, and economic engagement. The findings show that continuous mobile money use significantly strengthens users' psychological ownership, which in turn positively influences financial, social, and economic engagement. As anticipated, perceived e-levy policy negatively affects all three engagement dimensions. The qualitative findings corroborated these results. Collectively, the results deepen understanding of how Fintech solutions such as mobile money shape multidimensional engagement and

offer practical insights for providers and policymakers seeking to strengthen financial inclusion through digital financial services.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s12525-026-00911-1>.

Declarations

Conflict of interest The authors declare no competing interests.

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