

# Mobile Payment Innovations in Ambiguously Enforced Use Contexts: A Study Amid the COVID-19 Pandemic in Brazil

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## ABSTRACT

In this study, the authors discuss whether the innovation characteristics of mobile payment (m-payment) explain user attitudes and intentions in a psychologically conflictual context regarding the locus of control of use decisions. The authors present the development of an instrument that fully integrates innovation diffusion theory with the technology acceptance model and analyze data collected with it from Brazilian m-payment users during the COVID-19 pandemic. With path analysis, the authors found that the innovation factors of perceived observability and perceived relative advantage respectively explain the attitudes and the intentions toward m-payment. None of the other innovation factors had explanatory power. Moreover, two expected relationships in voluntary use settings for the formation of attitudes were not supported, leading the authors to conclude that the locus of control in use decisions was ambiguous to the user. The findings contribute to research on innovation diffusion, technology acceptance, consumer studies, usage patterns, behavioral change, and on the debate about the voluntariness or mandatoriness of technology use.

## KEYWORDS

Mobile Services, Consumer Behavior, Innovation Adoption, Locus of Control, Technology Use, Behavioral Change, Structural Equation Modeling

## INTRODUCTION

The adoption and use of digital technologies remain topics of much interest and contemporaneity in academia (e.g., Abdelfattah et al., 2023; Alkhwaldi, 2023; Bravo & Ostos, 2023; Changchit et al., 2023; Nguyen, 2023; Qiu, 2023; Sabani et al., 2023). Mobile services—those relying on internet

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technologies and mobile devices to provide individuals and businesses with new communication channels and commercial opportunities—are among the technology-mediated services deserving attention in this regard, particularly since new features emerge continuously and users from different regions of the world hold different cultural and attitudinal archetypes (Changchit et al., 2023).

In the early 2000s, m-payment services, i.e., buyer–seller transactions of goods and services effected through mobile devices (Thakur & Srivastava, 2014; Mantri & Feng, 2011), emerged as a topic in the business and the academic communities, and multiple m-payment applications were soon made available in the global market (Dahlberg et al., 2008). M-payment was particularly revolutionary in Brazil, Russia, India, China, and South Africa (BRICS countries), which brings together the most important developing nations in terms of political and economic power (BBC, 2024). In China, for instance, m-payment progressed rapidly and ended up accounting for an increase in 42.3% of revenues in 2018 as compared to the previous year (Lu & Lu, 2020). India and Brazil have witnessed similar trends (The Economist, 2023; Kearns & Mathew, 2022). Not surprisingly, companies operating in the m-payment sector thus enjoy great prestige all over the world. One evidence comes from The South Summit (the self-defined “best global showcase for the world’s leading companies, startups, investors, and institutions that want to accelerate innovation, build lasting relationships, identify opportunities, and generate business”), in which two m-payment companies (Payflow and Uelz) won the 2022 and 2023 competitions for the best start-up business plans (The South Summit, 2022, 2023).

In the present study, m-payment is framed as a technological innovation, since it involves new modalities of payment that make it easier and more convenient for consumers and vendors to perform their financial transactions (Kaur et al., 2020). M-payment indeed conveys unique opportunities to trade goods and services regardless of place, time, and distance in a way that offers flexibility, familiarity, and convenience (Phonthanakitithaworn et al., 2016) by relying on a pool of technologies such as smartphones, near-field communication, and QR codes (Dahlberg et al., 2008). However, m-payment still faces adoption and use issues (Kaur et al., 2020). Innovation adoption takes place gradually, since several aspects need time and understanding to mature, including the very nature of the innovation, the characteristics of the potential adopters, and the process of communication, as described in Rogers’ (2003) innovation diffusion theory (IDT). Moreover, in the case of m-payment, its value depends on the number of consumers using it (Wang & Lai, 2020) and whether dealers/merchants accept it (Możdżyński & Cellary, 2022) and appropriate it (P. H., 2023).

Opportunities for scholarly research thus exist about the adoption of m-payment, particularly in regard to its stakeholders (P. H., 2023) and in developing countries (Changchit et al., 2023). Regarding the stakeholders of m-payment, we decided to study the relationship of consumers with the technological features (Dahlberg et al., 2008); regarding the regional context, we performed the study in the giant market base of the developing Brazilian economy during the COVID-19 pandemic. In Brazil, the *Fintech Report* (Distrito, 2023) revealed that the growth in the number of fintech startups contributed to the m-payment technological landscape (e.g., open banking, open finance, the PIX platform for banking transactions, and non-fungible tokens) that was revolutionary for the Brazilian economy since the COVID-19 pandemic. During the pandemic, increased levels of anxiety were reported due to fears of virus transmission through traditional commercial transactions, pushing people to adopt m-payment as part of the strategies for social distancing (Capgemini Research Institute, 2020; Alam et al., 2021). Research has indeed shown that the COVID-19 pandemic significantly impacted not only people’s physical health (Del Rio et al., 2020) and mental health (Serafini et al., 2020), but also their patterns of technology adoption (Soares et al., 2023).

The pandemic, therefore, represented an unparalleled opportunity to study m-payment services, as those services conveyed instrumental resources for the global community to fulfill safer social and commercial operations (Hijazi & Abudaabes, 2023). Considering that the pandemic has accelerated and changed forever the digital economy (UNCTAD, 2021; McKinsey & Company, 2020) and that people tend to preserve their routines (Kanter, 2012), we should expect that attitudes and behaviors

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