

TECHNOLOGY CONTINUATION OF ON-DEMAND PLATFORM USAGE AMONG E-HAILING DRIVERS IN MALAYSIA: A CONCEPTUAL FRAMEWORK INTEGRATING UTAUT AND RELIABILITY

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Abstract: *The emergence of e-hailing platforms such as Grab has transformed the nature of work by enabling digitally mediated, algorithm-driven labour markets. While substantial research has focused on customers' adoption of e-hailing services, limited attention has been given to drivers' post-adoption behaviour, particularly their intention to continue using such platforms. This paper develops a conceptual framework to explain technology continuation of on-demand platform usage among e-hailing drivers in Malaysia by integrating the Unified Theory of Acceptance and Use of Technology (UTAUT), and reliability as an e-service quality dimension. Drawing on prior literature, this study proposes that performance expectancy, effort expectancy, social influence, facilitating conditions and reliability play central roles in shaping drivers' continued usage intention. This conceptual paper contributes by extending existing technology continuance theories to the context of gig workers and provides a foundation for future empirical research.*

Keyword: *e-hailing, gig economy, continued usage intention, UTAUT, reliability*

Introduction

Digitally mediated platforms such as Grab, Uber, and Lyft represent a new generation of work arrangements where algorithms coordinate labour, allocate tasks, and determine compensation. These platforms have created significant income opportunities, particularly in developing economies such as Malaysia, where e-hailing has become an important source of livelihood for many individuals.

Sustainability of e-hailing platforms depends not only on customer demand but also on drivers' willingness to continue using the platform (Wang et al., 2025). Drivers who perceive the system as unfair, unreliable, or difficult to use may reduce their participation or abandon the platform altogether. Despite this importance, prior studies largely focus on customers' adoption and satisfaction, leaving a theoretical gap in understanding drivers' technology continuation behaviour.

This paper aims to address this gap by proposing a conceptual framework that explains continued usage intention among e-hailing drivers. By integrating UTAUT, and reliability (Lin et al., 2025), this study offers a comprehensive perspective on how cognitive, affective, and system-related factors jointly shape drivers' post-adoption behaviour.

Background of E-Hailing and Digitally Mediated Work

On-demand service platforms facilitate peer-to-peer transactions through mobile applications and cloud-based digital infrastructures. Within the e-hailing ecosystem, platforms perform multiple operational functions including real-time ride matching, dynamic pricing, automated payment processing, navigation support, and performance monitoring (Zhou et al., 2023). These algorithm-driven mechanisms enable operational efficiency, scalability, and service standardisation, while simultaneously offering flexible work arrangements to drivers. Such flexibility allows individuals to participate in platform-based labour with minimal entry barriers, contributing to the rapid growth of the gig economy.

However, digitally mediated work also introduces structural dependencies between drivers and platform systems. Drivers rely heavily on algorithmic decisions to access ride requests, determine income potential, and maintain service ratings. Previous research indicates that algorithmic management creates power asymmetry between platforms and workers, where opaque system rules and automated performance evaluations reduce drivers' control over work outcomes (Zhang & Zhengwei, 2025). Rating systems, in particular, play a central role in shaping drivers' reputations and future earning opportunities. Low or unfair ratings can limit job allocation, reduce incentive eligibility, and threaten account deactivation, thereby increasing economic uncertainty and psychological stress among drivers.

Furthermore, platform reliability and system transparency significantly influence drivers' trust and satisfaction (Handoyo, 2024). System errors such as inaccurate fare calculations, unstable applications, delayed payments, or GPS inaccuracies may directly affect income and work efficiency. When drivers perceive platform operations as unreliable or unfair, their confidence in the system diminishes, potentially reducing long-term engagement. Consequently, continued participation in e-hailing platforms is not solely determined by initial adoption motivations, but by ongoing evaluations of system performance, fairness, and perceived economic benefits. Understanding these dynamics is essential for explaining technology continuation behaviour within digitally mediated labour markets.

Theoretical Foundations

Unified Theory of Acceptance and Use of Technology (UTAUT)

UTAUT explains technology acceptance through four core constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003). Performance expectancy refers to the degree to which using a system enhances job performance, while effort expectancy relates to ease of use. Social influence reflects perceived social pressure to use the system, and facilitating conditions capture the availability of technical and organisational support.

UTAUT has been widely adopted in transportation, mobile services, and platform-based applications. However, its application to gig workers' continued usage behaviour remains limited. Moreover, most existing studies applying UTAUT focus primarily on initial adoption rather than post-adoption or continuance intention, creating a gap in understanding long-term usage behaviour among gig workers. This limitation restricts insights into factors that sustain engagement, loyalty, and platform dependency over time. Therefore, extending UTAUT to examine continued usage behaviour can provide more comprehensive theoretical and practical implications for platform sustainability and workforce retention.

Reliability as an E-Service Quality Dimension

Reliability refers to the ability of a system to perform consistently and accurately, including stable operation, correct fare calculation, and dependable payment processing (Andersson et al., 2024). In platform environments, reliability directly affects users' trust and satisfaction. For drivers, unreliable systems may lead to income loss and frustration, making reliability a critical determinant of continued usage.

Furthermore, high system reliability enhances perceived platform credibility and reduces operational uncertainty, which are essential for sustaining long-term engagement among gig workers. When drivers experience consistent system performance and error-free transactions, they are more likely to develop positive usage habits and psychological attachment to the platform (Khairani, 2024). Consequently, reliability not only functions as a technical quality attribute but also serves as a strategic factor that strengthens continuance intention and overall platform competitiveness.

Conceptual Framework

The proposed conceptual framework is grounded in the Unified Theory of Acceptance and Use of Technology (UTAUT), which explains technology usage behaviour through performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003). In the context of e-hailing platforms, this model is particularly relevant because drivers' continued participation depends on both system functionality and environmental support. By focusing on behavioural intention rather than post-adoption confirmation mechanisms, the framework directly captures drivers' ongoing decision-making processes within algorithmically mediated work environments, which are characterised by dynamic pricing, automated task allocation, and real-time performance monitoring.

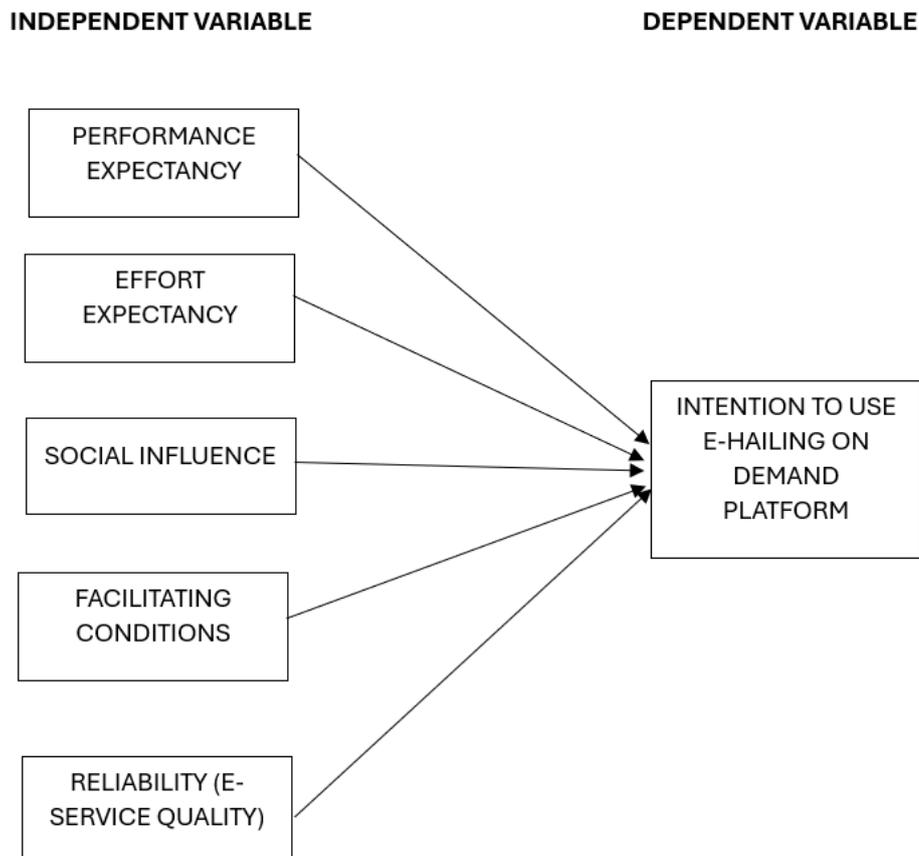


Figure 1: Conceptual Framework of Technology Continuation of On-Demand Platform Usage Among E-Hailing Drivers

The framework highlights both direct and indirect relationships. UTAUT variables mainly explain utilitarian and social drivers of intention. Reliability strengthens satisfaction by ensuring dependable system performance.

Performance expectancy and effort expectancy represent the core functional value drivers derive from platform usage. Performance expectancy reflects drivers' beliefs that using the platform enhances income generation, ride efficiency, and overall work productivity, which has been shown to be a critical determinant of sustained technology usage (Venkatesh et al., 2003). Meanwhile, effort expectancy refers to the perceived ease of using the application, including interface usability and operational simplicity. A user-friendly system reduces cognitive burden and operational errors, thereby increasing drivers' willingness to continue engaging with the platform over time (Adelusi, 2023).

Social influence and facilitating conditions capture the social and infrastructural dimensions of platform usage. Social influence reflects the extent to which peers, family members, and professional networks shape drivers' behavioural intentions, particularly during early participation stages (Venkatesh et al., 2003). Facilitating conditions represent the availability of technical support, stable internet connectivity, device compatibility, and platform assistance services. These conditions play an important role in enabling effective platform interaction and reducing operational barriers, thereby indirectly strengthening drivers' motivation to sustain long-term platform usage.

In addition to the original UTAUT constructs, the framework incorporates reliability as a core e-service quality dimension that directly influences drivers' intention to continue using e-hailing platforms. Reliability refers to the consistency, accuracy, and stability of system operations, including fare calculation, navigation performance, and payment processing (Mohajan, 2017). In gig work environments, system failures can result in immediate income loss and operational disruption, making reliability a critical determinant of perceived platform trustworthiness and economic security. By integrating reliability into the UTAUT-based framework, the model offers a more comprehensive explanation of sustained usage behaviour in digitally mediated labour platforms.

Expanded Theoretical Discussion

The integration of UTAUT and reliability as complementary theoretical perspectives offers a more comprehensive explanation of continued usage behaviour among gig workers in platform-based environments. While UTAUT primarily captures cognitive and social determinants of technology acceptance, such as perceived usefulness, ease of use, and social influence, it does not explicitly account for system performance quality (Auyeung et al., 2025). By incorporating reliability as an e-service quality dimension, the framework bridges this gap by linking behavioural intention with technical system performance, thereby strengthening the explanatory power of post-adoption technology usage models. This integration responds to growing scholarly calls for multi-theoretical approaches in platform economy research.

From a post-adoption perspective, continued usage behaviour differs conceptually from initial adoption, as it is influenced not only by expectations but also by accumulated user experiences. Gig workers continuously evaluate platform performance based on transaction accuracy, system stability, and payment reliability, which directly shape satisfaction and habit formation (Lang et al., 2023). UTAUT constructs such as performance expectancy and facilitating conditions become dynamic over time, as real-world usage feedback reinforces or weakens perceived benefits. Therefore, extending UTAUT into a continuance context allows researchers to capture the evolving nature of platform dependency and long-term engagement patterns among gig workers.

Reliability also plays a critical moderating and reinforcing role in the relationship between technological perceptions and behavioural outcomes (Handoyo, 2024). Even when performance expectancy and effort expectancy are high, persistent system errors or payment delays may undermine trust and discourage continued usage. In contrast, reliable system performance strengthens perceived platform credibility and reduces operational uncertainty, which is particularly important for gig workers whose income stability depends on digital platform functionality. This highlights reliability not merely as a technical attribute but as a behavioural catalyst that amplifies the effects of UTAUT constructs on continuance intention.

The expanded theoretical framework further contributes to platform economy literature by shifting the analytical focus from adoption-driven behaviour to sustainability-oriented engagement. By combining behavioural, social, and system-quality dimensions, the model provides a holistic explanation of workforce retention, platform loyalty, and long-term participation in gig work ecosystems. This perspective offers important implications for platform operators and policymakers, as it underscores the need for both user-centred interface design and robust technological infrastructure to sustain digital labour markets. Ultimately, the proposed integration advances theoretical understanding by positioning continued usage

behaviour as a multi-dimensional outcome shaped by cognitive evaluation, experiential feedback, and system reliability.

Theoretical Contributions

This conceptual paper contributes to the existing body of knowledge by extending the application of the Unified Theory of Acceptance and Use of Technology (UTAUT) into the gig economy and digitally mediated labour context. While UTAUT has been widely applied to explain initial technology adoption in consumer and organisational settings, its application to sustained usage behaviour among platform-based workers remains underexplored (Venkatesh et al., 2003). By repositioning e-hailing drivers as economically dependent technology users rather than conventional consumers, this study broadens the theoretical scope of UTAUT and demonstrates its relevance in explaining continued usage intention within income-generating digital work environments. This extension enriches technology continuance research by capturing the unique characteristics of gig work, including income dependency, algorithmic task allocation, performance-based evaluation systems, and platform-mediated labour control. In addition, this paper advances theoretical development by integrating system-quality considerations into the UTAUT framework through the explicit inclusion of reliability as a core explanatory construct. Reliability, conceptualised as an e-service quality dimension, reflects the stability, accuracy, and consistency of platform operations, including fare calculation, navigation functionality, and payment processing (Ighomereho et al., 2022). By embedding reliability within the behavioural intention framework, this study enhances the explanatory power of UTAUT in digitally mediated work settings, where technological failures directly affect workers' economic outcomes. This theoretical integration highlights the critical role of platform dependability and technological trustworthiness in sustaining long-term user engagement and provides a robust foundation for future empirical research across various on-demand service platforms.

Directions for Future Research

Future empirical studies should test the proposed framework using structural equation modelling or mixed-method approaches to validate the hypothesised relationships and examine the explanatory power of the integrated model. Additional constructs such as trust, transparency, perceived fairness, income stability, and algorithmic accountability may be incorporated to capture emerging issues in digitally mediated labour platforms. Longitudinal research designs are recommended to observe changes in drivers' perceptions and behavioural intentions over time, particularly in response to platform policy updates and regulatory interventions.

Conclusion

This paper proposes a comprehensive conceptual framework to explain technology continuation of on-demand platform usage among e-hailing drivers in Malaysia by integrating the Unified Theory of Acceptance and Use of Technology (UTAUT) and reliability as a key system-quality construct (Venkatesh et al., 2003). By shifting the analytical focus from initial adoption to sustained usage behaviour, the study addresses an important theoretical gap in platform-based service research. The proposed framework recognises drivers as economically dependent platform users whose continued participation is shaped by both technological performance and system quality perceptions, thereby offering a more realistic representation of digitally mediated work environments.

The integration of UTAUT with reliability enables the framework to capture both behavioural and operational determinants of continued usage intention. While UTAUT contributes performance-oriented, usability-related, and social influence constructs that are critical in income-driven platform work (Venkatesh et al., 2003), the inclusion of reliability strengthens the model by incorporating system stability and accuracy considerations that directly affect drivers' operational efficiency and income security (Abikoye et al., 2024). This combined perspective enhances the explanatory power of the framework by integrating functional value assessments with technology performance risks inherent in algorithmically managed platforms. Furthermore, the explicit incorporation of reliability extends existing technology continuation research by highlighting the operational vulnerabilities associated with digitally mediated labour systems. In environments where automated technologies govern work allocation, pricing mechanisms, and payment processes, system reliability plays a central role in shaping drivers' economic outcomes and perceived job stability (Howcroft & Taylor, 2022). By positioning reliability as a critical determinant of continued platform engagement, this study emphasises the importance of dependable digital infrastructure in sustaining workforce participation within the gig economy.

Overall, the proposed conceptual framework provides a strong theoretical foundation for future empirical investigation and practical application. Researchers may apply this model to examine causal relationships and explore moderating factors such as trust, transparency, and perceived fairness. From a managerial perspective, the findings suggest that platform operators should prioritise usability, system reliability, and driver experience management to enhance long-term platform sustainability. As on-demand platforms continue to expand across multiple industries, this framework can be adapted to investigate technology continuation behaviour in other digitally mediated labour markets, contributing to broader discussions on the future of work and digital platform governance.

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