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The Impact of Digital Payment and Accessibility on Passenger Satisfaction with Service Quality as an Intervening Variable

Steven Owen Purnawan[1*], Sigit Hermawan[1], Rita Ambarwati Sukmono[1], Zatul Karamah Ahmad Baharul Ulum[2], Tariq Tawfeeq Yousif Alabdullah[3]
1. Master of Management, Faculty of Law, Business and Social Sciences, Universitas Muhammadiyah Sidoarjo, Indonesia
2. Department of Information Technology, Faculty of Management and Information Technology, Sultan Azlan Shah University, Malaysia
3. Department of Accounting, Faculty of Management and Economics, University of Basrah, Iraq
*Corresponding author e-mail: steven.purnawan7@gmail.com

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Abstract

Purpose – This study aims to test the hypothesis that digital payment methods and accessibility positively affect passenger satisfaction, with service quality as an intervening variable in Trans Jatim.

Methodology – We uses SmartPLS to analyze data collected from 238 respondents who use Trans Jatim bus services. This study was conducted in two stages: first exploring primary variables, followed by an in-depth analysis of digital payment technology using the UTAUT2 method.

Findings – The results show that digital payment and accessibility have a positive effect on passenger satisfaction and service quality. Digital payment methods improve service quality and passenger satisfaction, while accessibility directly increases passenger satisfaction. In addition, service quality acts as an intervening variable between digital payment or accessibility and passenger satisfaction. While social influence does not have a significant impact on the use of digital payments.

Originality – Unlike previous studies that examined these factors in isolation, this research integrates them using the UTAUT2 model. Furthermore, this study offers practical insights for policymakers in improving urban mobility and transportation services by leveraging digital payment systems and enhancing accessibility. This dual focus on technological and service quality improvements provides a comprehensive framework for sustainable public transportation systems in emerging economies.

1. Introduction

Public transport is essential for the daily functioning of modern cities, and the Trans Jatim bus service, managed by the East Java Transportation Agency, is a prime example of this. The service, guided by the "CETTAR" philosophy, aims to create a fast, safe, comfortable, sustainable, and accessible integrated transport system. The Trans Jatim Corridor I bus, which began operating on August 20, 2022, connects cities and districts across East Java. The service emphasizes speed,

efficiency, transparency, safety, and responsiveness, with improvements in personnel performance, shelters, and bus facilities. The Trans Jatim model offers valuable insights into effective public transport management, contributing to the larger discourse on sustainable urban mobility. The Trans Jatim model underscores the importance of enhancing public transport in urban areas to meet growing demands and infrastructure needs.

Table 1. Number of Trans Jatim Bus Passengers Corridor 1

Month	Year	Number of Passengers	Passengers/Day	Load Factor (%)
August	2022	45.984	1.810	84.67
September	2022	106.881	4.136	86.13
October	2022	126.968	4.194	100.92
November	2022	119.356	3.428	116.06
December	2022	119.753	2.572	155.21
January	2023	107.368	2.868	124.78
February	2023	96.347	2.597	123.67
March	2023	22.424	556	134.38
Total		**754.081**	**22.161**	**115.73**

Source: processed data

According to data from Table 1 provided by the East Java Transportation Agency (Nur Aprianto, 2023), public enthusiasm for the Trans Jatim Bus Corridor I service on the Sidoarjo – Surabaya – Gresik route has begun to have an impact since the inauguration of the Trans Jatim Bus Corridor I service on the Sidoarjo – Surabaya – Gresik route in August 2022. Over the past eight months, the number of Trans Jatim bus passengers on corridor 1 (Sidoarjo-Surabaya-Gresik) has continued to increase until March 2023. Since its inauguration, an average of 745 thousand passengers have used the Trans Jatim Bus Corridor 1 service, with an average of 93 thousand passengers and 2,770 passengers per day .

The trend of increasing load factors, with a maximum potential of 155% in December 2022, indicates increased public interest in Trans Jatim (Figure 1). This highlights the need to focus on passenger satisfaction, which refers to travelers' perception of the perceived discrepancy between expectations and actual service performance. Passenger satisfaction in public transportation is influenced by the quality of service provided and the expectations of passengers (Sembiring et al., 2023). It is influenced by factors such as comfort, punctuality, and price. The East Java government has implemented aspects of comfort, security, equality, affordability, and regularity to enhance Trans Jatim passenger satisfaction, as per the Minister of Transportation Regulation Number 98 of 2013 (Menteri Perhubungan Republik Indonesia, 2013). Dissatisfaction arises when service performance falls short of expectations, while satisfaction arises when the service exceeds expectations (Lin, 2022). Therefore, the quality of service and customer expectations significantly impact passenger satisfaction in public transportation (Purnandika & Septiana, 2023).

Kobero & Swallehe (2022) highlight the importance of service quality in ensuring an organization meets or exceeds customer expectations. Service quality is measured by comparing customers' expectations before and after the service delivery process. High-quality service is considered high when customers perceive it meets or surpasses their expectations. Consistent service delivery across all interactions is crucial for service quality. Key aspects of service quality include reliability, responsiveness, competence, accessibility, and courtesy, as highlighted by Parasuraman et al. (1998) and Brady & Cronin (2001).

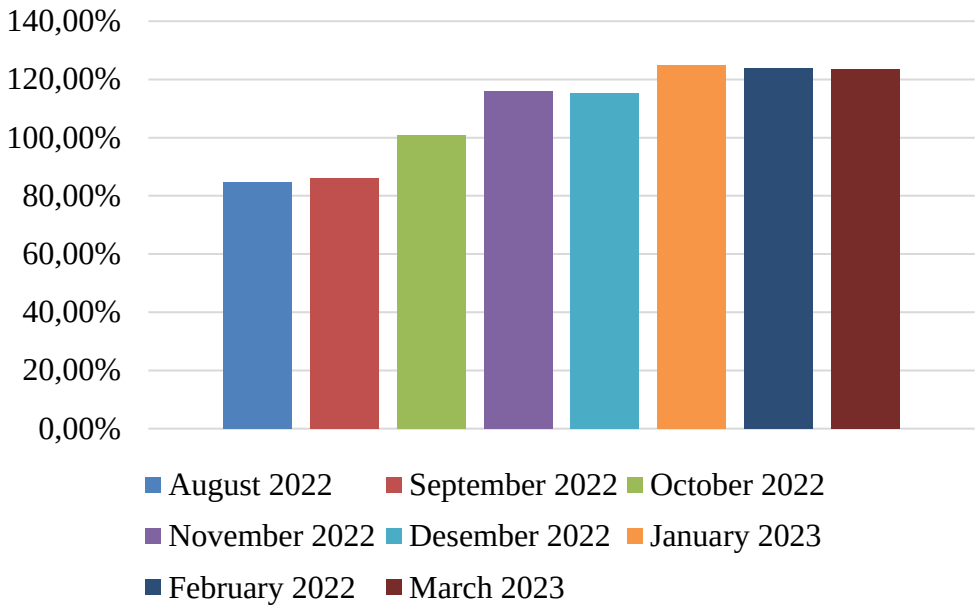

Figure 1. Passenger Load Factor for Trans Jatim Bus Corridor 1

Digital payment systems have undergone significant evolution and growth, driven by technological advancements and changing consumer behaviors. Digital payments have played a crucial role in promoting financial inclusion, particularly in developing countries. By providing access to banking services for previously underserved populations, digital payment systems have facilitated economic participation and growth (Mohd Ishar et al., 2024). The rise of mobile payment platforms and contactless technology has transformed the way consumers conduct transactions. This shift is evident in the growing number of users adopting mobile wallets (Anbukarasi & J, 2024).

Digital payment systems have revolutionized the transportation sector in East Java, enhancing passenger efficiency and comfort. Trans Semarang, a public transportation system, uses e-money solutions like TapCash and Brizzi, utilizing Near Field Communication (NFC) technology for quick and secure transactions (Az Zahra et al., 2023). However, the application of QR codes in Jaklingko (Jakarta Link O) has been criticized for higher risks of itinerary data leaks compared to international counterparts like Trainline (Tripradipta et al., 2024). Despite the positive impacts of digital payment systems in the transportation sector, there is a digital divide, with certain societal groups facing challenges in accessing and understanding digital payment systems, leading to uneven adoption. Addressing these challenges is crucial to ensure equitable access to digital payment technologies, particularly in developing regions.

Some studies have highlighted the significant growth in the adoption of digital payment systems in East Java, particularly among micro, small, and medium enterprises (MSMEs) and the service sector (see Rachman et al. (2023), Aziz (2023), Bachtiar et al. (2023), Sugiono & Nugraheni (2023). The QRIS system, which allows merchants to accept payments through a single QR code, has significantly enhanced transaction efficiency, particularly in urban areas where electronic data capture (EDC) machines are common. E-wallet usage has surged, with 92% of Indonesians using e-wallets in 2023, reflecting a broader acceptance of cashless transactions among younger demographics, particularly Gen Z and millennials.

Trans Jatim bus service, part of East Java's public transportation system, has made significant strides in incorporating digital payment solutions to enhance user experience and operational efficiency. Bank Jatim, a local bank in Indonesia, has played a significant role in

implementing digital payments in public bus transportation through cooperation with the East Java Transportation Agency. Trans Jatim service payments still accept all payment methods from any bank or e-wallet as long as they support payments using QRIS, EDC, or TapCard.

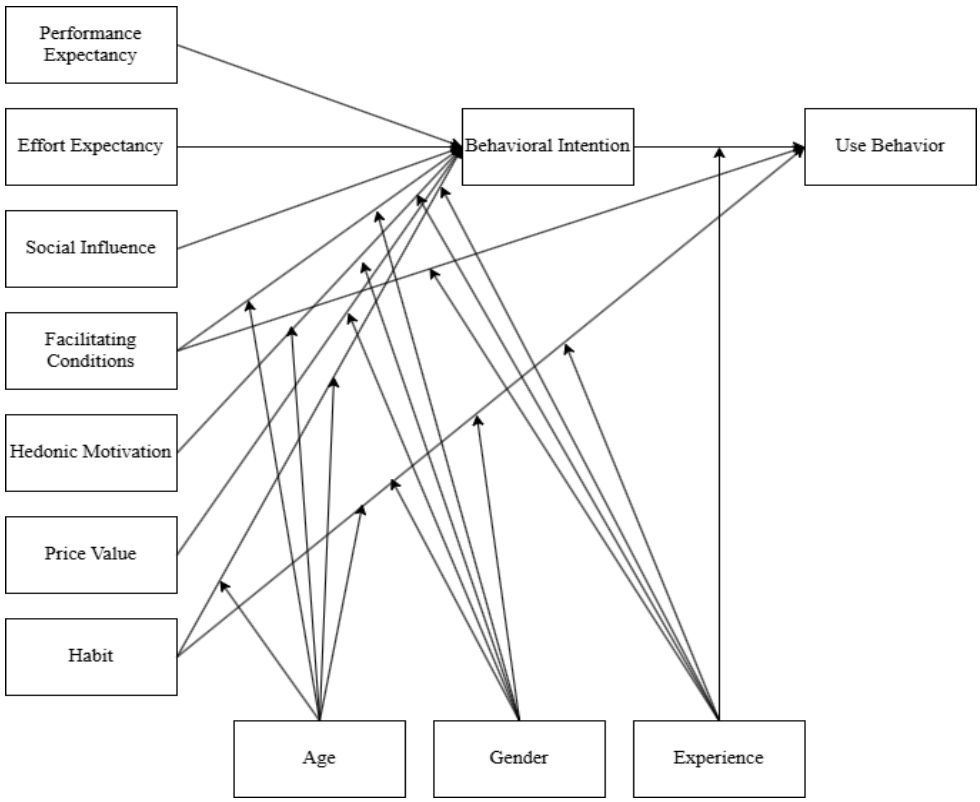

Figure 2. Unified Theory of Acceptance and Use of Technology 2 model

The Unified Theory of Acceptance and Use of Technology (UTAUT) is a comprehensive framework for studying digital payment adoption in Trans Jatim. It combines eight models to predict user acceptance and use of technology. The model identifies four key determinants of intention and use, including performance expectancy, effort expectancy, social influence, and facilitating conditions, and incorporates up to four relationship moderators like age, gender, experience, and voluntariness of use (Venkatesh et al., 2003). UTAUT was created to study technology adoption in consumer contexts. Its successor, UTAUT2, introduces three new constructs: hedonic motivation, price value, and habit. UTAUT2 focuses on specific consumer contexts and identifies predictors and mechanisms Venkatesh et al. (2012). Research by Anandia & Aisyah (2023) show that factors influencing mobile banking adoption, such as security, hedonic incentives, and supportive circumstances, influenced behavioral intention. This can be used to test the adoption of digital payment technology and payment effectiveness in Trans Jatim, using UTAUT2 to analyze digital payment adoption and effectiveness.

Accessibility transport refers to the creation and implementation of inclusive transportation systems, especially for individuals with disabilities or mobility challenges. Perceived accessibility is influenced by factors such as social drivers, safety perceptions, and service quality. A study on urban bus services identified critical factors like accessibility, safety, and fare structures. Addressing these can enhance user satisfaction and promote greater public transportation use. Sustainable transport investments foster economic development and ensure equitable access for all community members (Cho & Choi, 2021).

Research by Az Zahra et al. (2023) found that non-cash payment systems significantly improve service quality and user satisfaction in the Trans Semarang BRT service. However, Sonia et al. (2020) highlighted the need for increased public awareness of cashless payment options, convenient locations for passengers to top up their balances, and the impact of the Padang City Government's provisions on cashless payments, which led to a 10% decrease in passenger volume in 2019. Additionally, the quality of Trans Padang services must be considered. Research by Prawira & Pranitasari (2020) found that accessibility and service quality positively impact customer satisfaction. However, Komarruddin et al. (2023) found that customer satisfaction can mediate the influence of service quality and terminal accessibility on customer loyalty, but has no impact on passenger satisfaction or service quality. Both studies highlight the importance of accessibility and service quality in customer satisfaction.

This research integrates digital payments and accessibility within a single framework to analyze their combined effect on passenger satisfaction. It uses the UTAUT2 model, with service quality as an intervening variable. Focusing on Trans Jatim, a new public transportation system in East Java, the study offers insights into challenges and opportunities of adopting digital payment systems in developing regions. This study aims to fill gaps in understanding the relationships between passenger satisfaction, service quality, digital payment, and accessibility. It will examine digital payment, accessibility, passenger satisfaction, and service quality as primary variables, and consider secondary variables like performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit. The research model, illustrated in Figure 3, supports the development of hypotheses and illustrates the relationships between first-order variables.

Previous research shows that customer satisfaction has a significant positive impact on behavioral intention using digital payment (Simbolon & Heriyadi, 2022). In addition, research shows that the perceived usefulness and ease of use of digital wallets significantly influence the intention to use them (Marliana & Putri, 2021). Based on the research results, it can be concluded that the behavioral intention to use a digital payment system has a positive effect on passenger satisfaction (H_1). Previous studies of Grabcar users in Medan have highlighted the significant impact of accessibility on consumer satisfaction (Tobing & Wismart, 2022). Then previous research on public transport passengers revealed that accessibility, connectivity, and service quality are important factors in increasing passenger satisfaction, thereby encouraging passenger loyalty (Hidayatullah et al., 2020). The findings of this study indicate that passenger satisfaction is positively influenced by accessibility, leading to the hypothesis that accessibility has a positive impact on passenger satisfaction (H_2).

Previous studies have shown a significant effect of perceived service quality on behavioral intention to use digital wallets. This correlation is significant, given its potential implications for the level of e-wallet adoption by customers (Khan & Abideen, 2023). Furthermore, it is hypothesized (H_3) that behavioral intention to use digital payment has a positive impact on perceived service quality. Previous research shows that accessibility can significantly improve service quality. Research shows that perceptions of price, service quality, and accessibility can have a positive impact (Made Sri, 2019). Similarly, other studies have found that facilities, service quality, and accessibility contribute to positive outcomes (Tobing & Wismart, 2022). Therefore, it can be hypothesized that accessibility has a positive effect on service quality (H_4).

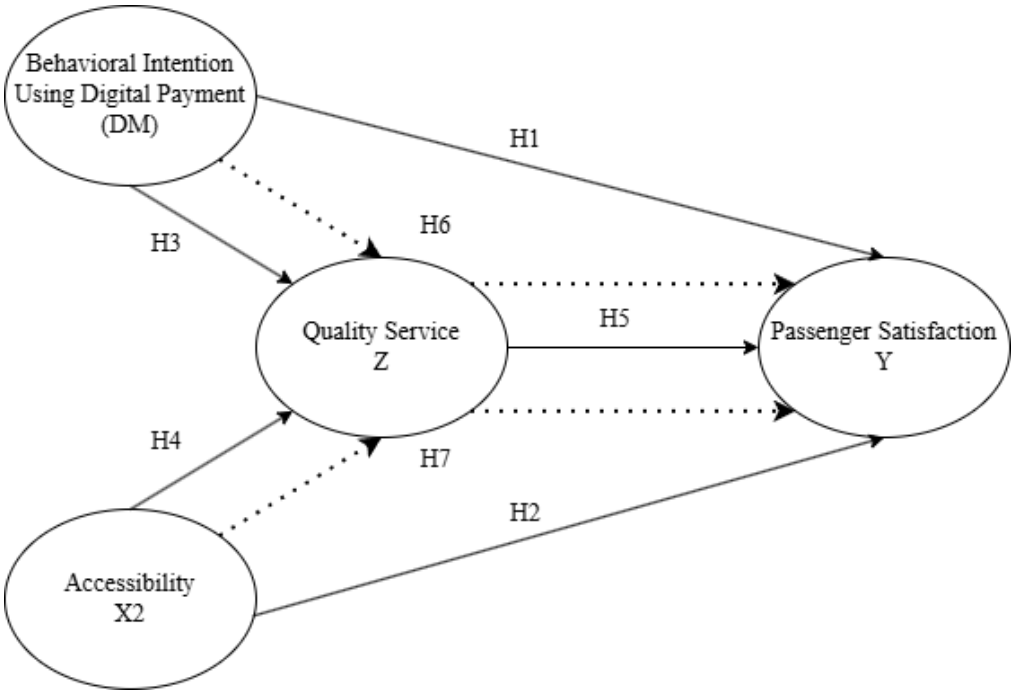

Figure 3. Research Model

The findings of the comprehensive analysis establish a positive correlation between passenger satisfaction and service quality. This indicates that service quality has a positive effect on passenger satisfaction (Nurwani et al., 2023). This relationship is shown in the hypothesis (H_5) that service quality has a positive impact on passenger satisfaction. Previous research that behavioral intentions derived from high service quality can affect passenger satisfaction. Mulyati et al. (2023) have identified various factors that influence user behavioral intentions, such as habits, enabling circumstances, hedonic incentives, performance expectations, and social impacts (Mulyati et al., 2023). In addition, advances in information technology have been shown to influence individuals' behavioral intentions when using digital payment services (Harahap et al., 2023). Therefore, it is hypothesised that (H_6) behavioral intention to use digital payments has a positive impact on passenger satisfaction through service quality.

Previous studies have shown that accessibility is crucial in enhancing passenger satisfaction through service quality. This study reveals that accessibility and quality of services and facilities have a significant impact on customer satisfaction. In particular, this study highlights the importance of improving accessibility by ensuring easy access to transportation or locations and providing high-quality services and facilities. This insight is supported by previous studies conducted by Tobing & Wismart (2022) and Prawira & Pranitasari (2020). Thus, there is a positive correlation between accessibility and passenger satisfaction through service quality (H_7).

This research contributes to the literature on the impact of digital payment usage by integrating key variables such as digital payment usage, accessibility, service quality, and passenger satisfaction into a single framework, offering a more comprehensive analysis than prior studies that often examine these factors in isolation. By focusing on the Trans Jatim public transportation system in East Java, Indonesia, the study provides context-specific insights into the challenges and opportunities of digital payment adoption in developing regions, where accessibility and equitable usage remain significant concerns. Furthermore, the research employs the UTAUT2 model, enhancing the understanding of user behavior by analyzing the relationships between technological acceptance, service quality, and passenger satisfaction. This multifaceted

approach fills existing gaps in the literature and offers practical recommendations for improving public transportation systems through digital payment integration and enhanced service quality.

2. Research Methods

The research using quantitative research to study a particular population or sample based on a positivist ideology. Research tools are used to collect data, which are then analyzed statistically to evaluate previously established ideas (Hermawan & Amirullah, 2016). This study will conduct quantitative data analysis to assess the hypothesis developed after the data collection process through the distribution of questionnaires.

Table 2. Operational Variables

Research Variables	Dimensions/Indicators	Source
Performance Expectancy (PE)	Perceived usefulness Extrinsic motivation Job-fit Relative advantage	(Venkatesh et al., 2012)
Effort Expectancy (EE)	Perceived ease of use Complexity Ease of use	(Venkatesh et al., 2012)
Social Influence (SI)	Subjective norm Social factor Image	(Venkatesh et al., 2012)
Facilitating Conditions (FC)	Perceived behavioral control Facilitating conditions Compatibility	(Venkatesh et al., 2012)
Hedonic Motivation (HM)	Fun Entertaint Interest	(Venkatesh et al., 2012)
Price Value (PV)	Quality Price Value	(Venkatesh et al., 2012)
Habit (H)	Prior use Addiction Behavior to be automatic	(Venkatesh et al., 2012)
Behavioral Intention Using Digital Payment (DP) (X_1)	Repurchase intentions Positive word-of-mouth communication Service quality	(Venkatesh et al., 2012)
Accessibility (X_2)	Distance Access to location Transportation Traffic flow	(Tjiptono, 2014)
Passenger Satisfaction (Y)	Conformity to expectations Interest in Reusing Willingness to recommend	(Ananta & Albanna, 2022)
Quality of Service (Z)	Tangibles Realibility Responssiveness Assurance Emphaty	(Kotler & Keller, 2016)

Source: processed data

We use questionnaires to collect data, where participants are given a series of questions or written statements to fill out. Thus, the questionnaire serves as a tool to measure an event or incident and consists of a list of questions used to collect data for the research project (Dewi & Sudaryanto, 2020). Operational variables are theoretical explanations of variables used to observe and examine research variables. They are attributes, characteristics, or values of an object or activity that have certain variations that researchers have determined to be studied and then conclusions drawn. Operational variables help determine the data collection tools and analysis techniques used in the study. Therefore, this study requires the definition of operational variables. This study used non-probability sampling, also called accidental sampling, to select available respondents in the relevant area (Hariputra et al., 2022).

Primary and secondary data sources were used to collect information. Primary data were collected through detailed questionnaires given to individuals using Trans Jatim buses on the Corridor I route in Sidoarjo, Surabaya, and Gresik districts. On the other hand, secondary data were obtained from various sources related to the research such as books, journals, and scientific publications available online. For this calculation, the Krejcie-Morgan formula is used, which is commonly applied in the process of calculating populations and samples. This statistical approach allows the determination of sample size with a 95% reliability level, which ensures that the sample accurately represents the population. The Krejcie-Morgan formula is highly regarded for its ability to calculate population ratios and was first introduced by Krejcie and Morgan in 1970. Based on recent research by Uakarn et al. (2021), this formula has been widely used since its inception (Uakarn et al., 2021).

This study analyzed a sample of 237.40 respondents rounded up to 238 respondents who used the Trans Jatim bus in Corridor I in the Sidoarjo, Surabaya, and Gresik areas. Using the Krejcie-Morgan formula, data and calculations show that the average number of passengers on the bus route from August 2022 to March 2023 is 2770 passengers/day, with a margin of error of 5%, a proportion value of 0.5, and a confidence level of 95%. This study uses statistical data analysis, reliability testing, and validity testing as data analysis methods. The SEM-PLS technique used is SmartPLS which is a combination of partial least square (PLS) and structural equality modeling (SEM).

3. Results and Discussions

After surveying 238 Trans Jatim passengers, it was discovered that 53.55% of respondents were male and 46.45% were female. On average, their ages ranged from 18 to 50, and they had been utilizing digital payments for Trans Jatim services for approximately two years. Table 3 showcases the outcomes generated by SmartPLS for each construct indicator, while Table 4 displays the results of the discriminant validity examination comparing correlations between variables with AVE roots.

This was supported by the Fornell Larcker Criterion method, which measured the variation of a construct component collected from its indicators based on the degree of error. Following this, the construct proved to have solid and consistent reliability. Composite reliability and Cronbach's alpha tests were conducted to ensure no measurement-related issues displayed in Table 3.

Table 3. Convergent Validity, AVE Test, Composite Reliability and Cronbach's Alpha Result

Construct-Items	Loading	AVE	Cronbach's Alpha
Behavioral intention using digital payment	0.934		
	0.921	0.883	0.921
	0.931		
Accessibility	0.922		
	0.849		0.922
	0.918	0.81	
	0.91		
Passenger satisfaction	0.898		
	0.891	0.787	0.865
	0.872		
Service quality	0.907		
	0.872		
	0.905	0.819	0.945
	0.933		
	0.906		
Effort expectancy	0.879		
	0.908	0.812	0.884
	0.917		
Facilitating conditions	0.922		
	0.936	0.854	0.914
	0.914		
Habit	0.939		
	0.907	0.869	0.925
	0.951		
Hedonic motivation	0.955		
	0.945	0.906	0.948
	0.955		
Performance expectancy	0.936		
	0.842	0.792	0.912
	0.934		
	0.844		
Price value	0.957		
	0.936	0.895	0.941
	0.943		
Social influence	0.924		
	0.924	0.844	0.908
	0.909		

Source: processed data

Table 4 presents the discriminant validity test results using the Fornell-Larcker Criterion, which compares the square root of Average Variance Extracted (AVE) for each construct with the correlation between them. The diagonal values represent the variance captured by the construct's indicators. For instance, Behavioral Intention Using Digital Payment (DP) explains 92.9% of the variance in its indicators. The table shows that all diagonal values are higher than the corresponding off-diagonal correlations, indicating that the constructs are sufficiently distinct from each other. For instance, Behavioral Intention Using Digital Payment (DP) has a correlation of

0.452 with Accessibility (AK), but the square root of the AVE for DP (0.929) is higher than this correlation, demonstrating that the constructs are discriminately valid.

Table 4. Discriminant Validity Test Results (Fornell Larcker Criterion)

	AK (X_2)	DP (X_1)	EE	FC	H	HM	KP (Y)	KPE (Z)	PE	PV	SI
Accessibility	0.9										
Behavioral intention using digital payment	0.452	0.929									
Effort expectancy	0.458	0.815	0.901								
Facilitating conditions	0.525	0.881	0.804	0.924							
Habit	0.425	0.819	0.688	0.812	0.932						
Hedonic motivation	0.191	0.595	0.496	0.569	0.52	0.952					
Passenger satisfaction	0.803	0.515	0.409	0.524	0.495	0.239	0.887				
Service quality	0.634	0.439	0.331	0.51	0.497	0.212	0.7	0.905			
Performance expectancy	0.543	0.766	0.802	0.733	0.648	0.414	0.438	0.273	0.89		
Price value	0.502	0.856	0.751	0.892	0.807	0.553	0.551	0.538	0.675	0.946	
Social influence	0.426	0.759	0.76	0.801	0.671	0.616	0.422	0.411	0.671	0.766	0.919

Source: proceed data

Based on the results of hypothesis testing, the bootstrapping process can be evaluated by examining the parameter coefficient values and significant t-statistic values provided in the bootstrapping report algorithm. Table 5 displays these results, comparing the t-table value with the t-count (t-statistic) to determine its significance at alpha 0.05 (5%) = 1.96. The analysis reveals an overall significant favorable influence, except for the Social Influence (SI) variable, which shows no considerable impact on the Digital Payment (DP) variable with a T value of 0.551 and p-value of 0.582. Furthermore, Table 6 illustrates a significant positive indirect effect of the variables Digital Payment (DP) and Accessibility (X_2) on Passenger Satisfaction (Y) through the Service Quality variable (Z). Figure 5 showcases the bootstrapping results.

The path diagram in Figure 5 illustrates the relationships between constructs in a structural equation model (SEM), illustrating the connections between latent variables and their corresponding indicators. The latent variables include Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Hedonic Motivation (HM), Price Value (PV), Habit (H), Behavioral Intention Using Digital Payment (DP), Service Quality (SQ), Passenger Satisfaction (PS), and Accessibility (X). Each variable is indicated by corresponding observed variables.

Table 6 shows a positive relationship between constructs and their effects on passenger satisfaction, with accessibility showing minimal variability. The sample mean is stable, and the t-statistic is above the 1.96 threshold. The P values confirm the significance of the effects, with Accessibility having a p-value of 0.000 and behavioral intention using digital payment having a p-value of 0.006, both below the 0.05 threshold.

Table 5. Hypothesis Testing Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	t-Statistics (|O/STDEV|)	P Values
Accessibility => passenger satisfaction	0.561	0.563	0.045	12.379	0.000
Accessibility => service quality	0.547	0.544	0.057	9.549	0.000
behavioral intention using digital Payment => passenger satisfaction	0.137	0.139	0.046	2.970	0.003
behavioral intention using digital Payment => service quality	0.192	0.194	0.054	3.547	0.000
effort expectancy => behavioral Intention using digital payment	0.166	0.158	0.058	2.862	0.004
facilitating conditions => behavioral intention using digital payment	0.254	0.238	0.081	3.133	0.002
Habit => behavioral intention using digital payment	0.198	0.227	0.092	2.154	0.032
Hedonic motivation => behavioral intention using digital payment	0.107	0.109	0.039	2.740	0.006
Service quality => passenger satisfaction	0.285	0.281	0.045	6.300	0.000
Performance expectancy => behavioral intention using digital payment	0.159	0.160	0.058	2.731	0.007
Price value => behavioral intention using digital payment	0.202	0.188	0.091	2.219	0.027
Social influence => behavioral intention using digital payment	-0.031	-0.028	0.055	0.551	0.582

Source: processed data

Figure 5 shows path coefficients, indicating the strength of relationships between constructs. For instance, the path from Behavioral Intention Using Digital Payment (DP) to Service Quality (SQ) has a coefficient of 3.547, while the path from Service Quality (SQ) to Passenger Satisfaction (PS) has a coefficient of 6.300. The R-squared values for latent variables reflect the model's explanatory power. For instance, the R^2 value for Behavioral Intention Using Digital Payment (DP) is 76.057, indicating that the independent variables explain a significant portion of the variance.

Table 6. Indirect Effect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	t-Statistics (|O/STDEV|)	P Values
Accessibility => passenger satisfaction	0.156	0.153	0.028	5.547	0.000
Behavioral intention using digital Payment => passenger satisfaction	0.055	0.055	0.020	2.766	0.006

Source: processed data

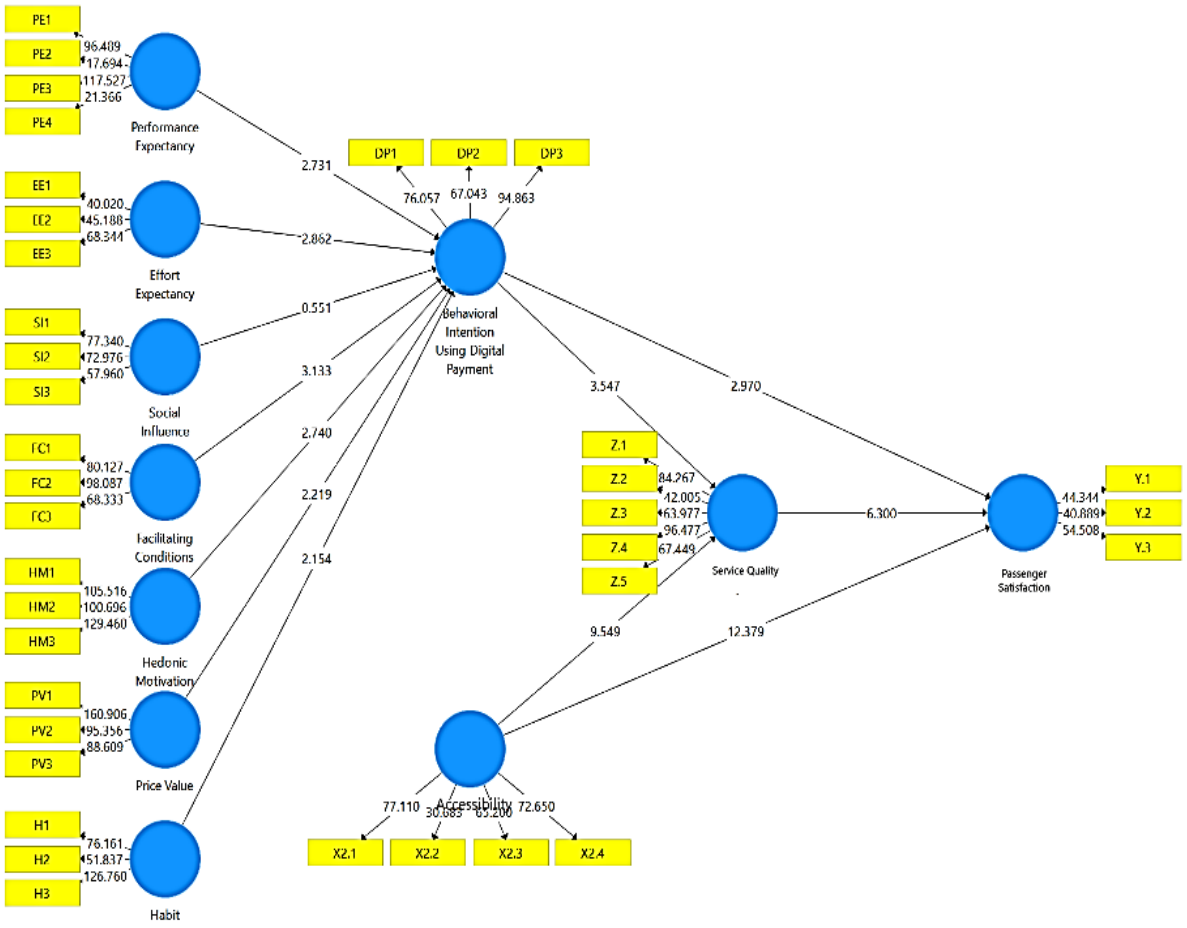

Figure 5. Bootstrapping Test Results

UTAUT2 is a framework that examines how people adopt and use technology. It considers factors such as perceived effort, social norms, performance expectations, and utility and ease. However, studies using the UTAUT2 model show that social influence has little impact on the adoption of digital payments. The study investigated factors like performance and effort expectancy, and social impact, but found that social influence is not very significant in determining a person's tendency to use digital payments. Instead, effort and performance expectancy may have a more significant role.

Social influence does not affect the use of digital payments, supported by several previous studies such as Aydin & Burnaz (2016) effect of social influence was found to be insignificant among the users. The Results Showed that attitude toward OVO (digital payment app) was influenced by self-efficacy and individual mobility but not influenced by social influences (Alfany et al., 2019). Previous study from Kurniasari et al. (2022) that social influence and facilitating condition did not have a direct influence on customer trust. Uncertainty avoidance, masculinity and long-term orientation also did not have a strengthening effect of social influence in gaining trust. However, previous study from Vivien et al. (2024) it was found that social influence has a positive correlation with the use of mobile payments. The study found that social influence is not a significant factor affecting mobile payment app use, and its impact is often overshadowed by perceived ease of use and usefulness. This suggests the need for further empirical research to understand the complex dynamics in different contexts and populations, as social influence can promote digital payment adoption.

The process of initiating fund transfers through electronic payment instruments involves digital technology. This results in the creation and exchange of digital information that represents the monetary value transferred. Case study of Medan, Muzakki found that the wide availability of these options greatly influenced Muzakki's decision to adopt digital payments (Ritonga et al., 2023). With the increasing popularity of digital payment platforms such as Go-pay, ShopeePay, OVO, Dana, and Link Aja, more people now have the means to access and use them, as noted in Septiana's study (2022). The Trans Jatim case study further supports the idea that digital payments have become more accessible (Septiana, 2022).

Increasing user satisfaction can be done through the use of non-cash payments or Tap On Bus (TOB) technology by bus users. Research by Intan Az Zahra et al. (2023) found that user satisfaction with non-cash payment methods has a positive impact on Trans Semarang bus rapid transit (BRT) services in Semarang (Az Zahra et al., 2023). Compared with willingness to pay (WTP), the public considers ability to pay (ATP) to have a more significant influence on passenger interest in bus services (Setiawan et al., 2025). Cashless payment systems enhance customer satisfaction, leading to improved service and increased interest in public transport options, with evidence indicating positive satisfaction with digital payments.

The use of non-cash payment methods has had a significant positive impact on digital payments and government bus services (Bus Rapid Transit, or BRT) in Semarang City. To streamline the payment process and eliminate the need for cash payments and waiting for change on the bus, the government introduced a digital payment system that utilizes Near Field Communication (NFC) technology (L. Tobing et al., 2023). The use of digital payment methods and high-quality government bus services in Semarang City have enhanced public transportation satisfaction and performance. The Trans Jatim case study underscores the importance of continuous improvement in worker welfare and performance, as BRT staff interact directly with the public.

Many factors influence the accessibility and satisfaction level of government bus passengers, such as easy access to public transportation, safety measures, comfortable waiting areas, minimal waiting time, clear bus route information, easy-to-use payment options, and intelligent transportation systems (Ginting, 2022). The government can enhance passenger satisfaction by prioritizing elements such as accessible and safe transportation infrastructure, comfortable waiting areas, transparent scheduling, efficient payment procedures, and advanced technology, as demonstrated in the Trans Jatim case study, emphasizing the importance of these factors in public transportation planning.

Accessibility and quality of bus services are crucial considerations that determine passengers' choice to use public transportation. The quality of services provided can have a negative impact on passengers' decisions to use Transjogja bus services (Masnain, 2019). Therefore, the Trans Jatim study highlights the importance of accessibility and service quality in passenger satisfaction. According to Ginting (2022), customer satisfaction with bus services is influenced by ease of access to public transportation, a safe environment, efficient payment methods, and comfortable stops. Other research on public transportation providers also shows that service quality has a significant and positive impact on customer satisfaction and loyalty (Pangaribuan & Yenita, 2023). Trans Jatim case study shows that digital payments increase passenger satisfaction by improving service quality.

Research conducted by Transjakarta shows that service quality plays an important role in determining customer satisfaction. Availability of information, waiting time, service availability, and facility availability are indicators of service quality (Cahyani et al., 2022). By evaluating the consistency between service performance and passenger expectations, it can determine the

accessibility and satisfaction of government bus services. Previous studies have found that passengers consider Surabaya city bus services to be of high quality. However, there is a difference between the fares charged by buses and those set by the government (Mahardi et al., 2019). Therefore, accessibility is very important to maintain passenger satisfaction through high-quality services, as shown by the Trans Jatim case study.

4. Conclusions

This study concludes that the adoption of digital payment systems in Trans Jatim public transportation services enhances passenger satisfaction by facilitating convenient transactions, reducing cash dependency, and improving overall accessibility. Cashless payments streamline boarding processes and save time, while accessibility and service quality such as safety, cleanliness, punctuality, and staff courtesy play a vital role in improving the passenger experience. Although the UTAUT2 model indicates that social influence does not significantly affect digital payment adoption, other factors like performance expectancy and ease of use remain influential. The study recommends improving infrastructure, adopting user-friendly technologies such as QR codes and contactless cards, and providing staff training to maintain high service standards. The geographical limitations of this study highlight the need for future research across broader regions and greater attention to the needs of individuals with disabilities to provide a more comprehensive understanding of the factors influencing passenger satisfaction.

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