

The Effect of Satisfaction on Switching Intention Public Transportation Users Among Bekasi ASN

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ABSTRACT

Dependence on private vehicles remains a major challenge for public transportation development in the Bekasi metropolitan area. This study examines the associations between five perceived service-quality dimensions; tangible, reliability, assurance, responsiveness, and empathy and user satisfaction, as well as the association between satisfaction and intention to increase public-transport use among State Civil Apparatus (ASN) in Bekasi. An explanatory quantitative design using Partial Least Squares Structural Equation Modeling (PLS-SEM) was applied. Data were collected through a five-point Likert-scale questionnaire from 374 ASN in Bekasi City and Bekasi Regency selected using purposive, non-probability sampling. All respondents had experience using public transportation and evaluated the mode they used most frequently. Because only 135 respondents (36.1%) used private vehicles as their primary commuting mode, the outcome was interpreted as intention to increase public-transport use and reduce private-vehicle dependence, rather than a literal switching decision. The results show that tangible, reliability, assurance, responsiveness, and empathy were positively and significantly associated with user satisfaction. Tangible demonstrated the strongest association with satisfaction ($\beta = 0.482$; $p < 0.001$). Satisfaction was also positively and significantly associated with intended public-transport use ($\beta = 0.551$; $p < 0.001$). The model explained 67.3% of the variance in satisfaction and 30.4% of the variance in intention. Bootstrapping results revealed significant specific indirect associations of assurance, reliability, responsiveness, and tangible with intended use through satisfaction, whereas empathy's indirect association was not significant ($p = 0.058$). These findings suggest that perceived service quality and satisfaction are important factors associated with ASN's intention to use public transportation. However, the results do not establish causal relationships due to the cross-sectional design, self-reported data, heterogeneous commuting modes, and purposive sampling. Future studies should employ probability sampling, longitudinal designs, and objective travel-behavior data to evaluate actual changes in public-transport use.

Keywords: Service Quality, User Satisfaction, Intended Public-Transport Use, Public Transportation, ASN, PLS-SEM.

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INTRODUCTION

Public transportation is an important component in supporting efficient and sustainable urban mobility. The growth of metropolitan areas is driving an increase in daily commuting, congestion, and dependence on private vehicles. This condition is also a challenge for Bekasi City and Bekasi Regency as part of the Greater Jakarta metropolitan area, which has high mobility intensity [1]. The government has developed various modes of public transportation, such as the KRL Commuter Line, Trans Patriot, Jabodebek LRT, and intercity buses. However, the availability of these modes has not automatically encouraged residents to abandon private vehicles; the success of public transport is determined not only by infrastructure, but also by user experience and satisfaction.

ASN (State Civil Apparatus) is a strategic group to study because of their regular commuting pattern, fixed working hours, and workplace-based mobility needs. Beyond routine trip-making, ASN commuting is also shaped by institution-specific factors that make it distinct from the general commuting population: fixed office schedules that concentrate demand at predictable peak times, workplace parking policy and availability, employer travel or transport

allowances, and, in some agencies, organized mobility or carpooling programs. These institutional levers give local government and human-resource management a more direct means of influencing ASN travel behavior than is available for the general public, which is the substantive rationale for focusing this study on ASN rather than commuters in general. In Bekasi City, there were 19,176 ASN as of December 2025, while Bekasi Regency had approximately 22,412 ASN in 2025. This large population indicates potential for routine trips that could be directed toward public transportation if services are able to meet user needs.

Empirically, the relationship between service quality, satisfaction, and behavioral intention has been extensively studied. Research [1] found that satisfaction acts as a mediator between service quality and behavioral intentions of public transport users in five European cities. Study [2] shows that among private vehicle users in Madrid and Lisbon, satisfaction acts as a full mediator between service quality and behavioral intentions, so that increased satisfaction is an important mechanism for attracting private vehicle users to public transport [2], [3], [4].

Study [3] also found differences in perceptions of service quality, satisfaction, and attitudes between public transport users and private vehicle users in Madrid, suggesting that proximity of access, intermodality, time and cost savings, and lifestyle can influence user perception and behavioral intent. Meanwhile, [4] indicates that social experience in public transportation is related to word of mouth (WOM) and intention to continue using the service, and [5] shows that user perception and experience help explain bus-passenger behavior through the integration of Social Exchange Theory and the Theory of Planned Behavior [5], [6]. The study closest to the present one was conducted by [6] in Kuala Lumpur: with 421 respondents and the SmartPLS method, that study showed that service quality affects satisfaction, while satisfaction has a positive effect on switching intention and WOM, placing satisfaction as a mechanism linking service quality with the intention to move from private vehicles to public transportation.

However, studies that specifically test the association between satisfaction and intended public-transport use among civil servants in Indonesia particularly Bekasi City and Regency remain limited; prior research has focused more on the general public or public-transport users in European and Asian cities [7], [8]. This study seeks to fill that gap by analyzing the association between user satisfaction and ASN's intention to increase public-transport use in Bekasi. The study is intended as an empirical contribution documenting associations relevant to public-transportation service strategy; given its cross-sectional, non-experimental design, it does not itself test or demonstrate an intervention capable of changing travel behavior, a limitation discussed further below.

Beyond geographic novelty, the contribution of this study is to test whether the satisfaction-mediated service-quality framework validated by [2] and [6] in other national and urban contexts holds, as an association pattern, among a specific institutional population salaried civil servants with fixed commuting schedules in a large but understudied Indonesian metropolitan-fringe context (Bekasi), and to report that pattern with explicit attention to the behavioral heterogeneity (mixed current modes, mixed evaluated services) present in the sample.

Accordingly, this study addresses the following research questions: (RQ1) Are the five service-quality dimensions (tangible, reliability, assurance, responsiveness, empathy) each associated with user satisfaction among ASN in Bekasi? (RQ2) Is user satisfaction associated with ASN's intention to increase public-transport use and reduce private-vehicle dependence? (RQ3) Are the service-quality dimensions associated with intended public-transport use indirectly, through satisfaction, and does this association pattern differ appreciably across the five dimensions?

Based on this framework, this study formulates eleven hypotheses in total: six hypotheses on the direct associations between the five service-quality dimensions and satisfaction and between satisfaction and intended use (H1–H6), and five hypotheses on the specific indirect association of each service-quality dimension with intended use through satisfaction (H7–H11). All eleven hypotheses are stated together here; their theoretical rationale is developed dimension-by-dimension.

MATERIAL AND METHOD

Research Design

This study uses a quantitative approach with explanatory research [7] to test the influence of the dimension of the quality of public transportation services on satisfaction and subsequently the effect of satisfaction on the intention to move ASN in Bekasi. The research model consists of five dimensions of service quality, namely tangible, reliability, assurance, responsiveness, and empathy as exogenous variables, satisfaction as mediator variables, and switching intention as final endogenous variables.

The selection of the model is based on the paradigm of service quality–satisfaction–behavioral intention. Research [2] It shows that service quality and satisfaction are important components in explaining the intention of private vehicle

users to increase the use of public transportation. The study used the Structural Equation Modeling approach on private vehicle users in five European metropolitan areas and showed the relationship between service quality, satisfaction, and behavioral intent towards public transport [9], [10].

More specifically, [6] test the relationship between service quality, satisfaction, and switching intention in public transportation users in Kuala Lumpur. Using 421 respondents and SmartPLS, the study found that satisfaction had a strong effect on switching intention, while several dimensions of service quality had an effect on switching intention through satisfaction [11], [12].

Based on this framework, this study tested six main hypotheses:

H1 : Tangible has a positive effect on satisfaction.

H2 : Reliability has a positive effect on satisfaction.

H3 : Assurance has a positive effect on satisfaction.

H4 : Responsiveness has a positive effect on satisfaction.

H5 : Empathy has a positive effect on satisfaction.

H6 : Satisfaction has a positive effect on switching intention.

Population and Sampling

The population of this study is State Civil Apparatus (ASN) who work in Bekasi City and Bekasi Regency and have experience using public transportation [13], [14], [15]. ASN were selected as the study population because their relatively routine commuting pattern gives them adequate experience to evaluate public-transportation service quality and to assess their own tendency to change travel-mode choices.

The sampling technique used purposive, non-probability sampling with the following criteria: (1) active ASN working in Bekasi; (2) at least 18 years old; (3) had used public transportation; and (4) had used a private vehicle as an alternative mode of travel [16], [17], [18]. Because the sample was drawn purposively rather than through probability sampling, and because the eligibility criteria did not require public transportation to be the respondent's current main commuting mode, the sample is not representative of either the full ASN population or of current private-vehicle users specifically; generalization of the findings beyond the sampled respondents should be made cautiously, and this constraint is treated as a limitation throughout the manuscript rather than only in the Conclusion.

In this study, the outcome construct intended public-transport use was defined as respondents' tendency to increase their use of public transportation and reduce dependence on private vehicles. As noted in Section 1.2, this definition intentionally spans two behaviorally distinct groups: respondents whose main commuting mode is currently a private vehicle, for whom the construct approximates a literal switching intention; and respondents who already commute mainly by public transport, for whom the construct approximates a continuance or increased-use intention. The model in this study does not statistically distinguish between these two groups (e.g., through multigroup analysis or an interaction term for current mode), so reported path coefficients should be read as an average association across a behaviorally heterogeneous sample. Multigroup or subgroup estimation by current main mode is recommended as a priority for future analysis of this dataset.

Data collection yielded 374 respondents who met the study criteria and were used as the final sample for PLS-SEM analysis.

Only 135 of the 374 respondents (36.1%) reported a private vehicle as their current main commuting mode (Table 1); the remaining 239 respondents (63.9%) were already using some form of public or online transportation as their main mode. This distribution means that, strictly speaking, a literal 'switching from private vehicles' interpretation of the results applies to well under half of the sample; the remaining majority's intention scores are better read as continuance/increased-use intentions, as discussed in Section 1.2. This point qualifies the study title, abstract, and conclusions throughout this revision.

Respondent characteristics by gender showed that 224 respondents (59.9%) were male and 150 (40.1%) were female. By age, most respondents were 20–30 years old (159 people, 42.5%), followed by 31–40 years (151 people, 40.4%); 52 respondents (13.9%) were 41–50 years old and 12 respondents (3.2%) were 50–65 years old.

By employment status, 253 respondents (67.6%) were PNS (civil servants with permanent status) and 121 (32.4%) were PPPK (government employees with work agreements). By monthly income, the largest group earned IDR 3,000,000–IDR 5,000,000 (169 respondents, 45.2%), followed by IDR 5,000,001–IDR 8,000,000 (127 respondents, 34.0%); 49 respondents (13.1%) earned IDR 8,000,001–IDR 12,000,000, 20 respondents (5.3%) earned less than IDR 3,000,000, and 9 respondents (2.4%) earned more than IDR 12,000,000.

By commuting distance, 169 respondents (45.2%) traveled 6–10 km, 113 (30.2%) traveled 11–20 km, 62 (16.6%) traveled 0–5 km, 19 (5.1%) traveled 21–30 km, and 11 (2.9%) traveled more than 30 km.

By frequency of public-transportation use, 184 respondents (49.2%) reported 1–3 times, 152 (40.6%) reported more than 3 times, and 38 (10.2%) reported 0 times. The 0-times category is not a contradiction of the eligibility criterion once the two questions are read as referring to different reference periods: eligibility criterion (3) required lifetime prior experience with public transportation, whereas the frequency item asked about use within a specific recent recall window. Respondents reporting 0 uses in that window therefore had public-transport experience predating the recall period.

By main commuting mode, KRL was the most used mode (143 respondents, 38.2%), followed by private vehicles (135 respondents, 36.1%). Buses/public transportation were used by 56 respondents (15.0%), online transportation by 16 respondents (4.3%), MRT by 15 respondents (4.0%), and LRT by 9 respondents (2.4%).

This composition confirms that respondents evaluated a heterogeneous set of underlying services rather than a single, homogeneous public-transport experience: KRL, bus, MRT, LRT, and online transportation differ in operator, fare structure, route design, and service reliability, and private-vehicle users additionally evaluated public transportation from an outside, non-user-of-record perspective on at least some items. Because the questionnaire [19], [20] asked respondents to rate the service or mode they used most frequently rather than requiring all respondents to rate one common reference service, service-quality ratings in Table 6 and Table 7 should be interpreted as an average across differing reference services rather than as ratings of one uniform service. Whether the five-dimension structure is measurement-invariant across these different modes has not been tested in this dataset and is listed under Limitations.

Table 1. Demographic Characteristics and Respondent Journey

Characteristics	Category	Quantity (n)	Percentage (%)
Gender	Male	224	59,9
	Female	150	40,1
Age	20–30 Year	159	42,5
	31–40 Year	151	40,4
	41–50 Year	52	13,9
	50–65 Year	12	3,2
Employment Status	PNS	253	67,6
	PPPK	121	32,4
Distance to the Office	0–5 km	62	16,6
	6–10 km	169	45,2
	11–20 km	113	30,2
	21–30 km	19	5,1
	>30 km	11	2,9
Frequency of Public Transportation Use	0 times	38	10,2
	1–3 times	184	49,2
	>3 times	152	40,6
Monthly Income	< Rp 3.000.000	20	5,3
	Rp 3.000.000–Rp 5.000.000	169	45,2
	Rp 5.000.001–Rp 8.000.000	127	34,0
	Rp 8.000.001–Rp 12.000.000	49	13,1
	> Rp 12.000.000	9	2,4
Main Mode of Transportation to Work	Private Vehicle	135	36,1
	Commuter Rail	143	38,2
	MRT	15	4,0
	LRT	9	2,4
	Bus	56	15,0
	Online Transportation	16	4,3
Total		374	100,0

Data Collection

Primary data was collected through a structured questionnaire that was distributed to respondents online and/or in person. The questionnaire used a five-point Likert scale, namely 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree.

The research instrument was developed based on the service quality literature and previous public transportation research [4], [21], [22]. Before the main data collection, a pilot test was conducted to evaluate the clarity of the statement, the relevance of the indicators, and the respondents' understanding of the research instrument.

The use of PLS-SEM in the context of the quality of public transportation services has been used by [8], explicitly applying variance-based Partial Least Squares Structural Equation Modeling to test the relationship between the quality of public transportation services and the satisfaction of private vehicle users.

Research and Hypothesis Development Model

This study develops a model that explains the relationship between the five dimensions of public transportation service quality, namely tangibles, reliability, assurance, responsiveness, and empathy to satisfaction and their impact on the mode of switching intention [9]. User satisfaction is positioned as a mediating variable explaining how perceptions of service quality are associated with users' tendency to increase public-transport use relative to private vehicles [10].

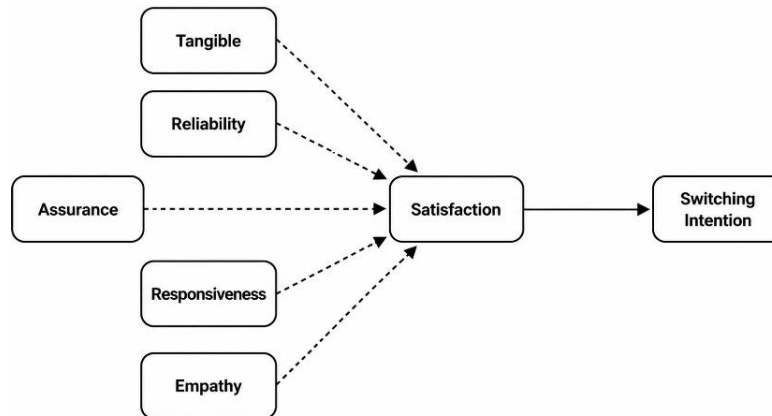


Figure 1. Conceptual Research Model

The model is based on the view that service quality is one of the important determinants in shaping the evaluation and satisfaction of public transportation users. Research [3] shows that satisfaction has an important role in the relationship between service quality and the behavioral intentions of public transport users. Next, [2] shows that service quality and satisfaction are important factors in explaining the intention of private vehicle users to increase the use of public transportation. The findings suggest that a positive service experience can be the basis for the formation of satisfaction and changes in travel behavior tendencies [23], [24].

Tangible and User Satisfaction

Tangible reflects the condition of facilities and infrastructure that can be observed directly by users, such as vehicle conditions, cleanliness, comfort, bus stops, stations, and supporting facilities. Good facility conditions can form a positive perception of service quality and enhance the travel experience. In the context of public transportation, the physical aspect is an important part of user evaluation because it interacts directly with the travel experience. Research on the quality of public transportation services shows that the characteristics of facilities and service conditions are an important part of the formation of user satisfaction [6], [8].

H1: Tangible has a positive effect on the satisfaction of public transportation users.

Reliability and Satisfaction

Reliability shows the ability of transportation providers to provide services consistently, on time, and in accordance with the information or services promised. For public transportation users, punctuality and consistency of service are important aspects because they are directly related to the certainty of travel. Service unreliability can increase uncertainty and lower user evaluation of services. Conversely, consistent and trustworthy service has the potential to increase satisfaction. Research [8] It shows that the quality attributes of transportation services are related to user satisfaction, while recent research on public transportation services also places reliability as an important attribute in service evaluation.

H2: Reliability has a positive effect on the satisfaction of public transportation users.

Assurance dan Satisfaction

Assurance is related to the ability, competence, politeness, and credibility of the service provider in providing a sense of security and trust to users. In public transport, a sense of security during the journey and confidence in the competence of the officers are an important part of the user experience. When users feel safe and trust in the services provided, evaluations of the services tend to be more positive. [6] shows that the assurance dimension is one of the dimensions of service quality that contributes to the satisfaction of public transportation users.

H3: Assurance has a positive effect on public transport user satisfaction.

Responsiveness and Satisfaction

Responsiveness shows the willingness and ability of the service provider to provide assistance quickly and appropriately, including in handling user questions and complaints. A quick service response can reduce inconvenience and increase the perception that user needs are taken care of. In the context of public transportation, responsiveness is important, especially when users face travel disruptions or need information. Research [6] Finding that responsiveness is one of the dimensions of service quality that contributes to the formation of user satisfaction.

H4: Responsiveness has a positive effect on the satisfaction of public transportation users.

Empathy and Satisfaction

Empathy describes the individual concern and concern of the service provider for the needs of the user. Empathy can be reflected through the attention of the officers, ease of obtaining services, understanding of user needs, and willingness to provide assistance according to the user's condition. Services that show care can create a more positive travel experience and increase user evaluation. Research [6] It was found that empathy is one of the important predictors in shaping the satisfaction of public transportation users.

H5: Empathy has a positive effect on the satisfaction of public transportation users.

Satisfaction and Switching Intention

User satisfaction reflects the overall evaluation after the user compares expectations with the actual experience while using public transportation. When the experience of using public transportation is rated positive, users have a greater tendency to consider public transportation as an alternative to private vehicles. Research [2] shows the importance of satisfaction in explaining the intentions of private vehicle users' behavior towards public transportation. More specific findings presented [6], which shows that satisfaction has a positive effect on the switching intention of public transportation users. Based on these findings, satisfaction is estimated to be an important factor that encourages ASN to reduce the use of private vehicles and increase the use of public transportation.

H6: satisfaction has a positive effect on switching intention modes from private vehicles to public transportation.

The Role of User Satisfaction Mediation

User satisfaction in this study is not only positioned as a consequence of service quality, but also as a mechanism that explains how service quality can result in a change in behavioral intent. Theoretically, better quality of service can increase satisfaction, while high satisfaction can increase the tendency of users to change their choice of mode of travel. Thus, the effect of service quality on switching intention can take place through user satisfaction.

Based on these relationships, this study examines the role of satisfaction mediation in the relationship between each dimension of service quality and intention to change modes.

H7 : Satisfaction mediates the effect of assurance on the intention to switching intention.

H8 : Satisfaction mediates the influence of empathy on switching intention.

H9 : Satisfaction mediates the influence of reliability on switching intention.

H10 : Satisfaction mediates the influence of responsiveness on switching intention.

H11 : Satisfaction mediates a tangible influence on switching intention.

Based on the overall hypothesis, the research model examines the influence of five dimensions of service quality on user satisfaction, the effect of satisfaction on the intention to change modes, and the indirect influence of each dimension of service quality on the intention to change modes through user satisfaction. Model testing was conducted using Structural Equation Modeling–Partial Least Squares (SEM-PLS) [11].

Data Analysis

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS software. The application of PLS-SEM in public-transportation research has been demonstrated by [8]. Analysis proceeded in two stages: evaluation of the measurement model (outer model) and evaluation of the structural model (inner model).

PLS-SEM was selected, following [13], because the model combines a formative-leaning research objective (explaining and predicting satisfaction and intended use rather than confirming a strictly defined covariance structure), a mediating-variable structure with multiple exogenous predictors, and a sample size and distributional profile (five-

point Likert data, not confirmed to be multivariate normal) for which variance-based estimation is a defensible choice; a formal comparison against covariance-based SEM on model-fit grounds was not conducted and is noted here, per Reviewer B, as an assumption rather than a demonstrated result [25], [26].

All constructs (tangible, reliability, assurance, responsiveness, empathy, satisfaction, and intended public-transport use) are specified as reflective, consistent with the outer-loading- and AVE-based validation approach reported in [27], [28], [29]. The five service-quality dimensions are modeled as separate first-order constructs rather than as indicators of a single higher-order service-quality construct because SERVQUAL theory treats them as conceptually distinct facets of service experience with potentially different antecedent strength.

Because predictor, mediator, and outcome variables were all collected from the same respondent in the same questionnaire administration, the design is exposed to common method bias (CMB) [16]. The source manuscript does not report a statistical CMB test [30], [31], [32]. As a minimum procedural safeguard consistent with [16]'s recommendations, question order and neutral framing in the instrument should be documented; as a statistical check, a Harman's single-factor test or a full collinearity VIF test [16] should be run on the existing raw dataset and reported as a supplementary robustness check. Because this requires the original response-level data, it could not be performed as part of this editorial revision and is listed under Limitations.

Measurement Model

An evaluation of the outer model was carried out to test the validity and reliability of the indicators. Convergent validity was evaluated through outer loading and Average Variance Extracted (AVE) values. Indicators with an outer loading ≥ 0.70 and AVE ≥ 0.50 are considered to meet the convergent validity criteria [33].

The reliability of the construct was evaluated using Cronbach's Alpha and Composite Reliability (CR) with a value of ≥ 0.70 as the acceptance criteria. Furthermore, discriminant validity is evaluated using the Heterotrait-Monotrait Ratio (HTMT) to ensure that each construct has adequate empirical differences [34], [35], [36]. As an empirical comparator, [6] report the values of outer loading, AVE, and composite reliability in the evaluation of the measurement model and use these criteria to ensure the quality of the research construct.

Structural Model

After the measurement model meets the criteria, the structural model evaluation is carried out through the Variance Inflation Factor (VIF), path coefficient, R^2 , f^2 , and Q^2 .

The R^2 value is used to determine the ability of the five dimensions of service quality in explaining satisfaction and satisfaction ability in explaining switching intention [37], [38]. The value of f^2 is used to evaluate the magnitude of each predictor's contribution to the endogenous construct, while Q^2 is used to assess the predictive relevance of the model [12]. Hypothesis testing was carried out using a bootstrapping procedure with 5,000 subsamples. The relationship between variables is declared significant if it has a p-value of < 0.05 or a t-statistic > 1.96 at a significance level of 5% [39], [40], [41].

RESULTS AND DISCUSSION

Outer Loading

The evaluation of the measurement model begins with testing the convergent validity through the outer loading value of each indicator against the measured construct. Outer loading shows the strength of the relationship between the indicator and the latent construct. In reflective model evaluation, an outer loading value of 0.70 or more generally indicates that the indicator has an adequate contribution in representing the construct. Based on [13] Indicators with values between 0.40–0.70 can still be maintained if their removal does not substantively increase the reliability and validity of the construct and is supported by theoretical considerations which can be seen in Table 2 below.

Table 2. Value of Outer Loading Construct

Construct	Item	Assurance	Empathy	Reliable	Responsiveness	Satisfaction	Switching Intention	Tangible
Assurance	ASR1	0.857						
	ASR2	0.841						
	ASR3	0.879						
	ASR4	0.847						
Empathy	EMP1		0.725					
	EMP2		0.844					
	EMP3		0.867					

	EMP4	0.672		
	EMP5	0.830		
Switching Intention	INT1			0.798
	INT2			0.892
	INT3			0.860
	INT4			0.691
Reliability	REL1	0.724		
	REL2	0.805		
	REL3	0.761		
	REL4	0.784		
	REL5	0.707		
	REL6	0.728		
	REL7	0.845		
Responsiveness	RES1		0.684	
	RES2		0.706	
	RES3		0.837	
	RES4		0.688	
	RES5		0.621	
Satisfaction	SAT1			0.775
	SAT2			0.728
	SAT3			0.856
	SAT4			0.837
Tangible	TANG1			0.782
	TANG2			0.882
	TANG3			0.845
	TANG4			0.854
	TANG5			0.896

Most indicators in Table 2 exceed 0.70. Five indicators fall below this threshold: EMP4 (0.672), INT4 (0.691), RES1 (0.684), RES4 (0.688), and RES5 (0.621). Consistent with the 0.40–0.70 retention guidance in [13], all five are retained in the reported model rather than dropped, for three reasons stated explicitly here: (1) each falls within the 0.40–0.70 retention band rather than below it; (2) removing them would reduce each construct to three or fewer indicators, narrowing content coverage of the Empathy, Responsiveness, and Intended-Use constructs; and (3) as shown in Table 3, the Composite Reliability and AVE of Empathy (CR = 0.892, AVE = 0.626), Responsiveness (CR = 0.835, AVE = 0.505), and Switching/Intended-Use Intention (CR = 0.886, AVE = 0.662) all still clear their respective thresholds with these items included. This is a substantive, stated retain decision rather than a default; because the Responsiveness AVE (0.505) is only marginally above 0.50 and carries three of the five low-loading items, a sensitivity re-estimation with RES1, RES4, and RES5 removed is recommended as a robustness check for the authors to run on the raw data before final publication.

Overall, indicators in the Assurance, Reliability, Satisfaction, and Tangible constructs show relatively strong outer loadings. The highest value is TANG5 at 0.896; within Assurance, the highest is ASR3 at 0.879; and within Switching/Intended-Use Intention, INT2 has an outer loading of 0.892. These results indicate strong indicator contributions to their respective constructs.

Convergent Reliability and Validity

Evaluation of the measurement model is carried out to ensure that the research construct has an adequate level of reliability and convergent validity before structural model testing is carried out. The reliability of the construct was evaluated using Cronbach's Alpha, rho_A, and Composite Reliability (CR), while the convergent validity was evaluated based on the value of the Average Variance Extracted (AVE). In general, Cronbach's Alpha, rho_A, and Composite Reliability values above 0.70 indicate acceptable internal consistency, while an AVE value of at least 0.50 indicates that the construct is able to explain at least 50% of the indicator's variance.

Table 3. Composite Reliability, Cronbach's alpha (α), Average Variance Extracted (AVE)

Variable	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Assurance	0.878	0.879	0.916	0.733
Empathy	0.850	0.885	0.892	0.626
Reliable	0.882	0.886	0.908	0.587
Responsiveness	0.755	0.793	0.835	0.505
Satisfaction	0.815	0.834	0.877	0.641
Switching Intention	0.827	0.840	0.886	0.662
Tangible	0.905	0.906	0.930	0.727

Based on the results of data processing using PLS-SEM, all research constructs showed Cronbach's Alpha, rho_A, and Composite Reliability values above 0.70. Cronbach's Alpha value is in the range of 0.755–0.905, rho_A is in the range of 0.793–0.906, while Composite Reliability is in the range of 0.835–0.930. These results show that the entire construct has good internal consistency.

Furthermore, the AVE value of the entire construct is in the range of 0.505–0.733. The highest AVE value is found in the Assurance construct of 0.733, while the lowest value is found in the Responsiveness construct of 0.505. Despite having the lowest AVE value, the Responsiveness construct still meets the minimum limit of 0.50. Thus, all constructs in this study meet the criteria of convergent reliability and validity and can be used for the structural model evaluation stage.

Discriminant Validity

Discriminant Validity was evaluated using the Fornell–Larcker criteria by comparing the value of the square root of the Average Variance Extracted (AVE) on the diagonal with the correlation between constructs [13]. A construct is declared to have sufficient discriminant validity if the square root of the AVE in the construct is greater than its correlation value with other constructs. This approach is used to ensure that each construct in the model has quite different empirical characteristics and measures concepts that are conceptually not identical.

Table 4. Discriminant Validity

Construct	Assurance	Empathy	Reliable	Responsiveness	Satisfaction	Switching Intention	Tangible
Assurance	0.856						
Empathy	0.280	0.791					
Reliable	0.505	0.233	0.766				
Responsiveness	0.356	0.244	0.262	0.711			
Satisfaction	0.743	0.332	0.502	0.392	0.801		
Switching Intention	0.487	0.496	0.360	0.352	0.551	0.814	
Tangible	0.804	0.316	0.512	0.376	0.790	0.553	0.852

Based on the test results, the square root value of AVE in all constructs is in the range of 0.711–0.856. Insurance Construct has a square root value of AVE of 0.856, Empathy of 0.791, Reliability of 0.766, Responsiveness of 0.711, Satisfaction of 0.801, Switching Intention of 0.814, and Tangible of 0.852. The value is then compared with all the correlations between the constructs in their respective rows and columns.

The test results show that the square root value of AVE of each construct is higher than the correlation of that construct with other constructs. For example, the square root value of AVE in the Satisfaction construct of 0.801 is higher than its correlation with Assurance (0.743), Reliability (0.502), Responsiveness (0.392), Empathy (0.332), Switching Intention (0.551), and Tangible (0.790). Similarly, the square root of AVE on Tangible of 0.852 is higher than its correlation with Assurance (0.804), Reliability (0.512), Responsiveness (0.376), Satisfaction (0.790), and Switching Intention (0.553). The same pattern is also seen in other constructs.

The findings show that although there are some relatively strong relationships between constructs, such as the correlation between Assurance and Tangible (0.804) and Tangible and Satisfaction (0.790), the square root value of each construct is still greater than the value of the correlation. Thus, the constructs in this study still show adequate discriminating ability, so that each construct can be empirically distinguished from the others.

Based on these results, it can be concluded that all research constructs meet the criteria for discriminant validity based on the Fornell–Larcker approach. With the fulfillment of discriminant validity, the measurement model is considered to have adequate construct quality and can be continued to the structural model evaluation stage, including testing of collinearity, path coefficient, R^2 , f^2 , predictive relevance, as well as testing hypotheses and mediating effects.

Structural Inner Model

Determination coefficient (R^2) testing was performed to evaluate the apparent power of the structural model against endogenous constructs [42], [43], [44]. The value of R^2 indicates the proportion of endogenous construct variance that can be explained by the exogenous construct in the model. The higher the R^2 value, the greater the model's ability to explain variations in endogenous constructs. The results of the determination coefficient test on each endogenous construct are presented in Table 5.

Table 5. Coefficient of Determination (R^2)

Construct	R^2	R^2 Adjusted
Satisfaction	0,673	0,669
Switching Intention	0,304	0,302

Based on Table 5, the R^2 value on Satisfaction is 0.673, which shows that 67.3% of user satisfaction variations can be explained together by five dimensions of service quality, namely tangible, reliability, assurance, responsiveness, and empathy. Meanwhile, 32.7% of the variation in user satisfaction was explained by other factors not included in the research model.

A R^2 value of Switching Intention of 0.304 indicates that 30.4% variation in switching intention can be explained by constructs in the model, especially user satisfaction and other structural pathways included in the model. Thus, 69.6% of the variation in intention to change modes was still influenced by other factors outside the research model.

The Adjusted R^2 values are 0.669 for Satisfaction and 0.302 for Switching Intention, respectively, which are relatively close to the R^2 values respectively. These small differences suggest that adjusting to the number of predictors in the model does not result in a large change in the model's explainability.

Path Coefficients

Direct influence testing was carried out to determine the direction, magnitude of influence, and significance of the relationship between constructs in the structural model. The estimated path coefficient was obtained through the bootstrapping procedure on PLS-SEM [11], [30], [45]. The parameters used in the test include the value of the band coefficient (Original Sample/O), standard deviation, t-statistic, and p-value. A path coefficient with a positive value indicates a unidirectional relationship between exogenous and endogenous constructs, while a negative value indicates the opposite relationship.

Decision-making was conducted at a significance level of 5% ($\alpha = 0.05$) with a confidence level of 95%. The hypothesis is stated to be supported if the p-value is < 0.05 and the t-statistical value > 1.96 for bidirectional testing. On the other hand, the relationship is declared insignificant if the p-value is ≥ 0.05 or the t-statistic ≤ 1.96 [13]. In addition to statistical significance, the interpretation of the results also considers the direction and magnitude of the path coefficient to determine the strength of the relationship between constructs.

In this study, the direct effects tested included the influence of physical evidence, reliability, assurance, responsiveness, and empathy on user satisfaction, as well as the effect of user satisfaction on the intention to change modes. In addition, if the structural model includes a direct path from each dimension of service quality to the intention to switch modes, then the relationship is also evaluated to determine the direct contribution of each dimension to the endogenous variables which can be seen in table 6.

Tabel 6. Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ([O/STDEV])	P Values
Assurance -> Satisfaction	0.266	0.269	0.064	4.168	0.000
Empathy -> Satisfaction	0.066	0.070	0.034	1.974	0.049
Reliable -> Satisfaction	0.085	0.085	0.038	2.212	0.027

Responsiveness -> Satisfaction	0.078	0.084	0.035	2.239	0.026
Satisfaction -> Switching Intention	0.551	0.555	0.044	12.655	0.000
Tangible -> Satisfaction	0.482	0.474	0.063	7.680	0.000

The test results in Table 6 show that Assurance has a positive and significant effect on Satisfaction with a path coefficient of 0.266, a t-statistic of 4.168, and a p-value of 0.000. This shows that increasing the perception of civil servants on the guarantee of security, competence, politeness, and ability of officers will increase satisfaction with public transportation services.

Empathy also shows a positive and significant influence on Satisfaction. The path coefficient value of 0.066 with a t-statistic of 1.974 and a p-value of 0.049 indicates that the service provider's attention and concern for the needs of users contributes to increased satisfaction. Although the influence is relatively small compared to other dimensions, the relationship remains significant at the rate of 5%.

Furthermore, Reliability has a positive and significant effect on Satisfaction, with a path coefficient of 0.085, t-statistic of 2.212, and p-value of 0.027. These findings show that the higher the reliability of services, such as punctuality, schedule consistency, and accuracy of information, the higher the satisfaction of public transportation users.

Responsiveness also has a positive and significant influence on Satisfaction, with a path coefficient of 0.078, t-statistic of 2.239, and p-value of 0.026. These results show that the ability of service providers to provide assistance, respond to complaints, and resolve user issues quickly contributes to increased satisfaction.

The greatest influence on Satisfaction in the model is shown by Tangible, with a path coefficient of 0.482, t-statistic 7.680, and p-value of 0.000. These results show that the physical condition of the vehicle, cleanliness, comfort, and supporting facilities are the strongest factors in shaping ASN's satisfaction with public transportation services.

Meanwhile, Satisfaction has a positive and very significant effect on Switching Intention with a path coefficient of 0.551, t-statistic of 12.655, and a p-value of 0.000. These results show that the higher the satisfaction of civil servants with public transportation, the greater their tendency to increase the use of public transportation and reduce dependence on private vehicles. This relationship is a key pathway in the research model and provides empirical support for the role of satisfaction in driving change in fashion choices.

H1 : Tangible affect the satisfaction of public transportation users.

The H1 hypothesis states that physical evidence (tangible) has an effect on the satisfaction of public transportation users. Physical evidence reflects the condition of the vehicle, cleanliness, comfort of facilities, and the condition of the bus stop or station felt by the user. The test results showed that tangible had a path coefficient of 0.482, a t-statistic value of 7.680, and a p-value of 0.000. Since the t-statistic value is greater than 1.96 and the p-value is less than 0.05, physical evidence has been shown to have a positive and significant effect on user satisfaction. Thus, H1 is supported. These results show that the better the physical condition and public transportation facilities, the higher the satisfaction of civil servants with the services used.

H2 : Reliability affects the satisfaction of public transportation users.

The H2 hypothesis states that reliability affects the satisfaction of public transportation users. Reliability describes the ability of a service provider to provide services consistently, on time, on schedule, and in accordance with the information provided. The test results showed a path coefficient value of 0.085, t-statistic of 2.212, and a p-value of 0.027. These results show that reliability has a positive and significant influence on user satisfaction. Thus, H2 is supported. These findings show that the more reliable the public transportation service, the higher the level of user satisfaction.

H3 : Assurance affects the satisfaction of public transportation users.

The H3 hypothesis states that assurance affects the satisfaction of public transportation users. The guarantee includes the sense of security, competence, politeness, knowledge, and ability of the officer in providing services. Based on the test results, a path coefficient of 0.266, a t-statistic of 4.168, and a p-value of 0.000 were obtained. These results show that guarantees have a positive and significant effect on user satisfaction. Hence, H3 is supported. This means that the higher the user's sense of security and trust in the services provided, the higher the satisfaction felt.

H4 : Responsiveness affects the satisfaction of public transportation users.

The H4 hypothesis states that responsiveness affects the satisfaction of public transportation users. Responsiveness shows the willingness and ability of the service provider to provide assistance, respond to complaints, provide information, and solve user problems quickly and appropriately. The test results showed a path coefficient of 0.078, t-statistic of 2.239, and a p-value of 0.026. Thus, responsiveness has been proven to have a positive and significant effect on user satisfaction so that H4 is supported. These findings show that responsive service can improve the travel experience and satisfaction of ASN.

H5 : Empathy affects the satisfaction of public transportation users.

The H5 hypothesis states that empathy affects the satisfaction of public transportation users. Empathy reflects the individual attention, care, and ability of the service provider to understand the needs of the user. The test results showed a path coefficient of 0.066, a t-statistic of 1.974, and a p-value of 0.049. Because the t-statistic value is greater than 1.96 and the p-value is less than 0.05, empathy has been shown to have a positive and significant effect on user satisfaction. Thus, H5 is supported. Although the influence is relatively small compared to other dimensions, attention to user needs still contributes to the formation of satisfaction.

H6 : Satisfaction affects switching intention towards public transportation.

The H6 hypothesis states that satisfaction affects switching intention towards public transportation. Satisfaction is an overall evaluation of the user's experience using public transportation. The test results showed a path coefficient of 0.551, a t-statistic of 12.655, and a p-value of 0.000. These results show that satisfaction has a positive and very significant effect on the intention to change modes. Hence, H6 is supported. These findings show that the higher the satisfaction of civil servants with public transportation, the greater their tendency to increase the use of public transportation and reduce dependence on private vehicles.

H6 : User satisfaction affects the switching intention towards public transportation.

The H6 hypothesis states that satisfaction affects switching intention towards public transportation. Satisfaction is an overall evaluation of the user's experience using public transportation. The test results showed a path coefficient of 0.551, a t-statistic of 12.655, and a p-value of 0.000. These results show that satisfaction has a positive and very significant effect on the intention to change modes. Hence, H6 is supported. These findings show that the higher the satisfaction of civil servants with public transportation, the greater their tendency to increase the use of public transportation and reduce dependence on private vehicles.

Indirect Effects and Mediation

Indirect influence testing was conducted to determine whether Satisfaction plays a mediating variable in the relationship between the dimensions of public transportation service quality and Switching Intention. The test was carried out using a bootstrapping procedure by evaluating the indirect effect, t-statistic, and p-value values.

The indirect effect is declared significant if the p-value is < 0.05 or the t-statistical value > 1.96 at a significance level of 5%. In this study, the indirect effect represents the influence of each dimension of service quality on the intention to switch modes through user satisfaction.

Table 7. Testing for the Direct Effect on Switching Intention

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Assurance → Switching Intention	0.147	0.149	0.037	3.930	0.000
Empathy → Switching Intention	0.037	0.039	0.019	1.897	0.058
Reliability → Switching Intention	0.047	0.047	0.022	2.117	0.035
Responsiveness → Switching Intention	0.043	0.047	0.020	2.162	0.031
Tangible → Switching Intention	0.266	0.263	0.039	6.771	0.000

The test results in table 7 show that Assurance has a positive and significant effect on Switching Intention, with a path coefficient of 0.147, a t-statistic of 3.930, and a p-value of 0.000. These findings show that the higher the sense of security, trust, competence, and courtesy of service felt by ASN, the higher the tendency to increase the use of public transportation and reduce dependence on private vehicles.

Empathy had a positive path coefficient of 0.037, but the effect was not significant on Switching Intention (t-statistic = 1.897; p-value = 0.058). Thus, individual attention and concern of service providers have not shown a sufficiently strong direct influence on the intention to switch modes at a significance level of 5%. These findings indicate that empathy may play a more indirect role through the formation of user satisfaction.

Furthermore, Reliability has a positive and significant effect on Switching Intention, with a coefficient of 0.047, t-statistic 2.117, and p-value of 0.035. This means that the more consistent, timely, and reliable public transportation services are, the greater the tendency of civil servants to increase the use of public transportation.

Responsiveness also showed a positive and significant influence on Switching Intention, with a path coefficient of 0.043, t-statistic of 2.162, and p-value of 0.031. These findings show that the ability of service providers to provide assistance quickly, respond to complaints, and solve user problems can encourage the intention to change modes.

The largest direct influence was in the Tangible → Switching Intention, with a path coefficient of 0.266, a t-statistic of 6.771, and a p-value of 0.000. These results show that the physical condition of the vehicle, cleanliness, comfort, and quality of transportation facilities are the most powerful aspects in influencing the intention to change modes directly compared to other dimensions of service quality tested.

H7 : Satisfaction mediates the effect of guarantees on switching intention towards public transportation.

The H7 hypothesis states that satisfaction mediates the effect of assurance on switching intention. Guarantees that include a sense of security, competence, politeness, and trust in public transportation services can increase user satisfaction. The satisfaction that is formed next is expected to encourage ASN to increase the use of public transportation and reduce dependence on private vehicles. The test results showed an indirect effect of 0.147, t-statistic 3.930, and p-value 0.000, so the effect of mediation was proven to be significant. Thus, H7 is supported.

H8 : User satisfaction mediates the influence of empathy on switching intention towards public transportation.

The H8 hypothesis states that user satisfaction mediates the influence of empathy on switching intention. Empathy reflects the individual attention, care, and ability of the service provider to understand the needs of the user. Conceptually, this attention can increase satisfaction which then encourages the intention to use public transportation. However, the test results showed an indirect effect of 0.037, t-statistic 1.897, and p-value 0.058. Since the p-value is greater than 0.05, the mediation effect is not significant. Thus, H8 is not supported by research [14].

H9 : Satisfaction mediates the influence of reliability on switching intention towards public transportation.

The H9 hypothesis states that user satisfaction mediates the influence of reliability on switching intention. Reliability reflects consistency of service, timeliness, timeliness, and accuracy of information. Reliable services can increase user satisfaction, which further strengthens the tendency to increase the use of public transportation. The test results showed an indirect effect of 0.047, t-statistic 2.117, and p-value 0.035. These results show a positive and significant influence of mediation. Thus, H9 is supported.

H10 : Satisfaction mediates the influence of responsiveness on switching intention towards public transportation.

The H10 hypothesis states that user satisfaction mediates the influence of responsiveness on switching intention. Responsiveness describes the ability of the service provider to provide assistance, respond to needs and complaints, and resolve user problems quickly and appropriately. Responsive service can increase satisfaction, which further strengthens the intention to use public transportation. The test results showed an indirect effect of 0.043, t-statistic 2.162, and p-value 0.031. Thus, the mediation effect proved to be positive and significant, so H10 was supported.

H11 : Satisfaction mediates the influence of physical evidence on switching intention towards public transportation.

The H11 hypothesis states that user satisfaction mediates a tangible influence on switching intention. Physical evidence includes vehicle condition, cleanliness, comfort, and quality of bus stop and station facilities. Good physical condition can improve user experience and satisfaction, which further encourages the intention to increase the use of public transportation. The test results showed an indirect effect of 0.266, t-statistic 6.771, and p-value 0.000. These results show a positive and significant influence of mediation. Thus, H11 is supported.

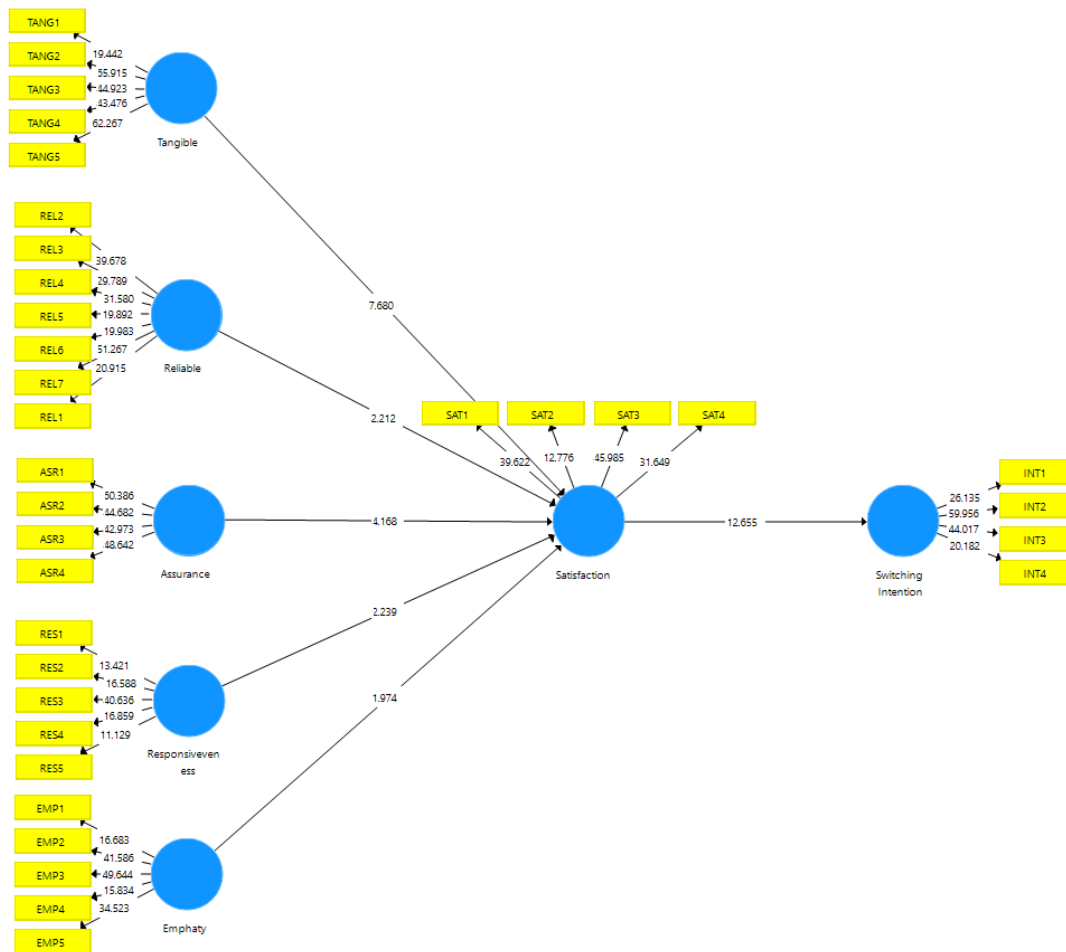


Figure 2. Bootstrapping Results

CONCLUSION

This study aims to analyze the influence of the quality dimension of public transportation services on user satisfaction and the tendency of intention to change ASN modes in Bekasi City and Regency. Based on testing using PLS-SEM on 374 respondents, all research constructs met the criteria of reliability and convergent validity as well as discriminant validity, so that the measurement model was considered feasible for structural testing.

The results of the study show that physical evidence, reliability, assurance, responsiveness, and empathy have a positive and significant effect on user satisfaction. Among the five dimensions, physical evidence was the strongest determinant of satisfaction, with a path coefficient of 0.482. Furthermore, user satisfaction was proven to have a positive and very significant effect on the intention to change modes, with a coefficient of 0.551. The findings suggest that increased experience and positive evaluation of public transportation can strengthen the tendency of civil servants to increase the use of public transportation and reduce dependence on private vehicles. The model's ability to explain user satisfaction reached 67.3%, while the ability to explain the intention to switch modes reached 30.4%, which shows that the satisfaction is relatively strong explained by the dimension of service quality, while the intention to change modes is also influenced by other factors outside the model.

Indirect effects analysis showed that assurance, reliability, responsiveness, and physical evidence had a significant indirect influence on switching intentions through satisfaction, whereas empathy showed no significant indirect effects. Practically, these results confirm that improving the quality of facilities, service reliability, security, and responsiveness are strategic priorities to strengthen satisfaction and encourage changes in the choice of ASN modes in Bekasi. Further research needs to include other factors, such as travel cost, travel time, accessibility, travel habits, and individual characteristics, to improve the predictability of switching intentions.

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