Ride-Hailing Quality Gaps and Improvement Priorities: SERVQUAL-Kano Study in Mid-Sized Indonesian City

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***Abstract*— Digitalization has accelerated ride-hailing growth by offering urban commuters convenience and flexibility. In Indonesia, rising usage has intensified competition among platforms such as Grab and its rivals. Despite its extensive reach, Grab continues to face negative perceptions concerning pricing, inconsistent service, and suboptimal user experiences, which erode customer satisfaction and loyalty. Malang City was selected for its high mobility and rapidly growing user base. As a mid-size city with moderate density and growing transport demand, Malang is suitable for studying ride-hailing beyond megacities. This study integrates SERVQUAL and the Kano Model to identify, classify, and prioritize service attributes influencing GrabBike user satisfaction. A purposive sample of 385 respondents completed an online survey (Google Forms) between December 2025 and January 2026. The overall quality ratio (Q) was 0.85, and Tangibles was the lowest performing dimension. RL4 (fare suitability) recorded the largest gap (-1.65), a critical priority. Kano classification yielded 7 Must-Be, 3 One-Dimensional, 3 Attractive, 1 Indifferent, and 1 Reverse attributes. This integrated approach constitutes a novel, data-driven framework for prioritizing service enhancements. The findings provide guidance to remedy dissatisfiers and invest in delight-enhancing attributes, while establishing local quality benchmarks for policymakers.**

Keywords—Customer Satisfaction, Kano Model, Ride-Hailing, Service Quality, SERVQUAL

I. INTRODUCTION

Advances in information technology over the past decade have fundamentally transformed societal mobility patterns, primarily through the emergence of application-based transportation services, commonly referred to as ride-hailing. This development has proceeded rapidly across various regions of the world, including Southeast Asia, owing to its capacity to offer ease of access, cost transparency, and flexibility that conventional public transportation systems have yet to fully provide [1]. Globally, more than 13 billion ride-hailing trips were recorded in the first half of 2025, with the Asia-Pacific region accounting for 57.5% of the total global market [2]. The region's dominance is driven by a combination of dense urban populations, the abundance of two-wheeled vehicles, and high consumer engagement with digital platforms [3]. This growth reflects a paradigm shift in urban mobility from conventional transportation models toward a more responsive and integrated digital mobility ecosystem. Ride-hailing services were first introduced in the United States by UberCab in 2009, and the global market for this industry subsequently expanded rapidly, exceeding a value of USD 113 billion by 2020 [4], [5].

In Indonesia, the growth in the number of ride-hailing users has been further propelled by the limited reach and quality of public transportation in several regions. The data shows that with a user penetration rate of 66.7% [6], Indonesia has a high adoption rate for online ride-hailing services, although this does not necessarily mean that Indonesia has the largest market in absolute terms. This figure positions Indonesia as the world's largest ride-hailing market. Market projections estimate that Indonesia's ride-sharing sector will reach USD 163.55 billion by 2033, with a compound annual growth rate (CAGR) of 9.1% [7]. This condition fosters an intensely competitive environment among service providers, rendering service quality a primary differentiating factor among platforms.

This substantial market size has created an increasingly competitive landscape among service providers. A national survey shows that Gojek ranks first as the most popular ride-hailing platform among Indonesians, followed by Grab in second place, as well as Maxim and inDrive [5], [8]. This preference gap suggests an unfavorable perception toward Grab, particularly regarding pricing and service quality consistency. Although specific fleet data for Malang has not been disclosed to the public, the supply-side dynamics observed in Jakarta likely also hold true in mid-sized cities, where Gojek's earlier entry into the market has generally established a denser network of drivers across various cities in Indonesia, including mid-sized urban centers such as Malang. In the Greater Jakarta area, Gojek commands a market share of 59.13%, while Grab accounts for only 32.34% [9], a disparity that is difficult to reconcile without a corresponding gap in driver supply. The link between fleet size and operational outcomes is well established in the ride-hailing literature: a larger driver fleet increases the probability of a nearby vehicle, thereby reducing matching time and improving responsiveness, while simultaneously dampening the frequency and magnitude of surge pricing events that elevate base fares during periods of peak demand [10], [11]. This structural mechanism plausibly explains why sentiment analyses consistently reveal that Grab receives more negative reviews than its competitors, particularly regarding service fees and application performance [12]. Consequently, the supply-side imbalance implied by the market share data

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emerges as a plausible structural factor behind the price and responsiveness perceptions that warrant systematic investigation. Such conditions indicate a discrepancy between user expectations and the actual experiences encountered when using Grab, underscoring the necessity of a systematic evaluation of Grab's service quality, particularly within the two-wheeled transportation segment (GrabBike), to identify the root causes affecting user satisfaction and potential loyalty.

Service quality constitutes a fundamental factor in determining customer satisfaction and loyalty within the service industry. Service quality is perceived as the outcome of an evaluative process wherein customers compare their perceptions of the received service performance against their pre-established expectations [13]. When service meets or exceeds expectations, customers will assess the service as being of high quality. Research on Ride-Hailing Applications (RHA) in Bangkok found that empathy, driver competence, and structural assurance strongly influence customer satisfaction and loyalty [14]. Conversely, Gojek users in Yogyakarta demonstrated that service quality does not always exert a significant influence on satisfaction or loyalty; customer trust plays a more substantial role [15]. This variation in findings confirms that the relationship among service quality, satisfaction, and loyalty is contextual and warrants more in-depth investigation for each platform and user segment.

In efforts to evaluate the quality of a service, the SERVQUAL (Service Quality) approach is one of the most widely adopted frameworks [16]. This method measures service quality based on the gap between user expectations before service use and their perceptions of the actual service performance received. Measurement is conducted across five principal dimensions: reliability, responsiveness, assurance, empathy, and tangibles. Through the SERVQUAL approach, service attributes whose performance falls below user expectations can be quantitatively identified. The gap model underlying SERVQUAL emphasizes that failures in delivering quality service often arise not solely from direct interactions with customers but also from discrepancies at various stages of service management, ranging from understanding customer needs to actual service delivery [17].

However, merely identifying quality gaps through SERVQUAL is insufficient for formulating targeted improvement strategies. A deeper understanding is required regarding how and to what extent each service attribute differentially influences user satisfaction. The model introduced by Noriaki Kano classifies service attributes into six primary categories: Must-Be (basic requirements that must be fulfilled), One-Dimensional (satisfaction is proportional to performance), Attractive (increase satisfaction when present but not missed when absent), Indifferent (no significant effect on satisfaction), Reverse (presence decreases satisfaction, absence increases it), and Questionable (inconsistent or unclear responses) [18]. The Kano Model posits that each attribute does not exert an equal influence on customer satisfaction; certain attributes function as essential prerequisites, while others are flexible and can markedly increase satisfaction when available [19]. This approach enables companies to prioritize improvements based on two dimensions simultaneously: the magnitude of the quality gap and the significance of the attribute to satisfaction. The simultaneous application of SERVQUAL and Kano analyses serves two complementary purposes, SERVQUAL quantifies expectation and perception gaps across service quality dimensions (tangibles, reliability, responsiveness, assurance, and empathy), while the Kano model classifies attributes (must-be, one-dimensional, attractive, indifferent, reverse, questionable) based on their asymmetric impact on satisfaction, the integration of these two methods allows researchers and practitioners to measure the magnitude of service shortfalls and prioritize which attributes require immediate improvement, especially during crisis conditions [20].

The combined application of SERVQUAL and the Kano Model in this study is directed exclusively toward evaluating GrabBike services. A comprehensive suite of methods that includes SERVQUAL, Kano Model, Importance Performance Analysis (IPA), and Quality Function Deployment (QFD) for their investigation of GrabBike in Jakarta, the present study deliberately limits the methodological scope to SERVQUAL and the Kano Model [21]. This parsimonious combination was chosen to achieve focused analytical depth. SERVQUAL quantifies the expectation and performance gap, and the Kano Model classifies attributes according to their nonlinear impact on satisfaction [22], without the supplementary layers of explicit importance rating or technical deployment that IPA and QFD introduce. Moreover, a study was conducted before the COVID-19 pandemic, whereas the data in the current research were collected post-pandemic, capturing potential shifts in user expectations and mobility behaviour [21]. A more fundamental distinction lies in the urban context. Jakarta represents a high-density megacity with deep ride-hailing penetration and heterogeneous socioeconomic strata [9], [23]. In contrast, Malang is a mid-sized educational city [24], home to over 15 higher education institutions and approximately 300,000 students. This demographic composition likely generates distinct service quality priorities, particularly regarding fare sensitivity, application reliability, and driver empathy, that may diverge substantially from those identified in a megacity setting. Consequently, this study offers a critical cross-context validation, examining whether the attributes deemed essential in Jakarta retain their significance in a student-dominated, medium-sized urban environment. The necessity of such localised investigation is further reinforced by Kurniawan and Achjari [25], who demonstrated that Grab's competitive strategies across the ASEAN region must be tailored to the unique characteristics of each market, underscoring the importance of context-specific service quality assessments for generating actionable recommendations.

The selection of Malang City as the research site is grounded in its characteristics as a mid-sized Indonesian city. With a population of 889,359 [26], Malang does not fall into the category of primary metropolitan areas such as Jakarta or Surabaya. Rather, it typifies the medium-scale urban centers prevalent across Indonesia. This status positions Malang as a contextually relevant setting for examining ride-hailing service quality beyond the extreme pressures of metropolitan areas, while still offering substantial urban mobility dynamics. The city's dense population movement, driven by its functions as an educational and tourism hub, generates robust demand for app-based transportation services. The transportation dynamics in Malang are marked by the coexistence of widespread private vehicle usage and high ride-hailing adoption. This combination renders the city a representative site for assessing the extent to which service quality meets user expectations within a mid-sized urban context. The specific focus on GrabBike is justified by its role as the most frequently used mode for daily mobility, thereby directly capturing the interaction between drivers and users as well as the perceived service experience. From a consumer psychology standpoint, service quality assessments obtained through structured surveys are considered more reliable than app-based rating systems, because individual ratings are highly susceptible to

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situational influences such as traffic congestion or weather conditions. This phenomenon is recognized in the literature as affecting information, wherein momentary affective states often bias evaluations rather than reflecting actual service quality [27].

Based on the background exposition and the theoretical framework presented, this study is designed to achieve three primary objectives. First, to identify and measure the gap between user expectations and the actual performance of GrabBike services in Malang City across the five SERVQUAL dimensions. Second, to classify GrabBike service attributes based on Kano Model categories to identify quality requirement types. Third, to integrate both methods to formulate prioritized improvement strategies of GrabBike in Malang City. Through a systematic approach focused on these two methods, this research is expected to yield recommendations that are not only descriptive but also prescriptive, offering clear guidance on the most urgent and impactful service improvement priorities Accordingly, the findings of this study are anticipated to provide a tangible contribution to the enhancement of GrabBike service quality in Malang City, while simultaneously enriching the academic discourse in the field of service quality management, particularly within the context of ride-hailing in Indonesia.

II. METHODS

A. Research Design and Framework

This study employs a quantitative survey-based research design to evaluate the service quality of GrabBike in Malang City, Indonesia, through a combined SERVQUAL and Kano Model approach. The first phase involves a comprehensive literature review to identify relevant service quality attributes based on the five SERVQUAL dimensions: tangibles, reliability, responsiveness, assurance, and empathy [16]. These attributes are subsequently adapted to the context of motorcycle-based ride-hailing services. In the second phase, a structured questionnaire was developed and distributed to active GrabBike users in Malang City. Before full-scale distribution, the instrument was tested for validity and reliability using a pilot sample of 30 respondents. The third phase encompasses two primary analytical procedures: (1) SERVQUAL gap analysis to measure the difference between customer expectations and perceived service performance, and (2) Kano Model categorization to classify service attributes based on their influence on customer satisfaction.

B. Research Instrument

The research instrument consists of a structured questionnaire divided into three sections. The first section collects respondents' demographic characteristics, including gender, age, occupation, education level, and frequency of GrabBike usage within the preceding month. The second section contains SERVQUAL-based items designed to measure both customer expectations and perceived performance across the five service quality dimensions. A total of 15 attribute statements were developed, as presented in Table I. Each attribute is evaluated using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

The third section employed the Kano Model questionnaire format, wherein each SERVQUAL attribute was evaluated through a pair of functional and dysfunctional questions. The functional question asked, "How would you feel if this attribute were available?" whereas the dysfunctional question asked, "How would you feel if this attribute were not available?" Respondents selected one of five response options: (1) Like, (2) Must be, (3) Neutral, (4) Live with, or (5) Dislike.

Before full-scale deployment, the questionnaire was pilot tested with 30 respondents meeting the sampling criteria. Validity was assessed using Pearson's product-moment correlation, with items deemed valid if $r_{calculated} > r_{table}$ at a significance level of 0.05. Reliability was evaluated using Cronbach's Alpha coefficient, with a threshold value of 0.60 indicating acceptable internal consistency [28]. All items demonstrated satisfactory validity and reliability, confirming the instrument's suitability for data collection.

TABLE I. SERVQUAL ATTRIBUTES FOR GRABBIKE SERVICE

Dimension	Attribute Statement
Tangibles	
T1	GrabBike vehicles are clean and well-maintained.
T2	Drivers provide adequate safety equipment for riding.
T3	Drivers display authentic identification.
Reliability	
RL1	Grab provides consistent service quality at all times.
RL2	Grab drivers arrive according to the estimated time shown in the application.
RL3	Drivers comply with traffic regulations while riding.
RL4	GrabBike fares match the information displayed in the application and are competitive with similar services
Responsiveness	
RP1	Travel time is fast and punctual.
RP2	Complaints are addressed promptly.
Assurance	
A1	Feel safe and comfortable while using Grab.
A2	Feel safe and comfortable with the rating feature provided by drivers to passengers.
A3	Complaint services are available within the application.
Empathy	
E1	Drivers understand customer conditions and the surrounding environment.
E2	Drivers are reliable in serving customer interests.
E3	Grab drivers communicate politely and clearly.

C. Population and Sample

The target population of this study comprised all active GrabBike users in Malang City, East Java, Indonesia. The selection of Malang City as the research location was based on its status as the second-largest city in East Java Province, with a population of 889,359 [26], thereby classifying it as a mid-sized city. Administratively, Malang City is divided into five districts: Klojen, Blimbing, Kedungkandang, Sukun, and Lowokwaru, as illustrated in Fig. 1. The city experiences a high level of daily mobility, driven primarily by the presence of numerous educational institutions and tourism activities. The exact number of GrabBike users in Malang City is not publicly disclosed by the platform operator; therefore, the population size is indeterminate.

Given the unknown population size, the sample size was determined using the Lemeshow formula [29], with a 95% confidence level (z = 1.96), a maximum estimation proportion of 50% ($p = 0.5$), and a margin of error of 5% ($d = 0.05$) is shown in Equation (1). The calculation yielded a minimum required sample size of 385 respondents.

$$n = \frac{z^2 p(1-p)}{d^2} \quad (1)$$

A non-probability purposive sampling technique was employed to select respondents who met the following inclusion criteria: (1) had used GrabBike services at least twice within the preceding month, ensuring recent and repeated service experience; (2) were at least 18 years of age, indicating sufficient cognitive maturity to provide valid assessments; and (3) resided in or frequently traveled within

Malang City, ensuring familiarity with local operational conditions.

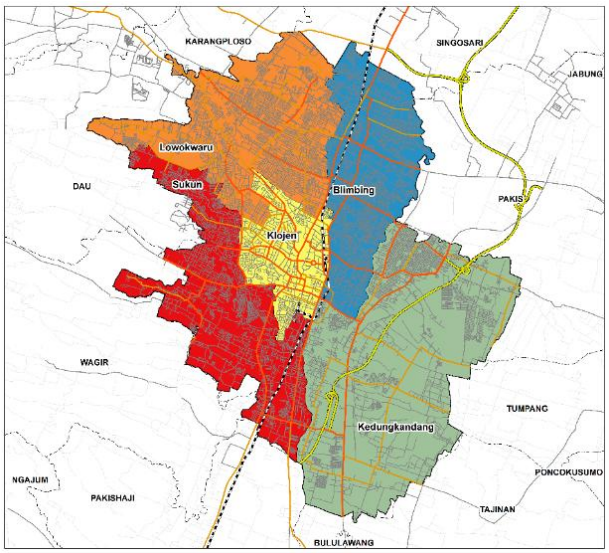

Fig. 1. Administrative Map of Malang City

D. Data Collection and Analysis

Data were collected via a questionnaire distributed using Google Forms. The survey link was disseminated through social media platforms and community groups targeting residents of Malang City. Data collection was conducted over four weeks to achieve the target sample size. Data analysis proceeded in two main stages:

1) SERVQUAL Analysis

Service quality was quantified by calculating the gap score (GAP) between perceived performance (P) and customer expectations (E) for each attribute, as formulated in Equation (2).

$$GAP = P - E \tag{2}$$

A positive GAP indicates that perceived performance exceeds expectations (satisfactory service), a GAP value of zero indicates that performance meets expectations, and a negative GAP reflects performance that falls short of customer expectations (dissatisfying service). The overall service quality ratio (Q) was also calculated using Equation (3), where $Q \geq 1$ denotes satisfactory service quality [30].

$$Q = \frac{P}{E} \tag{3}$$

2) Kano Model Classification

Each service attribute was categorized into one of six Kano categories: Attractive (A), One-Dimensional (O), Must-Be (M), Indifferent (I), Reverse (R), or Questionable (Q). In a study conducted by Rachman et al. [31], the Kano model is illustrated as shown in Fig. 2.

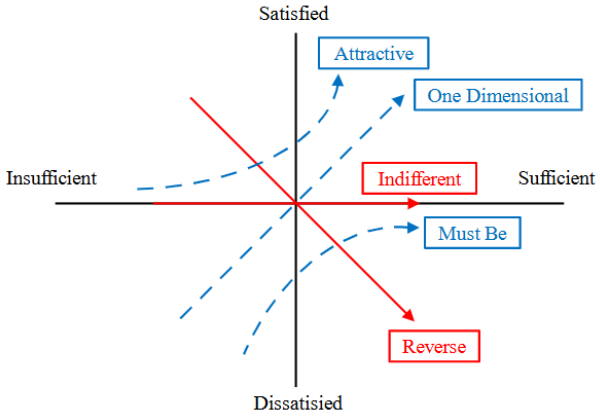

Fig. 2. The Kano Model

Categorization was performed by cross-referencing each respondent's functional and dysfunctional responses against the Kano evaluation matrix [32], as presented in Table II.

TABLE II. KANO EVALUATION MATRIX

Customer Requirements			Dysfunctional				
			1	2	3	4	5
			Like	Must be	Neutral	Live with	Dislike
Functional	1	Like	Q	A	A	A	O
	2	Must be	R	I	I	I	M
	3	Neutral	R	I	I	I	M
	4	Live with	R	I	I	I	M
	5	Dislike	R	R	R	R	Q

Following individual-level categorization, the dominant category for each attribute was determined using Blauth's formula [32]. The rule stipulates that if the sum of (A + O + M) exceeds the sum of (I + R + Q), the category with the highest frequency among A, O, and M is selected as the attribute classification. Conversely, if the sum of (A + O + M) is smaller, the category with the highest frequency among I, R, and Q is selected. In the event of a tie, the category with the overall maximum frequency prevails.

To further quantify the impact of each attribute on customer satisfaction, the Customer Satisfaction Coefficient (CSC) was calculated, comprising the Better coefficient (IBT) and the Worst coefficient (IWT). The IBT value, as expressed in Equation (4), indicates the extent to which an attribute enhances customer satisfaction. The IWT value, expressed in Equation (5), indicates the extent to which the absence of an attribute diminishes customer satisfaction.

$$\text{IBT} = \frac{\text{A+O}}{\text{A+O+M+I}} \tag{4}$$

$$\text{IWT} = \frac{\text{O+M}}{\text{A+O+M+I}} \tag{5}$$

The combined interpretation of SERVQUAL gap scores and Kano categories facilitates the formulation of strategic recommendations for service improvement. Attributes exhibiting large negative gaps and categorized as Must-Be or One-Dimensional require immediate corrective action, whereas attributes categorized as Attractive with positive gaps represent opportunities for competitive differentiation. This integrated analytical approach provides a comprehensive understanding of service quality deficiencies and their relative importance in shaping customer satisfaction.

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III. RESULT AND DISCUSSION

A. Respondent Characteristics

A total of 385 active GrabBike users in Malang City participated in this study. A summary of the respondents' demographic characteristics is presented in Table III.

TABLE III. RESPONDENTS CHARACTERISTICS (N = 385)

Characteristic	Category	n	%
Gender	Female	216	56.1
	Male	169	43.9
Age	17-20 years	70	18.2
	21-30 years	217	56.4
	31-40 years	44	11.4
	> 40 years	54	14.0
Frequency of Use per Month	2 times	121	31.4
	3 times	119	30.9
	≥ 4 times	145	37.7
Primary Trip Purpose	School/Campus	132	34.3
	Work/Official Business	110	28.6
	Shopping/Personal Errands	93	24.2
	Leisure/Tourism	40	10.4
	Others	10	2.6
Average Cost of Trip	< Rp15.000	119	30.9
	Rp15.000-Rp25.000	213	55.3
	> Rp25.000	53	13.8

Table III indicates that the majority of respondents were female (56.1%), aged 21-30 years (56.4%), and used GrabBike 2-3 times per month, primarily for school/campus purposes (34.3%). Most trips incurred costs ranging from Rp15,000 to Rp25,000 (55.3%). This profile reflects that GrabBike users in Malang are predominantly within the productive age group and engage in routine short to medium distance mobility.

B. Instrument Validity and Reliability

Before full-scale distribution, a pilot test was conducted on a subset of 30 respondents who satisfied the same inclusion criteria as the target population. This sample size conforms to the widely accepted guideline that a minimum of 30 participants is sufficient for preliminary instrument validation [33], [34]. The purpose of this preliminary test is to detect and rectify any deficiencies in item wording, structure, or clarity before the instrument is administered to the entire sample of 385 respondents, thereby safeguarding the quality of the primary data. The results of this pilot validation, conducted using IBM SPSS Statistics and summarized in Table IV, demonstrate that all 15 attribute items across the four instrument types (expectation (E), performance (P), functional (F), and dysfunctional (D)) yielded *r-calculated* values exceeding the critical *r-table* threshold of 0.361 at a 5% significance level, confirming their validity. Moreover, in Table V, the *Cronbach's Alpha* coefficients for each instrument type surpassed the 0.60 benchmark, with values ranging from 0.766 (functional) to 0.950 (dysfunctional), indicating satisfactory to excellent internal consistency. As the instrument proved both valid and reliable at this preliminary stage, no further modifications were required, and the identical questionnaire was subsequently employed for the full-scale survey with 385 respondents.

TABLE IV. INSTRUMENT VALIDITY TEST RESULTS (N = 30)

Dimension	Attribute	E	P	F	D	Result
Tangibles	T1	0.741	0.829	0.713	0.745	Valid
	T2	0.751	0.848	0.801	0.878	Valid
	T3	0.761	0.887	0.802	0.726	Valid
Reliability	RL1	0.781	0.85	0.789	0.814	Valid
	RL2	0.767	0.803	0.746	0.782	Valid
	RL3	0.707	0.829	0.716	0.729	Valid
	RL4	0.813	0.789	0.720	0.763	Valid
Responsiveness	RP1	0.672	0.778	0.704	0.689	Valid
	RP2	0.703	0.818	0.812	0.808	Valid
Assurance	A1	0.81	0.795	0.744	0.784	Valid
	A2	0.709	0.743	0.721	0.714	Valid
	A3	0.789	0.757	0.738	0.778	Valid
Empathy	E1	0.749	0.755	0.798	0.772	Valid
	E2	0.78	0.868	0.773	0.765	Valid
	E3	0.722	0.845	0.732	0.860	Valid

TABLE V. INSTRUMENT RELIABILITY TEST RESULTS (N = 30)

Instrument Type	N of Item	Cronbach's Alpha	Threshold	Result
Performance	15	0.773	0.600	Reliable
Expectations	15	0.944	0.600	Reliable
Functional	15	0.766	0.600	Reliable
Dysfunctional	15	0.950	0.600	Reliable

C. Service Quality Analysis Using SERVQUAL

A recapitulation of the mean perception and expectation scores for each SERVQUAL dimension is presented in Table VI. Overall, the average user expectation regarding GrabBike service quality fell within the very high category (mean = 4.46). whereas the average perceived performance was categorized as good (mean = 3.78). The largest gap occurred in the Tangibles dimension (GAP = -0.89). while the smallest gap was found in the Responsiveness dimension (GAP = -0.40). The overall service quality ratio (Q = P/E) of 0.85 indicates that GrabBike services have not yet met user expectations.

TABLE VI. MEAN PERFORMANCE. EXPECTATION AND GAP OF SERVQUAL DIMENSION

Dimension	P	E	GAP (P-E)	Q (P/E)
Tangibles	3.68	4.57	-0.89	0.81
Reliability	3.68	4.51	-0.83	0.82
Responsiveness	3.96	4.36	-0.40	0.91
Assurance	3.71	4.40	-0.69	0.84
Empathy	3.89	4.45	-0.56	0.87
Mean	**3.78**	**4.46**	**-0.68**	**0.85**

The ranking of GAP values per attribute (Table VII) reveals that all attributes exhibited negative GAP values. signifying that service performance has not yet met user expectations. The largest gap was identified for attribute RL4 (fare matching information and competitiveness) with a GAP of -1.65. followed by A2 (sense of security from the rating feature) with a GAP of -1.04. Conversely, the smallest gap was observed for RP1 (travel speed and punctuality) with a GAP of -0.37.

TABLE VII. RANKING OF GAP VALUES SERVQUAL ATTRIBUTE

Dimension	Attribute	Mean		GAP
		P	E	P-E
Tangibles	T1	3.57	4.52	-0.94
	T2	3.63	4.61	-0.98
	T3	3.84	4.58	-0.74
Reliability	RL1	3.84	4.55	-0.71
	RL2	3.93	4.44	-0.51
	RL3	3.96	4.41	-0.45
	RL4	2.99	4.64	-1.65
Responsiveness	RP1	3.97	4.33	-0.37
	RP2	3.95	4.39	-0.44
Assurance	A1	3.84	4.43	-0.59
	A2	3.28	4.32	-1.04
	A3	4.00	4.45	-0.45
Empathy	E1	3.93	4.48	-0.55
	E2	3.89	4.45	-0.56
	E3	3.85	4.42	-0.57

The SERVQUAL analysis confirms that all dimensions and attributes of GrabBike service in Malang City remain below user expectations. The Q value of 0.85 underscores a quality deficit that warrants prompt attention. This finding aligns with the study on GrabBike in Jakarta. which also identified negative gaps across all attributes. indicating that service quality gaps constitute a systemic issue across various Grab operational cities [21].

The Tangibles dimension registered the highest average gap among the five SERVQUAL dimensions. The single most critical shortfall was attribute RL4 (service fare) within the Reliability dimension. with a gap score of -1.65. making it an extreme outlier. A sensitivity analysis excluding RL4 reveals a marked decrease in the mean gap of the Reliability dimension. confirming that price dissatisfaction disproportionately inflates the dimension's overall underperformance. This discrepancy indicates that users perceive the fares paid as incompatible with the benefits received. particularly when benchmarked against competing platforms. A result that aligns with the sentiment analysis, which identified price-related complaints as the dominant negative sentiment toward Grab [12]. In a market defined by intense rivalry. A transparent and competitively calibrated pricing strategy is not merely advantageous. but essential for safeguarding market share.

Beyond this singular price grievance. The Tangibles dimension's broad-based deficiency, spanning vehicle cleanliness and the adequacy of safety equipment, remains a fundamental concern. These physical attributes constitute basic hygiene and security expectations that hold considerable weight for users. especially among the female respondents who comprised the majority of the sample. This finding corroborates [35]. which positions vehicle condition and driver courtesy as primary determinants of user choice in Indonesia's online motorcycle taxi sector. Consequently, a dual path improvement strategy is required. That is, immediate redress of the extreme fare dissatisfaction to arrest user churn. Concurrently with systematic upgrades to the physical service environment to meet baseline user expectations.

Conversely, the Responsiveness dimension (RP1 and RP2) exhibited the smallest GAP. indicating that GrabBike is relatively capable of meeting user expectations regarding service speed. This strength represents a competitive asset to be maintained. Though it should not overshadow the need for improvements in others. more fundamental dimensions.

D. Attribute Classification Using the Kano Model

The attribute classification results based on the Kano evaluation matrix and Blauth's formula are presented in Table VIII. Among the 15 attributes analyzed. Seven were classified as Must-Be (M). three as One-Dimensional (O). three as Attractive (A), one as Indifferent (I), and one as Reverse (R). No attributes were categorized as Questionable (Q).

TABLE VIII. KANO CLASSIFICATION AND CUSTOMER SATISFACTION COEFFICIENTS (CSC)

Dimension	Attribute Statement	Category	IBT	IWT
Tangibles	T1	M	0.45	-0.67
	T2	M	0.48	-0.70
	T3	I	0.37	-0.31
Reliability	RL1	O	0.62	-0.69
	RL2	O	0.56	-0.61
	RL3	M	0.47	-0.52
	RL4	M	0.45	-0.66
Responsiveness	RP1	A	0.70	-0.29
	RP2	O	0.58	-0.59
Assurance	A1	M	0.55	-0.65
	A2	R	0.35	-0.16
	A3	M	0.57	-0.64
Empathy	E1	A	0.65	-0.26
	E2	A	0.60	-0.31
	E3	M	0.49	-0.68

The highest better (IBT) value was obtained for attribute RP1 (0.70). indicating that improvements to this attribute's performance have the potential to increase satisfaction by up to 70%. Conversely. The most negative worst (IWT) values were observed for attributes T2 (-0.70) and RL1 (-0.69). indicating that the absence or poor performance of these two attributes could substantially diminish satisfaction.

The integration of the Kano Model enriches the SERVQUAL findings by revealing the differing nature of each attribute's influence on satisfaction. Must-Be attributes such as vehicle cleanliness (T1). safety equipment (T2). fare competitiveness (RL4). and sense of safety (A1) constitute fundamental requirements that must be fulfilled. Poor performance on these attributes will trigger acute dissatisfaction. whereas performance improvements will not proportionally elevate satisfaction. This is reflected in the high IWT values (-0.67 to -0.70) for attributes T1, T2, and RL4. For Grab management. These findings necessitate the allocation of prioritized resources to ensure that the minimum standards for Must-Be attributes are consistently met.

One-Dimensional attributes service consistency (RL1). punctuality (RL2). and complaint handling (RP2) exhibit a linear relationship with satisfaction. Enhancements to these attributes will directly increase user satisfaction. The relatively high IBT values (0.56-0.62) indicate that investment in these areas yields measurable returns in satisfaction. Grab can leverage these findings to develop focused service improvement programs. such as driver training to enhance punctuality and the standardization of complaint handling procedures.

Attractive attributes: travel speed (RP1), understanding customer conditions (E1), and driver reliability (E2) function as delighters capable of providing a competitive advantage. The presence of these attributes significantly enhances satisfaction (IBT = 0.60-0.70). Yet their absence does not engender dissatisfaction (low IWT). In an increasingly homogeneous market. Innovation in Attractive attributes can create a unique user experience and strengthen loyalty. For instance. Grab could develop driver preference features tailored to specific needs (e.g., female drivers for female passengers) or appreciation programs for drivers who demonstrate high levels of empathy.

The classification of driver identification (T3) as Indifferent and the rating feature (A2) as Reverse warrants careful interpretation. The Indifferent category does not imply

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that the attribute is unimportant. but rather that users do not perceive a significant impact on their satisfaction. Meanwhile. The Reverse category for A2 suggests that the feature's presence actually induces discomfort for a subset of users. Grab is advised to conduct further qualitative research to understand the underlying perceptions before implementing any design changes to the feature.

E. Strategic Implications and Improvement Priorities

The combined use of SERVQUAL and the Kano model offers more precise direction for establishing improvement priorities. Attributes that display substantial negative GAP values and fall under the Must-Be or One-Dimensional categories demand primary attention. since neglecting them will erode customer satisfaction and loyalty. Applying these criteria. The most urgent Must-Be attributes include T1. T2. RL3. RL4. A1. A3. and E3. Among the One-Dimensional attributes. Priority should also be assigned to RL1. RL2. and RP2. Closing these gaps directly mitigates dissatisfaction and establishes a basis for customer trust and long-term loyalty.

Conversely, Attractive attributes associated with relatively minor GAP values, namely RP1. E1 and E2 can be cultivated further as value-added differentiators. Marketing communication initiatives may emphasize GrabBike's responsiveness and driver empathy to draw new users and reinforce brand image. Through the strategic prioritization of Must-Be and One-Dimensional improvements, while capitalizing on Attractive features. Grab can simultaneously boost customer satisfaction and strengthen its competitive position.

IV. CONCLUSION

This study evaluated GrabBike service quality in Malang City through the integrated SERVQUAL-Kano framework. The results reveal that overall service performance remains below user expectations, with an overall quality ratio of 0.85 and negative gaps across all dimensions. The most critical shortfall was fare suitability (RL4, GAP = -1.65), while Kano classification identified a predominance of Must-Be attributes, notably safety equipment (T2, IWT = -0.70), whose underperformance substantially erodes satisfaction. A novel finding warranting further investigation is the Reverse classification of the rating feature (A2), suggesting potential user discomfort with two-sided rating systems in ride-hailing contexts. In contrast, travel speed (RP1) emerged as the strongest Attractive attribute (IBT = 0.70), offering a clear opportunity for competitive differentiation. These findings confirm that fundamental service requirements are not being adequately met, yet also highlight specific delight factors that can be leveraged to strengthen user satisfaction in a mid-sized urban market.

Several limitations warrant caution. The geographic confinement to Malang restricts direct generalization to other urban settings, and the cross-sectional design precludes causal interpretations. Future research should replicate this integrated framework in larger metropolitan areas to enhance external validity and incorporate complementary methods. such as Importance Performance Analysis. Quality Function Deployment, or Structural Equation Modeling, to deepen causal and technical insights. Cross-platform comparisons. longitudinal designs. and qualitative approaches are also recommended to capture evolving user expectations and to clarify ambiguous Kano categories. thereby building a more robust evidence base for ride-hailing service quality management in Indonesia.

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