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A Model for Brand Loyalty Formation through Perceived Quality and Customer Satisfaction in the Astra Motor O2O Ecosystem: A PLS-SEM Study

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Abstract

Background: Digital transformation in the automotive industry increasingly integrates digital and physical customer journeys through Online-to-Offline (O2O) services. In Astra Motor's Motorku X ecosystem, loyalty depends on whether digital convenience is translated into consistent service quality across application and dealership interactions.
Objective: This study examines the structural relationships among corporate image, customer expectation, perceived quality, perceived value, customer satisfaction, and brand loyalty in the Astra Motor O2O ecosystem.
Methods: A quantitative cross-sectional survey was analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM) in SmartPLS 4. The analysis used 385 Motorku X users who had completed at least one O2O transaction and met the study's eligibility criteria. Measurement validity, indicator reliability, collinearity, and bootstrapped structural relationships were evaluated.
Results: Corporate image and perceived quality significantly increased customer expectation. Perceived quality also significantly increased perceived value and customer satisfaction, while customer satisfaction significantly increased brand loyalty. Corporate image did not significantly affect perceived value or customer satisfaction; customer expectation did not significantly affect perceived value; and perceived value showed a positive but marginally non-significant relationship with customer satisfaction ($p = 0.061$).
Conclusion: The findings indicate that consistent perceived quality across the O2O journey is central to customer evaluation, while customer satisfaction is the direct antecedent of brand loyalty. Corporate image primarily shapes expectations rather than directly determining value or satisfaction.

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INTRODUCTION

The development of digital technology in the past decade has fundamentally changed the way consumers interact with brands and make purchasing decisions. According to the Indonesian Internet Service Providers Association, the number of internet users in Indonesia reaches more than 229 million people, or about 81% of the total population, with smartphone penetration rates continuing to increase (APJII, 2025).

Google (2021) reports that Indonesian consumers increasingly rely on digital channels to search for information, compare products, and consult customer reviews before purchasing. The reported increases in search interest for product quality, new products, and reviews indicate a changing information environment rather than direct evidence of dissatisfaction or loyalty problems. Accordingly, these trends are used here to establish the growing importance of digital touchpoints, while the specific research problem is derived from inconsistencies in the O2O

customer experience and service outcomes.

The digitalization phenomenon has triggered a shift in consumer behavior from traditional purchasing patterns to hybrid or Online-to-Offline (O2O) patterns, where consumers utilize online channels for information exploration, but still rely on offline interactions for validation and hands-on experiences. The application of the O2O model serves to reduce the information gap between digital and physical channels, improve customer convenience, and speed up the purchasing decision-making process (Che et al., 2022). Unlike a standard online transaction, an O2O model requires continuity between digital and physical channels: information displayed in the application, booking and payment processes, dealer execution, workshop service, spare-parts availability, and after-sales support should form one coherent experience. This continuity provides the conceptual basis for examining perceived quality and perceived value as evaluations of the integrated journey, customer satisfaction as the post-experience assessment, and brand loyalty as the longer-term relational outcome.

This context becomes even more relevant when it is associated with the role of motorcycles as the main mode of transportation in many developing countries, including Indonesia. Motorcycles not only function as a means of mobility, but also as an important asset that supports the economic and social activities of the community. The World Population Review (2025) in BPS (2026) report states that there are around 142 million motorcycles operating in Indonesia. Thus, Indonesia is the second largest two-wheeled market in the world. The large population of these vehicles reflects the high dependence of the community on motorcycles and the complexity of the decision-making process in purchasing them. This industry structure makes O2O consistency especially consequential because motorcycles are high-involvement products and customer relationships continue after purchase through maintenance, spare parts, warranty, and repeated workshop interactions. Unlike low-involvement transactions, service failures at any digital or physical touchpoint can therefore affect evaluations across the broader ownership journey.

Along with the high level of consumer involvement, the process of searching for information related to motorcycles is also increasingly hybrid, combining personal sources and digital channels. The survey Jakpat (2025) stated that more than 40% of consumers still rely on dealers and recommendations from the closest people as the main source of information. But the influence of digital channels also dominates, with more than 50% of consumers obtaining motorcycle information through social media, while online reviews and other digital content are increasingly shaping consumers' initial perceptions of products and brands. This change in behavior patterns in the automotive sector emphasizes the importance of a consistent and integrated end-to-end customer experience, because the perception formed in digital channels will affect expectations, quality assessments, and customer satisfaction at the point of interaction.

The adoption of the Online-to-Offline (O2O) model is a key strategy in bridging digital interaction and in-person experiences at dealerships. This model allows customers to search for information, assess, and order vehicles online before proceeding with purchase or maintenance transactions at a physical location. In line with Markplus Inc. (2025), research emphasizes that the quality of continuous customer experience has now shifted from just added value to the main differentiating factor in the competitiveness of automotive companies in the digital era.

In Indonesia, the development of O2O in the automotive sector is accelerating with increasing internet penetration and changes in information seeking behavior by consumers. Based on consumer behavior data from the Google (2020), as many as 43% of respondents expressed interest in buying vehicles online. In the same survey, 71% of respondents mentioned that they prefer the official dealer website as the platform of choice to make a purchase. This condition shows that digital channels have become one of the prominent first touchpoints in the customer journey of the automotive industry. Therefore, understanding digital consumer behavior is an important foundation for automotive companies in designing a more seamless and integrated orchestration of the customer journey.

In practice, the gap between customer expectations in digital channels and the actual quality of service in the field is still proving to be a major obstacle. Based on observations of secondary data in the form of customer reviews on the Motorku X page on the Google Play Store digital application distribution platform, it was found that consumers faced massive operational constraints. This gap specifically boils down to three critical issues. First, the failure of the

integration of the Online-to-Offline (O2O) system where digital booking queues and promotional voucher claims are often not synchronized or even rejected by the offline system at physical dealers. Second, the low technical performance of the application is characterized by slow loading time, authentication (OTP) constraints, and functional disruptions due to excessive advertising pop-up interruptions. Third, vulnerabilities in the data security system that trigger the unilateral transfer of customer vehicle ownership data to the accounts of other entities. This barrage of operational and technical dysfunction has significantly degraded the functional value of the digital services that companies offer.

Therefore, this study examines the structural relationships among Corporate Image, Customer Expectation, Perceived Quality, Perceived Value, Customer Satisfaction, and Brand Loyalty in the Astra Motor O2O ecosystem. The model tests nine hypotheses consistently defined in Table 4, including Corporate Image→Customer Expectation (H1), Corporate Image→Perceived Value (H2), Corporate Image→Customer Satisfaction (H3), and the subsequent relationships among expectation, quality, value, satisfaction, and loyalty. The analysis covers the integrated customer journey rather than assigning H1–H3 to sales, workshop, or spare-parts service categories (Statista Research Department, 2024).

Changes in consumer behavior in the digital era increase customer expectations for the quality of online services. Customers now demand fast, transparent, easy-to-use, and consistent experiences across online and offline channels. In automotive digital services, this expectation is increasingly prominent as customers increasingly rely on apps to place service orders, obtain information, and interact with workshops. To dig deeper into the trends in customer expectations and sentiment, this study conducted a text-based consumer behavior analysis using the Python programming language through the Google Colab computing environment. The creation of word cloud was carried out to process language in the stage of exploring expectations and complaints of users of the Astra Motor digital platform. This method is used to map and visualize the frequency of words that most often appear from reviews or customer feedback who have more expectations for Motorku X.

Specifically, the analyzed review data is limited to users who give a 1 to 3-star rating to focus text extraction on aspects of dissatisfaction, technical constraints, and areas for improvement. Through the visualization of the word cloud, the behavior patterns, main needs, and pain points of consumers towards application services can be identified in a more objective and measurable manner.

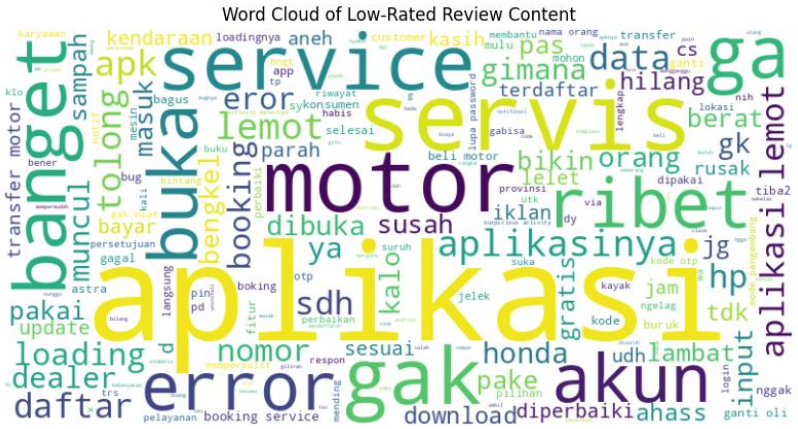

Figure 1. Word Cloud from Reviews Rated 1–3 (October 2025)**0**
Source: Author's data processing (2025)

Based on a Python-based text processing analysis of 1,000 application reviews as of October 2025, users show a consistent pattern of expectations for the quality of digital services. Referring to the visualization of Figure 1, the most dominant words emerged from low-rated reviews (1-3 stars) clearly mapping the technical problems experienced by customers. The enormous proportion of the words "app", "motor" and "service" confirms that the main intention of users when using the platform comes down to booking vehicle maintenance services. However, the expectation of convenience clashes with the system's functional constraints, which is strongly reflected in the high frequency of occurrences of the words "error", "slow", "difficult",

"complicated", "loading", "open", "list", and "account".

This indicates that the main pain points are in the onboarding phase such as registration and account management and the stability of application accessibility. Users often experience an unsmooth experience starting from applications that are slow to respond (slow/loading), difficulty logging in (difficult to open), to system failure problems (errors) when trying to complete a service booking transaction. These exploratory findings suggest that the low reliability of the system and the lack of ease of use directly hinder the fulfillment of customer expectations, which can then erode the perceived value of Astra Motor's digital ecosystem.

Previous studies have highlighted the importance of customer experience in the context of Online-to-Offline (O2O). However, much of the research still focuses on the retail and food and beverage (F&B) sector, where transaction characteristics are fast and involve relatively low risk. Meanwhile, research examining the application of the O2O model in the automotive industry is still very limited, even though the vehicle purchase process is categorized as a high involvement purchase which involves higher financial and functional risks compared to low-risk products such as consumer goods or stationery.

Yao et al. (2022) show that customer satisfaction in O2O commerce is shaped by multiple aspects of the service experience, including quality, value, and risk-related evaluations. However, much of the prior evidence comes from general e-commerce, retail, or food-service settings rather than high-involvement automotive ecosystems that require continuity between digital applications and physical dealer or workshop networks. This leaves a contextual gap concerning how corporate image, customer expectation, perceived quality, and perceived value operate together in shaping customer satisfaction and subsequent brand loyalty in automotive O2O services.

In practical terms, Astra Motor is a real example of the application of O2O in the automotive sector through the Motorku X application, Dealer Management System (DMS), as well as an omnichannel strategy that connects dealers and customers. However, the results of the Customer Satisfaction Level (CSL) survey and customer reviews show that there are gaps between expectations and actual experiences, such as order delays, stock mismatches, and information differences between online channels and offline dealers. This phenomenon illustrates the occurrence of expectation–disconfirmation, where customers feel that the digital experience has not fully met their expectations (Che et al., 2022).This situation shows that the digital transformation carried out by Astra Motor has not fully answered consumer expectations for a seamless and integrated O2O model.

From the academic side, the literature on customer satisfaction in the context of O2O in the automotive sector is still limited, especially in the motorcycle category which is a high involvement product. In fact, purchasing decisions in this segment involve significant financial considerations as well as repeated interactions with service providers. Kotler et al. (2022) affirms that customer satisfaction is a key determinant of long-term loyalty, while Malhotra (2022) adding that in the two-wheeled industry in Asia, customer satisfaction depends not only on product quality, but also on perceived value, brand image, and after-sales service.

A further research gap concerns the transition from customer satisfaction to brand loyalty in an O2O-based automotive context. Prior O2O studies have largely emphasized satisfaction antecedents such as service quality, perceived value, and risk Zhang et al. (2025), while loyalty-oriented studies emphasize satisfaction and relationship outcomes in automotive or service settings (Rehman et al., 2025). This study connects these streams by testing an integrated PLS-SEM model in which perceived quality and customer satisfaction link the O2O experience to brand loyalty within a motorcycle service ecosystem.

The urgency of this research arises from the increasing role of digital channels as entry points to automotive customer journeys and the operational need to maintain consistency when customers move between Motorku X and physical dealer or workshop services. Theoretically, the study contributes evidence on how perceived quality, perceived value, customer satisfaction, and brand loyalty interact in a high-involvement O2O setting. Practically, the findings provide an empirical basis for Astra Motor to prioritize improvements in application reliability, information consistency, booking execution, dealer coordination, and after-sales service. The study does not presume that research findings will directly increase loyalty; rather, they identify relationships that can inform managerial decisions aimed at improving the O2O customer experience.

METHOD

This study used a quantitative, cross-sectional survey design to examine hypothesized structural relationships among Corporate Image, Customer Expectation, Perceived Quality, Perceived Value, Customer Satisfaction, and Brand Loyalty in the Astra Motor O2O ecosystem. The target population was defined as Motorku X users who had completed at least one transaction through Astra Motor's O2O service, aligning the population boundary with the unit of analysis. Because the manuscript does not document an enumerated sampling frame or a formal randomization procedure, the respondent selection is described conservatively as criterion-based non-probability sampling rather than simple random sampling. Eligible users were screened according to the transaction criterion before inclusion in the analysis.

The inclusion criterion required respondents to be Motorku X users who had completed at least one O2O transaction. The minimum sample size was determined using the Cochran formula for a large or unknown population, yielding a minimum requirement of 385 respondents; the final analytical sample comprised 385 eligible users. The questionnaire operationalized six constructs with 23 retained indicators as reported in Table 1: Brand Loyalty (4 items), Corporate Image (2 items), Customer Expectation (3 items), Customer Satisfaction (3 items), Perceived Quality (8 items), and Perceived Value (3 items). Because the available manuscript does not provide a complete demographic profile or the original item-source matrix, those details are not inferred and should be interpreted as reporting limitations (Bourdeau et al., 2024).

The study used primary survey data supported by secondary information for contextual analysis. Structural relationships were estimated using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS 4, which is appropriate for simultaneously evaluating latent measurement models and hypothesized structural relationships (Hair Jr. et al., 2022). The measurement assessment reported outer loadings, indicator reliability, and Average Variance Extracted (AVE), while the structural assessment reported inner VIF and bootstrapped path coefficients with t-statistics and p-values. Because the design is cross-sectional and observational, the estimated paths are interpreted as structural associations rather than proof of causality. The single-source, single-time-point self-report design also creates a potential common-method bias that should be considered when interpreting the results; no unreported diagnostic statistics are inferred in this revision (Hair Jr. et al., 2022).

RESULTS AND DISCUSSION

Results

Outer Loading and Indicator Reliability (IR)

The outer loading value indicates the strength of the relationship between an indicator and its latent construct. Indicator Reliability (IR), calculated as the squared outer loading, represents the proportion of indicator variance explained by the construct and should not be interpreted as construct-level reliability.

Table 1

Outer Loading and Indicator Reliability Test Results

Indicator	Variable						GO
	BL	CI	CE	CS	PQ	PV	
BL1	0,883						0,780
BL2	0,877						0,769
BL3	0,898						0,806
BL4	0,836						0,699
CE1			0,827				0,684
CE2			0,886				0,785
CE3			0,849				0,721
CI1		0,878					0,771
CI2		0,865					0,748
CS1				0,869			0,755
CS2				0,894			0,799

CS3	0,888			0,789
PQ1		0,774		0,599
PQ2		0,808		0,653
PQ3		0,778		0,605
PQ4		0,797		0,635
PQ5		0,724		0,524
PQ6		0,831		0,691
PQ7		0,774		0,599
PQ8		0,848		0,719
PV1			0,853	0,728
PV2			0,864	0,746
PV3			0,855	0,731

Source: SmartPLS data processing 4 (2026)

Based on Table 1, all question indicators have an outer loading value above the recommended limit of 0.70 (Hair Jr. et al., 2022). The lowest load value is found in the PQ5 indicator of 0.724 and the highest value is found in the BL3 indicator of 0.898. This shows that all indicators used are valid and feasible to measure each of the latent variables. The acquisition of the Item Reliability (IR) score also met the criteria, which was in the range of 0.524 (lowest) to 0.806 (highest). Thus, each indicator item is declared to be able to explain more than 50% of the variance of each latent variable it measures. Hence, all indicators used are convergently valid, very feasible to measure latent variables, and none of the indicators need to be eliminated from the research model.

Average Variance Extracted (AVE)

The next parameter to measure convergent validity is Average Variance Extracted (AVE). AVE measures the amount of variance that can be captured by the latent construct of its indicators compared to the variance resulting from measurement error.

Table 2

Average Variance Extracted (AVE) Test Results

Variable	AVE	Critical Values	Model Evaluation
Brand Loyalty (BL)	0,763	>0.5	Valid
Corporate Image (CI)	0,759		Valid
Customer Expectation (CE)	0,730		Valid
Customer Satisfaction (CS)	0,781		Valid
Perceived Quality (PQ)	0,628		Valid
Perceived Value (PV)	0,735		Valid

Source: SmartPLS data processing 4 (2026)

Based on the data in Table 2, it is known that all latent variables in this study have an AVE value greater than 0.50. Thus, it can be concluded that overall, the measurement model of this study has met the required convergent validity requirements.

Multicollinearity Test Between Constructs (Variance Inflation Factor / VIF)

The structural model was first assessed for multicollinearity among predictor constructs using the Variance Inflation Factor (VIF). VIF values below 3 indicate that collinearity is unlikely to materially bias the estimated structural relationships (Hair Jr. et al., 2022).

Table 3

Multicollinearity Test Results (Inner VIF)

Construct Relationships	VIF
Corporate Image -> Customer Expectation	1.875
Corporate Image -> Customer Satisfaction	1.910

Corporate Image -> Perceived Value	2.171
Customer Expectation -> Perceived Value	1.935
Customer Satisfaction -> Brand Loyalty	1.000
Perceived Quality -> Customer Expectation	1.875
Perceived Quality -> Customer Satisfaction	2.930
Perceived Quality -> Perceived Value	2.135
Perceived Value -> Customer Satisfaction	2.352

Source: SmartPLS data processing 4 (2026)

Based on Table 3, the overall VIF value in each line of relationship between constructs is in the range of 1,000 to 2,930. The highest VIF score was recorded in the Perceived Quality to Customer Satisfaction (2,930) track, while the lowest score was recorded in the Customer Satisfaction to Brand Loyalty track (1,000).

Hypothesis Testing (Path Coefficients)

In the PLS-SEM method, the significance of the relationship between variables (path coefficients) was evaluated using a bootstrapping procedure. This procedure performs random resampling of the initial data to produce stable estimated values. A hypothesis is declared acceptable and has a significant influence if the T-Statistics value is greater than 1.96 (at a 95% confidence level or $\alpha = 0.05$) and the P-Values are less than 0.05. In addition to significance, the direction of the relationship (positive or negative) is assessed through the value of the path coefficient (Original Sample).

Table 4

Hypothesis Testing Results (Bootstrapping Procedure)

Hypothesis	Path Relationships	*Original sample (O)*	*Sample mean (M)*	*Standard deviation (STDEV)*	*T statistics (|O/STDEV|)*	*P values*	Remarks
H1	Corporate Image → Customer Expectation	0.391	0.391	0.063	6.234	0.000	Accepted
H2	Corporate Image → Perceived Value	0.088	0.090	0.058	1.515	0.130	Rejected
H3	Corporate Image → Customer Satisfaction	0.032	0.033	0.041	0.789	0.430	Rejected
H4	Perceived Quality → Customer Expectation	0.366	0.367	0.060	6.156	0.000	Accepted
H5	Customer Expectation → Perceived Value	0.085	0.086	0.053	1.596	0.110	Rejected
H6	Perceived Quality → Perceived Value	0.638	0.637	0.064	9.985	0.000	Accepted
H7	Perceived Value → Customer Satisfaction	0.117	0.117	0.062	1.873	0.061	Rejected

H8	Perceived Quality → Customer Satisfaction	0.683	0.683	0.058	11.798	0.000	Accepted
H9	Customer Satisfaction → Brand Loyalty	0.797	0.798	0.026	31.147	0.000	Accepted

Source: SmartPLS data processing 4 (2026)

Based on Table 4, the description of the test results of each hypothesis is as follows:

1. The test showed that Corporate Image had a positive and significant influence on Customer Expectation with a path coefficient value of 0.391, a T-Statistic value of 6.234 (> 1.96), and a P-Value of 0.000 (< 0.05). This means that Astra Motor's corporate image has proven to be able to significantly build customer expectations. These results prove that H1 is accepted, which means that the company's image has a positive and significant influence on customer expectations in the Astra Motor O2O ecosystem.
2. The test results showed that Corporate Image had a positive but insignificant influence on the Perceived Value with a path coefficient value of 0.088, a T-Statistic value of 1.515 (< 1.96), and a P-Value of 0.130 (> 0.05). This means that Astra Motor's corporate image has not been proven to be able to shape the perception of customer value directly and significantly. This result proves that H2 was rejected, which means that the company's image does not have a significant influence on the perception of customer value in Astra Motor's O2O ecosystem.
3. The test results showed that Corporate Image had a positive but insignificant influence on Customer Satisfaction with a path coefficient value of 0.032, a T-Statistic value of 0.789 (< 1.96), and a P-Value of 0.430 (> 0.05). This means that Astra Motor's corporate image has not been proven to be able to create direct and significant customer satisfaction. These results prove that H3 was rejected, which means that the company's image does not have a significant influence on customer satisfaction on Astra Motor's O2O ecosystem.
4. The test results showed that Perceived Quality had a positive and significant influence on Customer Expectation with a path coefficient value of 0.366, a T-Statistic value of 6.156 (> 1.96), and a P-Value of 0.000 (< 0.05). This means that the perception of quality has been proven to be able to significantly increase customer expectations. These results prove that H4 is accepted, which means that quality perception has a positive and significant influence on customer expectations in Astra Motor's O2O ecosystem.
5. The test results showed that Customer Expectation had a positive but insignificant influence on Perceived Value with a path coefficient value of 0.085, a T-Statistic value of 1.596 (< 1.96), and a P-Value of 0.110 (> 0.05). This means that customer expectations have not been proven to be able to directly and significantly shape customer value perceptions. This result proves that H5 is rejected, which means that customer expectations do not have a significant influence on customer value perception on Astra Motor's O2O ecosystem.
6. The test results showed that Perceived Quality had a positive and significant influence on Perceived Value with a path coefficient value of 0.638, a T-Statistic value of 9.985 (> 1.96), and a P-Value of 0.000 (< 0.05). This means that the perception of quality has been proven to be able to increase the perception of customer value strongly and significantly. These results prove that H6 is accepted, which means that the perception of quality has a positive and significant influence on the perception of customer value in the Astra Motor O2O ecosystem.
7. The test results showed that Perceived Value had a positive but statistically non-significant relationship with Customer Satisfaction (β = 0.117; t = 1.873; p = 0.061). H7 is therefore not supported at the 5% significance level. However, the p-value is close to the conventional threshold, so the result is more appropriately interpreted as marginal or borderline evidence rather than as a strong null relationship. This distinction is retained in the subsequent discussion.
8. The test results showed that Perceived Quality had a positive and significant influence on Customer Satisfaction with a path coefficient value of 0.683, a T-Statistic value of 11.798 (> 1.96), and a P-Value of 0.000 (< 0.05). This means that the perception of quality has been proven to be able to create customer satisfaction in a very strong and significant way. These

results prove that the H8 is accepted, which means that the perception of quality has a positive and significant influence on customer satisfaction in the Astra Motor O2O ecosystem.

9. The test results showed that Customer Satisfaction had a positive and significant influence on Brand Loyalty with a path coefficient value of 0.797, a T-Statistic value of 31.147 (> 1.96), and a P-Value of 0.000 (< 0.05). This means that customer satisfaction has proven to be able to build brand loyalty in a very strong and significant way. These results prove that H9 is accepted, which means customer satisfaction has a positive and significant influence on brand loyalty to Astra Motor's O2O ecosystem.

Discussion

The Influence of Corporate Image on Customer Expectation (H1)

When consumers realize that the Motorku X digital platform is officially developed and managed by Astra Motor, it will automatically form a high standard of expectation in their minds, even before they fully use the service. There is a process of trust transfer where customers project the reliability of physical services that they have been familiar with into their digital ecosystem.

These empirical findings are consistent with the research of Zhang et al. (2025), which are consistent withs that a positive company image serves as a strong quality signal, thus setting the anchor of higher initial expectations for customers, particularly in O2O integration spending scenarios. Further, this phenomenon is in line with Phonthanukitithaworn et al. (2020), in which a strong corporate reputation can provide positive memory associations in the minds of customers. This association not only shapes expectations, but also serves as a psychological protector that can reduce negative impacts in the event of minor obstacles in the early stages of service interaction.

In the perspective of a broader theoretical model, the results of this study also strengthen the framework of the European Customer Satisfaction Index (ECSI) as explored by (Yilmaz & Sürmelioğlu, 2025). These findings prove that a company's image acts as an initial predictive determinant that shapes a customer's proportional perception of what they should receive. When Astra Motor has been widely recognized as a reliable, professional, and innovative entity, consumer expectations for the quality of applications and physical services in the dealer network and AHASS will increase automatically.

The Influence of Corporate Image on Perceived Value (H2)

Perceived value is closely related to the customer's cognitive evaluation of the reciprocal ratio between the benefits received and the cost-benefit, such as costs, time, and effort expended. Astra Motor's digital product positioning strategy was developed by emphasizing the concepts of convenience, practicality, and excitement through direct profit offerings that are incentives and utilities. Concrete benefits offered include a no-queue booking service feature at AHASS, accumulation of Hepigo points that can be exchanged for discount vouchers, daily promos on the home page, complete catalog (motorcycles, oils, accessories, and spare parts), to integration with Honda Care emergency services and visit services (Astra Honda, 2022).

The existence of various features oriented towards functional and financial benefits proves that the basis of consumer value evaluation has shifted from the aspect of abstract imagery to direct benefit. Consumers evaluate value based on the economic incentives and time efficiency they get when transacting on the app, rather than simply being lulled by the greatness of their company's name. Interestingly, although these empirical findings present an anomaly to some previous literature such as Ni et al. (2020), Luo et al. (2024), and Hamzah & Pontes (2022) in the automotive industry sector which states that the image of a company always improves the perception of value, the results of this rejection are actually consistent and confirm the findings of the main reference of this study, namely (Zhang et al., 2025).

The Influence of Corporate Image on Customer Satisfaction (H3)

These factual conditions are concrete evidence that if the realization of services in the field is not optimal, then a good company image in the minds of consumers will not be able to compensate for their disappointment. In other words, a great reputation fails to transform into immediate satisfaction without any proof of quality. This finding presents an interesting academic debate because it contradicts the mainstream of the previous literature. Several studies

empirically conclude that a strong company image always boils down to an increase in customer satisfaction directly due to the presence of a sense of assurance and trust (Ardhana et al., 2024; Simanjuntak et al., 2020; Sugiat & Sudirman, 2024). Even in studies in the automotive industry studied by Yilmaz & Sürmelioğlu (2025), image is considered a crucial factor driving satisfaction.

However, the rejection of this study confirms the findings of the research results (Zhang et al., 2025). In his research on O2O commerce, Zhang et al. (2025) proves that the path of Corporate Image to Customer Satisfaction is indeed not significant. This proves that in the O2O ecosystem, satisfaction is highly transactional and rational. Astra Motor's corporate image is proven to only act as a pulling stimulus in the pre-consumption phase to build expectations as evidenced in H1. However, when customers have entered the consumption and post-consumption phases, the role of the image fades and is completely replaced by an evaluation of the quality of the products and services they receive.

The Effect of Perceived Quality on Customer Expectation (H4)

This increase in expectations standards is in line with a global report Zendesk (2026), which found that 68% of consumers now demand faster response times than the previous year. Once consumers feel the excellent quality of service, their expectations never stay in place, but continue to creep up. This phenomenon is validated very strongly in Indonesia as the digital-first lifestyle rolls around. Referring to consumer behavior research Google (2021), the massive shift to digital channels is driven by the absolute demands for speed and convenience, which is reflected in the skyrocketing searches related to instant delivery by up to 700%. These findings are consistent with various previous literature, including the results of the study of (Zhang et al. 2025). In the context of O2O, Zhang et al. (2025) is affirmed that perceived quality serves as a strong signal that guarantees that the service is consistent, safe, and reliable, thus directly raising the standard of customer expectations.

The Effect of Customer Expectation on Perceived Value (H5)

In digital platforms, there is a very high level of information transparency. Information such as the disclosure of spare parts prices, details of service fees, and the availability of booking slots can be accessed in general. This transparency encourages consumers to objectively calculate the cost-benefit ratio based on the facts presented on their device screens, so that value perceptions are no longer based on abstract pre-consumption expectations. Based on research on digital consumer behavior in Indonesia, around 94% of consumers state that they are obliged to read as detailed and relevant information as possible before making a transaction, and 80% of them are highly dependent on trusted sources of information (Google, 2021). In a specific study of the automotive industry, transparent upfront price disclosure is the reason that makes consumers rationalize their financial sacrifices strictly (Hamzah & Pontes, 2022). These empirical findings present an interesting theoretical debate, given that the mainstream literature generally places expectations as the primary foundation of value-making. Study of Rao et al. (2025) on public services, as well as the ACSI and ECSI customer satisfaction models explored in depth by Cui et al. (2023) and Yilmaz & Sürmelioğlu (2025), consistently conclude that high initial expectations will lead customers to evaluate services with higher value as well.

The Effect of Perceived Quality on Perceived Value (H6)

The reality of calculating this value is in line with the characteristics of urban commuter consumers who have a high level of mobility and time constraints. This is confirmed by the report on two-wheeled consumer behavior, where almost half of consumers now make the convenience and practicality of service maintenance their top priority (Jakpat, 2025). The quality of information in the application, such as cost transparency and certainty of the availability of booking slots, directly eliminates the risk of uncertainty and cuts the sacrifice of customer power who previously had to come directly just to check the queue. Furthermore, the precise quality of O2O synchronization between digital schedules and mechanical execution in physical workshops successfully converts lead time into efficient time. In the eyes of the modern digital consumer who has made speed and convenience the main lifestyle Google (2021), the time and effort savings due to a reliable O2O operating system are just as valuable as financial gains.

The Effect of Perceived Value on Customer Satisfaction (H7)

This phenomenon explains why Hepigo's tiered loyalty program, which provides transactional rewards in the form of vouchers, service discounts, and spare parts, fails to trigger a significant surge in emotional satisfaction. Customers view the financial reward as a standard utility of the application, rather than a privilege that touches the affective realm. This is strongly confirmed by global reports, Zendesk (2026) suggest that digital convenience facilities and instant services that were once considered an added value or exclusive privilege, have now shifted to a baseline in the eyes of modern consumers. As a result, customers find the platform to be pragmatically useful and profitable, but meeting those minimum standards is not yet strong enough to transform into emotional or affective satisfaction. These empirical findings present an interesting academic debate because contradict with Zhang et al. (2025) and mainstream research as well as literature such as (Malhotra, 2022; Matsuoka, 2022; Simanjuntak et al., 2020). The previous literature concludes convincingly that the balance of benefits and sacrifices has always been an absolute determinant towards customer satisfaction. Given the borderline p-value for H7 ($p = 0.061$), the evidence should not be interpreted as demonstrating that perceived value is irrelevant. Instead, it suggests that value may have a weaker or context-dependent link to satisfaction in this sample, warranting replication with alternative value dimensions, larger samples, or longitudinal observations.

The Effect of Perceived Quality on Customer Satisfaction (H8)

This phenomenon of satisfaction is strongly confirmed by Chan et al. (2025), which confirms that functionality and usability are the main pillars that determine the quality of a digital ecosystem. In the Indonesian market, consumers are often faced with connectivity disruptions and digital literacy constraints. When Astra Motor is able to present a seamless and error-free Motorku X platform, it directly reduces the cognitive burden of users and facilitates positive engagement. In contrast to offline customers who may tolerate physical queues, digital customers demand absolute reliability. Smooth operations are no longer just a complement to features, but an absolute prerequisite that underlies the formation of customer satisfaction.

The significance of these findings is consistent and is consistent with the results of the study of (Zhang et al., 2025). In the O2O trading model, perceived quality is proven to act as a direct antecedent that triggers customer satisfaction. Astra Motor's success in presenting this quality supports the statement of Liao et al. (2024) that emphasizes the importance of a seamless experience, where O2O satisfaction can only be formed if the quality in the realm of digital applications supports each other consistently with offline services at dealers or workshops, without any inequality in performance between channels.

The Effect of Customer Satisfaction on Brand Loyalty (H9)

This high reluctance to switch is a crucial retention achievement when faced with market realities. Referring to industry data from research Jakpat (2025), the loyalty of two-wheeled vehicle consumers in Indonesia is basically very fragile, where 72% of consumers still prefer to carry out maintenance in public workshops rather than in official workshop networks. These macro facts underscore how high the risk of customer turnover is in the automotive industry. Therefore, Astra Motor's success in locking customer loyalty proves that the actual satisfaction of a great O2O experience can build a solid moving barrier to prevent customers from being tempted by alternative options.

These empirical findings are very much in line and strongly confirm various previous literature, both in the digital and automotive sectors. Research of Rehman et al. (2025) emphatically places satisfaction as the main determinant that drives customers' tendency to make a repeat purchase and provides positive referrals. More specifically in the two-wheeled automotive industry, these findings reinforce the postulate Malhotra (2022) that loyalty is not solely formed from product technicalities in isolation, but is bridged emotionally by a thorough evaluation of post-consumer satisfaction. Without complacency at this point, any type of customer retention strategy will not be effective.

CONCLUSION

The study concludes that the proposed O2O brand-loyalty model is only partially supported. Corporate Image and Perceived Quality significantly shape Customer Expectation, but Corporate Image does not directly determine Perceived Value or Customer Satisfaction. Perceived Quality is consistently associated with Customer Expectation, Perceived Value, and Customer Satisfaction, indicating that customers evaluate the O2O ecosystem primarily through the quality experienced across digital and physical touchpoints. Customer Expectation does not significantly shape Perceived Value, and the positive Perceived Value–Customer Satisfaction relationship is marginal at the 5% level ($p = 0.061$).

Customer Satisfaction, in turn, has a strong positive relationship with Brand Loyalty, showing that loyalty in the Astra Motor O2O ecosystem is most directly linked to the customer's post-experience evaluation rather than corporate reputation alone. The study is limited by its cross-sectional, single-source self-reported design, its focus on one brand and one digital ecosystem, and the absence of complete demographic and common-method-bias diagnostics in the available dataset. Future research should replicate the model across automotive brands and regions, use longitudinal or multi-source data, report a fuller PLS-SEM assessment including construct reliability, discriminant validity, explanatory power, effect sizes, and predictive relevance, and examine additional mediating or moderating mechanisms such as trust, digital literacy, or channel consistency.

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AUTHOR CONTRIBUTION STATEMENT

All authors contributed to the conceptualization, methodology, investigation, data analysis, interpretation of findings, manuscript preparation, and critical revision of the study. All authors reviewed and approved the final manuscript and agreed to be accountable for the integrity of the work.

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