

Enhancing Customer Satisfaction Through Customer Journey Mapping: A Case Study of Electric Motorcycle Conversion Workshop

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Abstract

One of the primary solutions to reduce carbon emissions is to increase the adoption of electric vehicles. Electric motorcycle conversion workshops play a crucial role in facilitating this transition. However, customer satisfaction often suffers due to a lack of understanding of customer needs and expectations. This study aims to utilize the Customer Journey Map (CJM) as a strategic tool to enhance customer satisfaction within electric motorcycle conversion workshops. The research methodology involved collecting data through in-depth interviews, observations, and questionnaires administered to both customers and workshop staff. Data analysis focused on identifying the stages of the customer journey (awareness, consideration, decision, service, post-service), pain points, and opportunities for improvement at each stage. The results demonstrate that the CJM effectively identifies key issues, such as a lack of clear initial information, uncertainty during the conversion process, and minimal post-sales service communication. By leveraging the CJM, strategies such as enhancing information transparency, developing a more responsive communication system, and providing education on the benefits and usage of electric motorcycles are recommended. Implementing these strategies not only improves customer satisfaction but also fosters stronger customer loyalty to workshop services.

Keywords

Customer Journey Map, Pain Points Identification, Customer Satisfaction, Electric Vehicle Adoption, Electric Motorcycle Conversion

1. Introduction

1.1 Background

Indonesia faces an urgent need to transition to electric vehicles (EVs) as part of its commitment to reducing carbon emissions and achieving sustainable transportation (Pambudi & Juwono, 2024). With millions of conventional motorcycles contributing to air pollution and fuel dependency, the government has introduced various regulations to accelerate the adoption of electric mobility (Setiawan et al., 2022). One key initiative is the conversion of conventional motorcycles into electric motorcycles, which offers a cost-effective and environmentally friendly alternative to

purchasing new EVs. Policies such as Presidential Regulation Number 55 of 2019 on Battery Electric Vehicles (BEV) Development and Minister of Energy and Mineral Resources Regulation Number 3 of 2023 on Conversion Subsidies aim to provide financial incentives, standardization, and technical support for conversion workshops and consumers. However, despite these efforts, challenges remain in terms of infrastructure readiness, public awareness, and workshop capacity. Addressing these issues is essential to ensuring a smooth and large-scale transition toward sustainable mobility in Indonesia (Gallo & Marinelli, 2020; Veza et al., 2022).

The development of electric motorcycle conversion workshops in Indonesia is gaining momentum as part of the government's efforts to promote sustainable transportation (Rahmawati et al., 2023). These workshops specialize in converting conventional motorcycles into electric motorcycles by replacing the internal combustion engine with an electric conversion kit, which includes components such as an electric motor, battery, and controller (Rahmawati et al., 2024). To encourage wider adoption, the Indonesian government has introduced a subsidy program that provides financial assistance of approximately 10 million rupiah per motorcycle for eligible conversions (Darmoyono, 2024; Rahmawati et al., 2022; Yuniaristanto et al., 2024). This initiative not only reduces the cost burden on consumers but also supports the growth of local conversion workshops by creating new business opportunities in the electric vehicle sector. With increasing regulatory support and incentives, the expansion of conversion workshops is expected to accelerate, helping Indonesia transition towards a cleaner and more energy-efficient transportation system.

The customer journey is defined as the sum total of all customer interactions with a product, brand or organization across multiple channels and touchpoints (Pambudi et al., 2020). The customer journey encompasses the entirety of interactions a customer has with a product, brand, or organization across various channels and touchpoints (Towers & Towers, 2022). While widely utilized in business practice, it remains a relatively underdeveloped area in academic research. Consequently, we rely on existing literature that, although not explicitly centered on the customer journey, provides valuable insights to enhance our understanding. In particular, we draw upon research in multichannel management and service management to illustrate how these fields contribute to comprehending the evolving experiences of customers throughout their journey.

Based on the background discussion, customer satisfaction remains a major challenge in electric motorcycle conversion workshops due to the lack of a structured and transparent service process. Many customers face difficulties in understanding the conversion procedure, experience long waiting times, and encounter inconsistencies in service quality, which ultimately impact their overall satisfaction. Additionally, the absence of standardized guidelines and customer-oriented approaches leads to uncertainties and reduces trust in the conversion process. To address these issues, this study aims to analyze and enhance customer satisfaction by implementing Customer Journey Mapping (CJM) as a strategic tool to identify critical pain points and improve the overall service experience. By mapping the customer journey, this research seeks to provide actionable insights for conversion workshops, enabling them to optimize service processes, enhance transparency, and ultimately increase customer trust and satisfaction, thereby accelerating the adoption of electric motorcycle conversions in Indonesia.

1.1 Objectives

This research aims to enhance customer satisfaction in electric motorcycle conversion workshops by utilizing Customer Journey Mapping (CJM) to analyze and optimize the service experience. By identifying key touchpoints and pain points in the customer journey, this study seeks to provide actionable insights that can help workshops streamline their processes, improve service transparency, and ensure a more structured and customer-centric approach. Additionally, this research aims to support the development of standardized service guidelines, which can lead to increased trust and adoption of electric motorcycle conversions. Ultimately, the findings of this study are expected to contribute to the growth and sustainability of the electric vehicle ecosystem in Indonesia by addressing critical customer concerns and improving overall service quality.

2. Literature Review

2.1 Customer Journey

The customer journey is a fundamental concept in marketing and service management that represents the entire experience a customer goes through when interacting with a brand, product, or service across multiple touchpoints (Lemon & Verhoef, 2016; Pantouvakis & Gerou, 2022). It includes different stages, from awareness and consideration to post-purchase behavior, emphasizing how customers perceive and engage with a service over time (Fuller et al.,

2023; Moisescu, 2009; Tueanrat et al., 2021). Mapping this journey enables businesses to identify pain points, improve service quality, and enhance customer satisfaction.

2.2 Customer Journey Map (CJM)

One widely adopted approach to understanding the customer journey is Customer Journey Mapping (CJM), a visualization technique that helps organizations analyze customer interactions across different stages (Santana et al., 2020). CJM provides insights into customer expectations, frustrations, and decision-making processes, allowing businesses to optimize their service delivery (Alvarez et al., 2020; Nugraha et al., 2024; Patti et al., 2020). Research suggests that a well-structured customer journey can positively impact customer satisfaction and loyalty, as it reduces friction and enhances transparency in service processes (Ali & Alfayez, 2024; Rolando, 2025).

In the context of electric motorcycle conversion workshops, customer journey mapping plays a crucial role in addressing customer concerns, such as a lack of awareness, unclear service processes, and inconsistent service quality. By identifying key touchpoints and optimizing interactions, businesses can build trust and encourage more customers to transition to electric vehicles (Chabán & Ruz-Mendoza, 2024; Lundin & Kindström, 2024). Studies have shown that implementing CJM strategies helps organizations improve their operational efficiency and create a more seamless customer experience, particularly in industries with complex service offerings (Andersson & Börjeson, 2023; Fakher, 2024; Homburg & Tischer, 2023).

Furthermore, Mahardikaningtyas & Akromudin, (2024); Utami & Darma, (2024) emphasize that the effectiveness of CJM lies in its ability to integrate multiple channels and service interactions into a cohesive framework. In industries such as electric motorcycle conversion workshops, where customers may face confusion regarding the conversion process and subsidy applications, CJM can help create transparency and streamline operations. Customer journey mapping is not just about visualizing touchpoints but also about understanding customer emotions and behaviors throughout the experience (Lei et al., 2025; Širola et al., 2024). When used effectively, CJM serves as a powerful tool for service innovation, ensuring businesses align their processes with customer needs and expectations.

2.3 Similar Studies

Customer Journey Mapping (CJM) has been widely applied in various service industries to enhance customer experience and operational efficiency. A case study by Patrício et al., (2008) explored how CJM was used in the healthcare sector to improve patient experience by mapping their journey from appointment scheduling to post-treatment follow-ups. By identifying pain points such as long waiting times and lack of communication, the hospital was able to redesign its service flow, ultimately increasing patient satisfaction. Similarly, Clatworthy (2010) demonstrated how a banking institution implemented CJM to enhance digital and in-branch customer interactions, leading to a more seamless omnichannel experience.

In the automotive service sector, Jaakkola et al. (2015) analyzed how CJM helped improve the customer experience in car maintenance and repair services by visualizing critical touchpoints such as service booking, vehicle inspection, and after-service support. The study found that unstructured processes and lack of transparency negatively affected customer satisfaction. By restructuring these processes and incorporating digital tracking systems, service providers were able to increase trust and engagement. These findings are particularly relevant to electric motorcycle conversion workshops, where CJM can be used to enhance service delivery, clarify procedures, and optimize customer interactions.

3. Methods

3.1 Research Framework

The flow of this research is explained in detail in Figure 1 below. The object of the research focuses on evaluate the customer experience of the startup: electric motorcycle conversion workshop (Figure 1).

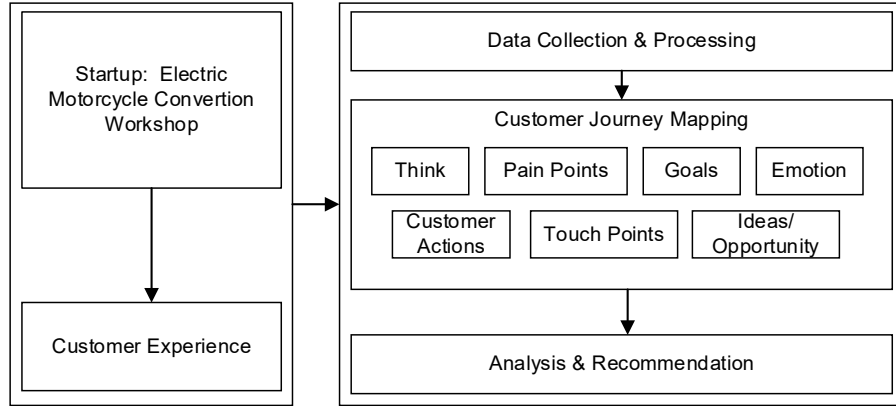


Figure 1. Research Framework

The Customer Journey Map (CJM) framework is a structured approach used to visualize and analyze customer interactions with a service or product across different touchpoints. It typically consists of several key stages: Awareness, Consideration, Purchase/Conversion, Service Experience, and Post-Service Engagement (Lemon & Verhoef, 2016). Each stage represents a critical moment in the customer's journey, allowing businesses to identify challenges and improve service delivery. Touchpoints refer to specific interactions customers have with the business, such as website visits, consultations, transactions, or after-sales support. Understanding these interactions helps organizations streamline processes and enhance customer satisfaction.

A crucial component of the CJM framework is identifying pain points and opportunities for improvement (Moquillaza et al., 2021). By mapping customer emotions, behaviors, and expectations at each stage, businesses can pinpoint inefficiencies and optimize service experiences. For example, in electric motorcycle conversion workshops, CJM can help address issues such as unclear procedures, long processing times, and lack of post-service support by restructuring workflows and increasing transparency. Another essential aspect of the framework is multichannel integration, ensuring a seamless transition across online and offline interactions (Rosenbaum et al., 2017). This approach enables service providers to create a more customer-centric experience, ultimately improving retention and advocacy.

4. Data Collection

To analyze the customer journey in an electric motorcycle conversion workshop, data collection was conducted through multiple methods:

- Customer Surveys: 15 customers who have undergone the conversion process were surveyed regarding their experiences, satisfaction levels, and pain points.
- Interviews: In-depth interviews with 5 customers were conducted to gain qualitative insights into their expectations and frustrations.
- Workshop Observations: Direct observations of the service process were carried out over one month to identify inefficiencies in touchpoints.
- Service Logs & Complaints Analysis: Data from service requests, waiting times, and customer complaints were analyzed to understand recurring issues.








5. Results and Discussion

5.1 Results

To address the challenges faced by electric motorcycle conversion workshops, several strategies are proposed to enhance customer satisfaction and streamline the conversion process. First, developing a standardized service guideline will ensure a structured and transparent workflow, reducing customer confusion about the required steps and documentation. Second, implementing automated status updates via SMS or a mobile application will keep customers informed about the progress of their motorcycle conversion, minimizing frustration caused by a lack of communication. Third, streamlining document submission and verification by introducing a digital platform will improve efficiency and reduce processing delays. Additionally, to tackle long waiting times, workshop capacity optimization through better scheduling and resource allocation will be implemented. Lastly, improving after-sales support by establishing a dedicated customer service team and providing clear maintenance guidelines will enhance

the overall customer experience. These strategies collectively aim to increase customer trust, improve service efficiency, and ensure a smoother transition to electric motorcycles. Table 1. shows customer journey mapping of electric motorcycle conversion workshop.

Table 1. Customer Journey Mapping

Step by Step CJM	Awareness	Information Search	Consideration	Purchase
Think	Inquiries "I need complete information about this conversion workshop."	In Contact "How do I contact this conversion workshop?"	Appointment "I want to see this conversion bike in person."	Negotiation "Can I get a better price?"
		In Discussion "Does this vehicle conversion really suit my needs?"	Viewing "Does this meet my expectations?"	Booking "How is the payment and queue booking process?"
Pain points	Inquiries • Conversion service information is incomplete or less interesting. • It's difficult to compare the features of conversion motors..	In Contact • Respons lambat dari <i>customer service</i> • The follow up process is quite long	Appointment • It is difficult to determine a schedule with the vehicle owner. • Lack of time flexibility.	Negotiation • The negotiation process is complicated or slow. • Ignorance of market prices.
		In Discussion • Customer service answers are unsatisfactory or too technical. • <i>Customer service is not responsive and fast response</i>	Viewing • The results of the motorbike conversion are not as the owner wants. • There is no technician to explain directly.	Booking • The legal process is confusing • Doubts about the safety of motor conversion
Goals	Inquiries Get a conversion bike that fits your criteria	In Contact Connect with workshop technicians easily.	Appointment Schedule a visit to the workshop.	Negotiation Get a good price.
		In Discussion Get more clear information about conversion motors.	Viewing Assess whether the motor conversion results are appropriate.	Booking Ensure safe and registered transactions.
Emotion	Inquiries 	In Contact 	Appointment 	Negotiation 
		In Discussion 	Viewing 	Booking 
Customer Actions	Inquiries Search for a conversion workshop on the platform, read descriptions, view photos, or search filters..	In Contact Click the "Contact" button, send a message, or call.	Appointment Submit a visit schedule.	Negotiation Discuss about price and payment terms.
		In Discussion Questions and answers about prices, legality, or detailed features of conversion motorbikes.	Viewing Visit the workshop, ask for additional details, take photos.	Booking Confirmation of continuation of conversion.
Touch Points	Inquiries Digital Platform ESDM	In Contact Whatsapp	Appointment Whatsapp	Negotiation Whatsapp
		In Discussion Whatsapp	Viewing Whatsapp	Booking Whatsapp, confirmation email

5.2 The Urgency of Using Customer Journey Mapping

In the context of electric motorcycle conversion workshops, the use of Customer Journey Mapping (CJM) is crucial to enhancing customer satisfaction and improving service efficiency. The conversion process involves multiple touchpoints, including booking, document submission, conversion, vehicle delivery, and after-sales support. However, many workshops face challenges such as unclear procedures, long waiting times, and ineffective communication, leading to dissatisfaction among customers. CJM provides a structured approach to visualize the entire customer experience, identifying pain points and inefficiencies at each stage. By mapping the journey, workshops can gain deeper insights into customer expectations and optimize their services accordingly. Implementing CJM will help

create a more seamless, transparent, and customer-friendly conversion process, ultimately increasing adoption rates for electric motorcycles.

5.3 Connection to Survey Results

The results of the customer satisfaction survey reinforce the need for a well-structured customer journey. From the 35 surveyed customers, key issues were identified, including long processing times (average 3-4 weeks), lack of clear instructions for document submission, and inadequate communication regarding conversion status. Additionally, customers reported difficulties in accessing after-sales support, leading to frustration post-conversion. These findings highlight the disorganized nature of the current process, making it evident that a systematic approach like CJM is needed to enhance service delivery and improve customer trust. Addressing these issues through process standardization, automated status updates, and better customer support will significantly enhance customer satisfaction and loyalty.

6. Conclusion

Customer Journey Mapping serves as a strategic tool to identify and resolve service inefficiencies in electric motorcycle conversion workshops. The survey results indicate that a lack of structured processes and poor communication are major barriers to customer satisfaction. By implementing CJM-driven improvements, workshops can enhance transparency, reduce waiting times, and provide a more seamless customer experience. Ultimately, these enhancements will not only improve customer trust and retention but also contribute to the larger goal of accelerating Indonesia's transition to electric mobility.

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