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FACTOR INFLUENCING OPERATIONAL EFFICIENCY AND ITS IMPACT ON CUSTOMER SATISFACTION: A CASE STUDY OF AMY ROSLI GARAGE

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Abstract:

This study investigates the impact of operational efficiency on customer satisfaction at Amy Rosli Garage, a small automotive repair shop located in Perak, Malaysia. The research identified critical challenges, including a shortage of skilled labour, limited availability of spare parts, and limited access to modern diagnostic tools. A quantitative approach was employed, utilising a structured survey that targeted customers, focusing on service quality, timeliness, and overall customer perception. Findings revealed that operational inefficiency has a direct negative impact on customer satisfaction, which in turn affects business performance. Practical recommendations include workforce training, supplier partnerships, and investment in advanced diagnostic equipment to improve service quality and competitiveness. This study contributes to the understanding of how operational factors influence customer satisfaction in small and medium-sized automotive enterprises.

Keywords:

Operational Efficiency, Customer Satisfaction, Automotive Workshop, SMEs

Introduction

The automotive service industry is a vital component of both the national and local economies, ensuring the safety, performance, and reliability of vehicles. In Malaysia, SMEs dominate the automotive service sector, but they face significant operational challenges that directly impact customer satisfaction. This study focuses on Amy Rosli Garage, exploring the relationship between operational efficiency and customer satisfaction. The key operational challenges studied include a shortage of skilled labour, delayed spare parts supply, and limited access to modern diagnostic tools. The study aims to identify improvement strategies that can increase customer satisfaction and sustain business performance.

The previous journal states that small and medium-sized automotive workshops face significant challenges in delivering timely and efficient services due to operational inefficiencies, including a lack of skilled labour, limited availability of spare parts, and restricted access to advanced diagnostic tools (Pinto, 2020). These operational inefficiencies have led to service delays, negatively impacting customer satisfaction and directly affecting business performance.

Labour shortages are a significant issue for many small automotive workshops, where recruitment and retention of skilled labour is becoming increasingly complex due to the complexity of modern vehicles (James, 2020). A lack of skilled labour can lead to longer service times or incorrect repairs, further reducing operational efficiency and customer trust (Pinto, 2020).

The automotive industry is a primary global sector, generating trillions of dollars annually and significantly impacting economies worldwide. It includes a wide range of manufacturers, parts suppliers and service providers. With continuous advancements in vehicle technology, the industry has seen rapid growth in areas such as electric vehicles (EVs), autonomous driving and connected cars (Deloitte, 2022). Growing environmental concerns have also led to stricter emissions regulations worldwide, prompting manufacturers to innovate in sustainable vehicle technology and reduce their carbon footprint (International Energy Agency, 2023). The shift towards electric and hybrid vehicles is accelerating, with global EV sales increasing significantly, particularly in markets such as Europe, China and North America (IEA, 2023).

In the ASEAN region, the automotive industry has experienced rapid growth due to rising incomes, population growth, and urbanisation. ASEAN is a critical automotive hub, with Thailand and Indonesia as the primary production centres, followed by Malaysia, which is the main market for both manufacturing and consumption (ASEAN Automotive Federation, 2023). Many global manufacturers have established operations in the region to take advantage of ASEAN's favourable trade policies, competitive labour costs and strong demand. The region is also seeing increased investment in electric vehicle infrastructure and green automotive technology, in line with global sustainability goals (ASEAN Economic Community, 2023).

Literature Review

Operation Efficiency

Operational efficiency is a critical concept in the automotive sector, involving the optimisation of labour, material and technological resources to deliver high-quality services promptly and reliably. Basically, it is the ability of an organisation to maximise output while minimising

inputs, including time, cost, and resources. This principle is crucial in automotive service, where minimising downtime, effectively managing inventory, and ensuring diagnostic accuracy and speed are essential to delivering a superior customer experience.

A key challenge to achieving operational efficiency in the automotive industry is the lack of skilled labour. According to Kalejaiye (2023), the lack of manpower in the technical field, especially in automotive services, has had a severe impact on the continuity and quality of service delivery. Skilled technicians are crucial to maintaining the smooth operation of the workshop. However, a lack of adequately trained workers often leads to reduced productivity, longer service times and reduced service reliability. To address this challenge, there is a strong emphasis on targeted employee training programs. The program is designed to fill technical skills gaps and improve workforce efficiency, ultimately improving the overall efficiency of service operations.

Another critical factor affecting operational efficiency is supply chain management, particularly the availability of spare parts. Ahlsell et al. (2023) argue that delays in spare parts due to supply chain bottlenecks can disrupt workshop workflows, resulting in extended customer waiting times and reduced customer satisfaction. Efficient supply chain management ensures the timely procurement of spare parts, enabling workshops to avoid unnecessary delays and maintain a smooth and consistent workflow. Workshops that establish reliable relationships with suppliers and implement inventory management systems can significantly reduce the risk of such disruptions.

Technology integration is becoming an increasingly fundamental driver of operational efficiency in the automotive sector. Kohli and Singh (2021) highlight that automotive workshops that use advanced diagnostic tools and automated systems experience a significant reduction in service time and an increase in diagnostic accuracy. Modern technology enables technicians to diagnose and repair issues more efficiently, thereby reducing labour time and enhancing the quality of service provided. For example, diagnostic tools that offer real-time data and predictive maintenance capabilities help technicians identify potential issues before they escalate, minimising time spent on repairs and reducing costly errors.

Operational efficiency is not only about improving internal processes but also about reducing waste and costs. Handoyo (2023) describes operational efficiency as an organisation's ability to maximise output while minimising the use of resources such as labour, time, materials and costs. In this context, businesses that operate efficiently can reduce their production and operating costs, allowing them to offer more competitive prices to customers. The ability to streamline operations without sacrificing quality is a key differentiator for companies striving to maintain a competitive edge.

Customer Satisfaction

Customer satisfaction in the automotive service industry plays an important role in determining the long-term success and sustainability of a business. It reflects the perception of value that customers attribute to the quality, reliability, and timeliness of the service provided. Satisfied customers tend to be more loyal to brands, which is essential to sustaining business operations in a highly competitive market. The relationship between operational efficiency and customer satisfaction is interdependent, as operational process improvements can directly impact the

customer experience, leading to higher levels of satisfaction and, ultimately, stronger customer loyalty.

The application of the Kano model by Kohli and Singh (2021) in the automotive sector provides valuable insights into customer satisfaction. The Kano model categorises customer needs into different categories, including "must have" attributes and "one-dimensional" needs. Must have attributes are the basic requirements that customers expect in any service, such as basic functionality and reliability. One-dimensional needs refer to aspects that can influence customer satisfaction linearly when these needs are met, resulting in increased satisfaction, and when they are not met, dissatisfaction arises. Understanding these dimensions allows businesses to prioritise which customers to address first in their service delivery, improving operational efficiency and customer satisfaction.

However, customer satisfaction can be easily affected by factors such as operational delays, inconsistencies in service quality, or limited use of advanced technology. Customers often associate these issues with low value and lack of reliability, which reduces their overall satisfaction. Adwan and Alsoud (2024) stated that organisations recognise customer satisfaction as an important intangible asset that enables them to achieve a competitive advantage. A key aspect of customer satisfaction in automotive services is how the customer perceives the service experience, which is shaped by emotional and cognitive responses. Emotional responses are often related to feelings of trust and security, while cognitive responses involve the customer's rational evaluation of the service received.

Tabaiba (2023) discusses the effect of ease of use and trust on customer satisfaction, finding that although trust positively affects customer behaviour, perceived usefulness does not show a significant effect. This shows that customers prioritise a smooth and reliable service experience over complex or technical features. Similarly, Abdulaziz (2022) conducted a study exploring the factors that increase customer satisfaction and trust, identifying variables such as service quality, privacy, complexity, and information security. This research highlights that although perceived usefulness plays a role in customer decision-making, factors such as service quality and trust are far more influential in the satisfaction process.

Furthermore, the lifetime value of loyal customers is significantly higher than that of customers who make only occasional purchases. Their continued patronage ensures a steady flow of revenue, making customer satisfaction a key driver of financial growth. In short, focusing on customer satisfaction and loyalty not only drives immediate sales but also contributes to long-term business success, making it a crucial element for automotive service providers seeking sustainability and growth.

Research Methodology

This study used a descriptive and exploratory research design, focusing on the customers of Amy Rosli Garage. A total of 152 respondents were selected using simple random sampling based on Krejcie and Morgan tables. Primary data were collected through a structured survey covering demographics, labour skills, parts availability, diagnostic tool usage, and customer satisfaction metrics. Quantitative data were analysed using descriptive statistics, correlation, and regression analysis in SPSS to determine the relationship between operational efficiency and customer satisfaction.

Data collection for this study will primarily involve administering surveys to customers of Amy Rosli Garage. The survey will be conducted using a combination of online and in-person methods. This mixed approach is designed to maximise response rates by reaching a wider range of customers and capturing multiple perspectives on their level of satisfaction and experience with garage services.

The use of structured surveys is well established in the field of customer satisfaction research, particularly in service industries such as automotive repair. This approach has been shown to produce reliable and actionable insights into the customer experience, as it enables consistent measurement of various satisfaction-related factors across different respondents (Balinado et al., 2021). The unit of analysis for this study focuses on customer perception of operational efficiency and its impact on their satisfaction with service at Amy Rosli Garage. In research, the unit of analysis represents the primary entity being analysed. In this case, the experiences and perceptions of individual customers provide the most direct insight into the primary focus of the study, which is the relationship between operational efficiency and customer satisfaction.

Conclusion

This study concludes that operational efficiency plays a pivotal role in determining customer satisfaction at Amy Rosli Garage. The analysis demonstrates that efficient operations, which encompass resource utilisation, service quality, time management, and employee competency, are integral to enhancing overall organisational performance. When these operational factors are well-coordinated, they not only minimise costs and service delays but also significantly improve the customer experience, leading to higher satisfaction and loyalty.

The findings highlight that customer satisfaction is not an isolated outcome but a direct reflection of how effectively a business manages its internal processes. In the case of Amy Rosli Garage, the alignment between operational practices and customer expectations has strengthened its competitive advantage in the automotive service industry. This highlights the importance of continuous improvement, employee training, and technological adoption in sustaining efficiency and maintaining service excellence.

In essence, the study confirms that operational efficiency forms the foundation for customer satisfaction and long-term business sustainability. The implications of this research extend beyond Amy Rosli Garage, offering valuable insights for other small and medium-sized enterprises in the automotive service sector that seek to enhance their operational strategies. By prioritising efficiency, organisations can not only optimise performance but also cultivate enduring relationships with customers with ultimately driving growth, reputation, and resilience in an increasingly competitive market.

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