

1. INTRODUCTION

1.1 Background

Luxury car brands in Indonesia have experienced significant growth over the past decade, driven by the increasing number of high-income individuals and a stable economic trajectory. The demand for luxury vehicles in emerging markets, including Indonesia, is influenced by modern lifestyles, urbanization, and growing awareness of brand prestige. In Indonesia, brands such as Mercedes-Benz, BMW, Audi, and Lexus dominate the luxury car market, focusing on technological innovation, comfort, and personalized services. Data from the Association of Indonesian Automotive Industries (GAIKINDO) reveals that the premium car segment has recorded an average annual growth rate of 5-7% over the past ten years. Despite the high costs of luxury vehicles due to import taxes and additional fees, demand remains stable, driven by the rising number of affluent individuals seeking social status and a premium lifestyle. Official dealerships, exclusive after-sales services, and high-profile model launch events also play a significant role in attracting consumers. For luxury car brands in Indonesia, these vehicles are not merely a means of transportation but also a reflection of lifestyle, status, and prestige for their owners.

Mercedes-Benz Distribution Indonesia (MBDI), a subsidiary of Daimler AG, is responsible for the distribution, sales, and after-sales services of Mercedes-Benz vehicles in Indonesia. As a key player in the premium automotive segment, MBDI plays a strategic role in marketing Mercedes-Benz's flagship products, ranging from sedans and SUVs to light commercial vehicles. Headquartered in

Jakarta, MBDI collaborates closely with authorized dealers to reach customers across the country. MBDI holds a dominant position in Indonesia's premium automotive market, maintaining a stable and growing market share thanks to the strong reputation of the Mercedes-Benz brand, innovative technology, and a commitment to quality and safety. The company frequently launches creative marketing initiatives, such as automotive exhibitions, exclusive test drives, and tailored special offers to meet the demands of the local market. In recent years, MBDI has also focused on vehicle electrification, introducing hybrid and electric vehicle models to align with global trends and Indonesian government policies supporting environmentally friendly transportation. Additionally, its robust after-sales services, including a widespread service network and availability of spare parts, strengthen customer loyalty. With the increasing purchasing power of Indonesia's upper class and a growing interest in premium vehicles, MBDI is well-positioned to maintain its leadership in the market. However, challenges such as economic fluctuations, competition with other premium brands, and regulatory policies require MBDI to continuously innovate and deliver the best products and services to its customers in Indonesia.

In the era of globalization, characterized by increasingly intense business competition, companies are required to implement strategies that enhance competitiveness, customer loyalty, and customer satisfaction. According to Kotler, P., & Keller, (2016) Customer Relationship Management (CRM) is a strategic approach focused on building and maintaining long-term relationships with customers through the integration of technology, processes, and human resources.

CRM not only helps companies understand customer needs but also enables service personalization, which is particularly critical in the luxury automotive industry, such as Mercedes-Benz. Similarly, Payne, A., & Frow, (2017) highlight that effective CRM implementation can improve customer loyalty by creating consistent and satisfying customer experiences, primarily through integrated customer data management. They emphasize that companies leveraging CRM effectively can identify cross-selling opportunities, enhance customer retention, and optimize customer lifetime value. This is crucial for a competitive automotive industry that requires strong customer relationships to maintain market dominance. Consequently, CRM has become a vital strategy for building long-term customer relationships, increasing customer value to the company, and delivering superior customer experiences. This is especially relevant for the automotive industry, where customers have high expectations for product and service quality, as is the case with Mercedes-Benz.

Mercedes-Benz is a globally recognized premium automotive brand. In Indonesia, Mercedes-Benz faces significant challenges in maintaining customer loyalty and satisfaction amidst fierce competition with other brands. According to available data, there was a significant decline in sales between 2023 and 2024, amounting to a drop of 1,223 units or 35.68%. This decline underscores the need to evaluate the CRM strategies employed by Mercedes-Benz Distribution Indonesia.

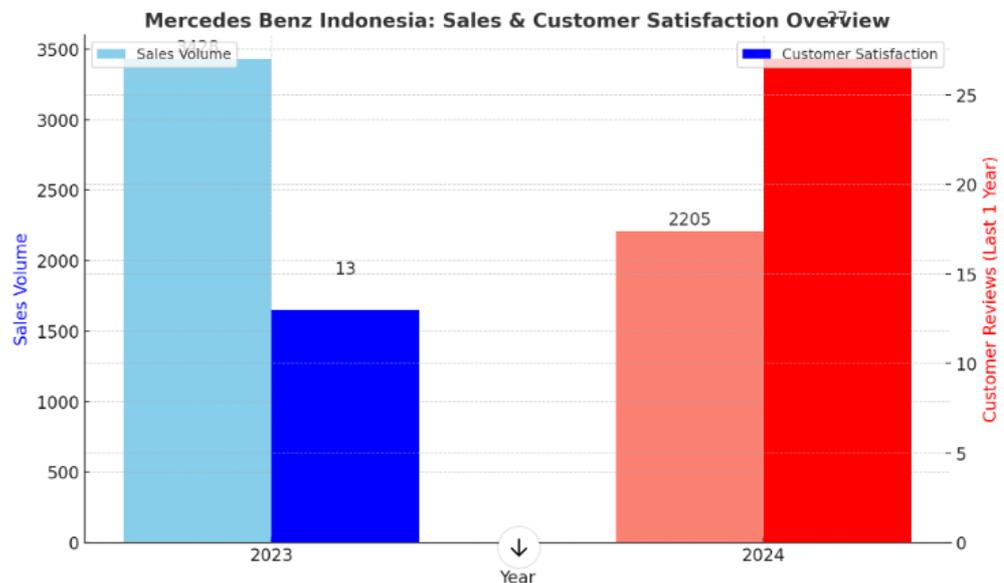


Figure 1. 1 Sales and Customer Reviews

Moreover, customer satisfaction data reveal a contrasting trend. Over the past eight years, the majority of customers rated their experience as 5 stars (81.9%), indicating a high level of satisfaction with Mercedes-Benz products and services. However, in the past year, there has been a significant increase in 1-star ratings, suggesting a decline in customer perceptions of service or product quality. This shift points to potential weaknesses in certain aspects of CRM, such as response speed, service personalization, or suboptimal interactions. These issues require serious attention to ensure customer loyalty and satisfaction remain intact amid increasingly high customer expectations.

This study is supported by theories and findings from experts over the past decade. Payne, A., & Frow, (2017) explain that effective CRM implementation can enhance customer value through personalized services and improved customer data management. Furthermore, V. Kumar, (2018) emphasize the importance of

leveraging technology in CRM to create more meaningful interactions with customers, including through social media and other digital platforms. In the context of the automotive industry, Reichheld, F. and Schefter, (2020) found that sustained customer satisfaction heavily relies on a company's ability to build trust through consistent and high-quality interactions. These findings provide a strong foundation for understanding how CRM can be optimized to address the challenges present in the premium automotive market.

DIGITAL ASSET			SOSIAL MEDIA									
NO	Nama Dealership Mercedes	Lokasi	Alamat sit	Facebook	Instagra	Twitter	Tiktok	Linkedin	Youtube	Nomd	Email	Catatan Lain
1	PT. Arista Jaya Abadi	Medan	✓	✓	✓					✓	✓	
2	PT Thamrin Citra Abadi	Palembang	✓	✓	✓				✓	✓	✓	
3	PT Panji Rama Otomotif	Tangerang	✓	✓	✓	✓				✓	✓	
4	PT Cakrawala Automotif Rabhasa Kuningan	Jakarta Selatan	✓	✓	✓				✓	✓	✓	
5	PT Dipo Angkasa Motor	Jakarta Utara	✓	✓	✓				✓	✓	✓	
6	PT Mercindo Autorama Mampang	Jakarta Selatan	✓	✓	✓		✓	✓	✓	✓	✓	
7	PT Mercindo Autorama Sunter	Jakarta Utara	✓	✓	✓		✓	✓	✓	✓	✓	
8	PT Panji Rama Otomotif Gandaria	Jakarta Selatan	✓	✓	✓	✓		✓	✓	✓	✓	
9	PT Suri Motor Indonesia	Jakarta Selatan	✓	✓	✓				✓	✓	✓	
10	PT Citrakarya Pranata	Bandung	✓	✓	✓				✓	✓	✓	
11	PT Hartono Raya Motor - Semarang	Semarang	✓	✓	✓	✓	✓	✓	✓	✓	✓	
12	PT Kalimas Arubu Indonesia	Yogyakarta	✓	✓	✓				✓	✓	✓	
13	PT Hartono Raya Motor Surabaya	Surabaya	✓	✓	✓				✓	✓	✓	
14	PT Kedaung Satrya Motor	Surabaya	✓	✓	✓				✓	✓	✓	
15	PT Hartono Raya Motor Bali	Bali	✓	✓	✓			✓		✓	✓	
16	PT Kumala Bintang Cemerlang	Makassar	✓	✓	✓		✓	✓		✓	✓	
17	PT Cakrawala Automotif Rabhasa Bintaro	Bintaro	✓	✓	✓				✓	✓	✓	

Figure 1. 2 Dealer Sosial Media Data

1	PT. Arista Jaya Abadi	Medan		
2	PT Thamrin Citra Abadi	Palembang	✓	1 Hari
3	PT Panji Rama Otomotif	Tangerang	✓	4 hari
4	PT Cakrawala Automotif Rabhasa Kuningan	Jakarta Selatan	✓	1 Hari
5	PT Dipo Angkasa Motor	Jakarta Utara	✓	6 hari
6	PT Mercindo Autorama Mampang	Jakarta Selatan		
7	PT Mercindo Autorama Sunter	Jakarta Utara		
8	PT Panji Rama Otomotif Gandaria	Jakarta Selatan	✓	4 hari
9	PT Suri Motor Indonesia	Jakarta Selatan		
10	PT Citrakarya Pranata	Bandung	✓	3 Hari
11	PT Hartono Raya Motor - Semarang	Semarang	✓	5 hari
12	PT Kalimas Arubu Indonesia	Yogyakarta	✓	15 hari
13	PT Hartono Raya Motor Surabaya	Surabaya	✓	7 Hari
14	PT Kedaung Satrya Motor	Surabaya		
15	PT Hartono Raya Motor Bali	Bali	✓	6 Hari
16	PT Kumala Bintang Cemerlang	Makassar	✓	1 Hari
17	PT Cakrawala Automotif Rabhasa Bintaro	Bintaro	✓	1 Hari

Figure 1. 3 Social Media Activities

In the digital era, one of the primary channels for implementing Customer Relationship Management (CRM) is social media, which enables companies to interact with customers more quickly, personally, and efficiently. Social media has

become a highly relevant tool for enhancing customer engagement, expanding brand reach, and strengthening loyalty through engaging and responsive content. However, in the context of Mercedes-Benz distribution in Indonesia, significant challenges exist in utilizing social media as part of the CRM strategy. Many Mercedes-Benz dealerships in Indonesia have yet to fully optimize social media as a platform to build closer relationships with their customers.

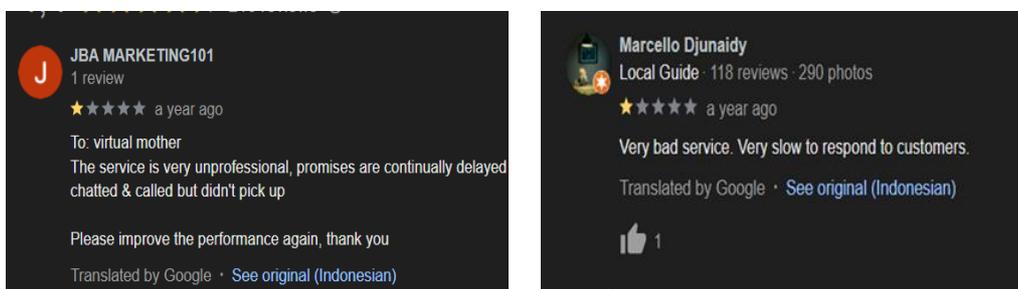


Figure 1. 4 Customer Reviews

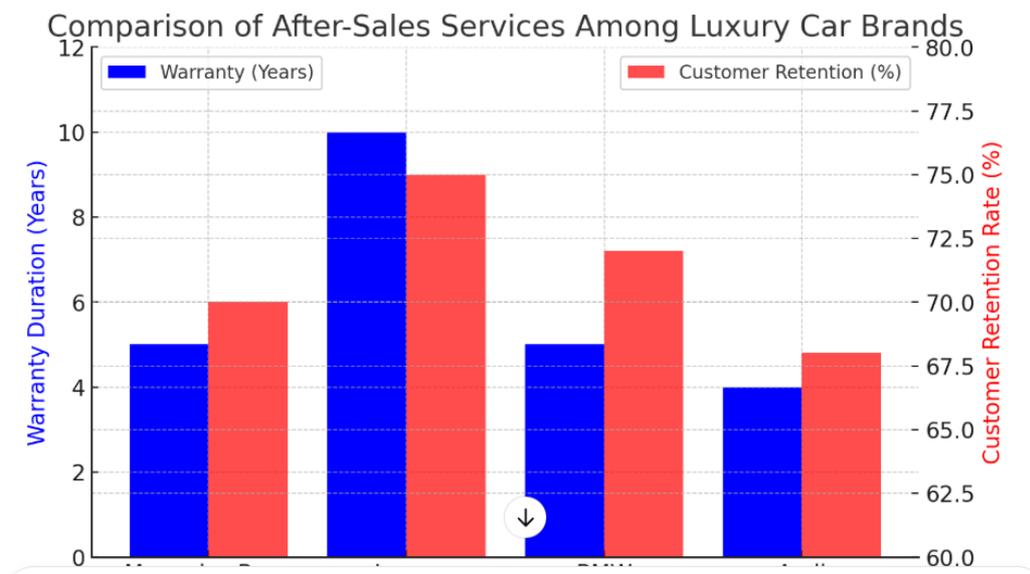


Figure 1. 5 After Sales Comparisons

Mercedes-Benz Indonesia, despite its global prestige and robust CRM strategies, faces challenges in outperforming competitors like Lexus, BMW, and Audi in the Indonesian luxury automotive market. One critical factor is its relatively weaker after-sales service perception. While Mercedes offers 24/7 roadside assistance and bundled maintenance packages, competitors like Lexus have capitalized on Indonesia's customer preference for long-term reliability by introducing extended warranties (e.g., up to 10 years for hybrid models) and concierge-style services. Lexus's emphasis on personalized post-purchase care has elevated its customer retention rate to approximately 75%, compared to Mercedes' estimated 70%. This gap highlights how Mercedes' focus on global standards may not fully align with local expectations, where buyers prioritize hassle-free ownership and resale value a niche Lexus dominates through its renowned customer service reputation. from this above can you make visual data for thesis.

Based on the data collected, This shift suggests potential gaps in CRM strategies, particularly in after-sales service, personalized engagement, and customer retention efforts, which may be contributing to lower repeat purchases and a decline in overall brand loyalty. A well-structured CRM system is essential in fostering long-term relationships with customers by ensuring consistent communication, personalized services, and effective issue resolution. However, the rising dissatisfaction among customers, as seen in the surge of 1-star reviews in the last year, indicates that Mercedes-Benz may be facing challenges in meeting customer expectations, potentially due to insufficient follow-ups, ineffective handling of complaints, or a lack of tailored experiences that cater to customer

needs. This declining trend in customer loyalty suggests that the company must take proactive measures to strengthen its customer relationship management by enhancing service quality, optimizing digital engagement channels, and implementing data-driven loyalty programs that provide personalized incentives to encourage repeat purchases. Additionally, investing in customer feedback mechanisms, such as real-time support and predictive analytics, can help identify and address pain points before they escalate, ultimately leading to higher customer satisfaction and a stronger emotional connection with the brand. By focusing on these CRM improvements, Mercedes-Benz can rebuild trust, enhance customer retention, and ensure long-term brand loyalty in an increasingly competitive luxury automotive market.

1.2 PROBLEM OF THE STUDY

1. How does after-sales service impact customer loyalty at Mercedes-Benz Distribution Indonesia?
2. What is the effect of personalized engagement on customer satisfaction and retention?
3. How do negative customer reviews influence sales performance?
4. How do CRM strategies affect brand trust and customer loyalty?
5. Can customer feedback predict future customer loyalty trends?
6. What strategies can be implemented to optimize the use of social media by Mercedes-Benz dealers in supporting CRM and improving customer loyalty?

1.3 OBJECTIVE OF THE STUDY

1. To analyze the relationship between after-sales service quality and customer loyalty at Mercedes-Benz Distribution Indonesia.
2. To examine the influence of personalized engagement on customer satisfaction and its impact on customer retention.
3. To assess how negative customer reviews affect customer loyalty and sales performance.
4. To evaluate the effectiveness of CRM strategies in strengthening brand trust and fostering long-term customer loyalty.
5. To determine the role of customer feedback in predicting customer loyalty trends and improving CRM practices.

1.4 SIGNIFICANCE OF THE STUDY

1. Theoretical Benefits

This study aims to contribute to the academic discourse on the relationship between social media activities and customer satisfaction, particularly in the automotive industry. By examining the influence of dealer social media engagement on customer satisfaction and brand loyalty, the research enriches existing theories on digital marketing, customer relationship management, and brand equity. The findings are expected to provide a deeper understanding of how social media can serve as a strategic tool for fostering stronger customer relationships and enhancing brand loyalty. Additionally, this study could serve as a

reference for future research exploring similar dynamics in different industries or geographic contexts.

2. Practical Use

For Mercedes-Benz Distribution Indonesia and its dealers, this study provides actionable insights into the importance of active social media engagement. It highlights the potential for improved customer satisfaction and brand loyalty through more robust social media strategies. By comparing the current social media practices of Mercedes-Benz dealers with those of more active competitors, the study underscores the need for adopting best practices to remain competitive in the digital landscape. The practical outcomes of this research could guide Mercedes-Benz dealers in Indonesia to develop and implement more effective social media marketing strategies, thereby enhancing their overall market position and customer engagement.

1.5 THEORITICAL FRAMEWORK

1.5.1 Costumer Relationship Managementt (CRM)

Customer Relationship Management (CRM) is a management approach that places the customer at the center of a company's processes and marketing strategy implementation. This concept is based on the assumption that customers prefer to establish long-term relationships with a single company rather than frequently switching between providers (Tunggal, 2018). According to Tjiptono, (2014) CRM is the process of acquiring, retaining, and developing profitable customers. Graffin emphasizes this by showing that 80% of a company's revenue comes from 20% of

its loyal customers. CRM is defined as the integration of coordinated sales, marketing, and service strategies. It involves storing customer information, recording all interactions between customers and the company, and creating customer profiles accessible to staff who need this information (Widjaja, 2018).

The concept of CRM encompasses three main components: **Enhance** (improving customer relationships), **Retain** (maintaining existing customers), and **Acquire** (gaining new customers). CRM focuses on continuously acquiring new customers while enhancing relationships to ensure customer satisfaction and loyalty, ultimately turning them into long-term customers (Widjaja, 2018). Based on their knowledge of each customer, companies can tailor their market offerings, services, programs, messages, and media to better meet customer needs.

CRM is important because a company's profitability is primarily driven by the collective value of its customer base. As a business philosophy, CRM places clients at the center of processes, activities, and culture (Prastowo & Tarmuji, 2018). This concept is widely applied to improve company services and maintain customer relationships by collecting and managing all customer interactions, whether through phone calls, emails, website feedback, or discussions with sales and marketing staff. In this sense, CRM represents a comprehensive business strategy that allows companies to effectively manage customer relationships. Through CRM, companies can gather valuable information regarding customer needs and preferences (Salsabilla, 2021).

1.5.1.1 Benefits and Objectives of Customer Relations Management

1. Enhancing Customer Loyalty

Customer Relationship Management (CRM) applications enable companies to utilize information from all customer touchpoints, whether via the web, call centers, or through sales and service staff in the field. The consistency and accessibility of this information allow for better sales and service performance through access to key customer data. This facilitates improved customer interactions and fosters loyalty.

2. Reducing Costs

By improving the company's sales and service capabilities, costs can be significantly reduced. For example, leveraging web-based technologies allows companies to conduct sales or provide services at a lower cost through focused and specific marketing programs. These programs target the right customers at the right time, ensuring efficiency and effectiveness.

3. Improving Operational Efficiency

Automating sales and service processes minimizes the risk of declining service quality. CRM streamlines workflows, ensuring consistent and efficient customer experiences.

4. Accelerating Time to Market

CRM applications facilitate quicker product delivery to the market by providing better customer information. With the ability to sell products online, barriers such as time, geography, and data availability are minimized, enabling faster product sales and market penetration.

5. Increasing Revenue

CRM applications provide valuable insights that enhance company revenue and profitability. The benefits of CRM implementation include:

- a. Improving two-way communication processes with customers, resulting in faster and more accurate transactions.
- b. Enhancing management decision-making and overall profitability.
- c. Upgrading customer service quality to better meet customer needs.
- d. Driving business growth and providing strong business support.

These benefits emphasize the importance of CRM in modern business strategies, enabling companies to enhance customer satisfaction, loyalty, and overall operational success (Dewi, 2015).

1.5.1.2 Implementation of Customer Relationship Management

Customer Relationship Management (CRM) is the cornerstone of strategies discussed in the loyalty wheel and is often integrated with loyalty programs. From a customer's perspective, CRM can deliver significant improvements in service quality and enhance customer value through customization and convenience (Suwandi, 2022). Companies must conduct market segmentation and target the "right" customers by carefully selecting target segments that align with the company's capabilities. Managing the customer base effectively can be achieved through tiered services, grouping customers into different value levels (e.g., platinum, gold, iron, and lead). Successfully implementing CRM is crucial for fostering customer loyalty, particularly when a company serves a large number of

customers across various service delivery channels. According to Suwandi, (2022), CRM strategies generally encompass five key processes:

1. **Strategy Development**, which involves selecting target segments, prioritizing services, and designing loyalty rewards;
2. **Value Creation**, where companies provide benefits to customers through tiered services and loyalty programs, such as priority queues and service upgrades;
3. **Multichannel Integration**, ensuring seamless interaction for customers across various service delivery channels, such as websites;
4. **Information Management**, which includes data storage, analytical tools (e.g., internal management analysis), and applications for both front and back-office operations; and
5. **Performance Assessment**, where CRM implementation should lead to continuous improvements in CRM strategies and systems for the organization.

1.5.1.3 Factors that influence CRM

1. Organizational Factors

Several studies highlight that organizational structure, process reengineering, and culture significantly influence the successful implementation of CRM strategies within companies. The organizational structure defines the lines of authority, communication channels, and mechanisms through which tasks and programs are executed effectively. A well-established structure is critical in

ensuring the seamless implementation of CRM strategies, as it provides clarity in roles and responsibilities across the organization.

2. Human Resource Factors

Employees play a pivotal role in the success of CRM strategies. Employees should be adequately trained to understand how to retain and satisfy customers, which is essential in achieving CRM goals and objectives. For CRM strategies to succeed, employees and system users must comprehend the importance of these strategies and how they can facilitate and enhance their work processes. Frontline staff, in particular, should not be underestimated, as their involvement in executing CRM programs is vital for building strong customer relationships.

3. Technological Factors

Technology serves as a critical enabler in CRM strategy implementation. Dinata (2016) explains that CRM technology allows management to organize customer data and develop information and knowledge about their customers. Without technology, implementing CRM strategies would be highly challenging, as customer interactions across various touchpoints, such as email, telephone, web platforms, and call centers, rely heavily on technological tools.

Hamidin, (2021) emphasizes three essential elements for CRM strategy implementation:

1. **Qualified Personnel (People):**

Organizations need professionals with adequate qualifications who understand not only how to engage with customers but also how to effectively utilize CRM technology. Key factors in this dimension include the organizational structure, roles and responsibilities, corporate culture, procedures, and comprehensive change management programs. Organizations must prioritize the involvement of frontline staff in building and executing CRM initiatives.

2. **Well-Designed Processes:**

CRM processes should be meticulously designed to align with the strategy and objectives of the organization. Processes provide systems and procedures that help employees build stronger, more meaningful relationships with customers. These processes consist of four key activities:

a. **Identification Phase:**

This phase focuses on precisely determining which customers to target, specifically identifying the most profitable customers. At this stage, CRM involves filtering customers to prioritize those with the highest potential profitability.

b. **Differentiation Phase:**

Customers are grouped into specific segments. This allows companies to develop tailored service strategies and allocate resources more effectively for each segment.

c. Interaction Phase:

This involves reciprocal communication between the company and its customers, enabling the company to gain deeper insights into customer needs and preferences.

d. Personalization Phase:

CRM's core philosophy is to treat each customer uniquely, tailoring services and products to meet their specific needs and preferences. Using data and insights gathered during previous phases, companies can deliver customized products and services that align with customer expectations.

3. Adequate Technology

Technology is crucial in supporting employees to carry out CRM activities and strategies efficiently. With appropriate technology, CRM processes can be executed more quickly and optimally. However, companies must consider business structure, consumer behavior, employee capabilities, and work culture before adopting technological solutions. While technology adds value to CRM, it should be seen as a supporting tool that complements broader CRM initiatives.

1.5.1.4 Customer Relationship Management Indicators

According to Peelen, E., & Beltman, (2023), there are four key indicators of Customer Relationship Management (CRM) that must be understood:

1. Customer Knowledge

Understanding individual customers is essential for developing long-term relationships. The knowledge of customers' preferences, behaviors, and needs allows organizations to build strong and sustainable connections.

2. Relationship Strategy

Information about individual customers should be utilized to develop customer relationships. In other words, the type of marketing or strategy implemented should be entirely different from strategies that focus solely on transactions. This approach emphasizes building enduring relationships rather than one-off interactions.

3. Communication

Effective communication between customers and suppliers is critical. A good relationship strategy should demonstrate its quality through transparent and consistent communication, ensuring mutual understanding and trust.

4. Individual Value Proposition

Organizations that take the initiative to better understand individual customers, build strong relationships, and maintain effective

communication must also deliver tailored value propositions. Products, services, and pricing must align with the specific circumstances and needs of individual customers to ensure satisfaction and loyalty.

1.6 CUSTOMER SATISFACTION

1.6.1 Definition of Customer Satisfaction

According to Andi. Tjiptono, (2015) customer satisfaction is a core element in modern marketing thought and practice. Competition can be won if a company is able to create and maintain satisfied customers. Achieving customer satisfaction provides several benefits, including fostering a harmonious relationship between the company and its customers, establishing a strong foundation for repeat purchases and customer loyalty, and generating positive recommendations that are advantageous for the company.

Marketing activities conducted by companies are essentially aimed at creating superior value for customers. Furthermore, Kapferer, (2008) argues that the primary determinant of customer satisfaction is the gap between the customer's experience and their expectations, with brand positioning playing a critical role in shaping those expectations. As a result, companies must continuously monitor and enhance customer satisfaction. Higher levels of customer satisfaction significantly increase the likelihood of customer loyalty.

Kotler , (2023) highlight four important facts about customer satisfaction and loyalty:

1. Acquiring new customers is 5 to 10 times more expensive than retaining existing customers.
2. On average, companies lose 10% to 30% of their customers annually.
3. A 5% reduction in customer errors can result in a revenue increase of 25% to 85%, depending on the industry in which the company operates.
4. Revenue levels from customers tend to grow as customers are retained for longer periods.

1.6.1.1 Indicator

According to Tjiptono, (2015), there are several indicators of customer satisfaction that can be outlined as follows:

1. **Reliability:** The ability to provide services promptly, accurately, consistently, and satisfactorily.
2. **Responsiveness:** The ability of employees to deliver services quickly and attentively.
3. **Confidence:** The quality associated with the company's capabilities and employee behavior in fostering trust and confidence among customers.
4. **Empathy:** The willingness of employees to build relationships, engage in good communication, provide personal attention, and understand the individual needs of customers.
5. **Tangibility:** The physical appearance, equipment, and visible materials that can be evaluated as satisfactory by customers.

1.6.1.2 Customer Satisfaction Factors

According to Handi, (2004), the factors that drive customer satisfaction include five aspects that should be considered by companies, namely:

- 1) **Product Quality:** Customers are satisfied when the purchased and used products exhibit good quality.
- 2) **Price:** For price-sensitive customers, affordability is a significant source of satisfaction as they perceive high value for their money.
- 3) **Service Quality:** Satisfaction with the quality of service is often challenging to replicate. Service quality is a multifaceted driver, with popular models such as SERVQUAL highlighting its various dimensions.
- 4) **Emotional Factor:** Customers experience satisfaction and pride due to the emotional value provided by the brand associated with the product.
- 5) **Cost and Convenience:** Customer satisfaction increases when obtaining products or services is relatively easy, comfortable, and efficient.

1.6.1.3 Measuring Customer Satisfaction

Customer satisfaction is a function of service quality subtracted by customer expectations A. Parasuraman, Valarie A. Zeithaml, (1988), in other words, it can be formulated as:

1. Service Quality < Expectation

If this occurs, it can be stated that the services provided by the company are poor. Not only are they unsatisfactory, but they also do not meet customer expectations.

2. Service Quality = Expectation

If this happens, it can be said that the services provided lack uniqueness and are indeed supposed to be that way.

3. Service Quality > Expectation

If this happens, it can be said that customers perceive the services provided by the company not only to meet their needs but also to be satisfying and enjoyable. This third type of service is called excellent service, which is always expected by customers

1.7 Customer Loyalty

1.7.1 Customer

Consumer loyalty, in its literal sense, refers to steadfastness or devotion, which arises voluntarily and not through coercion, typically based on past experiences. Efforts to create consumer satisfaction tend to influence consumer attitudes, while the concept of consumer loyalty primarily focuses on purchasing behavior. Loyalty entails a commitment accompanying repeated purchases, where consumers remain unwilling to switch products or services even during periods of scarcity in the market. Loyal consumers willingly recommend the product or service to friends, family, or other potential customers. According to Rangkuti, (2017)"Consumer loyalty is the dedication of consumers to a company, brand, or product." Dauly & et al, (2020) further defines loyalty as a favorable attitude toward a brand, reflected in consistent purchases of that brand over time. Similarly, Tjiptono, (2004) describes consumer loyalty as a customer's commitment to a brand, store, or supplier based on a strongly positive attitude resulting in long-term

purchasing behavior. This suggests that loyalty to a brand is achieved through a combination of satisfaction and the resolution of complaints. Satisfaction, in turn, is driven by the company's performance in minimizing complaints and enhancing consumer experiences, leading to repeated long-term purchases. Durianto, (2019) adds that loyal consumers tend to continue purchasing a brand despite the presence of numerous competing brands offering superior features or attributes. When many consumers fall into this category, it indicates a strong brand equity, which comprises the assets and liabilities associated with a brand, name, or symbol that can add to or detract from the value provided by a product or service, both to the company and to customers.

1.7.1.1 Types of Consumer Loyalty

According to Griffin, (2005) consumer loyalty can be classified into four types, based on the combination of attachment (low or high) and repurchase behavior (low or high):

1. **No Loyalty:** Some consumers do not develop loyalty toward any product or service due to various reasons. Low attachment combined with low repurchase behavior signifies an absence of loyalty. Businesses are advised to avoid targeting this segment, as they are unlikely to become loyal customers.
2. **Inertia Loyalty:** This type of loyalty is characterized by low attachment but high repurchase behavior. Consumers in this category make purchases out of habit or situational convenience. For instance, purchasing gasoline at a

nearby station due to proximity. Such consumers are vulnerable to switching if competitors offer clear benefits. However, companies can convert this weak loyalty into stronger loyalty through proactive customer engagement and enhancing the perceived value of their offerings compared to competitors.

3. **Latent Loyalty:** Latent loyalty reflects high attachment but low repurchase behavior, often influenced by situational factors rather than personal preferences. For example, a husband who enjoys European cuisine might rarely visit European restaurants if his spouse prefers other types of food.
4. **Premium Loyalty:** This represents the highest form of loyalty, where high attachment aligns with frequent repurchases. Companies strive to achieve this type of loyalty, as it reflects pride and a strong preference for a product or service. Consumers with premium loyalty willingly recommend the brand to friends, family, and others.

1.7.1.2 Characteristics of Consumer Loyalty

According to Griffin, (2005), consumer loyalty is a reliable predictor of sales growth and is reflected in consistent purchasing behavior. The key characteristics of consumer loyalty include:

1. **Regular Repurchases:** Loyal consumers frequently buy a specific product or service. For instance, Harley Davidson enthusiasts consistently purchase new Harley models while also investing in modifications to suit their preferences.

2. **Cross-Purchases:** Loyal customers not only buy the main product or service but also purchase related items from the same brand. For example, Harley Davidson buyers often purchase accessories to enhance their motorcycles.
3. **Word of Mouth:** Loyal consumers actively share positive experiences about a product or service with others, influencing their purchasing decisions. For example, a Harley Davidson owner might inspire a friend to buy a Harley based on their personal experiences.
4. **Resistance to Competitors:** Loyal customers are resistant to alternative products or services offered by competitors. For example, Harley Davidson fans are unlikely to switch to other motorcycle brands, demonstrating strong brand allegiance.

1.7.1.3 Indicators of Consumer Loyalty

Hidayat, (2009) outlines several indicators of consumer loyalty as follows:

1. **Trust:** Reflects consumers' confidence in the market or brand.
2. **Emotional Commitment:** Represents the psychological attachment consumers have toward the brand.
3. **Switching Costs:** Reflects the perceived burden consumers associate with switching to an alternative product or service.
4. **Word of Mouth:** Refers to the promotional behavior exhibited by consumers, sharing their experiences with others.

5. **Cooperation:** Demonstrates consumers' willingness to collaborate and engage positively with the brand.

1.8 Relationships Between Variable

1.8.1 The Relationship between CRM dan Customer Satisfaction

According to Kotler, P., & Keller, (2016), Customer Relationship Management (CRM) is a strategic approach that enables companies to integrate customer data, interactions, and services with the goal of creating superior customer experiences. The implementation of CRM helps companies gain an in-depth understanding of customer needs, serving as the foundation for providing more personalized and responsive services. Widjaja (2018) further emphasizes that CRM involves the management of customer data to personalize offerings and create relevant interactions, ensuring customer satisfaction with the services provided. In the context of Mercedes-Benz, customer satisfaction can be influenced by the company's ability to deliver premium services that align with customer expectations through effective utilization of CRM, such as tracking customer preferences and providing prompt service. Andi. Tjiptono, (2015) asserts that customer satisfaction is a direct outcome of effective CRM implementation, which connects services to customer needs efficiently.

1.8.2 The Relationship between CRM dan Customer Loyalty

CRM not only enhances customer satisfaction but also plays a significant role in fostering customer loyalty. Reichheld and Scheffer (2020) emphasize that customers who consistently receive high-quality experiences through CRM are more likely to remain loyal to a specific brand. In the context of Mercedes-Benz,

CRM enables the company to build long-term relationships with customers through loyalty programs, personalized services, and high-quality after-sales support. (V. Kumar, 2018)highlight that CRM creates added value for customers by understanding their preferences, thereby strengthening the emotional bond between customers and the brand. The resulting customer loyalty is not limited to repeat purchases but also includes advocacy for the brand, which is a critical factor for success in the premium automotive industry.

1.8.3 The Relationship between Customer Satisfaction and Customer Loyalty

Customer satisfaction has a significant relationship with customer loyalty. Oliver (2010) explains that satisfied customers are more likely to continue using the same products or services and recommend them to others. In the context of Mercedes-Benz, satisfaction with premium products and high-quality services creates a positive experience that strengthens customer loyalty. Additionally, Homburg, (2017) highlight that customer satisfaction can enhance retention and build emotional connections with the brand, which is crucial in the luxury automotive industry. Customers who feel satisfied with a company's services tend to exhibit greater loyalty, as they perceive the value they receive to be aligned with their expectations. Therefore, customer satisfaction acts as a critical link between CRM and customer loyalty.

1.9 PREVIOUS RESEARCH

Table 1. 1 Previous Research

No.	Author Name and Year	Title Research	Research purposes	Research methods	Result
------------	-----------------------------	-----------------------	--------------------------	-------------------------	---------------

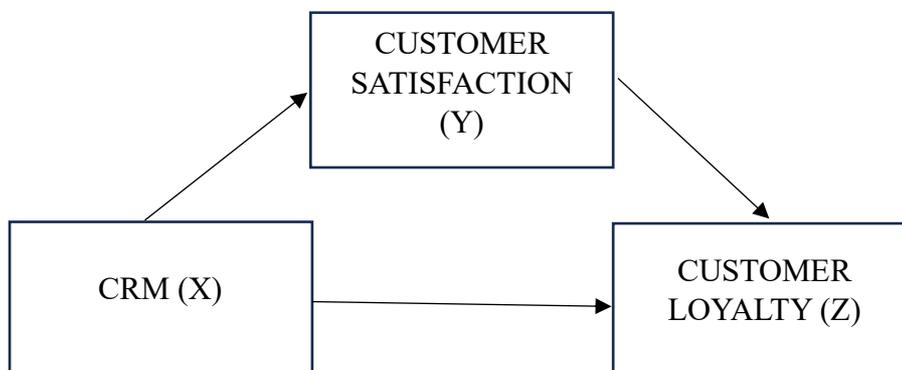
1.	(Djihane Malki, Mohammed Bellahcene, Hela Latreche, 2024)	How social CRM and customer satisfaction affect customer loyalty	The primary objective of this study is to Base on relationship marketing theory, this study aims to test the effect of social customer relationship management (social CRM) on customer satisfaction (CS) and loyalty (CL).	This study employed to assess the proposed framework, structural equation modelling was performed on the data of 314 automotive customers surveyed online.	The study revealed Social CRM dimensions [traditional CRM (TCRM) and social media (SM) technology use] have a direct and positive effect on CS
2.	(Kaur, 2021)	Examining the Interconnections Between E-CRM, Customer Experience, Customer Satisfaction and Customer Loyalty: A Mediation Approach	The primary objective of this study is to Examines the impact of electronic customer relationship management (E-CRM) on customer loyalty through the mediating effects of customer experience and customer satisfaction in the context of the banking industry	This study employed The data was then analyzed using structural equation modeling (SEM) through AMOS	The study revealed the relationships were found to be significant and positive and also customer experience and customer satisfaction proved to be mediators on the relationship between E-CRM and customer loyalty. Thus, these empirical results will have both theoretical and managerial implications which will further

					provide useful insights to the bank managers to improve their long-term relationships with the customers.
3.	(Redjeki, 2020)	The Influence of Customer Relationship Management (CRM) on Customer Trust and Loyalty in PT Amarta Sejahtera	The primary objective of this study is to examine the impact of Customer Relationship Management (CRM) on PT Amarta Sejahtera customers' trust and loyalty both simultaneously and partially	This study employed Determination of data samples using an incidental sampling method. The unit of analysis is a customer who has been a regular customer for at least 3 months. The number of samples taken was as many as 150 people. Meanwhile, the analysis tool used is multiple regression	The study revealed it can be concluded that simultaneous customer relationship management has a 49.6 percent positive and substantial impact on customer satisfaction
4.	(Nitin Liladhar Rane, Anand Achari, 2023)	ENHANCING CUSTOMER LOYALTY THROUGH QUALITY OF SERVICE: EFFECTIVE STRATEGIES TO IMPROVE	The primary objective of this study is to explore effective strategies for enhancing customer loyalty through	The research employs a mixed-methods approach, incorporating both qualitative and	The research highlights that customer satisfaction, driven by high-quality service, personalized experiences,

		CUSTOMER SATISFACTION, EXPERIENCE, RELATIONSHIP, AND ENGAGEMENT	quality service. It aims to identify key drivers of customer loyalty, such as customer satisfaction, customer experience, and customer relationship management (CRM), and to analyze how these factors influence loyalty.	quantitative data collection. Literature reviews, case studies, and customer surveys were analyzed to understand the drivers of customer loyalty.	and consistent communication, is a primary factor in fostering customer loyalty. Effective CRM strategies, including the use of technology to anticipate customer needs and respond to feedback, significantly enhance customer retention.
5.	(Ramadhania & Afriani, 2023)	The relationship between CRM, knowledge management, organization commitment, customer profitability and customer loyalty in telecommunication industry: The mediating role of customer satisfaction and the moderating role of brand image	The primary objective of this study is to evaluate the effectiveness of a customer relationship management (CRM) model based on telecom customers' experiences with company services.	This study employed a quantitative research design using structural equation modeling (SEM) to test the proposed hypotheses	The study revealed that knowledge management and organizational commitment significantly influence CRM performance, which, in turn, affects customer profitability and loyalty directly and indirectly through customer satisfaction.

6.	(S. Lokesh, Menaga.A, 2022)	Influence Of Customer Relationship Management Towards Customer Loyalty with Mediating Factor Customer Satisfaction in Insurances Sector.	Of	The objective of this research is to examine the performance and impact of Customer Relationship Management (CRM) on customer satisfaction and loyalty.	This study employs a literature review approach to analyze existing research and theoretical perspectives on the relationship between CRM, customer satisfaction, and customer loyalty. By synthesizing secondary data from prior studies, the research examines various dimensions of CRM	The findings reveal that CRM, when implemented effectively, significantly enhances customer satisfaction and loyalty by enabling organizations to better target profitable customers, streamline customer service, and customize products and services.
----	-----------------------------	--	----	---	--	---

1.10 CONCEPTUAL MODEL



1.11 Hypothesis

The study examines the relationships between Customer Relationship Management (CRM), customer satisfaction, and customer loyalty within the context of Mercedes Benz Distribution Indonesia. The first hypothesis

(H1): CRM has a significant influence on customer satisfaction.

(H2): CRM also has significant impact on customer loyalty.

(H3): Customer satisfaction significantly affects customer loyalty.

(H4): The mediating role of customer satisfaction, asserting that it significantly mediates the relationship between CRM and customer loyalty. These hypotheses aim to provide insights into how CRM practices enhance customer satisfaction and loyalty, contributing to the company's long-term success.

1.12 CONCEPTUAL DEFINITION

1. CRM

According to Tjiptono, (2014), Customer Relationship Management (CRM) is defined as the process of acquiring, retaining, and developing profitable customers for Mercedes Benz Distribution Indonesia.

2. Customer Satisfaction

According to Andi. Tjiptono, (2015), customer satisfaction is a fundamental element in modern marketing thought and practice. Competition can be won if Mercedes-Benz Distribution Indonesia is able to create and maintain satisfied customers. Achieving customer satisfaction provides several benefits, including fostering a harmonious relationship between the

company and its customers, establishing a solid foundation for repeat purchases and customer loyalty, and generating positive recommendations that are advantageous for Mercedes-Benz Distribution Indonesia.

3. Customer Loyalty

According to Hurriyati, (2015) customer loyalty is defined as a deep commitment from customers to repurchase or consistently use Mercedes-Benz Indonesia products or services in the future.

1.13 OPERATIONAL DEFINITION

1. CRM

Customer Relationship Management (CRM) is the process of acquiring, retaining, and developing profitable customers for **Mercedes Benz Distribution** (Tjiptono, 2014). CRM focuses on building long-term relationships with customers rather than merely emphasizing transactional interactions. The following indicators highlight the essential components of an effective CRM strategy:

1. Customer Knowledge

Understanding individual customers is crucial for fostering long-term relationships. This involves gathering and utilizing customer data to better address their needs and preferences.

2. Relationship Strategy

Customer information must be used to develop personalized relationship strategies. Unlike transactional-focused marketing, these strategies aim to

build meaningful, long-term customer connections that prioritize mutual value.

3. **Communication**

Effective communication between the customer and the organization is critical. A successful relationship strategy should demonstrate a high level of trust and self-validation, ensuring that both parties benefit from the interaction.

4. **Individual Value Proposition**

Organizations should take the initiative to better understand individual customers, develop strong relationships, and communicate effectively. However, this also requires aligning products, services, and pricing with the specific circumstances of each customer. A tailored approach ensures the value proposition meets the unique needs of the customer.

The ultimate goal of implementing CRM is to enhance the company's success in competitive industries by increasing customer retention and satisfaction. For **Mercedes Benz Distribution Indonesia**, this means maintaining a loyal customer base while attracting new customers through personalized strategies and superior customer service.

Table 1. 2 CRM Research Matrix

No	Variable	Definition Operational	Indicator	Item
1	CRM	Customer Relationship Management (CRM) is the process of obtaining, maintaining and developing profitable Mercedes Benz Distribution Indonesia customers (Tjiptono, 2014)	1.Knowledge Customer 2.Information Relations Strategy 3.Communication 4.Individual Value Proposition	1.Customer Segmentation 2.Customer Feedback Analysis 1.Personalized Customer Interaction 2. Mutual Value Creation 1.Customer Feedback Channels 2.Response Time and Quality 1.Customer Insights and Segmentation 2. Product and Pricing Alignment

2. CUSTOMER SATISFACTION

Customer satisfaction is a fundamental element in modern marketing practices and thought, where competitive advantage can be achieved if a company can create and sustain satisfied customers. According to Tjiptono, (2015) creating customer satisfaction offers several benefits, including fostering a harmonious relationship between the company and its customers, providing a strong foundation for repeat purchases and the development of customer loyalty, and generating positive recommendations that benefit the company.

Indicators of customer satisfaction, as outlined by Tjiptono, (2015) include the following:

1. **Reliability:** The ability to deliver services promptly, accurately, consistently, and satisfactorily.
2. **Responsiveness:** The capability of employees to provide services quickly and attentively.
3. **Confidence:** The quality associated with the company's ability and employees' behavior to instill trust and confidence in customers.
4. **Empathy:** The willingness of employees to establish relationships, maintain effective communication, offer personal attention, and understand individual customer needs.
5. **Tangibles:** The physical appearance, equipment, and other visible materials that customers can evaluate positively.

Table 1. 3 Customer Satisfaction Research Matrix

No	Variable	Definition Operational	Indicator	Item
1	CUSTOMER SATISFACTION	Customer satisfaction is a fundamental element in modern marketing practices and thought, where competitive	1.Reliability 2.Responsiveness 3.Confidence	1.Service Consistency 2.Accuracy in Delivery 1.Response Time 2.Service Attentiveness 1.Employee Trustworthiness

illustrate the dimensions of customer loyalty and their significance in fostering long-term relationships with customers.

Table 1. 4 Customer Loyalty Research Matrix

No	Variable	Definition Operational	Indicator	Item
1	CUSTOMER LOYALTY	Customer loyalty is defined as a deeply held commitment by customers to repurchase or continue subscribing to a selected product or service consistently in the future (Hurriyati, 2015)	1) Trust 2) Emotion commitment 3) Switching cost 4) Word of mouth 5) Cooperation	1. Consumer Confidence in Product Quality 2. Brand Reputation and Trustworthiness 1. Emotional Connection to Brand 2. Brand Loyalty Impact 1. Perceived Difficulty of Switching 2. Financial or Contractual Barriers 1. Consumer Advocacy and Influence 2. Impact of Online Reviews and Social Media 1. Willingness to Engage 2. Repeat Purchase Behavior

1.14 RESEARCH METHODS

1.14.1 Type and Research Design

This study is a type of quantitative research, which is a research method based on positivism philosophy, used to investigate a specific population or sample. The sampling technique is generally done randomly, data collection uses research instruments, and data analysis is quantitative or statistical, with the aim of testing established hypotheses (Sugiyono, 2017). The researcher seeks to find both the direct and indirect effects of compensation on employee performance through work stress as an intervening variable. The research data provides procedures for obtaining the information needed to address or resolve the research problem. The research design includes the study's population and sample, research instruments, and data analysis.

1.14.2 Population, Sample, and Sampling Technique

1.14.2.1 Population

According to Sugiyono, (2017), the population is a generalization area consisting of objects/subjects that have specific qualities and characteristics defined by the researcher to be studied and then drawn conclusions. The population in this study includes customers who have used after-sales services, customers who have purchased Mercedes Benz vehicles and customers who have interacted with CRM. The population is still unknown due to prudential data by Mercedes Benz Distribution Indonesia

1.14.2.2 Sample

A sample can be defined as a part of the population selected through certain methods that also have specific, clear, and complete characteristics, which are considered to represent the population (Sugiyono, 2017). The sampling method used in this study is non-probability sampling with a purposive sampling technique.

According to Sugiyono (2017), non-probability sampling is a sampling technique that does not provide equal opportunities for every element or member of the population to be selected as a sample.

Meanwhile, purposive sampling is based on specific characteristics that are deemed to have a strong correlation with the known characteristics of the population. In other words, the selected sample units are chosen according to certain criteria applied based on the research objectives or research problems.

In this study, the sample consists of respondents who meet specific criteria. The criteria for selecting research samples are as follows:

1. Able to provide a reliable representation of the entire studied population.
2. Located near the researcher to facilitate information gathering.

The reason for selecting samples based on these criteria is to avoid bias caused by extreme differences.

1.14.3 Sampling Technique

To determine the sample size for this study, Lemeshow formula is used. Lemeshow formula is a method for calculating the minimum sample size for a finite population survey, where the primary goal of the survey is to estimate the population proportion. The Lemeshow formula used to determine the sample size is (Sugiyono, 2017):

1. Have interacted with a CRM system (Chat Customer Service)
2. Experiencing Problems in Response Time or Service Quality
3. Willing to fill out a questionnaire for research purposes.
4. Have interest or experience with Mercedes Benz products

$$n = \frac{z^2_{1-\alpha/2} \times P(1-P)}{d^2}$$

- **n**: Required sample size.
- **z**: Z-score for the desired confidence level.
- **P**: Estimated population proportion.
- **1 - P**: Proportion not having the attribute.
- **d**: Margin of error (desired precision).
- **α**: Significance level (e.g., 0.05 for 95% confidence).

Here is the technique for drawing samples using proportionate random sampling:

Table 1. 5 Sample Size of Mercedes Benz Distribution Indonesia

Office	Population	Proportion	Sample
Mercedes Distribution Indonesia	150	0.5	100.93
Total			101

Source: Primary Data Processed

At the stage of questionnaire distribution, it was done randomly. The simple random sampling method was used with the help of a Random Number Table due to the large population size. Based on the sampling technique with proportionate random sampling, the sample size in this study is 101 samples. But the author fix it to 150 samples

1.14.4 Operational Variables in the Research

1.14.4.1 Research Variable

The variables in this study consist of three variables: independent (exogenous) variables, dependent (endogenous) variables, and intervening (mediating) variables. A variable is an attribute, characteristic, or value of a person, object, or activity that has specific variations and is determined by the researcher to be studied and concluded upon (Sugiyono, 2017). In this study, there are three research variables, namely:

1. Dependent Variable

The dependent variable is often referred to as the output variable, criterion, consequence, or tied variable. This is the variable that is influenced or caused by the independent variable. In this study, the dependent variable is employee performance.

2. Independent Variable

The independent variable is often called the stimulus, predictor, antecedent, or free variable. This variable affects or causes a change in the dependent variable. In this study, the independent variable is compensation.

3. Intervening Variable

The intervening (mediating) variable is a variable that theoretically affects the relationship between the independent and dependent variables, making it an indirect relationship that cannot be directly observed or measured. This variable serves as a bridge between the independent and dependent variables, meaning the independent variable does not directly influence the change or emergence of the dependent variable. The mediating variable used in this study is work stress.

1.14.5 Data Collection Method

The data collection method in this study is based on primary data. Primary data refers to data obtained from the original source, such as from observations, interviews, or questionnaires. The data required for this research will be collected using the following methods:

1. Secondary Data

This study uses secondary data sourced from the Customer Relationship Management (CRM) system of Mercedes-Benz Distribution Indonesia. The data includes customer interaction logs, such as chat histories, response times, and the frequency of conversations; pre-existing customer satisfaction reports; and customer loyalty data, such as repeat purchase frequency or Net Promoter Scores

(NPS) Sugiyono, (2015:199). According to research on CRM systems, customer interaction and satisfaction data are crucial for understanding customer behavior and improving service quality. By analyzing such data, companies can gain valuable insights into customer loyalty, satisfaction, and retention (Anderson, 2020).

2. Questionnaire

A questionnaire is an efficient data collection technique when the researcher is sure about the variables to be measured and knows what can be expected from the respondents. Additionally, questionnaires are suitable when the number of respondents is sufficiently large and spread over a wide area. Therefore, the questionnaire in this study is closed-ended and will be logically designed to relate to the research problem, with each question providing answers that are meaningful in testing the hypotheses.

Likert Scale is used to measure attitudes, opinions, and perceptions of individuals or groups of people about social phenomena (Sugiyono, 2017). Variables measured using a Likert scale will be broken down into indicators. Then, each item in the instrument will have gradation and an index used, which is 5. The gradation values are presented in table below:

Table 1. 6 Likert Index Scale

Grade	Value	Description
1	Very Not Good	Very Negative
2	Not Good	Negative
3	Neutral	No Opinion
4	Good	Positive
5	Very Good	Very Positive

Source: Sugiyono, (2010: 135)

Descriptive statistical analysis is a method used to analyze data by describing or summarizing the collected data as it is, without aiming to make any generalizations.

The scale used in this research is a Likert scale from 1 to 5.

According to Ferdinand (2014: 231), the calculation of the index is done using the following formula for determining the index value:

$$\text{Index Value} = \frac{(\%F1 \times 1) + (\%F2 \times 2) + (\%F3 \times 3) + (\%F4 \times 4) + (\%F5 \times 5)}{5}$$

Description:

- **F1:** Frequency of respondents who answered 1 (Very Good)
- **F2:** Frequency of respondents who answered 2 (Good)
- **F3:** Frequency of respondents who answered 3 (Neutral)
- **F4:** Frequency of respondents who answered 4 (Not Good)
- **F5:** Frequency of respondents who answered 5 (Very Not Good)

This method is used to determine the interpretation criteria for the index values obtained from the questionnaire responses. The range of values used for interpretation is divided into three categories based on the ratings provided by the respondents, which fall on a scale of 1 to 5 (with a total range of values between 20 to 100).

The steps are as follows:

1. The respondent's ratings range from 1 to 5, which, when converted to a scale from 20 to 100, results in a range of 80 (i.e., $100 - 20 = 80$).
2. This interval range is then divided into three categories, each with a range of **26.67**. Thus, the interval divisions are as follows:

Table 1. 7 Interval Value Criteria

No	Grade	Criteria
1.	20 – 46,67	Low
2.	46,68 – 73,34	Mid
3.	73,35 – 100	High

Source: Ferdinand, (2014: 232)

3. CRM Data Analysis

The purpose of CRM data analysis is to evaluate historical customer relationship management data to measure key performance indicators that directly influence customer satisfaction and business outcomes. Previous research has shown that analyzing average response times of customer service plays a crucial role in understanding customer retention, as quicker responses are linked to higher satisfaction. Interaction volumes and resolution rates of customer complaints are also essential metrics, providing insights into the efficiency of support teams and the effectiveness of complaint handling in driving customer loyalty. Studies have consistently demonstrated that higher resolution rates correlate with improved customer retention and positive reviews. Furthermore, the relationship between response times and transactional outcomes, such as successful purchases or abandoned transactions, is vital for identifying potential bottlenecks in the sales funnel. Faster response times have been found to reduce cart abandonment and increase conversion rates, underscoring the importance of timely customer service in influencing purchasing behavior and overall business performance.

1.14.6 Instrument Testing

Research instruments are tools used to measure specific phenomena, whether natural or social, that are observed for all phenomena referred to as research variables. The research instrument used in this study is a questionnaire or survey (Sugiyono, 2017). Data regarding compensation, work stress and employee performance can be revealed in this research using instruments based on a Likert scale.

A good research instrument must meet two essential criteria: validity and reliability (Sugiyono, 2017).

- **Validity** refers to the extent to which the instrument measures what it is intended to measure. A valid instrument accurately captures the variable it is designed to assess.
- **Reliability** refers to the consistency and stability of the results produced by the instrument. A reliable instrument produces the same results when used under similar conditions.

In this study, the validity and reliability of the instrument (questionnaire) will be tested to ensure that the data collected is both accurate and consistent, allowing for valid conclusions to be drawn from the research.

A valid instrument must have both internal and external validity. An instrument has internal validity or rationality when the criteria within the instrument, from a theoretical perspective, adequately reflect what is being measured. On the other

hand, an instrument has external validity when the criteria in the instrument are based on existing empirical facts (Sugiyono, 2017).

Meanwhile, a reliable instrument is one that, when used multiple times to measure the same object, will produce the same data consistently. The development of an instrument must begin with the research variables that have been defined for study. From these variables, indicators are determined and then further elaborated in the form of questions or statements.

This study requires validity and reliability testing to assess the feasibility of the research questionnaire or survey instrument. These tests ensure that the instrument accurately measures what it intends to measure (validity) and that it provides consistent results (reliability) when applied to the same object multiple times.

1.14.7 Instrument Validity

The validity of a questionnaire indicates how well the questionnaire can measure what it is intended to measure and whether it aligns with the actual conditions. The research findings must be valid or legitimate in order to be scientifically accountable for their accuracy (Solimun, 2017). There are several types of instrument validity, including content validity, criterion validity, unidimensional validity, convergent validity, and discriminant validity. This research employs convergent validity and discriminant validity. Below is an explanation of these two types of validity:

1. Convergent Validity

Convergent validity is measured using factor loadings for reflective indicator models or component loadings for formative indicator models. If the factor loading is equal to or greater than 0.70, or if the factor loading and component weight of an indicator are significant, then the corresponding indicator is considered to meet convergent validity. Additionally, the Average Variance Extracted (AVE) value is considered; if the AVE value is greater than 0.5, it can be said to have satisfied convergent validity.

Table 1. 8 Convergent Validity Test Parameters in PLS Measurement Model

Parameter	Rule of Thumbs
Loading Factor	More than 0,7
Average Variance Extracted (AVE)	More than 0,5

Source: (W. Abdillah & Jogiyanto, 2015)

2. Discrimination Validity

Discriminant validity indicates that the measuring indicators within a construct will have a high correlation with other indicators in the same construct, and a low correlation, or no correlation, with indicators in other constructs Abdillah & Jogiyanto, (2015: 73). Discriminant validity is measured by comparing the loading values with the crossloading factor. If the loading value of an indicator is higher than the crossloading value of another indicator, then the indicator is considered to meet discriminant validity. Discriminant validity of a questionnaire can be assessed by comparing the square root of the AVE (Average Variance Extracted) between the Latent. In the second method (cross-loadings), the comparison is between an indicator's loading on its own construct versus its loadings on

other constructs. If the square root of AVE is greater than the correlation coefficient with other variables, then the questionnaire is considered to have discriminant validity. Alternatively, discriminant validity can also be measured by examining cross-loading; if it is greater than 0.70, the corresponding indicator is considered to meet discriminant validity (W. dan J. Abdillah, 2015).

Table 1. 9 Discriminant Validity Test Parameters in PLS Measurement Model

Parameter	Rule of Thumb
Square Root of AVE and Correlation of Latent Variables	Square Root of AVE > Correlation of Latent Variables
Cross Loading	More than 0,7 in one variable

Source: (Abdillah & Jogiyanto, 2015: 196)

1.14.7.1 Reliability Instrument

Reliability is a measure that indicates the extent to which a questionnaire is able to consistently measure a variable (Solimun, 2017). The concept of reliability aligns with construct validity or quantitative validity. A valid construct is guaranteed to be reliable, but a reliable construct is not necessarily valid (W. dan J. Abdillah, 2015). To analyze the reliability of a questionnaire, there are two methods: composite reliability and Cronbach's alpha. The rule of thumb for composite reliability and Cronbach's alpha is that they should be greater than 0.70, although a value of 0.60 is still acceptable (Hair, J.F., Black, W.C., Babin, B.J. and Anderson, 2010).

1.14.8 Hypotheses Testing

In this research, hypothesis testing is performed using analysis techniques through Structural Equation Modeling (SEM) with the alternative Partial Least Square

(PLS) method, utilizing SmartPLS 3.0 software. Structural Equation Modeling (SEM) is used as a representation of the system under study to explain the behavior of the system, closely approximating the real conditions of the research object (Solimun, 2017). SEM is a multivariate analysis technique that can analyze relationships between variables more complexly. SEM is considered a reliable, illustrative, and robust statistical technique for research (W. dan J. Abdillah, 2015). PLS is a variance-based structural equation analysis (SEM) that can simultaneously perform measurement model testing and structural model testing (W. dan J. Abdillah, 2015). The measurement model is used for validity and reliability testing, while the structural model is used for causal testing (hypothesis testing with prediction models).

The hypothesis testing process in this study is conducted by observing the significance value of the hypothesis, which can be compared using the T-table and T-statistics values. If the T-statistics value is higher than the T-table value, the hypothesis is supported. For a 90% confidence level (alpha 10%), the T-table value for the hypothesis is > 1.96 .

Acceptance or rejection of hypotheses is based on the following criteria:

1. If the original value has a positive (+) statistical result, the hypothesis is accepted. It can be concluded that the independent variable statistically has a positive effect on the dependent variable.

2. If the original value has a negative (-) statistical result, the hypothesis is rejected. It can be concluded that the independent variable statistically does not affect the dependent variable.
3. If the T-statistics value > 1.96 or the p-value < 0.05 , the hypothesis has a significant effect, so it can be concluded that the independent variable statistically has a significant effect on the dependent variable.
4. If the T-statistics value < 1.96 or the p-value > 0.05 , the hypothesis has no significant effect, so it can be concluded that the independent variable does not statistically have a significant effect on the dependent variable.

The probability value of the t-test for direct relationships can be found in the Path Coefficients table in the SmartPLS 3.0 program under the p-values column. The probability value of the t-test for indirect relationships can also be found in the Path Coefficients table under the p-values column.

In hypothesis testing using SmartPLS, the following steps can be taken:

1. **Design the Structural Model (Inner Model)**

The structural model, also known as inner relation, substantive theory, or structural model, illustrates the relationship between latent variables based on sub-theories (Ghozali, 2014).

2. **Design the Measurement Model (Outer Model)**

The outer model, also called outer relation or measurement model, defines how each indicator block relates to the latent variable.

3. **Design the Path Diagram**

Create a path diagram that visually represents the relationships between variables.

4. **Convert the Path Diagram into System of Equations**

Convert the path diagram into a system of equations to enable analysis.

5. **Model Evaluation**

The evaluation of the model is divided into two parts: the outer model and the inner model..

a. **Outer Model**

The outer model is divided into reflective and formative. The reflective outer model is evaluated using convergent and discriminant validity, along with the indicators. Composite reliability and Cronbach Alpha are used to measure the instrument's reliability.

b. **Inner Model**

The inner model is evaluated using several criteria, including:

1. **Goodness of Fit (GoF)**

Goodness of Fit (GoF) measures how well the model fits the research data. The GoF index tests the goodness of fit between the observed frequencies and the expected theoretical frequencies. The GoF index has criteria: 0.1 (small), 0.25 (moderate), and 0.36 (large) (Hair, J.F., Black, W.C., Babin, B.J. and Anderson, 2013).

2. f^2 for effect size

If the obtained value of f^2 is greater than zero, this indicates that the model has a sufficient effect size on the latent variable. However, if the value of f^2 is below zero, it indicates that the model does not have a sufficient effect size. The categories or parameters of f^2 are 0.02, 0.15, and 0.35 (small, medium, and large) (Chin, 2010).

In addition to being calculated within the SmartPLS system

3. Relevance of Prediction (q^2)

If the obtained value of f^2 is greater than zero, this indicates that the model has a sufficient effect size on the latent variable. However, if the value of f^2 is below zero, it indicates that the model does not have a sufficient effect size. The categories or parameters of f^2 are 0.02, 0.15, and 0.35 (small, medium, and large) (Chin, 2010).

In addition to being calculated within the SmartPLS system, f^2 can also be calculated using the following formula:

4. R^2 for Endogenous Latent Variables

The R-squared value is used to measure the extent of variation in the dependent variable explained by the independent variables. Therefore, the higher the R-squared value in a model, the better the predictive model of the proposed research model (Abdillah, W., & Hartono, 2014). The rule of thumb for interpreting R-squared values in structural models are 0.67, 0.33, and 0.19, which can be interpreted as good, moderate, and weak levels of determination, respectively (Chin, 2010).

5. Path Coefficient Estimation

This refers to the estimated value for the path relationships in the structural model obtained through the bootstrapping procedure with the original sample values.

6. T-statistics and P-Value as Significance Values

The t-value thresholds are 1.65 (significance level = 10%), 1.96 (significance level = 5%), and 2.58 (significance level = 1%).

- c. Based on hypothesis testing using SmartPLS 3.0, the rule of thumb for evaluating structural models applies to both outer and inner models

Table 1. 10 Rule of Thumb for Evaluating Reflective Indicator Measurement Model

No	Criteria	Parameter	Rule of Thumb
1.	Covergent Validity	Loading Factor	<ul style="list-style-type: none"> a. >0.70 for Confirmatory Research b. >0.60 for Exploratory Research c. >0.50 for early-stage research
		Average Variance Extracted (AVE)	<ul style="list-style-type: none"> a. $>0,50$ for Corfirmatory and Exploratory Research
		.Cross loading	<ul style="list-style-type: none"> a. $>0,70$ for every variable
2.	Discriminant Validity	Square root of AVE and correlation between latent constructs	<ul style="list-style-type: none"> a. Square root of AVE $>$ correlation between latent constructs

3.	Realibility	Cronbach Alpha's	a. >0,70 for Confirmatory Research
		Composite Reability	b. >0,60 for Exploratory Research
			a. >0,70 for Confirmatory Research
			b. 0,60 – 0,70 for Exploratory Research

Source: (Ghozali & Latan, 2015:76)

Table 1. 11 Summary of Rule of Thumb for Structural Model Evaluation

No	Criteria	Rule of Thumb
1.	R - Square	0.75, 0.50, 0.25 indicate a strong, moderate, and weak model, respectively.
2.	Effect Size f^2	0.02, 0.15, 0.35 (small, medium, and large)
3.	Q^2 Predictive Relevance	$Q^2 > 0$ indicates that the model has predictive relevance, while $Q^2 < 0$ indicates that the model lacks predictive relevance.
4.	q^2 predictive relevance	0.02, 0.15, 0.35 (small, medium, and large).
5.	Significance	1. ttt-value 1.65 (significance level = 10%) 2. ttt-value 1.96 (significance level = 5%) 3. ttt-value 2.58 (significance level = 1%)

Source: (Ghozali dan Latan, 2