

Analysis of the Effect of Value Co-Creation and Service Quality on Customer Loyalty with Customer Engagement as a Mediation Variable on Le Minerale Consumers in Semarang City

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Abstract. *In an increasingly competitive environment, customer loyalty is a key factor in determining business sustainability. Loyal consumers not only make repeat purchases but also tend to recommend products to others. Therefore, companies are required to understand the factors that can influence the formation of customer loyalty, especially in the AMDK industry such as Le Minerale which competes with other major brands in Indonesia. One factor thought to play a significant role in shaping customer loyalty is value co-creation. This concept emphasizes that customers are not merely recipients of value but also active participants in creating shared value with the company. Through interaction, feedback, and involvement in product development, customers can feel a stronger connection with the brand. Besides value co-creation, another equally important factor is service quality. Service quality is a fundamental aspect in building positive consumer perceptions of a product. Good, consistent service that meets customer expectations creates a satisfying experience, which can increase customer trust and loyalty to a particular brand. In the context of modern marketing, a company's success is not only determined by the quality of its products, but also by the company's ability to create customer engagement. Customer engagement reflects the level of emotional, cognitive, and behavioral attachment consumers have to a brand that is formed through ongoing interactions. Customer engagement become an important bridge that connects customer experience with purchasing decisions and loyalty. The higher a customer's engagement with a brand, the more likely they are to continue using that product long-term. This demonstrates that customer engagement plays a strategic role in building long-term relationships between companies and consumers. Previous research shows that value co-creation and service quality have a significant influence on customer engagement.*

Keywords: Customer; Engagement; Loyalty; Service.

1. Introduction

The bottled drinking water (AMDK) industry in Indonesia is experiencing rapid growth in line with the increasing public demand for practical, hygienic, and safe drinking water products. This has led to increasingly fierce competition among bottled drinking water brands, both in terms of product quality and marketing strategies. Companies are no longer solely focused on product sales, but also on building long-term relationships with consumers through enhanced customer experiences and engagement.

In an increasingly competitive environment, customer loyalty is a key factor in determining business sustainability. Loyal consumers not only make repeat purchases but also tend to recommend products to others. (Lubis et al., 2025). Therefore, companies are required to understand the factors that can influence the formation of customer loyalty, especially in the AMDK industry such as Le Minerale which competes with other major brands in Indonesia.(Zulkarnain et al., 2020).

One factor thought to play a significant role in shaping customer loyalty is value co-creation. This concept emphasizes that customers are not merely recipients of value but also active participants in creating shared value with the company. Through interaction, feedback, and involvement in product development, customers can feel a stronger connection with the brand. (Oyner & Korelina, 2016). Besides value co-creation, another equally important factor is service quality. Service quality is a fundamental aspect in building positive consumer perceptions of a product. Good, consistent service that meets customer expectations creates a satisfying experience, which can increase customer trust and loyalty to a particular brand. (Xu et al., 2024). In the context of modern marketing, a company's success is not only determined by the quality of its products, but also by the company's ability to create customer engagement. (López-Tenorio et al., 2025). Customer engagement reflects the level of emotional, cognitive, and behavioral attachment consumers have to a brand that is formed through ongoing interactions.

Customer engagement become an important bridge that connects customer experience with purchasing decisions and loyalty. (Wu et al., 2018). The higher a customer's engagement with a brand, the more likely they are to continue using that product long-term. This demonstrates that customer engagement plays a strategic role in building long-term relationships between companies and consumers.

Previous research shows that value co-creation and service quality have a significant influence on customer engagement. (Ramezanirad & Zarepour Nasirabadi, 2025). When customers are involved in the value creation process and receive quality service, their level of engagement with the brand increases. This creates a stronger relationship between customers and the company. Furthermore, various studies have shown that value co-creation and service quality influence customer loyalty, both directly and indirectly through customer engagement. (Ramezanirad & Zarepour Nasirabadi, 2025). This shows that customer loyalty is not formed instantly, but rather through a continuous process of interaction and experience between customers and the company. (Abror et al., 2020).

In the context of Le Minerale AMDK in Semarang City, competition with other brands such as Aqua, Club, and other local brands requires companies to continuously improve their customer experience-based marketing strategies. Today's consumers not only consider product price and quality, but also the interaction experience they feel with the brand. Le Minerale, as one of the fastest-growing AMDK brands in Indonesia, needs to understand the factors that can increase consumer loyalty. Increasing loyalty depends not only on product quality, but also on how the company creates shared value with consumers and provides quality and consistent service. The phenomenon of changing consumer behavior that is increasingly critical and selective also presents a challenge for AMDK companies. Consumers are more likely to switch brands if they feel dissatisfied or do not have an emotional attachment to a product. Therefore, companies must be able to build stronger relationships through effective customer engagement strategies.

2. Research Methods

This study uses explanatory research, or research that explains the data with a quantitative approach. Explanatory research aims to test hypotheses, either by confirming or rejecting them based on the research results obtained. (Cooper, 2017). This approach is used to understand the causal relationship between independent and dependent variables through objective statistical analysis. By using quantitative methods, this research allows for structured and systematic measurements, so that the results obtained can be tested for validity and reliability. In addition, explanatory research also helps in identifying the magnitude of the influence of independent variables on dependent variables, thus providing a deeper understanding of the phenomenon being studied. If there is a relationship and influence, how close is the relationship and influence (Sugiyono, 2017). Quantitative method research is the process of obtaining knowledge based on data or numbers using statistical calculations from the number of respondent samples given in the survey conducted. Sugiyono (2017) argues that this quantitative approach is used for research on certain populations and samples as well as data collection based on research variables.

3. Results and Discussion

3.1. The Influence of Value Co-Creation on Customer Engagement

Based on the results of the linear regression test, it is known that the value co-creation variable has a regression coefficient of 0.407 with a t-value of 2.732 and a significance level of 0.007. This significance value is smaller than 0.05 ($0.007 < 0.05$), thus indicating that value co-creation has a positive and significant effect on customer engagement among Le Minerale AMDK consumers in Semarang City. A positive regression coefficient indicates that the higher the value created together between the company and consumers, the higher the level of consumer attachment to the product. These results prove that the first hypothesis in this study is accepted.

This situation indicates that Le Minerale AMDK consumers in Semarang City no longer play a mere role as buyers, but also as parties involved in the value creation process through product experiences, providing reviews, recommendations to other consumers, and interacting with the company through various communication media. This involvement makes consumers feel a closer relationship with the brand, thus encouraging greater attention, participation, and interaction with Le Minerale AMDK products. The greater the opportunity the company provides for consumers to participate in creating value, the stronger the consumer's attachment to the brand.

The results of this study align with the Service-Dominant Logic theory proposed by Vargo and Lusch, which explains that value is created through collaboration between companies and consumers. Consumers who experience positive experiences in the value creation process will demonstrate higher levels of customer engagement. These results also support previous research that concluded that value co-creation has a positive effect on customer engagement. Therefore, companies need to continuously increase activities that involve consumers in the value creation process to strengthen long-term relationships with consumers. Theoretically, value co-creation creates an interactive space that allows customers to engage in various activities such as providing feedback, sharing ideas, and participating in service innovation. (Hau et al., 2017) This ongoing interaction increases customer attention, emotional attachment, and a sense of belonging to a brand or organization. Therefore, the higher the level of customer involvement in the value creation process, the higher the level of customer engagement. (Bason, 2010).

In the context of modern marketing, customer engagement is influenced not only by service quality but also by the extent to which customers are involved in the value creation process. When organizations provide opportunities for customers to actively participate, they feel valued and their contributions recognized. (Baah et al., 2024) This condition encourages the

creation of stronger and more interactive relationships between customers and companies, which ultimately increases overall engagement.

Various empirical studies also support a positive relationship between value co-creation and customer engagement. Studies show that the higher the level of customer participation in the co-creation process, the higher the level of emotional, cognitive, and behavioral engagement with the brand.(Felix & Rembulan, 2023);(Rachmadhaniyati & Sanaji, 2021). Thus, value co-creation can be seen as an important factor capable of increasing customer engagement sustainably in long-term relationships between customers and organizations.

3.2. The Influence of Service Quality on Customer Engagement

Based on the results of linear regression testing, it is known that the service quality variable has a regression coefficient of 0.282 with a t-value of 2.030 and a significance level of 0.045. This significance value is smaller than 0.05 ($0.045 < 0.05$), thus indicating that service quality has a positive and significant effect on customer engagement among Le Minerale AMDK consumers in Semarang City. A positive regression coefficient indicates that the better the quality of service provided by the company to consumers, the higher the level of consumer engagement with the product. Thus, the second hypothesis in this study is accepted.

Field conditions demonstrate that good service quality is not only reflected in the quality of Le Minerale's AMDK products, but also in the ease of product acquisition, accuracy of distribution, the company's responsiveness to consumer needs, and the company's ability to maintain consistent product quality. Service that meets consumer expectations fosters trust and comfort, leading to more active interactions with the product and the company. This positive relationship ultimately forms an emotional engagement that encourages consumers to continue following product developments and providing recommendations to others.

The results of this study support the service quality theory, which states that service that meets or exceeds customer expectations will foster long-term relationships between companies and customers. This research also aligns with previous studies that have found service quality to be a crucial factor in increasing customer engagement. Therefore, companies need to maintain consistent service quality to foster stronger relationships with consumers and increase their engagement with Le Minerale bottled water products. Theoretically, customers who receive high-quality service tend to show greater attention, enthusiasm, and interaction with the company. Consistent service quality will foster a sense of trust and comfort in customers' relationships with the organization.(Kaleka & Morgan, 2017)When customers feel that a company is able to optimally meet their needs and expectations, they will be more motivated to engage in various activities related to the company, both directly and through digital media.(Saraswati, 2021b).

From a relationship marketing perspective, service quality is the main foundation in building long-term relationships between companies and customers.(Rama et al., 2025)Superior service enables more intensive communication and meaningful interactions, enabling customers to become not only service users but also members of the company's community. This ultimately increases customer emotional attachment and strengthens customer engagement.(Oyner & Korelina, 2016).

Several previous studies support a positive relationship between service quality and customer engagement. Research by Abror et al. (2020) shows that good service quality can increase customer engagement in the Islamic banking sector. These findings indicate that customers who receive quality service tend to have closer relationships with the organization, demonstrate more active participation, and exhibit higher commitment to the company.(Zaichkowsky, 2016). Thus, the higher the quality of service a company provides, the higher the level of customer engagement that is formed.

3.3. The Effect of Value Co-Creation on Customer Loyalty

Based on the results of linear regression testing, it is known that the value co-creation variable has a regression coefficient of 0.228 with a t-value of 2.927 and a significance level of 0.016. This significance value is smaller than 0.05 ($0.016 < 0.05$), thus indicating that value co-creation has a positive and significant effect on customer loyalty among Le Minerale AMDK consumers in Semarang City. A positive regression coefficient indicates that the higher the value perceived by consumers through the process of co-creating value, the higher the consumer loyalty to Le Minerale AMDK products. Thus, the third hypothesis in this study is accepted.

This situation illustrates that consumers who feel involved in the value creation process will have a better experience than those who simply use the product. This positive experience can increase their sense of brand ownership, leading to repeat purchases, continued preference for Le Minerale bottled water over other brands, and willingness to recommend it to family and friends. This demonstrates that consumer involvement in value creation is a crucial strategy for building customer loyalty amidst the increasingly competitive bottled water industry.

The results of this study are in line with the Service-Dominant Logic theory, which explains that creating shared value will result in a long-term, mutually beneficial relationship between companies and consumers. Furthermore, the results of this study also strengthen various previous studies that concluded that value co-creation has a positive effect on customer loyalty. Therefore, companies need to continue to develop various programs that can increase consumer participation in the value creation process so that consumer loyalty to Le Minerale bottled water can be maintained and enhanced. According to the Service-Dominant

Logic perspective, value will be created optimally when customers actively participate in the process of creating and using services.(Oyner & Korelina, 2016)Through this engagement, customers gain a more personalized and relevant experience tailored to their needs. When customers feel that their contributions are valued and provide tangible benefits, they develop a sense of ownership and a stronger attachment to the company. This encourages customers to maintain long-term relationships with the company.(Merz et al., 2018).

Additionally, value co-creation allows companies to understand customer needs and preferences more deeply. Through intensive interaction, companies can produce products or services that better align with customer expectations.(Xu et al., 2024). The alignment between customer expectations and experiences will increase perceived value, satisfaction, and trust. These three aspects are important factors contributing to the formation of customer loyalty.(Merz et al., 2018).

Empirical research also shows a positive relationship between value co-creation and customer loyalty. Cossio-Silva et al.'s (2016) study found that customer involvement in the value creation process significantly increased customer loyalty. Similar findings were also presented by Albuquerque and Ferreira (2022), who demonstrated that co-creation behavior can strengthen customer relationships with the company, thus encouraging repeat purchases and long-term commitment.(Yen et al., 2020). Thus, the higher the level of value co-creation carried out by customers with the company, the higher the level of customer loyalty that is formed.

3.4. The Influence of Service Quality on Customer Loyalty

Based on the results of linear regression testing, it is known that the service quality variable has a regression coefficient of 0.335 with a t-value of 2.278 and a significance level of 0.011. This significance value is smaller than 0.05 ($0.011 < 0.05$), thus indicating that service quality has a positive and significant effect on customer loyalty among Le Minerale AMDK consumers in Semarang City. A positive regression coefficient indicates that the better the quality of service provided by the company to consumers, the higher the level of consumer loyalty to Le Minerale AMDK products. These results prove that the fourth hypothesis in this study is accepted.

Field conditions indicate that consumer loyalty to Le Minerale bottled water is influenced not only by product quality, but also by the quality of service received during the purchasing and consumption process. Ease of product acquisition across various distribution channels, consistent product availability, secure packaging, and the company's ability to maintain product quality are factors that provide a positive experience for consumers. These experiences build consumer trust in the brand, leading to repeat purchases, resistance to

switching to competitors' products, and willingness to recommend Le Minerale bottled water to others.

The results of this study align with the theory of service quality, which states that service that meets or even exceeds customer expectations will result in satisfaction and ultimately increase customer loyalty. These findings also support previous studies that concluded that service quality has a positive influence on customer loyalty. Therefore, the company needs to continuously improve service quality to maintain customer loyalty and strengthen Le Minerale's position in the competitive bottled water industry. According to the service quality theory proposed by Parasuraman, Zeithaml, and Berry (1988), customers will evaluate service quality based on a comparison between their expectations and the service performance they receive. If the service provided meets or exceeds customer expectations, customers will have a positive perception of the company.(Novia et al., 2020)This positive perception will encourage customers to make repeat purchases, maintain relationships with the company, and demonstrate a higher commitment to the products or services they use. Thus, service quality is a key determinant in building customer loyalty.(Elsye Fatmawati et al., 2023).

From a relationship marketing perspective, customer loyalty is built not only through repeat transactions but also through consistent and satisfying service experiences. Customers who receive high-quality service tend to have a greater level of trust in the company.(Rendhi, 2023)This trust will strengthen the customer's emotional connection with the company, making it more difficult for them to be influenced by competitors' offers. As a result, customers will demonstrate loyal behavior in the form of repeat purchases, preference for the same brand, and a willingness to recommend the company to others.(Hapsari et al., 2017).

Various previous studies support a positive relationship between service quality and customer loyalty. Abror et al.'s (2020) study found that service quality significantly influences customer loyalty in Islamic banking. Similar findings were obtained by Agarwal and Gowda (2020), who showed that airline service quality positively influences customer loyalty by increasing customer satisfaction.(Saraswati, 2021a)Furthermore, research by Alkraihi and Ameen (2022) demonstrated that e-service quality plays a crucial role in increasing user loyalty to digital-based government services. The results of this study indicate that the higher the quality of service provided by a company, the higher the level of customer loyalty.

3.4. The Influence of Customer Engagement on Customer Loyalty

Based on the results of linear regression testing, it is known that the customer engagement variable has a regression coefficient of 0.333 with a t-value of 3.366 and a significance level of 0.000. This significance value is smaller than 0.05 ($0.000 < 0.05$), thus indicating that customer engagement has a positive and significant effect on customer loyalty among Le

Minerale AMDK consumers in Semarang City. A positive regression coefficient indicates that the higher the level of consumer attachment to the product, the higher the consumer loyalty. These results prove that the fifth hypothesis in this study is accepted.

Field conditions indicate that consumers who have a strong attachment to Le Minerale bottled water tend to exhibit loyal behavior, such as making consistent repeat purchases, providing recommendations to others, and continuing to choose the product despite the presence of various alternative brands available on the market. This attachment is formed through positive experiences while using the product, good communication between the company and consumers, and trust in the quality of the product being marketed. The higher the level of interaction and emotional connection the company builds with consumers, the greater the likelihood that consumers will maintain their loyalty.

The results of this study align with relationship marketing theory, which explains that long-term relationships built through customer engagement will result in stronger loyalty. This research also supports various previous studies that state that customer engagement is a key factor influencing customer loyalty. Therefore, companies need to continue building active interactions with consumers through various communication and marketing strategies to increase levels of consumer engagement and, thus, foster sustainable customer loyalty. Theoretically, customer engagement is seen as an important factor in building a relationship between a company and its customers. According to Brodie et al. (2011), customers who are actively involved in interactions with a company tend to have a stronger emotional bond with the brand.(Felix & Rembulan, 2023)This emotional bond increases customers' trust, commitment, and satisfaction, ultimately encouraging them to continue using the same product or service. In other words, the higher the level of customer engagement, the more likely the customer is to maintain a relationship with the company.(Li et al., 2020).

In the context of modern marketing, customer engagement is a strategic asset because it can create customers who are not only loyal in their purchasing behavior but also loyal in their attitudes. Highly engaged customers tend to demonstrate repeat purchase behavior, provide positive word-of-mouth recommendations, and are more resilient to various offers from competitors.(Darmadi et al., 2021). In addition, actively engaged customers are also more willing to participate in various company activities, such as providing feedback, joining customer communities, and supporting the development of new products or services.(Yen et al., 2020).

The relationship between customer engagement and customer loyalty is also supported by various empirical studies. Research by Ahmad et al. (2022) found that customer engagement plays a crucial role in increasing customer loyalty in the digital environment. Research by Abror et al. (2020) also showed that customer engagement has a positive and significant influence on customer loyalty in Islamic banking. Furthermore, Chathoth et al. (2016)

explained that high customer involvement in the interaction process and value co-creation can strengthen long-term relationships between customers and companies. These findings indicate that customer engagement is a crucial factor in creating and maintaining customer loyalty.(Wu et al., 2018).

Based on theoretical descriptions and previous research results, it can be understood that customers who have a high level of engagement will show a stronger commitment to the company, make repeat purchases more often, and be more willing to recommend products or services to others.(Abror et al., 2020)Therefore, increasing customer engagement is an important strategy for companies to build sustainable customer loyalty and create long-term competitive advantage.(Yen et al., 2020).

3.5. The Role of Customer Engagement in Mediating the Effect of Value Co-Creation on Customer Loyalty

Based on the results of the Sobel test, it is known that the indirect effect of value co-creation on customer loyalty through customer engagement obtained a Sobel Test Statistic value of 1.053 with a two-tailed probability value of 0.292. This value is greater than 0.05 ($0.292 > 0.05$), thus indicating that customer engagement is not able to significantly mediate the relationship between value co-creation and customer loyalty among Le Minerale AMDK consumers in Semarang City. These results indicate that although value co-creation has a significant effect on customer engagement and also has a direct effect on customer loyalty, the indirect effect through mediating variables has not been proven significant. Thus, the sixth hypothesis in this study is rejected.

This situation indicates that Le Minerale AMDK consumers in Semarang City form loyalty more based on the benefits they directly experience from the value creation process than through prior engagement. Consumers who receive a quality product, are satisfied with their experience using the product, and experience benefits that meet their expectations tend to immediately become loyal customers. In other words, consumer loyalty is more influenced by the perception of value received than by the level of engagement formed during interactions with the company.

The results of this study indicate that customer engagement has not been able to act as a mediating variable in the relationship between value co-creation and customer loyalty. This condition may occur because bottled drinking water is a daily necessity, where purchasing decisions are more influenced by product quality, safety, price, and ease of obtaining the product than by the level of consumer engagement with the company. Therefore, although the company succeeded in increasing value co-creation, the increase in consumer loyalty occurred more through direct influence than through increased customer engagement. The results of research by Abror et al. (2020) also showed that customer engagement has a

positive and significant influence on customer loyalty in Islamic banking. Furthermore, Chathoth et al. (2016) explained that high customer involvement in the interaction process and value co-creation can strengthen long-term relationships between customers and companies. These findings indicate that customer engagement is a very important factor in creating and maintaining customer loyalty. (Wu et al., 2018).

3.6. The Role of Customer Engagement in Mediating the Effect of Service Quality on Customer Loyalty

Based on the results of the Sobel test, it is known that the indirect effect of service quality on customer loyalty through customer engagement obtained a Sobel Test Statistic value of 0.992 with a two-tailed probability value of 0.321. This value is greater than 0.05 ($0.321 > 0.05$), thus indicating that customer engagement is not able to significantly mediate the relationship between service quality and customer loyalty among Le Minerale AMDK consumers in Semarang City. These results indicate that although service quality has a significant effect on customer engagement and also has a direct effect on customer loyalty, the indirect effect through mediating variables has not been proven significant. Thus, the seventh hypothesis in this study is rejected.

Field conditions indicate that Le Minerale AMDK consumers prioritize the quality of service they receive directly over emotional attachment to the company. Consumers will continue to make repeat purchases if the product is easily accessible, the water quality is maintained, the packaging is secure, and the service meets their expectations. Therefore, consumer loyalty is more influenced by the direct service experience than by the level of customer engagement.

The results of this study indicate that customer engagement has not been able to act as a bridging mechanism between service quality and customer loyalty. This suggests that for bottled water products, improving service quality is more effective in building loyalty through direct influence on consumers. Therefore, companies need to continue to prioritize improving service quality as a primary strategy in maintaining customer loyalty, accompanied by efforts to increase customer engagement as a supporting strategy to strengthen long-term relationships with consumers. Various empirical studies also support the positive relationship between value co-creation and customer engagement. Studies show that the higher the level of customer participation in the co-creation process, the higher the level of emotional, cognitive, and behavioral involvement of customers with the brand. (Felix & Rembulan, 2023); (Rachmadhaniyati & Sanaji, 2021). Thus, value co-creation can be seen as an important factor capable of increasing customer engagement sustainably in long-term relationships between customers and organizations.

4. Conclusion

From the results of the data analysis that have been described in the previous chapter of this research, the following conclusions can be drawn:

1. Based on the results of data analysis and hypothesis testing that have been conducted, it can be concluded that value co-creation has a positive and significant effect on customer engagement among Le Minerale AMDK consumers in Semarang City. This is evidenced by a regression coefficient of 0.407, a t-value of 2.732, and a significance level of 0.007 which is smaller than 0.05. These results indicate that the higher the value co-creation perceived by consumers, the higher the level of customer engagement formed. Thus, the first hypothesis stating that value co-creation has a positive and significant effect on customer engagement among Le Minerale AMDK consumers in Semarang City is declared accepted.
2. Based on the results of data analysis and hypothesis testing that have been conducted, it can be concluded that service quality has a positive and significant effect on customer engagement among Le Minerale AMDK consumers in Semarang City. This is evidenced by a regression coefficient of 0.282, a t-value of 2.030, and a significance level of 0.045 which is smaller than 0.05. These results indicate that the better the service quality provided by the company, the higher the level of customer engagement of consumers. Thus, the second hypothesis stating that service quality has a positive and significant effect on customer engagement among Le Minerale AMDK consumers in Semarang City is declared accepted.
3. Based on the results of data analysis and hypothesis testing that have been conducted, it can be concluded that value co-creation has a positive and significant effect on customer loyalty among Le Minerale AMDK consumers in Semarang City. This is evidenced by a regression coefficient of 0.228, a t-value of 2.927, and a significance level of 0.016 which is smaller than 0.05. These results indicate that the higher the value co-creation perceived by consumers, the higher the level of customer loyalty towards Le Minerale AMDK. Thus, the third hypothesis stating that value co-creation has a positive and significant effect on customer loyalty among Le Minerale AMDK consumers in Semarang City is declared accepted.
4. Based on the results of data analysis and hypothesis testing that have been conducted, it can be concluded that service quality has a positive and significant effect on customer loyalty among Le Minerale AMDK consumers in Semarang City. This is evidenced by a regression coefficient of 0.335, a t-value of 2.278, and a significance level of 0.011 which is smaller than 0.05. These results indicate that the better the service quality provided by the company, the higher the level of customer loyalty of consumers towards Le Minerale AMDK. Thus, the fourth hypothesis which states that service quality has a positive and

significant effect on customer loyalty among Le Minerale AMDK consumers in Semarang City is declared accepted.

5. Based on the results of data analysis and hypothesis testing that have been conducted, it can be concluded that customer engagement has a positive and significant effect on customer loyalty among Le Minerale AMDK consumers in Semarang City. This is evidenced by a regression coefficient of 0.333, a t-value of 3.366, and a significance level of 0.000 which is smaller than 0.05. These results indicate that the higher the level of customer engagement owned by consumers, the higher the level of customer loyalty towards Le Minerale AMDK. Thus, the fifth hypothesis which states that customer engagement has a positive and significant effect on customer loyalty among Le Minerale AMDK consumers in Semarang City is declared accepted.
6. Based on the results of data analysis and hypothesis testing that have been conducted, it can be concluded that customer engagement is not able to mediate the influence of value co-creation on customer loyalty among Le Minerale AMDK consumers in Semarang City. This is proven by the results of the Sobel test which obtained a Sobel Test Statistic value of 1.053 with a two-tailed probability value of 0.292 which is greater than 0.05. These results indicate that the indirect effect of value co-creation on customer loyalty through customer engagement is not significant. Thus, the sixth hypothesis stating that customer engagement is able to mediate the influence of value co-creation on customer loyalty among Le Minerale AMDK consumers in Semarang City is rejected.
7. Based on the results of data analysis and hypothesis testing that have been conducted, it can be concluded that customer engagement is not able to mediate the effect of service quality on customer loyalty among Le Minerale AMDK consumers in Semarang City. This is proven by the results of the Sobel test which obtained a Sobel Test Statistic value of 0.992 with a two-tailed probability value of 0.321 which is greater than 0.05. These results indicate that the indirect effect of service quality on customer loyalty through customer engagement is not significant. Thus, the seventh hypothesis stating that customer engagement is able to mediate the effect of service quality on customer loyalty among Le Minerale AMDK consumers in Semarang City is rejected.

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