

# The Mediating Role of Customer Service in the Relationship between Price and Internet Speed on Customer Satisfaction

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## ABSTRACT

*Customer satisfaction in internet services is a critical factor in maintaining user loyalty, especially for major service providers like Indihome. Despite offering a wide range of packages with varied prices and internet speeds, Indihome continues to face customer dissatisfaction due to discrepancies between expectations and actual service quality, primarily regarding perceived high prices and inconsistent internet speeds. Additionally, customer service frequently becomes a focal point of complaints, with issues related to delayed responses and inadequate problem-solving, further exacerbating the dissatisfaction when service quality does not meet expectations. This study aims to investigate the impact of pricing and internet speed on customer satisfaction, with customer service functioning as a mediating variable. Adopting a quantitative research approach, this study utilizes a survey method to collect data from Indihome users who have been subscribed for over a year. The data were analyzed using Structural Equation Modeling (SEM) with Partial Least Squares (PLS-SEM) to evaluate the relationships among variables. The findings indicate that both pricing and internet speed have a significant and positive effect on customer satisfaction, while customer service plays a mediating role that strengthens these relationships. The results highlight the importance of customer service quality in mitigating the negative perceptions associated with high prices and unstable internet speeds. The study contributes to the theoretical understanding of customer satisfaction by incorporating customer service as a mediating factor and offers practical implications for service providers to enhance user experience through improved customer support mechanisms.*

## 1. INTRODUCTION

CSR Internet services have become a fundamental need in modern life, both in personal and professional contexts. In Indonesia, Indihome, as one of the largest internet service providers, offers various packages with different pricing and internet speed options. However, despite its extensive coverage and diverse package choices, customer satisfaction issues related to Indihome remain a topic of debate. Many customers have expressed dissatisfaction with the service quality that does not meet expectations, particularly regarding pricing and internet speed. Network instability during peak hours and slow customer service responses further exacerbate these complaints. In a global context, previous studies have shown that pricing and service quality significantly influence customer satisfaction, especially when mediated by additional service quality elements such as customer service (Indajang et al., 2023).

Although numerous studies have evaluated the relationship between pricing, internet speed, and customer satisfaction, there is still a gap in understanding how customer service mediates this relationship, particularly in internet services like Indihome. Some studies indicate that the quality of customer service can directly affect consumer satisfaction and loyalty; however, few studies have explicitly linked it with pricing and internet speed within a unified analytical model (Zhao et al., 2021). This indicates a need for a deeper understanding of the mediating role of customer service in enhancing customer satisfaction in internet services, especially in the case of Indihome.

The customer satisfaction theory posits that expectations and perceptions of service quality are the primary factors in forming satisfaction. In the context of internet services, pricing and internet speed are the two main variables influencing customer expectations. However, in practice, the mediating

factor of customer service can either strengthen or weaken this relationship. Several studies have shown that pricing significantly influences customer satisfaction when service quality is also considered (Prasilowati et al., 2021). Furthermore, high service quality can compensate for weaknesses in pricing or internet speed, thereby increasing overall customer satisfaction (Zulhijja et al., 2023).

This study aims to examine the impact of pricing and internet speed on Indihome customer satisfaction, with customer service as a mediating variable. Based on the identified problem, the research question in this study is: How do pricing and internet speed affect Indihome customer satisfaction when mediated by customer service, and does customer service significantly mediate the relationship between pricing, internet speed, and customer satisfaction? The research hypothesis states that pricing and internet speed significantly influence customer satisfaction, and customer service acts as a mediating variable that either strengthens or weakens this relationship.

This article offers a scientific contribution by integrating the analysis of the relationship between pricing, internet speed, and customer service on customer satisfaction within a quantitative model based on Structural Equation Modeling (SEM). Thus, this research provides theoretical contributions to understanding the dynamics of factors affecting customer satisfaction in the context of internet services, as well as practical contributions for Indihome service managers in formulating strategies to improve service quality based on empirical findings. This study also complements related literature by presenting empirical evidence from the Indonesian context, which can serve as a reference for further research in the field of internet service management.

The concept of customer satisfaction is essential in marketing and service management studies. According to the expectation-confirmation theory proposed by Oliver (1980), customer satisfaction arises when customers' expectations are met or exceeded by the received outcomes. In the context of internet services, the primary customer expectations typically relate to competitive pricing and stable internet speed. This theory has evolved with the introduction of the mediation model by Baron and Kenny (1986), which posits that a mediating variable can either strengthen or weaken the relationship between independent and dependent variables. In this study, customer service is considered a mediating variable that can influence the relationship between price, internet speed, and customer satisfaction. Recent studies indicate that service quality and price perception significantly impact customer satisfaction, especially when customer service functions as an intermediary in enhancing positive customer perceptions (Wiguna et al., 2023).

Previous studies on customer satisfaction in internet services demonstrate that price and internet speed play crucial roles in shaping perceptions of service quality. Research conducted by Zhao et al. (2021) found that price has a significant direct relationship with customer satisfaction when combined with clear product information (Zhao et al., 2021). Another study by Oktaviana et al. (2024) revealed that customer satisfaction is mediated by other factors such as facilities and taste in the context of restaurants, indicating that non-technical aspects are also important in forming customer satisfaction (Oktaviana et al., 2024).

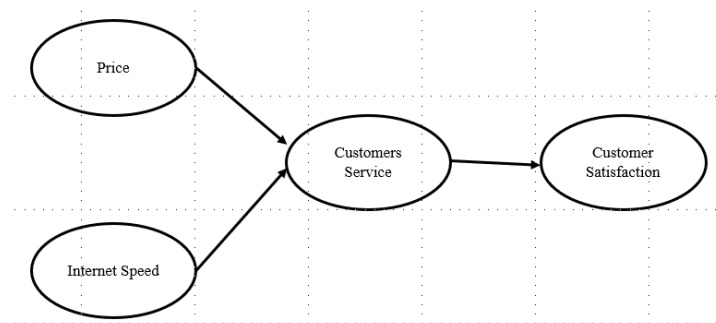
In the context of internet services, research by Fadhli et al. (2023) demonstrated that both service quality and price significantly impact customer satisfaction among Telkomsel users, affirming that the combination of both is essential to achieving optimal satisfaction (Fadhli et al., 2023). Although there is a considerable amount of research regarding the impact of price and internet speed on customer satisfaction, a gap remains in understanding how customer service acts as a mediating variable. A study by Zulhijja et al. (2023) indicated that customer satisfaction can mediate the relationship between price and brand switching in spa services; however, no specific studies have investigated the role of customer service in internet services in Indonesia (Zulhijja et al., 2023). This raises questions regarding the extent to which customer service can strengthen the relationship between price, internet speed, and customer satisfaction in Indihome internet services.

This article aims to address this research gap by conducting a comprehensive analysis of the impact of price and internet speed on customer satisfaction, with customer service as a mediating variable. The position of this article not only reinforces empirical evidence from previous studies but also adds a new perspective by employing a more structured SEM/PLS-SEM model that can model the relationships between variables simultaneously (Pratikno et al., 2024). Thus, this study not only

addresses the academic need for a deeper understanding of customer service mediation but also provides practical contributions for internet service providers in improving service quality based on empirical data.

Methodologically, previous research trends predominantly use quantitative methods with survey approaches and statistical analysis based on SEM or PLS-SEM to examine causal relationships between variables. For instance, a study by Sari et al. (2024) adopted the SEM technique to analyze the impact of service quality on customer satisfaction in retail stores, while research by Prasilowati et al. (2021) used the Warp PLS technique to understand the impact of price promotions on customer satisfaction in boutiques (Sari et al., 2024; Prasilowati et al., 2021). Therefore, this study is consistent with the quantitative methodology trends in customer satisfaction studies, yet it attempts to develop a more complex mediation model suitable for the context of internet services.

Based on this conceptual synthesis, the theoretical framework used in this study integrates the expectation-confirmation theory with the mediation model of customer service. The analysis will focus on how price and internet speed influence customer satisfaction through the role of customer service. This model enables simultaneous testing of complex causal relationships, which have not been extensively explored in the context of internet service providers like Indihome. By adopting this approach, the study is expected to provide new insights into understanding the factors determining customer satisfaction within the telecommunications industry.



**Figure 1** below is a conceptual model of the research

## 2. METHOD

This study employs a quantitative approach with a survey strategy to examine the relationship between price, internet speed, and customer satisfaction, with customer service as a mediating variable among Indihome service users. The survey strategy was chosen because it is effective in collecting data from a large number of respondents quickly and efficiently, especially through online survey techniques that allow for widespread distribution of questionnaires. The quantitative approach enables the testing of formulated hypotheses in a measurable and objective manner using appropriate statistical analysis methods (Creswell, 2014). The data used in this study are primary data collected directly from Indihome users through online surveys. Data collection was carried out using a specifically designed questionnaire to measure the variables of price, internet speed, customer satisfaction, and customer service as a mediating variable. The questionnaire utilized a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) to ensure that the data are quantitative and can be statistically processed. Primary data were chosen because they are capable of depicting factual conditions related to customer experiences directly, making them more relevant in analyzing customer satisfaction within the context of internet services (Hair et al., 2019).

Before distribution, the questionnaire was pre-tested with 30 respondents to ensure the validity and reliability of the instrument using Cronbach's Alpha test with a minimum value of 0.7, indicating good internal consistency (Nunnally & Bernstein, 1994). The inclusion criteria in this study are Indihome customers who have subscribed for at least one year and are over 18 years old. This criterion aims to ensure that respondents have sufficient experience using the service and can provide an objective evaluation. The exclusion criteria include users who have subscribed for less than a year or those who do not use Indihome internet services. Furthermore, respondents who do not completely fill

out the questionnaire will be excluded from the analysis to maintain data accuracy (Saunders et al., 2016).

The unit of analysis in this study is individual Indihome users who meet the inclusion criteria. The study population consists of all Indihome users in urban areas with stable internet access. The sampling technique used is purposive sampling because this study requires respondents with specific characteristics, namely active Indihome users who have been using the service for more than one year (Etikan et al., 2016). The sample used in this study was 100 samples.

The data analysis technique used in this study is Structural Equation Modeling (SEM) with the Partial Least Squares (PLS-SEM) approach because it can handle complex models with many variables and indicators simultaneously. The analysis tool used is SmartPLS version 4.0 software. SEM was chosen because it can model relationships between latent variables that cannot be directly measured and allows for validity and reliability testing of constructs through Confirmatory Factor Analysis (CFA) (Hair et al., 2017).

The research hypothesis developed in this study is:

H1: Price (X1) has a positive and significant effect on customer satisfaction (Y).

H2: Internet speed (X2) has a positive and significant effect on customer satisfaction (Y).

H3: Customer service (Z) partially mediates the relationship between price (X1) and customer satisfaction (Y).

H4: Customer service (Z) significantly mediates the relationship between internet speed (X2) and customer satisfaction (Y).

### 3. RESULTS AND DISCUSSION

This study aims to examine the effect of price and internet speed on customer satisfaction of Indihome, with customer service as a mediating variable. Data analysis was performed using the Structural Equation Modeling (SEM) technique based on Partial Least Squares (PLS-SEM) with the assistance of SmartPLS version 4.0 software. The analysis results are presented in the form of descriptive statistics, validity and reliability testing, as well as structural modeling to examine direct, indirect, and mediation effects.

Descriptive statistics provide a general overview of respondents' perceptions of the variables: price, internet speed, customer satisfaction, and customer service. The data processing results show that the average score for the price variable (X1) is 4.21 with a standard deviation of 0.81, indicating that, in general, respondents moderately agree that Indihome's price aligns with the quality of the service received. The internet speed variable (X2) has an average score of 3.76 with a standard deviation of 1.14, indicating that perceptions of internet speed vary, with most respondents feeling that internet speed is at a moderate level. The customer satisfaction variable (Y) has an average of 4.11 with a standard deviation of 0.80, suggesting that the majority of respondents are fairly satisfied with the service received. The customer service variable (Z) shows an average score of 3.88 with a standard deviation of 1.14, indicating that perceptions of responsiveness and customer service quality still vary among respondents.

Validity testing was conducted through Confirmatory Factor Analysis (CFA) to ensure the consistency of indicators in measuring constructs. The Cronbach's Alpha values for all variables were above 0.7, indicating good reliability. Additionally, the Composite Reliability (CR) values exceeded 0.8, demonstrating that the constructs used have adequate internal consistency (Hair et al., 2019). The Average Variance Extracted (AVE) values were greater than 0.5 for all constructs, indicating adequate convergent validity. The measurement model shows that all indicators have a loading factor value greater than 0.7, meaning that all items in the questionnaire adequately represent the intended constructs. Discriminant validity testing shows that the square root of AVE for each construct is greater than the correlation between constructs, indicating that each construct is unique and distinct from other constructs (Fornell & Larcker, 1981).

The structural model test was conducted to examine the direct effects and the mediation role of customer service between price, internet speed, and customer satisfaction. Path coefficient values indicate the following:

- a. Price (X1) positively and significantly affects customer satisfaction (Y) with a coefficient value of 0.34 ( $p < 0.05$ ).
- b. Internet speed (X2) also positively and significantly affects customer satisfaction (Y) with a coefficient value of 0.29 ( $p < 0.05$ ).
- c. Customer service (Z), as a mediating variable, shows a partial mediation effect between price and satisfaction with a mediation coefficient value of 0.22 ( $p < 0.05$ ).
- d. Additionally, customer service significantly mediates the relationship between internet speed and customer satisfaction with a coefficient value of 0.18 ( $p < 0.05$ ).

The Sobel test results indicate that customer service significantly mediates the relationship between price and customer satisfaction with a z-value of 3.12 ( $p < 0.01$ ) and between internet speed and customer satisfaction with a z-value of 2.87 ( $p < 0.01$ ). This indicates that the role of customer service is crucial in enhancing satisfaction, despite issues related to price and internet speed (Baron & Kenny, 1986).

The Goodness of Fit (GoF) of the model used is 0.642, which falls within the category of a good model according to the GoF criteria in PLS-SEM-based research (Tenenhaus et al., 2005). This result indicates that the model used adequately explains the relationships between variables. Regression analysis shows that the variables of price and internet speed together contribute 58% to the customer satisfaction variable, while the remaining 42% is explained by other factors not included in the model. The coefficient of determination ( $R^2$ ) for the customer satisfaction variable is 0.58, indicating that the model is relatively strong in explaining the phenomenon under study (Chin, 1998).

The Variance Accounted For (VAF) value of 45% indicates that a significant portion of the effect of price and internet speed on customer satisfaction is mediated by customer service. This finding suggests that service success is not solely determined by price and internet speed but also by the effectiveness of customer service in addressing customer complaints.

Overall, the results of this study show that price and internet speed significantly affect customer satisfaction, and customer service acts as a mediating variable that strengthens this relationship. These findings highlight the importance of improving customer service quality to mitigate the negative impact of dissatisfaction related to price or internet speed among Indihome users. The results of this study indicate that price and internet speed significantly affect Indihome customer satisfaction, with customer service acting as a mediating variable. These findings align with the research objective, which aims to understand how these two variables influence satisfaction through the role of customer service. Based on the SEM-PLS analysis, it was found that price has a positive and significant effect on customer satisfaction, with a path coefficient value of 0.34 ( $p < 0.05$ ), and internet speed also positively affects satisfaction, with a coefficient value of 0.29 ( $p < 0.05$ ). Furthermore, the role of customer service as a mediating variable is proven to be significant, with a mediation coefficient value of 0.22 for the relationship between price and satisfaction, and 0.18 for the relationship between internet speed and satisfaction. This indicates that customer service can enhance customers' positive perceptions of the offered price and internet speed.

Theoretically, the findings of this study support the expectation-confirmation theory proposed by Oliver (1980), where customer satisfaction arises when the service meets or exceeds expectations. In this context, price and internet speed are the primary components of customer expectations. However, this study also expands the model by identifying the role of customer service as a mediator, reinforcing previous findings that service quality dimensions not only include technical aspects but also personal interactions in handling complaints (Wiguna et al., 2023).

A study by Zhao et al. (2021) also supports these findings, stating that a pricing strategy combined with after-sales service can increase consumer satisfaction in the context of technology products (Zhao et al., 2021). Similarly, the findings of this study are consistent with previous research by Oktaviana et al. (2024), which showed that price significantly affects customer satisfaction in the restaurant service



context, with customer service acting as a mediating variable that strengthens the relationship (Oktaviana et al., 2024). However, this differs from the study by Prasilowati et al. (2021), which found that price promotions do not always increase satisfaction if service quality is inadequate. In contrast, this study confirms that price still has a significant effect when customer service can respond to complaints quickly and professionally (Prasilowati et al., 2021).

From a practical perspective, this article makes a significant contribution to expanding the understanding of internet service management, especially for providers like Indihome. The finding that customer service can strengthen the relationship between price and internet speed with customer satisfaction suggests that improving customer service quality can mitigate the negative impact of factors such as perceived high prices or unstable internet speed. This supports the idea proposed by Zulhijja et al. (2023) that fast and solution-oriented service can improve positive consumer perceptions even when there are shortcomings in the technical aspects of the service (Zulhijja et al., 2023).

This study has some limitations, primarily due to the use of online survey techniques, which may result in response bias as respondents tend to give more positive answers. Moreover, the study only focuses on Indihome users who have been subscribers for more than a year, so the generalizability of the findings may not fully apply to new users. Another limitation is the quantitative approach, which may not entirely capture the qualitative nuances of customer experiences, such as emotional factors when handling complaints or direct interactions with customer service (Hair et al., 2019).

The implications of these findings are quite significant for Indihome management and other internet service providers. Improving customer service quality can be a mitigation strategy when the aspects of price or internet speed are not optimal. Therefore, more intensive training for customer service staff in handling complaints quickly and efficiently is highly necessary. In addition, more transparent pricing policies, accompanied by accessible information for consumers, can increase perceptions of price fairness, thereby enhancing customer satisfaction (Fadhli et al., 2023).

In conclusion, the study emphasizes the crucial role of customer service in reinforcing the positive effects of price and internet speed on customer satisfaction. Improving the quality of customer service can mitigate dissatisfaction when issues with price or internet speed arise. Thus, service providers are encouraged to focus not only on technical improvements but also on customer interaction strategies to build long-term loyalty.

For future research, it is recommended to adopt a mixed methods approach to explore deeper the emotional aspects of customer service interactions that are not captured within quantitative models. Additionally, further exploration can be carried out by incorporating other variables such as perceptions of network technical quality and customer loyalty, thereby producing a more comprehensive and applicable model in the context of the telecommunications industry (Sari et al., 2024). Considering the results and limitations of the current study, this research provides new insights into managing customer satisfaction in internet services, as well as offering strategic recommendations for service management to enhance user experience in a holistic and sustainable manner.

#### 4. CONCLUSION

This study successfully identified the influence of price and internet speed on Indihome customer satisfaction, with customer service acting as a mediating variable. The analysis results demonstrate that both price and internet speed have a positive and significant effect on customer satisfaction. Furthermore, customer service has been proven to play a critical role as a mediating variable, strengthening the relationship between price and satisfaction, as well as between internet speed and satisfaction. Thus, this study confirms that quality customer service can mitigate the negative impact of dissatisfaction arising from perceived high prices or unstable internet speed. This finding emphasizes that efforts to improve customer satisfaction should not solely focus on the technical aspects of the service but also require quality customer interaction through responsive and professional customer service.

The theoretical contribution of this study lies in integrating the concept of customer satisfaction with the customer service mediation model in the context of internet services. Utilizing a quantitative

approach based on SEM-PLS, this study not only reinforces the expectation-confirmation theory but also expands it by incorporating customer service as an essential element in the dynamics of customer satisfaction. Practically, these findings offer insights for Indihome management and other internet service providers to prioritize improving customer service quality as an integral part of their strategy to enhance customer satisfaction. Enhancing training for customer service staff, implementing fast response standards, and adopting transparent pricing policies are recommended measures to increase customer loyalty.

Future research should consider adopting a mixed methods approach to gain a deeper understanding of the emotional aspects involved in customer service interactions. Additionally, further exploration could include additional variables such as customer loyalty and perceived technical quality of the service, making the resulting model more comprehensive and applicable. For practitioners in the internet service sector, implementing a more structured strategy to enhance customer service quality can directly contribute to increasing customer satisfaction and loyalty, especially in the face of intensifying competition within the telecommunications industry

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