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**CONSUMER PROTECTION | RESEARCH ARTICLE**

# Enhancing Unit-linked Insurance Consumer Loyalty: The Role of Service Quality, Information Asymmetry, and Agent Marketing Strategies

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**Abstract:** Unit-linked insurance (PAYDI), Indonesia's top-selling life insurance product, has driven industrial growth in the last two decades through effective agent marketing. However, its complexity, blending protection, and investment have drawn criticism for consumers' detriment and increasing complaints about insurance agent practices. This study aimed to achieve critical objectives by examining consumer perceptions of agent-provided service quality and distinguishing between active and lapsed policyholders as a measure of loyalty. It also seeks to construct a model that delineates the impact of service quality on consumer satisfaction and loyalty with information asymmetry as a moderating variable. This study used a cross-sectional research design, and gathered data through electronic questionnaires distributed to PAYDI insurance consumers. Purposive sampling was used to select participants, resulting in 159 respondents meeting the study's criteria. Data analysis was conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM). These findings underscore the critical influence of agent reliability and empathy on consumer satisfaction with information asymmetry emerging as a key moderator between satisfaction and loyalty. These results imply that reinforcing agent training in reliability, empathy, and efforts to minimize information asymmetry significantly enhances consumer satisfaction and loyalty in the insurance sector. This research suggests that companies should develop a Key Performance Indicator (KPI) and incentives for agents to enhance both customer acquisition and post-purchase services, ensure transparent information sharing, and set measurable satisfaction targets such as the Net Promoter Score (NPS). Future studies should focus on operational diversity and alternative proxies of firms.

Keywords: agent service quality, consumer loyalty, consumer satisfaction, information asymmetry, PAYDI insurance

JEL Classification: I13, L84, M31

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### PUBLIC INTEREST STATEMENT

The research underscores the critical influence of agent reliability and empathy on Satisfaction, highlighting the need for strategic interventions in agent training. Theoretical contributions enrich insurance marketing literature by detailing the differential impacts of pre- and post-purchase service quality on customer loyalty. Information asymmetry's moderating role adds a novel dimension to understanding consumer-agent interactions in the insurance sector.

This research also provides actionable insights for the insurance industry, guiding companies to enhance service quality, minimize information asymmetry, and foster consumer satisfaction and loyalty. The findings align with the public interest in promoting transparent and customer-centric practices within the insurance sector, offering a roadmap for industry stakeholders to cultivate positive and enduring consumer-agent relationships. Acknowledging limitations, such as the focus on the consumer perspective, the study concludes by emphasizing the crucial link between customer satisfaction and loyalty. Future research recommendations include investigating insurance agents' perspectives, longitudinal studies, comparative analyses, and cross-cultural examinations of information asymmetry.

## 1. Introduction

Among the various types of individual life insurance products in Indonesia, Investment-Linked Insurance products (PAYDI) are the most widely sold by insurance companies. The 2020 Insurance Statistics Report shows that PAYDI products rank first in terms of premium income in the industry with a market share of 63.5% (Financial Services Authority/OJK RI, 2021). On the other hand, in the same year, the marketing channel that contributed the most to premium income in the life insurance industry, reaching 81.3%, was the life insurance agency (Financial Services Authority/OJK RI, 2022). PAYDI products and agency marketing channels reflect the industry's condition that, for almost the past two decades, the growth of life insurance companies in Indonesia has been supported by PAYDI insurance products with relatively high premiums and sold through high-cost agency distribution channels.

Bennett and Zultowski (2014) stated that one of the oldest adages in the insurance business is that "life insurance is sold, not bought." Furthermore, life insurance generally differs from other products, especially consumer goods. Life insurance is intangible, its users are not usually purchasers, it is only bought once in a lifetime, it is not easy to understand, it is uncomfortable to discuss, and purchasing decisions are made more based on emotional factors than rational ones.

In line with Bennett's perspective, the reality on the ground indicates that the rapid sales of PAYDI occur not because consumers independently become aware of life insurance and seek information about the product and then purchase it but rather because of the dominant role of insurance agents in the marketing process. PAYDI aggressively offers products to consumers because of attractive incentives such as commissions and other rewards. PAYDI products are highly profitable for both insurance companies and agents because they implement profit-sharing and dynamic incentive contracts. However, they often receive complaints and are viewed as products that harm consumers. This is because the PAYDI is a complex product that combines protection and investment elements. Therefore, an agent is required to explain protection and investment schemes accurately and in detail, including all potential risks and cost components that consumers must bear, all of which are part of the agent's service quality standard.

The quality standards for agents' services were formulated using ethical codes issued by each insurance company association, which require agents to be open, balanced, and accurate in providing information about the products they sell. Nevertheless, regarding PAYDI products, in 2020, there was a 65% increase in consumer complaints received by the Financial Services Authority from 360 to 593 cases, as discussed at the meeting of the XI Commission of the Indonesian Parliament (Financial Services Authority/OJK RI, 2022). The causes of these cases include promising consumers a 100% fund return and 99 years of protection if they have paid premiums for ten years (Wareza, 2022).

Tseng et al. (2016) in their research in Taiwan, found that agents' attitudes and intentions are influenced by compensation, information asymmetry, and sales training. Unit-linked insurance plans (ULIPs) are among the most commonly misused financial products. PAYDI was a good product. However, consumers often do not receive transparent information from agents about how premiums are allocated to insurance and investment costs, where funds are invested, or what returns are generated. In India, there has been significant misselling of PAYDI because companies offer agent commissions of up to 60% of the total premium (Nathan, 2016).

The OJK Circular Letter No. 5/SEOJK-5/2022 states that companies marketing PAYDI products must provide information transparency to policyholders, insured persons, or participants before and after the policy is issued. Companies must also emphasize that PAYDI is an insurance product aimed at providing protection against risks and explaining the benefits related to investment, including potential investment returns and balanced investment risks (Financial Services Authority/OJK RI, 2022).

Against this backdrop, this study explores consumers' perceptions of the service quality provided by agents, particularly in the context of PAYDI. This research seeks to model how service quality interacts with variables such as satisfaction and consumer loyalty and uses information asymmetry as a moderating factor.

This study introduces two novel aspects. First, while most studies on information asymmetry in insurance primarily examine the actions of consumers who do not disclose true information when purchasing policies, leading to inaccuracies in risk assessment by insurers, this study examines how insurance companies, represented by agents, engage in information asymmetry. Second, this study is the first to combine the Parasuraman SERVQUAL and ECSI models.

## 2. Literature Review

### 2.1 PAYDI Life Insurance Product

The PAYDI is often referred to as a non-traditional life insurance product because it combines protection benefits against the risk of death (at a relatively minimal amount) with cash benefits, which refer to the investment results from mutual funds specifically established to support the insurance product. PAYDI was marketed in Indonesia around 1998-2000 by several large foreign insurance companies. In line with this development, the government enacted several regulations for this product, the last of which was POJK No. 23/POJK.05/2015, and its implementation was set out in SEOJK No. 5/2022 (Financial Services Authority/OJK RI, 2022).
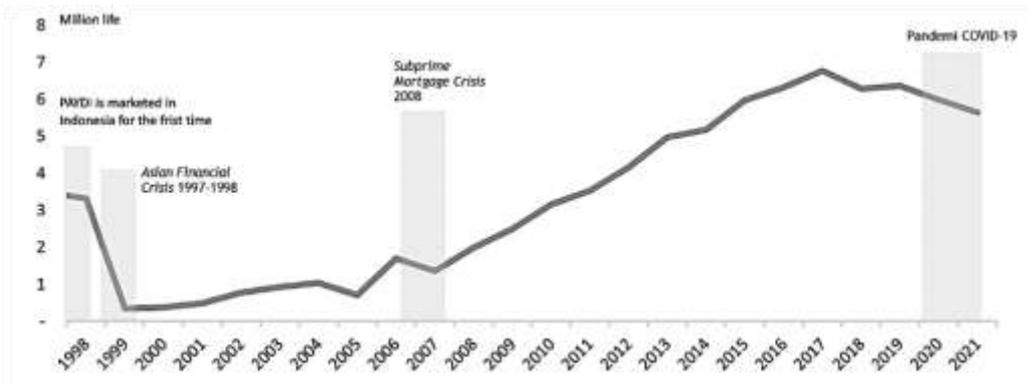


Figure 1. The development of the number of PAYDI policies in Indonesia (IFG Progress, 2021)

Figure 1 shows that at the beginning of its appearance in 1998, the number of PAYDI policyholders was recorded at 3.3 million individuals, or about 16% of the total life insurance policies overall. In 2009, PAYDI sales surged with an average annual growth of 25%. Throughout 2010-2016, the number of PAYDI policies continued to record growth each year, peaked in 2017, and then experienced a slight decline owing to the COVID-19 pandemic.

PAYDI is a life insurance product that charges consumers high fees. The IFG Progress report reveals that PAYDI products in the market impose deductions consisting of

acquisition fees (in the first five years of the policy) of up to 35% per year, insurance fees of approximately 41% to 57% per year, and administrative fees of approximately 2% to 3% per year. The high costs in the first five years of the policy make the portion of investment funds formed relatively small, at less than 15% of the total premiums paid (Yamora et al., 2021).

## 2.2 The Role of Insurance Agents in the Consumer Decision-Making Process

Consumer decisions highly depend on trust in the insurance company. In practice, consumers are usually unable to directly assess information about the insurance company and the products they sell. Instead, consumers make assessments with the help of marketing intermediaries, namely insurance agents (Chen, 2021). The extent of information highly depends on the intensity of consumer needs, quantity of information acquired, and ease of accessing information (Andini et al., 2023).

In the process of selling life insurance products, agents are the primary contacts and consumers depend on them to find suitable products. They also act as financial planners, who develop long-term bonds of trust with consumers. An insurance company's brand value, high level of trust in insurance agents, and low level of financial literacy lead to consumers' excessive dependence on the advice given by insurance agents (Giri, 2018). Rahmah and Satyaningrat (2023) stated that the final condition for purchasing is the post-purchase condition, which occurs after consumer purchases.

## 2.3 Service Quality of Agents

Service Quality is an important measurement tool for companies to understand consumer needs and desires. Although there is no general agreement regarding the specific model used as a measure of perceptions of service quality, researchers believe that service quality is multidimensional (Ghotbabadi et al., 2015). Parasuraman et al. (1988) mentioned five dimensions of service quality: tangibility, reliability, responsiveness, assurance, and empathy (Figure 2).
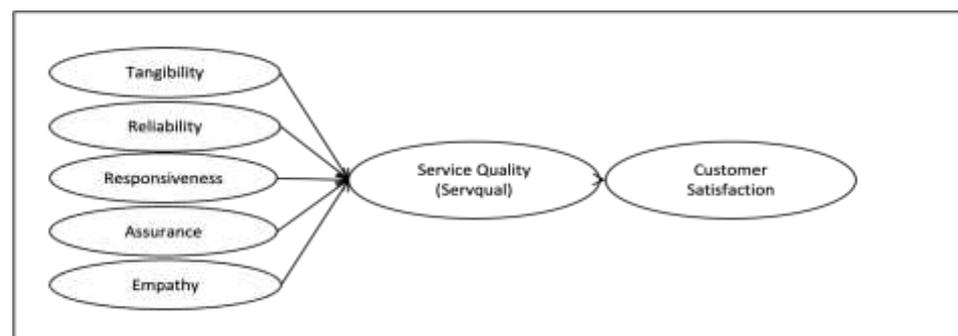


Figure 2. Service quality model or SERVQUAL by Parasuraman et al. (1988)

Referring to these dimensions, this study used only four aspects: 1) reliability, 2) responsiveness, 3) assurance, and 4) empathy. The tangible dimension is not utilized because it emphasizes the physical evidence of the office, building, or facilities, whereas this study focuses on the role of insurance agents who provide services to consumers. Therefore, it is not relevant to this research topic. To determine whether consumers perceive the presence or absence of information asymmetry, the quality of the agent's service is divided into two-time dimensions: at the time the agent offers the product (pre-purchase phase), and when the consumer has become a customer (post-purchase phase).

## 2.4  Consumer Satisfaction and Consumer Loyalty

According to Haaften (2017), four models can be used to measure consumer satisfaction: Swedish Customer Satisfaction Barometer (SCSB), American Customer Satisfaction Index (ACSI), Norwegian Customer Satisfaction Barometer (NCSB), and European Customer Satisfaction Index (ECSI). Of these four models, ECSI is the only one that includes perceived service quality as one of the conceptual variables that overlaps with the Srasuraman service quality model. Therefore, the ECSI model is chosen in this study as a continuation of the Parasuraman model to connect the influence of the quality of agent services on consumer satisfaction and the influence of consumer satisfaction on consumer loyalty (Figure 4).
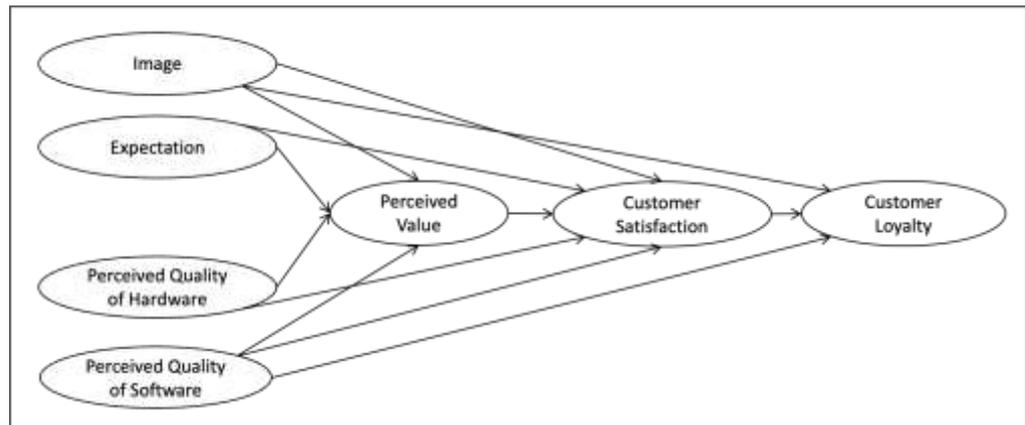


Figure 3.  The European Customer Satisfaction Index (ECSI) model for measuring customer satisfaction and customer loyalty (Ciavolino & Dahlgaard, 2007)

## 2.5  Asymmetry Information in Life Insurance Marketing

Consumers' intention to purchase a product can be influenced by various factors. Having information about a product is crucial because it can enhance consumer comprehension and impact their intentions to buy a product or service (Zulfa et al., 2023). The term asymmetric information was first popularized by Akerlof (1970) in his paper "The Market for 'Lemons'".

Asymmetric information occurs when one economic agent has more information than another when buying or selling goods or services. For example, in motor vehicle insurance, consumers sometimes conceal information about the damage to parts of the car body when completing the questionnaire. This leads to inaccuracies in risk assessment. In the life insurance context, patterns of information asymmetry are likely to emerge in the PAYDI marketing process. Insurance agents frequently employ fear tactics to exaggerate the risks of boosting sales. They emphasize investment and savings over protection, potentially leading consumers to view policies as saving products. Additionally, some agents withhold important policy details such as exclusions and the consequences of cancellation, underscoring the importance of consumer caution and transparency from agents for informed decision-making.

This study examines the phenomenon of information asymmetry from the perspective of consumers. Indicators that insurance agents do not engage in information asymmetry (non-asymmetry) include the following: if agents do not disguise PAYDI products as savings products, they explain insurance costs openly; and agents explain the risks or consequences borne by consumers if the policy is canceled. By differentiating the quality of agent services into two phases and analyzing the impact of information asymmetry on the quality of service of agents and consumer

satifaction, this study modifies the model of Parasuraman et al. (1988), resulting in the model shown in Figure 4.
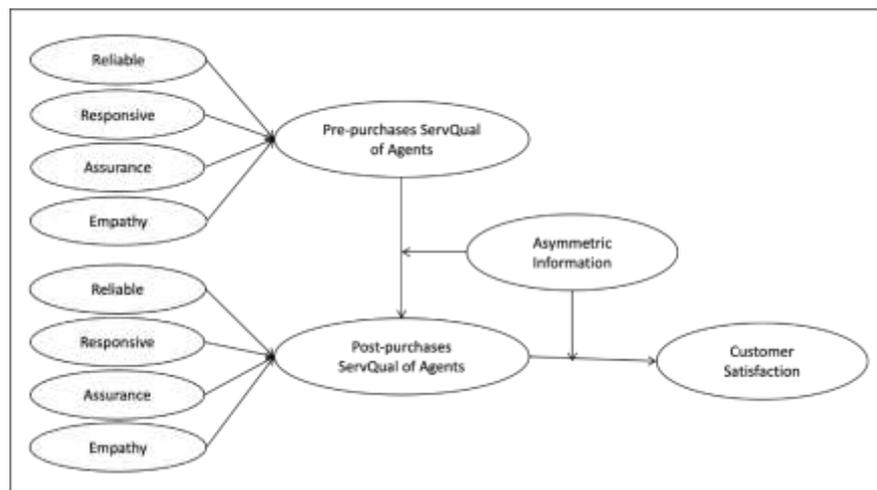


Figure 4. Modification of the SERVQUAL model by Parasuraman et al. (1988)

## 3.   Conceptual Framework

The study of service quality, customer satisfaction, and customer loyalty uses a construct that combines Parasuraman's SERVQUAL service quality model with the ECSI model. Through the combination of these two models, the conceptual framework in this research examines the influence of the dimensions of reliability, responsiveness, assurance, and empathy on agent service quality in the pre- and post-purchase phases, which, in turn, affects customer satisfaction while involving information asymmetry as a moderating variable. Ultimately, customer satisfaction affects loyalty. The conceptual framework of this study is illustrated in Figure 5.
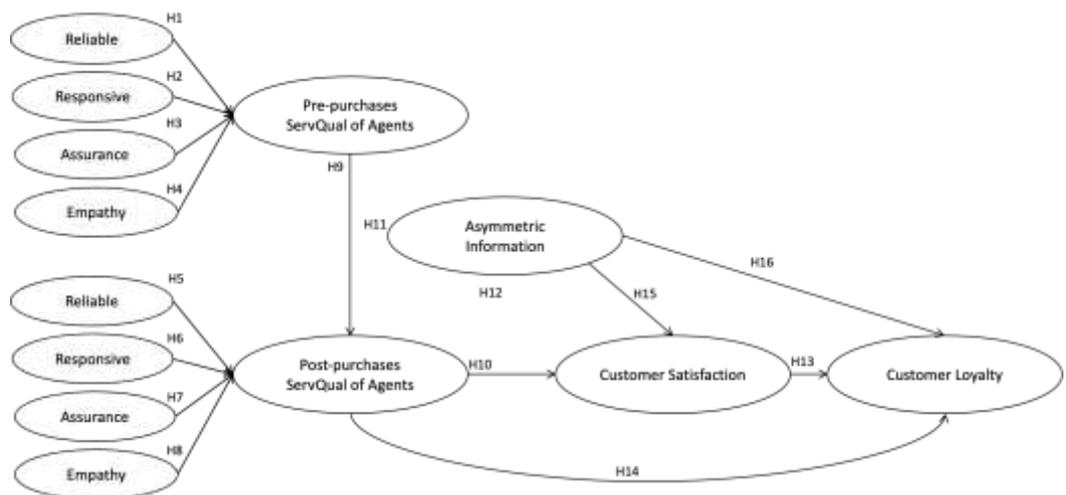


Figure 5. Conceptual framework as the base of hypotheses development

Based on the conceptual framework as depicted in Figure 5, below presents the null hypotheses developed in this research. These hypotheses will be subjected to further testing and analysis in later stages of the study.

H1:   Reliability has a significant and positive effect on the pre-purchase agent service quality.

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H2: Agent responsiveness has a significantly positive effect on pre-purchase agent service quality.

H3: Assurance from agents significantly and positively affects the pre-purchase agent service quality.

H4: Empathy has a significant and positive effect on pre-purchase agent service quality.

H5: Reliability has a significant and positive impact on the post-purchase agent service quality.

H6: Agent responsiveness has a significant and positive effect on the post-purchase agent service quality.

H7: Assurance of agents significantly and positively affects the post-purchase agent service quality.

H8: Empathy has a significant and positive effect on post-purchase agent service quality.

H9: Pre-purchase agent service quality affects post-purchase agent service quality significantly and positively.

H10: Post-purchase agent service quality affects customer satisfaction significantly and positively.

H11: The absence of information asymmetry has a significantly positive moderating role in the relationship between pre- and post-purchase agent service qualities.

H12: The absence of information asymmetry plays a significant and positive moderating role in the relationship between the post-purchase agent service quality and customer satisfaction.

H13: Customer satisfaction has a significant positive impact on customer loyalty.

H14: Post-purchase agent service quality affects customer loyalty significantly and positively.

H15: The absence of information asymmetry significantly and positively impacts customer satisfaction.

H16: The absence of information asymmetry significantly and positively impacts customer loyalty.

## 4. Methods

### 4.1 Research Design

The research design focused on the interplay between service quality, customer satisfaction, and customer loyalty, building on the concepts outlined in the SERVQUAL model by Parasuraman and the ECSI model. The conceptual framework combines these two models to examine the influence of reliability, responsiveness, assurance, and empathy on the service quality of agents during both pre- and post-purchase phases. To collect data, the study employed a questionnaire with respondents divided into two groups: those with active insurance policies, and those with lapsed policies.

The research was conducted in February 2023, utilizing primary data collected through electronic questionnaires from respondents who were policyholders of the PAYDI insurance. Respondents were selected using purposive sampling based on two validation criteria: a) they are not currently or previously employed as insurance agents, and b) they possess or have had individual life insurance purchased through agents.

## 4.2    Sampling

Purposive sampling was used to select the respondents for this study. Purposive sampling is a non-random sampling technique employed in research to deliberately select participants based on specific, predefined criteria. This study utilized two distinct validation criteria to curate the respondent pool. The first criterion was that individuals were either not currently engaged or were never employed as insurance agents. The second criterion targets individuals who either currently hold or have previously owned individual life insurance policies acquired through insurance agents' services.

## 4.3    Measurement

The measurements used in this study employed a range of indicators to assess and quantify the critical constructs. First, it includes reflective indicators in both pre- and post-purchase service quality dimensions. These serve as crucial metrics for gauging service quality perceptions before and after purchase.

Additionally, indicators of agent service quality derived from consumer perceptions are incorporated to evaluate the quality of the service agents provided. Information asymmetry, as perceived by consumers, is another dimension that is examined, shedding light on transparency in interactions. Furthermore, this section delves into customer satisfaction indicators to gauge the extent of content among consumers. Finally, it explores consumer loyalty indicators and assesses various factors that contribute to customer loyalty within the insurance context. These diverse indicators collectively form a comprehensive framework for measurement and analysis, facilitating a deeper understanding of research variables.

## 4.4    Data Collection

In this particular study, the researchers initially managed to gather 232 respondents. However, they later filtered some of these respondents based on specific research criteria, resulting in a final sample of 159 respondents who met the validity requirements.

## 4.5    Analysis

This study employed the Partial Least Squares Structural Equation Model (PLS-SEM) for its analysis, as suggested by Hair et al. (2019), in exploratory research involving complex models with multiple constructs and variables. Smart-PLS software (version 4.0) was used for the data analysis. This study focuses on consumer perceptions of agent service quality by dividing respondents into two groups: those with active policies and those with lapsed policies. The aim was to identify any significant perceptual differences between the groups. Descriptive statistical tools were used to analyze the Likert scale responses across the four service quality dimensions in both the pre- and post-purchase phases.

The quality of the PAYDI Life Insurance Agent Services model constructed in this study was tested using the Partial Least Squares Structural Equation Model (PLS-SEM) to examine the causality of latent (unobserved) exogenous variables on endogenous variables. The use of PLS-SEM as an analytical tool has seen exponential growth over the past ten years, as noted by Zeng et al. (2021). Some of the reasons for its use include a small sample size (58.27%), non-normally distributed data (40.29%), and its exploratory nature (31.65%).

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## 5.    Findings

### 5.1    Respondent Characteristics

The research initially collected 232 respondents, who were then refined based on specific criteria. Among them, 80.2% were residents of Greater Jakarta and the majority (46.0%) had monthly expenditures ranging from 5 to 15 million rupiahs. Of the 232 respondents, 159 met the criteria after applying two questionnaire filters: those who had never worked as insurance agents, and individual life insurance consumers. Among these 159 samples, 67.7% never filed a claim and 60.4% of the policies remained active. The remaining 39.6% of the policies were intentionally terminated, primarily because of switching to non-PAYDI products (22.2%) or financial issues (17.5%).

The respondents were divided into two groups. The first group consisted of consumers whose policies were still active during the study period (60.4%) and the second group consisted of consumers whose policies had been canceled or lapsed (39.6%). Each group was asked to use a questionnaire to understand their perceptions of agent service quality by comparing the pre- and post-purchase conditions. Table 1 shows the results of the descriptive statistical analysis of consumers' perceptions of the four service quality dimensions. Statistically, the respondents' answers had a normal distribution, as evidenced by kurtosis and skewness values within the range of -2 to 2.

Table 1. Assessing the normality of the distribution of consumer perception data across the four dimensions of service quality

| Dimension | Active policies | | | | | | Lapsed policies | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | Standard deviation | Sample variance | Kurtosis | Skewness | | Mean | Standard deviation | Sample variance | Kurtosis | Skewness | |
| **Reliability** | | | | | | | | | | | | |
| Pre-purchases | 4.1 | 0.9 | 0.7 | 0.2 | (0.7) | | 3.5 | 1.1 | 1.1 | (0.3) | (0.4) | |
| Post-purchases | 3.7 | 1.1 | 1.1 | 0.0 | (0.7) | | 3.1 | 0.9 | 0.9 | (0.2) | 0.0 | |
| Gap | (0.4) | | | | | | (0.4) | | | | | |
| **Responsive** | | | | | | | | | | | | |
| Pre-purchases | 4.2 | 0.8 | 0.7 | 1.4 | (1.0) | | 3.7 | 0.9 | 0.8 | 0.4 | (0.5) | |
| Post-purchases | 3.7 | 1.1 | 1.1 | (0.2) | (0.6) | | 3.2 | 0.9 | 0.9 | (0.1) | (0.1) | |
| Gap | (0.5) | | | | | | (0.5) | | | | | |
| **Assurance** | | | | | | | | | | | | |
| Pre-purchases | 4.0 | 0.9 | 0.7 | 0.5 | (0.7) | | 3.6 | 0.9 | 0.8 | 0.3 | (0.4) | |
| Post-purchases | 3.7 | 1.1 | 1.1 | (0.1) | (0.6) | | 3.1 | 0.9 | 0.9 | (0.1) | (0.1) | |
| Gap | (0.3) | | | | | | (0.4) | | | | | |
| **Empathy** | | | | | | | | | | | | |
| Pre-purchases | 4.1 | 0.8 | 0.7 | 0.8 | (0.7) | | 3,7 | 0.9 | 0.8 | 0.2 | (0.3) | |
| Post-purchases | 3.7 | 1.0 | 1.1 | (0.2) | (0.4) | | 3.0 | 0.9 | 0.8 | 0.4 | (0.0) | |
| Gap | (0.4) | | | | | | (0.7) | | | | | |

The table indicates that respondents perceived a decline in the quality of agent services after becoming policyholders. Although this decline is still tolerable for

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consumers, as evidenced by an average decrease of -0.39 points in the quality-of-service scores, policyholders still maintain their active policies. However, when the decrease in service quality scores reaches an average of -0.55 points, consumers can no longer tolerate it, and this becomes a trigger for policy cancellations. Policy cancellation indicates low customer loyalty. Among the various reasons for policy cancellations, two reasons specifically related to agent services are consumers' feelings that the product does not meet what was promised by the agent (22.2%), and that the agent no longer cares about them (15.9%).

### 5.2 Modeling the Service Quality of PAYDI Life Insurance Agents

The research model employed in this study measures the influence of these variables, as shown in Figure 6. This figure shows all elements and how they are related to each other, focusing on the quality of service. Central to the map are "SerQualPra" and "SerQualPasca," SerQualPasca, which assess service quality before and after changes. The "NonAsymmetrical" part looks at service aspects that stay the same, even when information or services change. These elements affect how satisfied customers are and how loyal they feel to the company.
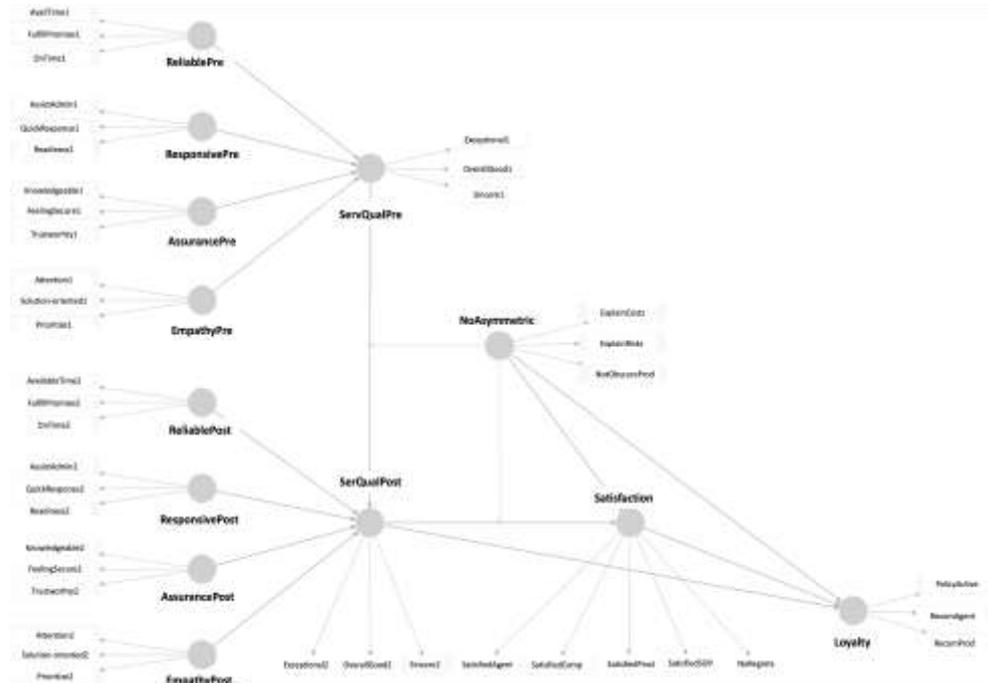


Figure 6. Path diagram illustrating connections in the PLS-SEM model

### 5.3 Outer Model Analysis

An outer model analysis was conducted to test convergent validity, composite reliability, and discriminant validity. A PLS-SEM model can be used to test research hypotheses only when convergent validity, composite reliability, and discriminant validity meet specified criteria. For convergent validity, in line with the confirmatory nature of this study, the prerequisite is that the loading factor value should not be less than 0.7. Table 2 indicates that all the indicators in this research model had loading factor values greater than 0.7, thereby attaining a valid status.

Table 2. Convergent validity of research model indicators based on loading factors

| Indicators | Loading factor | Cut value | Validity |
|---|---|---|---|
| Available time pre-buy | 0.828 | 0.7 | Valid |
| Fulfill promise pre-buy | 0.819 | 0.7 | Valid |
| On-time pre-buy | 0.894 | 0.7 | Valid |
| Assist admin pre-buy | 0.937 | 0.7 | Valid |
| Quick response pre-buy | 0.949 | 0.7 | Valid |
| Readiness pre-buy | 0.930 | 0.7 | Valid |
| Knowledgeable pre-buy | 0.924 | 0.7 | Valid |
| Feeling secure pre-buy | 0.875 | 0.7 | Valid |
| Trustworthy pre-buy | 0.928 | 0.7 | Valid |
| Attention pre-buy | 0.926 | 0.7 | Valid |
| Solution-oriented pre-buy | 0.902 | 0.7 | Valid |
| Prioritize pre-buy | 0.926 | 0.7 | Valid |
| Available time 2 | 0.910 | 0.7 | Valid |
| Fulfill promise post-buy | 0.897 | 0.7 | Valid |
| On-time post-buy | 0.946 | 0.7 | Valid |
| Assist admin post-buy | 0.947 | 0.7 | Valid |
| Quick response post-buy | 0.956 | 0.7 | Valid |
| Readiness post-buy | 0.963 | 0.7 | Valid |
| Knowledgeable post-buy | 0.927 | 0.7 | Valid |
| Feeling secure post-buy | 0.945 | 0.7 | Valid |
| Trustworthy post-buy | 0.938 | 0.7 | Valid |
| Attention post-buy | 0.963 | 0.7 | Valid |
| Solution-oriented post-buy | 0.950 | 0.7 | Valid |
| Prioritize post-buy | 0.975 | 0.7 | Valid |
| Exceptional pre-buy | 0.749 | 0.7 | Valid |
| Overall Good pre-buy | 0.922 | 0.7 | Valid |
| Sincere pre-buy | 0.837 | 0.7 | Valid |
| Exceptional post-buy | 0.924 | 0.7 | Valid |
| Overall good post-buy | 0.954 | 0.7 | Valid |
| Sincere post-buy | 0.961 | 0.7 | Valid |
| Explain costs | 0.911 | 0.7 | Valid |
| Explain risks | 0.902 | 0.7 | Valid |
| Not obscure products | 0.873 | 0.7 | Valid |
| Satisfied agent | 0.849 | 0.7 | Valid |
| Satisfied company | 0.956 | 0.7 | Valid |
| Satisfied product | 0.945 | 0.7 | Valid |
| Satisfied SOP | 0.908 | 0.7 | Valid |
| No regrets | 0.907 | 0.7 | Valid |
| Policy active | 0.898 | 0.7 | Valid |
| Recom agent | 0.941 | 0.7 | Valid |
| Recom prod | 0.950 | 0.7 | Valid |

All indicators are valid; therefore, the testing proceeds to the Average Variance Extracted (AVE) stage to measure the extent of variance within the indicators of the related construct itself. AVE values greater than 0.5 indicate that the tested constructs have good quality. Table 3 indicates that the overall AVE values exceeded 0.5, suggesting that all the constructs met the required convergent validity. In addition to the AVE values, Cronbach's Alpha and Composite Reliability had overall values that surpassed 0.7. This indicates that all the constructs in this study met the required reliability.

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Table 3. Cronbach's alpha, composite reliability, and average variance extracted

| Variables | Cronbach's alpha | Composite reliability (rho-a) | Composite reliability (rho-c) | Average variance extracted (AVE) |
|---|---|---|---|---|
| Reliable pre | 0.805 | 0.827 | 0.885 | 0.719 |
| Responsive pre | 0.933 | 0.944 | 0.957 | 0.881 |
| Assurance pre | 0.895 | 0.897 | 0.935 | 0.827 |
| Empathy pre | 0.907 | 0.911 | 0.942 | 0.843 |
| Reliable post | 0.907 | 0.907 | 0.942 | 0.843 |
| Responsive post | 0.952 | 0.953 | 0.969 | 0.912 |
| Assurance post | 0.930 | 0.931 | 0.955 | 0.877 |
| Empathy post | 0.960 | 0.960 | 0.974 | 0.926 |
| Servqual pre | 0.788 | 0.826 | 0.876 | 0.704 |
| Servqual post | 0.942 | 0.943 | 0.963 | 0.896 |
| Non-Asymmetry | 0.876 | 0.878 | 0.924 | 0.802 |
| Satisfaction | 0.950 | 0.951 | 0.962 | 0.835 |
| Loyalty | 0.921 | 0.922 | 0.950 | 0.864 |

Discriminant validity testing was used to examine whether constructs within the model could be differentiated. This test assesses the heterotrait–monotrait ratio (HTMT) values among constructs. Constructs in the PLS-SEM model are deemed to fulfill discriminant validity when the HTMT values between any two constructs do not exceed 0.9 (Hair et al., 2019). Table 4 shows that most constructs in the PLS-SEM model had HTMT values below 0.9. Thus, it can be concluded that a significant portion of the constructs within the model met the required discriminant validity criteria.

Table 4. Discriminant validity assessment results based on the HTMT ratio in the PLS-SEM model

| Variable | Reliable post | Reliable pre | Empathy post | Empathy pre | Satisfaction | Loyalty | Non-Asymmetry | Assurance post | Assurance pre | SerQual post | SerQual pre | Responsive post | Responsive pre |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Reliable post | | | | | | | | | | | | | |
| Reliable pre | 0.38 | | | | | | | | | | | | |
| Empathy post | 0.63 | 0.29 | | | | | | | | | | | |
| Empathy pre | 0.29 | 0.56 | 0.39 | | | | | | | | | | |
| Satisfaction | 0.53 | 0.37 | 0.53 | 0.30 | | | | | | | | | |
| Loyalty | 0.45 | 0.30 | 0.50 | 0.26 | 0.65 | | | | | | | | |
| Non-Asymmetry | 0.50 | 0.35 | 0.54 | 0.33 | 0.63 | 0.57 | | | | | | | |
| Assurance post | 0.62 | 0.32 | 0.67 | 0.39 | 0.55 | 0.51 | 0.58 | | | | | | |
| Assurance pre | 0.28 | 0.57 | 0.38 | 0.66 | 0.33 | 0.30 | 0.39 | 0.45 | | | | | |
| SerQual post | 0.57 | 0.29 | 0.58 | 0.26 | 0.58 | 0.53 | 0.62 | 0.55 | 0.28 | | | | |
| SerQual pre | 0.30 | 0.47 | 0.32 | 0.49 | 0.28 | 0.23 | 0.31 | 0.33 | 0.43 | 0.29 | | | |
| Responsive post | 0.69 | 0.34 | 0.64 | 0.35 | 0.51 | 0.44 | 0.50 | 0.63 | 0.33 | 0.55 | 0.30 | | |
| Responsive pre | 0.32 | 0.66 | 0.31 | 0.62 | 0.30 | 0.24 | 0.28 | 0.32 | 0.58 | 0.25 | 0.38 | 0.35 | |

## 5.4    Analysis of Model Fit (Model's Goodness of Fit)

Model fit was analyzed by examining the R-squared and Q-squared values of the model. R-square value >0.67 indicates that the PLS model is strong in predicting endogenous variables, an R-square value between 0.33 to 0.67 suggests a moderately strong (moderate) PLS model, and an R-square value between 0.19 to 0.33 indicates a weak PLS model in predicting endogenous variables. The analysis results in Table 5 indicate that the model falls within the moderate-to-strong category.

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Table 5. R-square and r-square adjusted values

| Variables | R-square | R-square adjusted |
|---|---|---|
| Servqual pre | 0.414 | 0.399 |
| Servqual post | 0.785 | 0.775 |
| Satisfaction | 0.730 | 0.725 |
| Loyalty | 0.776 | 0.775 |

The Q-square reflects how well the PLS-SEM model can predict data that has never appeared before (out-of-sample data). The Q-square value ranges from 0 to 1, where a larger Q-square value indicates better predictive performance of the PLS-SEM model on previously unseen data. Table 6 presents the Q-square values with an overall value of one, indicating that the model can effectively predict data that have not been previously encountered.

Table 6. Q-square predictive relevance values for PLS-SEM model variables

| Variable | Satisfaction | Loyalty | Servqual post | Servqual pre |
|---|---|---|---|---|
| Reliable pre | | | | 1.000 |
| Responsive pre | | | | 1.000 |
| Assurance pre | | | | 1.000 |
| Empathy pre | | | | 1.000 |
| Reliable post | | | 1.000 | |
| Responsive post | | | 1.000 | |
| Assurance post | | | 1.000 | |
| Empathy post | | | 1.000 | |
| Servqual pre | | | 1.000 | |
| Servqual post | 1.000 | | | |
| Non-Asymmetry | 1.000 | 1.000 | 1.000 | |
| Satisfaction | | 1.000 | | |

In addition to being measured by R-Square and Q-Square values, goodness of fit was assessed based on the Standardized Root Mean Square Residual (SRMR), which measures the discrepancy between the estimated model and actual data in standard units. A model with a smaller SRMR is considered better, indicating a closer fit to the actual data. The model was deemed perfectly fit if the SRMR was less than 0.08, and was considered fit if the SRMR value was between 0.08 0.10. The analysis results in Table 7 show that the SRMR value of the model is 0.072, categorizing it as a perfect fit.

Table 7. Standardized root mean square residual (SRMR) values

| | Saturated model | Estimated model |
|---|---|---|
| SRMR | 0.064 | 0.072 |

## 5.5 Inner Model Analysis

Once the model has been validated, an inner model analysis or examination of the relationships between variables can be conducted. This analysis encompassed 1) an analysis of direct effects as a hypothesis test, 2) an analysis of indirect effects, and 3) an analysis of total effects, all of which were performed using bootstrapping. The results of model estimation using the bootstrapping method are shown in Figure 7.
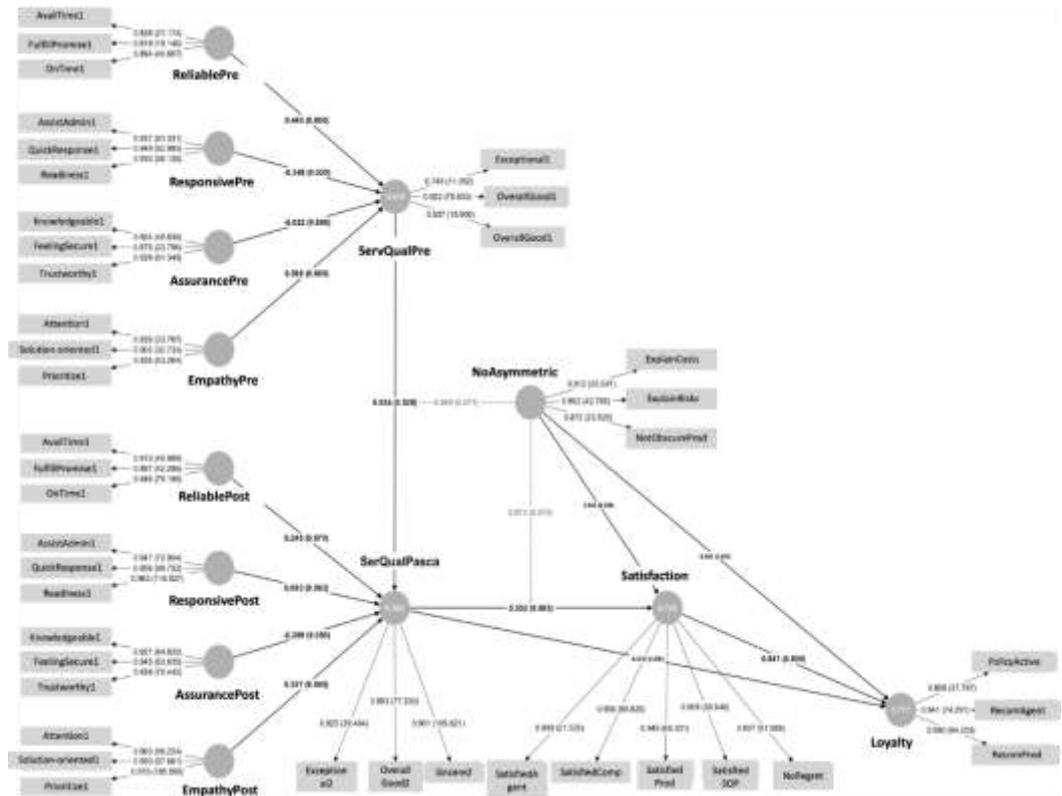
Figure 7. Model estimation results using bootstrapping using PLS-SEM analysis

Direct effect refers to the direct influence of an exogenous variable on an endogenous variable. In PLS-SEM analysis, the significance and direction of direct effects are examined through the p-value, t-statistic, and coefficients of the paths connecting exogenous variables to endogenous ones. The critical t-statistic value for a significance level of 10% ($\alpha$ = 0.10; two-sided test) is 1.65 (Hair et al., 2017). If the obtained p-value is less than 0.100 and the t-statistic is greater than 1.650, it is concluded that the exogenous variable significantly influences the endogenous variable, and the direction of influence aligns with the sign of its path coefficient. Conversely, if the p-value is greater than 0.100 and the t-statistic is less than 1.650, the exogenous variable does not significantly influence the endogenous variable. Table 8 presents the results of the direct effect testing in this study.

Table 8. Results of direct path analysis to test hypotheses

| Paths | Hypothesis | Original sample (O) | T-statistics (|O/STDEV|) | P-values | Conclusion |
|---|---|---|---|---|---|
| Reliable pre → Servqual pre | H-1 | 0.440 | 3.657 | 0.000 | Accepted |
| Responsive pre → Servqual pre | H-2 | -0.348 | 2.319 | 0.020 | Accepted |
| Assurance pre → Servqual pre | H-3 | -0.022 | 0.144 | 0.886 | Rejected |
| Empathy pre → Servqual pre | H-4 | 0.588 | 3.591 | 0.000 | Accepted |
| Reliable post → Servqual post | H-5 | 0.245 | 1.816 | 0.070 | Accepted |
| Responsive post → Servqual post | H-6 | 0.093 | 0.548 | 0.583 | Rejected |
| Assurance post → Servqual post | H-7 | -0.289 | 1.962 | 0.050 | Accepted |
| Empathy post → Servqual post | H-8 | 0.357 | 2.657 | 0.008 | Accepted |
| Servqual pre → Servqual post | H-9 | 0.034 | 0.630 | 0.528 | Rejected |
| Servqual post → Satisfaction | H-10 | 0.352 | 2.986 | 0.003 | Accepted |
| Non-Asymmetry X Servqual pre → Servqual post | H-11 | 0.069 | 1.803 | 0.071 | Accepted |

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Table 8. Results of direct path analysis to test hypotheses (Continue)

| Paths | Hypothesis | Original sample (O) | T-statistics (|O/STDEV|) | P-values | Conclusion |
|---|---|---|---|---|---|
| Non-Asymmetry X Servqual post → Satisfaction | H-12 | 0.073 | 1.814 | 0.070 | Accepted |
| Satisfaction → Loyalty | H-13 | 0.841 | 10.556 | 0.000 | Accepted |
| Servqual post → Loyalty | H-14 | -0.016 | 0.182 | 0.856 | Rejected |
| Non-Asymmetry → Satisfaction | H-15 | 0.540 | 4,903 | 0.000 | Accepted |
| Non-Asymmetry → Loyalty | H-16 | 0.064 | 0.704 | 0.481 | Rejected |

Testing for indirect effects was conducted to evaluate whether there were significant indirect influences from an independent variable on a dependent variable through a mediator or linking variable, with the conditions of significance based on the p-value and t-statistic, as mentioned above. The results of the indirect effects tests are listed in Table 9.

Table 9. Results of indirect effect tests and significance in the path model

| Paths | Original sample (O) | T-statistics (|O/STDEV|) | P-values | Conclusion |
|---|---|---|---|---|
| Servqual pre → Servqual post → Satisfaction → Loyalty | 0.009 | 0.591 | 0.554 | Rejected |
| Servqual post → Satisfaction →Loyalty | 0.296 | 2.919 | 0.004 | Accepted |
| Non-Asymmetry → Satisfaction → Loyalty | 0.596 | 7.813 | 0.000 | Accepted |

## 5.6    Analysis of Coefficient of Determination

The coefficient of determination can be obtained from the adjusted R-squared value, ranging from 0 to 1, or can be interpreted in a percentage form (0 to 100%). A higher coefficient of determination indicates a greater ability of the exogenous variable to explain the endogenous variable. Conversely, a lower coefficient of determination suggests a smaller influence of the exogenous variable on the endogenous variable, indicating that many factors outside the exogenous variable affect the endogenous variable. Table 10 reveals that 72.5% of satisfaction is influenced by post-purchase service, 77.5% of loyalty is influenced by satisfaction, 77.5% of post-purchase service is influenced by pre-purchase service, 39.9% is influenced by service quality or service quality, and 39.9% is influenced by pre-purchase service.

Table 10. Coefficient of determination values indicating model fit for each variable

| Variables | R-square | R-square adjusted |
|---|---|---|
| Satisfaction | 0.730 | 0.725 |
| Loyalty | 0.776 | 0.775 |
| Servqual Post | 0.785 | 0.775 |
| Servqual Pre | 0.414 | 0.399 |

## 6.    Discussion

## 6.1    Relevance of Service Dimensions to Pre-purchase Service Quality

As shown in Table 8, the first, second, and fourth hypothesis tests show significant and positive results, as evidenced by p-values smaller than 0.1000 and positive path coefficients. This means that the dimensions of reliability, responsiveness, and empathy have a strong influence on enhancing consumers' perceptions of the quality

of service agents in the pre-purchase phase. However, the third hypothesis test indicates that the assurance dimension provides a negative perception of service agents' quality. This is somewhat different from the concept of Parasuraman et al. (1988), who mentioned that reliability, responsiveness, assurance, and empathy are the dimensions of SERVQUAL. This difference can be explained by the fact that, in practice, insurance agents often overpromise their products' guarantees, leading consumers to feel that the service is too good to be true.

## 6.2 Relevance of Service Dimensions to Post-purchase Service Quality

On the other hand, regarding the quality of post-purchase services, the fifth, seventh, and eighth hypothesis tests show significant and positive effects. The sixth hypothesis test showed a significantly negative result. This means that, out of the four SERVQUAL dimensions, the dimensions of reliability, assurance, and empathy have a real and positive influence on consumer perceptions of the quality of post-purchase agents, while the responsiveness dimension has a negative effect on consumer perceptions. This anomaly can be explained by the fact that agents often complain about losing responsiveness once a consumer becomes a policyholder. This could be caused by the agents being too busy to serve new customers who have not yet purchased a product.

The model developed in this study, which focuses on the impact of agent reliability, responsiveness, assurance, and empathy, aligns with the empirical evidence that product knowledge, empathy, reliability, and trust are significant attributes of service quality (Gera, 2011). Similarly, Riyadi et al. (2015) identified empathy and tangible evidence as the dimensions that affect public satisfaction the most. This provides evidence of the significant influence of empathy on overall customer satisfaction, further reinforcing the importance of empathy in service quality (Balinado et al., 2021). Empathy had a positive and significant relationship (Rita et al., 2019). Quality of agent service, customer satisfaction, and perceived value are significant predictors of the intention to recommend products. These parallels highlight a universal principle within the insurance industry: the human factor, especially in agent-customer interactions, is critical across different markets. The PAYDI study enhances this dialogue by framing these attributes within the scope of both pre- and post-purchase service quality.

## 6.3 Relevance of Service Quality to Consumer Satisfaction to Consumer Loyalty

The tenth and thirteenth hypothesis tests showed significant and positive results, respectively. This means that there is a series of interconnected influences between post-purchase services and consumer satisfaction, which ultimately results in consumer loyalty. The results of this test are important findings that prove that this study successfully intertwined and combined two quality service concepts introduced by Parasuraman, namely SERVQUAL with the ECSI version of the quality service concept, which is one of the goals of this study, as explained in Figure 5 above.

This finding also emphasizes that service quality is a critical factor for the growth and sustainability of insurance businesses. Dominique-Ferreira's (2018) suggested a need for a deeper understanding of the role of insurance agents as intermediaries in maintaining customer relationships post-purchase. Putera and Wahyono (2018) also highlight that consumer satisfaction can mediate the relationship between service quality and consumer loyalty. Furthermore, Mosahab et al. (2010) demonstrated that customers' expectations were higher than their perceptions of the bank's operation, indicating the importance of aligning service quality with customer expectations to enhance satisfaction and loyalty (Mosahab et al., 2010).

### 6.4 Impact of Information Asymmetry on Customer Satisfaction and Loyalty

Hypotheses eleventh and twelfth were accepted, indicating that the absence of information asymmetry moderates the relationship between pre- and post-purchase service quality and consumer satisfaction, with P-values less than 0.100. Ho-15 was also accepted, affirming that the absence of information asymmetry had a significant and positive effect on consumer satisfaction, as evidenced by a very low P-value and a positive path coefficient. However, Ho-16 was rejected, showing that the absence of information asymmetry does not affect consumer loyalty, with a p-value of 0.481 greater than 0.100, indicating that perceptions of information asymmetry do not influence consumer loyalty.

The effect of information asymmetry on customer satisfaction and loyalty is a crucial area of study, particularly in the insurance industry. The PAYDI study's exploration of the influence of information asymmetry on customer satisfaction and loyalty in insurance services aligns with Chen's (2021) insights into the significance of transparency in insurance services. This is particularly relevant in the contemporary digital age, where transparency and access to information are increasingly important to customers (Araslı et al., 2005). Furthermore, IT-based services have a direct impact on service quality dimensions and an indirect impact on customer-perceived service quality and satisfaction, emphasizing the relevance of technology in influencing customer satisfaction (Zhang et al., 2020).

### 6.5 Managerial Implication

The significant findings of this study on agent reliability, responsiveness, empathy, and the absence of information asymmetry have profound managerial implications for enhancing service quality, consumer satisfaction, and loyalty. First, emphasizing agent reliability through targeted training and development programs can substantially improve consumers' perceptions of pre-purchase service quality. This approach should focus on fostering a culture in which agents are accountable and provide accurate information, thereby positively influencing consumer decisions before a transaction. However, the study also highlights a nuanced challenge with agent responsiveness: rapid responses alone may not always be positively perceived. Managers must ensure that agent interactions balance speed with relevance and accuracy, suggesting that training should cover the quality of communication alongside responsiveness.

Furthermore, the positive impact of agent empathy on service quality, both before and after a purchase, underscores the value of emotional intelligence in customer service. Managers are advised to recruit empathetic agents or provide training to improve their ability to understand and address consumer emotions and needs. This can enhance the perceptions of service quality and increase consumer satisfaction. Additionally, maintaining high-quality post-purchase service is crucial for consumer satisfaction, indicating that managers should actively seek consumer feedback and implement continuous quality improvement measures to support and assist consumers after sale.

The strong link between consumer satisfaction and loyalty emphasizes the strategic importance of satisfying consumer needs as a pathway to building loyalty. Initiatives can include personalized services, loyalty programs, and regular engagement to keep consumers connected with and satisfied with the brand. Moreover, the positive effects of transparency and absence of information asymmetry on consumer satisfaction

highlight the need for clear and honest communication. Managers should prioritize transparency to build trust and ensure that all consumer interactions are straightforward and truthful, thus avoiding misleading practices.

In summary, these managerial insights point towards a holistic approach to customer service management, where agent training, communication quality, empathetic interactions, post-sale support, transparency, and customer engagement work in tandem to foster a loyal and satisfied customer base. This approach not only enhances consumer experience, but also contributes to the long-term success of an organization by building a positive reputation and encouraging repeat business.

### 6.6 Theoretical Contribution

Theoretically, this study enriches the literature on insurance marketing by delineating the differential impact of pre- and post-purchase service quality on customer loyalty. It also introduces the novel concept of the moderating role of information asymmetry in the insurance sector. These contributions are valuable for understanding the complex dynamics of customer-agent interactions and the factors influencing customer loyalty in the insurance industry.

### 6.7 Limitations

The limitations of this study are its reliance on a small, specific sample, and one-time data collection effort, which potentially does not capture the broader spectrum of customer perspectives. This study primarily concentrates on agent reliability and empathy, which may lead to the oversight of other critical factors such as pricing on customer satisfaction and loyalty. Furthermore, the use of self-reported data could introduce bias, whereas a study's regional focus could restrict the applicability of its findings to more diverse contexts.

### 7. Conclusion

Consumers of PAYDI perceive that the service quality of insurance agents tends to decrease once they become policyholders, compared to before becoming customers. The decline in the quality of agent services becomes a dominant reason for customers to exhibit disloyal behavior, with one indicator being the cancellation of policies. Based on the service quality model (Servqual) constructed in this study, consumer loyalty can only be established when customer satisfaction is achieved first. This is not a direct result of the post-purchase service quality provided by agents because the quality of agent services in the post-purchase phase is lower than that in the pre-purchase phase. The model developed in this study indicates that information asymmetry moderates this relationship. Thus, the influence of an agent's service quality on consumer satisfaction is stronger if the agent does not engage in information asymmetry. This study also confirms the theory that customer satisfaction is a crucial indicator for measuring the quality of products or services, and can influence customer loyalty.

### 8. Recommendation

Future research in the insurance sector should consider a range of avenues to enhance our understanding of the customer loyalty dynamics. First, it is crucial to investigate the perspectives of insurance agents and how factors, such as training, incentives, and work conditions, influence service quality. Longitudinal studies that track customer perceptions over time can provide insights into the evolving trends.

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Comparative analyses across insurance companies and agents can help to identify the industry's best practices. Additionally, an in-depth examination of information asymmetry and its impact on customer satisfaction warrant further attention. Cross-cultural studies could help unveil variations in customer expectations and behaviors, and the influence of technology on service quality perceptions should also be explored.

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