

ASSESSING SERVICE FACTORS ON PATIENT SATISFACTION AND LOYALTY IN HOMECARE SERVICES IN INDONESIA

Yuanita Melina Anggoro^{1*}, Margaretha Pink Berlianto², Amirsyani Ariestotama Ilyas³

^{1,2,3} Universitas Pelita Harapan, Indonesia

margaretha.berlianto@uph.edu², tamailyas14@gmail.com³

*Corresponding Author: Yuanita Melina Anggoro, Email: yuanita.anggoro@gmail.com

ABSTRACT

Home-based healthcare has emerged as a critical component of post-pandemic medical systems, providing continuous, personalized, and cost-effective treatment for patients outside hospital settings. However, maintaining consistent service quality in homecare remains challenging due to variability in caregiver competence, timeliness, and communication. Recent evidence shows fluctuations in patient satisfaction and loyalty, highlighting the need to strengthen homecare service management through improved quality and perceived value. This study examines the influence of six service factors—Communication & Attitude, Service Promptness, Medical Supplies, Information Transparency & Administrative Procedure, Service Value, and Service Quality—on Patient Satisfaction and the subsequent effect of satisfaction on Patient Loyalty in Indonesian homecare services. A quantitative cross-sectional design was applied. Data were collected from 307 homecare patients using a structured questionnaire adapted from validated scales. All constructs were measured using a five-point Likert scale and analyzed using PLS-SEM with SmartPLS 4 to assess reliability, validity, and structural relationships. The findings support five of the seven proposed hypotheses. Medical supplies, information transparency and administrative procedures, service value, and service quality significantly and positively influence patient satisfaction, which in turn significantly enhances patient loyalty. However, communication and attitude, as well as service promptness, do not significantly affect patient satisfaction. The model demonstrates substantial explanatory power, accounting for 69.8% of the variance in patient satisfaction and 50.2% in patient loyalty. The study uses a cross-sectional design and purposive sampling, which may limit generalization across different homecare providers and regions. Homecare providers should prioritize service quality, medical supply readiness, administrative transparency, and value creation, as these factors significantly shape patient satisfaction and loyalty. This study develops and tests an integrated homecare satisfaction–loyalty model in Indonesia, addressing a contextual research gap in decentralized healthcare services.

KEYWORDS: Homecare; Service Value; Service Quality; Patient Satisfaction; Patient Loyalty; Healthcare Management

1. INTRODUCTION

Home-based healthcare has become increasingly important in the post-pandemic era, particularly for elderly and chronically ill patients who require continuous yet personalized medical care. The COVID-19 pandemic significantly accelerated the adoption of home-based healthcare services, as patients sought safer alternatives to inpatient treatment while maintaining access to professional medical support. Consequently, healthcare delivery has gradually shifted beyond hospitals toward patients' homes, emphasizing convenience, safety, and continuity of care. In the literature, this mode of care is described using various terms—such as Hospital-at-Home, care-at-home, home-health-care, and homecare—all of which share a common focus on delivering healthcare services within patients' home environments. For consistency, this study adopts the term homecare as an umbrella concept encompassing these related approaches.

The strategic importance of homecare is further reinforced by global industry projections. Fortune Business Insights (2026) reported that the global home healthcare market was valued at USD 404.26 billion in 2025 and is projected to exceed USD 1 trillion by 2034. PwC (2025) similarly highlighted the rapid expansion of home healthcare driven by cost efficiency and comparable effectiveness to inpatient services. Accenture (2024) further emphasized the long-term transformation of healthcare systems toward technology-enabled, value-driven care-at-home models. These reports indicate that homecare is not merely a temporary response to pandemic constraints but represents a sustainable and competitive healthcare delivery model. In Indonesia, this transition is reflected in the growth of digital health platforms such as MHomecare, Halodoc, HomeClinic Indonesia, CaptainCare, and Homecare24, which facilitate direct service provision to patients' homes (Gautama et al., 2024).

As homecare services expand, patient satisfaction and patient loyalty emerge as critical indicators of service sustainability and organizational performance. Loyal patients are more likely to continue using services and

recommend them to others, strengthening long-term operational stability (Ha et al., 2023). In homecare settings—where interactions occur within patients’ personal living environments—trust and relationship continuity play an even more central role (Wang et al., 2022). Empirical studies consistently demonstrate that service-related factors such as communication quality, timeliness, service value, and service quality influence satisfaction outcomes in healthcare contexts (Huang et al., 2025; Ha et al., 2023). However, prior findings remain inconsistent regarding which service attributes most strongly determine patient satisfaction across different healthcare settings.

To ensure theoretical rigor and construct validity, this study adopts and extends a validated healthcare service framework. The core service dimensions—Communication & Attitude (CA), Service Promptness (SP), and Medical Supply (MS)—together with Patient Satisfaction (PS) and Patient Loyalty (PL), are adapted from Gül et al. (2023), who empirically demonstrated their interrelationships in healthcare service settings. Nevertheless, given the distinctive operational characteristics of homecare—such as decentralized service delivery and administrative coordination outside institutional facilities—the model is extended to better reflect the contextual realities of homecare services.

Specifically, this study incorporates Information Transparency & Administrative Procedure (ITAP) to capture patients’ evaluations of service process clarity, treatment explanations, cost transparency, and administrative communication. This inclusion is grounded in Nguyen et al. (2022), who identified “information transparency and administrative procedures” as a distinct domain influencing patient satisfaction in healthcare services. In addition, Service Value (SV) and Service Quality (SQ) are integrated as higher-order evaluative constructs. Ha et al. (2023) emphasize that perceived service value and service quality are key determinants of satisfaction and loyalty in healthcare contexts, while Huang et al. (2025) demonstrate that improvements in service quality significantly enhance patient satisfaction.

Importantly, although prior studies have examined service quality, value, and satisfaction in hospital, pharmacy, and telemedicine contexts, empirical research testing an integrated model combining CA, SP, MS, ITAP, SV, and SQ in the specific context of homecare services in Indonesia remains limited. To the best of the authors’ knowledge, no prior study has simultaneously examined these six service dimensions and their structural relationship with patient satisfaction and patient loyalty within Indonesian homecare settings. Therefore, this study aims to fill this empirical gap by developing and testing a comprehensive homecare satisfaction–loyalty model in Indonesia.

2. THEORETICAL REVIEW

2.1 Theoretical Basis of Each Variable

Communication and Attitude (CA) - refer to caregivers’ ability to convey information clearly, respectfully, and empathetically during service interactions. In healthcare contexts, interpersonal communication plays a central role in shaping patients’ perceptions of professionalism and relational trust. Gül et al. (2023) conceptualized communication and attitude as a core service dimension and empirically examined its relationship with patient satisfaction and loyalty in healthcare settings. Their findings demonstrate that communication-related attributes form part of the structural determinants of satisfaction outcomes. In homecare services, where service encounters occur in patients’ personal living environments, effective communication and professional attitude are critical components of service evaluation.

Service Promptness (SP) - reflects the timeliness and responsiveness of service delivery. In healthcare service research, timeliness is commonly associated with perceptions of reliability and operational competence. Gül et al. (2023) included service promptness as a distinct service factor influencing satisfaction within their healthcare service model. Ha et al. (2023) further emphasize that responsive service delivery contributes to favorable service evaluations and satisfaction outcomes. In homecare settings, adherence to scheduled visits and prompt responses to patient needs represent important operational indicators influencing service perceptions.

Medicine Supply (MS) - refers to the availability and adequacy of prescribed medications and necessary medical equipment during service provision. Gül et al. (2023) identified medicine supply as a significant service determinant affecting patient satisfaction in pharmacy-based healthcare services. Reliable access to medicines and medical materials supports treatment continuity and strengthens patient confidence in service providers. In homecare contexts, consistent medical supply represents an essential operational component that contributes to perceived service reliability.

Information Transparency and Administrative Procedure (ITAP) –

refer to the clarity of communicated service processes, treatment explanations, cost information, and administrative procedures provided to patients. Nguyen et al. (2022) explicitly identified “information transparency and administrative procedures” as a distinct domain influencing patient satisfaction in healthcare services. Their findings indicate that transparent communication regarding procedural and administrative aspects forms an important dimension of patient service evaluation. In homecare settings—where service coordination occurs outside institutional facilities—clear administrative guidance and transparent communication become particularly relevant for shaping patient satisfaction.

Service Quality (SQ) - represents patients’ evaluation of how well healthcare services meet or exceed their expectations. The SERVQUAL framework conceptualizes service quality across dimensions including reliability, responsiveness, assurance, empathy, and tangibles (Parasuraman et al., 1988), and this framework has been widely applied in healthcare research. Huang et al. (2025) demonstrate that higher levels of perceived service quality significantly enhance patient satisfaction, and that effective information flow further strengthens this relationship. These findings reinforce the central role of service quality in shaping satisfaction outcomes in healthcare contexts.

Service Value (SV) - refers to patients' assessment of the benefits received relative to the financial and non-financial costs incurred. Ha et al. (2023) emphasize that perceived service value, together with service quality, constitutes a primary determinant of customer satisfaction in healthcare services. Their study demonstrates that favorable cost-benefit evaluations increase satisfaction and strengthen loyalty intentions. In homecare services, perceived value reflects whether patients consider the outcomes of care to justify the resources invested.

Patient Satisfaction (PS) - refers to patients' evaluation of service performance relative to their expectations. Gül et al. (2023) conceptualize satisfaction as a mediating construct linking service attributes to loyalty outcomes in healthcare service models. Similarly, Ha et al. (2023) and Huang et al. (2025) demonstrate that satisfaction plays a central role in translating service quality and service value into behavioral intentions. In homecare contexts, PS represents the overall appraisal of service experiences across interpersonal, operational, and evaluative dimensions.

Patient Loyalty (PL) - refers to the intention to continue using healthcare services and to recommend them to others. Gül et al. (2023) empirically demonstrate that patient satisfaction significantly predicts loyalty outcomes in healthcare service settings. Ha et al. (2023) further show that satisfaction reduces switching intentions and strengthens retention behavior. In homecare environments, loyalty reflects sustained trust and continued engagement with service providers.

2.2 Hypothesis Development

Communication and professional attitude shape satisfaction primarily through relational trust and emotional reassurance. When healthcare providers communicate clearly, listen attentively, and demonstrate respect, patients are more likely to feel understood and valued. Gül et al. (2023) conceptualized communication and attitude as a core service dimension within a healthcare satisfaction-loyalty model. Similarly, Nguyen et al. (2022) identified interaction and communication-related elements as significant components associated with outpatient satisfaction. A recent systematic review by Ferreira et al. (2023) further confirms that interpersonal interaction quality consistently appears among key determinants of patient satisfaction across healthcare settings. Taken together, these findings suggest that effective communication and positive caregiver attitude enhance patients' satisfaction evaluations.

H1: Communication and attitude have significant positive effects on patient satisfaction in homecare services.

Timeliness and responsiveness influence satisfaction through expectation-confirmation and perceived reliability mechanisms. When services are delivered on schedule and patient concerns are addressed promptly, patients are more likely to perceive the provider as organized and dependable. Gül et al. (2023) included service promptness as a structural determinant of satisfaction in healthcare services. In a broader synthesis of patient satisfaction research, Ferreira et al. (2023) identified waiting time and access-related dimensions as recurring factors influencing satisfaction outcomes. In the home care context specifically, Rahadian Syah et al. (2025) highlighted operational aspects among factors frequently associated with patient satisfaction. These findings support the expectation that higher service promptness contributes to greater patient satisfaction.

H2: Service promptness has significant positive effects on patient satisfaction in homecare services.

Reliable availability of prescribed medications supports continuity of care and reinforces perceptions of service reliability. Patients who consistently receive the medications and materials they require are more likely to perceive the healthcare provider as competent and trustworthy. Gül et al. (2023) explicitly modeled medicine supply as a determinant of patient satisfaction in healthcare services. Evidence from community pharmacy research also demonstrates that medication availability is positively associated with patient satisfaction (Alzahrani et al., 2024). In addition, broader evidence synthesis indicates that technical and reliability-related service components frequently contribute to satisfaction formation (Ferreira et al., 2023). These findings collectively suggest that adequate medicine supply increases patient satisfaction.

H3: Medical supply has significant positive effects on patient satisfaction in homecare services.

Clear information and well-structured administrative procedures reduce ambiguity and improve patients' understanding of care processes. When patients receive transparent explanations regarding treatment steps, costs, and administrative requirements, they are more likely to perceive the service as organized and fair. Nguyen et al. (2022) identified "information transparency and administrative procedures" as a distinct factor influencing outpatient satisfaction. Supporting evidence from hospital settings also indicates that administrative procedures are associated with patient satisfaction and loyalty-related outcomes (Hussain, 2025). Furthermore, systematic evidence highlights process-related quality and service organization as recurring determinants of satisfaction (Ferreira et al., 2023). Accordingly, greater transparency and administrative clarity are expected to enhance patient satisfaction.

H4: Information transparency and administrative procedure have significant positive effects on patient satisfaction in homecare services.

Service value reflects patients' judgment of whether the benefits received justify the costs, time, and effort invested. When patients perceive favorable value—meaning that outcomes outweigh sacrifices—they are more likely to report higher satisfaction. Ha et al. (2023) empirically demonstrate that perceived service value

significantly influences satisfaction in healthcare services. Broader evidence also supports the role of value-related evaluations in shaping patient satisfaction (Ferreira et al., 2023). Moreover, Huang et al. (2025) emphasize the importance of evaluative perceptions in strengthening satisfaction formation. Therefore, stronger perceived service value is expected to increase patient satisfaction.

H5: Service value has significant positive effects on patient satisfaction in homecare services.

Service quality influences satisfaction through patients' overall performance evaluation relative to expectations. When services are reliable, responsive, empathetic, and professionally delivered, patients are more likely to perceive that their expectations have been met or exceeded. Huang et al. (2025) empirically demonstrate that improvements in nursing service quality significantly enhance patient satisfaction. Ha et al. (2023) similarly position service quality as a primary determinant of satisfaction in healthcare service models. In addition, systematic evidence confirms that perceived service quality consistently predicts patient satisfaction across healthcare contexts (Ferreira et al., 2023). These findings strongly support the positive relationship between service quality and patient satisfaction.

H6: Service quality has significant positive effects on patient satisfaction in homecare services.

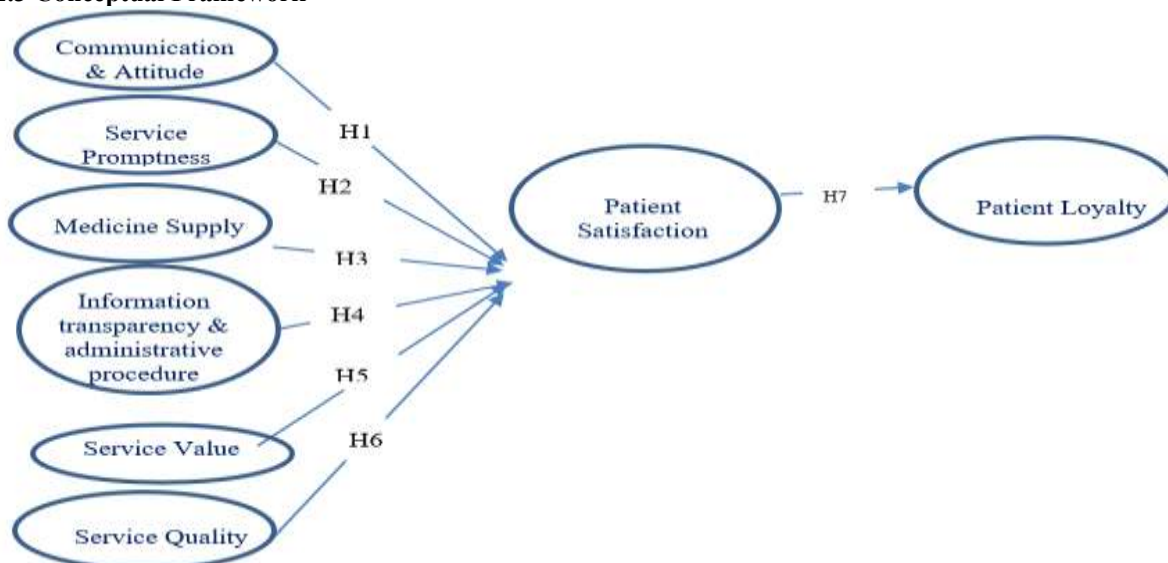
Satisfaction plays a pivotal role in shaping patients' future behavioral intentions. Patients who are satisfied with healthcare services are more likely to revisit and recommend the provider to others. Gül et al. (2023) demonstrate that patient satisfaction significantly predicts loyalty outcomes in healthcare service models. Ha et al. (2023) similarly link satisfaction to retention-related outcomes and reduced switching behavior. Furthermore, systematic evidence positions satisfaction as a proximal antecedent of loyalty and revisit intention across healthcare contexts (Ferreira et al., 2023). These findings support the expectation that higher patient satisfaction leads to stronger patient loyalty.

H7: Patient satisfaction has a positive effect on patient loyalty.

Summary Hypothesis:

Hypothesis	Relationship	Expected Effect	Key Reference
H1	Communication & Attitude → Satisfaction	Positive	Gül et al. (2023); Nguyen et al. (2022)
H2	Service Promptness → Satisfaction	Positive	Gül et al. (2023); Ferreira et al. (2023)
H3	Medical Supply → Satisfaction	Positive	Gül et al. (2023); Alzahrani et al. (2024)
H4	Information transparency & administrative procedure → Satisfaction	Positive	Nguyen et al. (2022); Hussain et al. (2025)
H5	Service Value → Satisfaction	Positive	Ha et al. (2023); Ferreira et al. (2023)
H6	Service Quality → Satisfaction	Positive	Huang et al. (2025); Ha et al. (2023)
H7	Satisfaction → Loyalty	Positive	Gül et al. (2023); Huang et al. (2025)

2.3 Conceptual Framework



3. RESEARCH METHOD

This study adopted a quantitative, cross-sectional research design to examine the structural relationships between service-related factors, patient satisfaction, and patient loyalty in homecare services. Specifically, this research employed a quantitative, explanatory, and cross-sectional design, aiming to test theoretically derived causal relationships among latent constructs within a single period of data collection. The target population consisted of patients who had received homecare services in Indonesia within the last twelve months. Participation in the survey was voluntary and anonymous. Respondents were informed about the purpose of the study prior to completing the questionnaire, and informed consent was obtained to ensure ethical compliance. The sampling technique used was purposive sampling, focusing on respondents aged eighteen years and above who had completed at least one full episode of homecare service and were willing to participate voluntarily. Data were collected using a structured questionnaire distributed both online and offline, and a total of 307 valid responses were obtained. The adequacy of the sample size was assessed based on the PLS-SEM “10-times rule,” which recommends that the minimum sample should be at least ten times the maximum number of structural paths directed at any latent construct. In this study, six constructs predict Patient Satisfaction; therefore, the minimum required sample was 60. The final sample of 307 respondents substantially exceeds this threshold, indicating sufficient statistical power for structural model estimation (Hair et al., 2021). All indicators were measured using a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The questionnaire items were adapted from previous validated studies, namely Gül et al. (2023) for Communication & Attitude (seven items), Service Promptness (four items), Medicine Supply (five items); Nguyen et al. (2022) for Information Transparency and Administrative Procedure (seven items); Huang et al. (2025) for Service Quality (six items); Ha et al. (2023) for Service Value (six items); and Gül et al. (2023) for Patient Satisfaction (four items) and Patient Loyalty (five items). The constructs were then analyzed using the Partial Least Squares–Structural Equation Modeling (PLS-SEM) approach with SmartPLS 4 software. PLS-SEM was selected because the research model is prediction-oriented and involves multiple interrelated latent constructs. Moreover, PLS-SEM is appropriate for studies with moderate sample sizes and does not require strict multivariate normality assumptions, making it suitable for survey-based healthcare research (Hair et al., 2021).

The analysis followed a two-step approach. First, the measurement model was assessed to evaluate indicator reliability, internal consistency reliability (Cronbach’s Alpha and Composite Reliability), convergent validity (Average Variance Extracted), and discriminant validity (HTMT criterion). All outer loadings exceeded the recommended threshold of 0.70, indicating adequate indicator reliability. Second, the structural model was evaluated by examining path coefficients (β), t-values, and p-values obtained through bootstrapping with 5,000 subsamples. The coefficient of determination (R^2) was also assessed to evaluate the explanatory power of the model. To assess potential common method bias resulting from self-reported data collected at a single point in time, full collinearity variance inflation factor (VIF) values were examined. All VIF values were below the threshold of 3.3, indicating that common method bias was not a serious concern.

4. RESULT AND DISCUSSION

This chapter presents the empirical findings of the study and discusses the results based on the proposed research model. The analysis includes respondent characteristics, measurement model evaluation, and structural model assessment, including hypothesis testing.

4.1 Respondent Profile

A total of 307 valid responses were collected from patients who had received homecare services in Indonesia within the last twelve months. Respondents were selected using purposive sampling criteria, ensuring that all participants had sufficient experience to evaluate homecare service quality, satisfaction, and loyalty.

The demographic profile of respondents is summarized in Table 1.

Table 1. Respondent Profile

DESCRIPTION		Total	Percentage (%)
Gender	Male	140	46%
	Female	167	54%
Age (years)	18 – 28	122	40%
	29 – 44	62	20%
	45 – 60	69	22%
	> 61	54	18%
Education level	SMA	75	24%
	Diploma	108	35%
	Sarjana	108	35%
	Magister/Doctor	16	5%

Duration of using homecare service	<6 months	142	46%
	6 - 12 months	107	35%
	>1 year	58	19%
Frequency of homecare visits in last 6 months	1x	132	43%
	2-3x	94	31%
	> 3x	81	26%
Type of homecare service used	Immune booster	129	42%
	Medical Checkup	63	21%
	Physiotherapy	58	19%
	Doctor Visit	57	19%

Overall, the respondent profile indicates a diverse sample in terms of gender, age, and educational background. This diversity supports the representativeness of the data for examining patient perceptions of homecare services in Indonesia.

4.2 Measurement Model Evaluation

The measurement model was evaluated to assess convergent validity, internal consistency reliability, discriminant validity, and multicollinearity, following PLS-SEM guidelines (Hair et al., 2021).

4.2.1 Convergent Validity and Reliability

Convergent validity was assessed using outer loadings and Average Variance Extracted (AVE), while internal consistency reliability was evaluated using Cronbach's Alpha and Composite Reliability (CR). All indicators demonstrated outer loading values above 0.70, indicating adequate indicator reliability. The constructs also met the recommended thresholds for reliability and convergent validity.

Table 2. Construct Reliability and Validity

Item and Constructs		Outer Loading
Communication & Attitude (CA) (CR= 0,883, AVE= 0,519)		
CA1	The homecare medical staff spend enough time communicating with me during visits.	0.711
CA2	Homecare staff behave in a friendly manner.	0.711
CA3	The homecare staff behave politely.	0.705
CA4	The homecare staff respect the patients and their families.	0.731
CA5	Homecare staff give clear and adequate answers to my questions.	0.708
CA6	Homecare staff communicate with me using language that I can easily understand.	0.773
CA7	Homecare staff help to solve problems encountered during homecare treatment.	0.700
Service Promptness (SP) (CR= 0,857, AVE=0,601)		
SP1	The waiting or response time for homecare service is short.	0.754
SP2	The time it takes for homecare staff to arrive is acceptable.	0.746
SP3	I don't wait long for the homecare staff to attend to me.	0.821
SP4	The duration of each homecare visit is reasonable given the care provided.	0.777
Medical Supply (MS) (CR=0,885, AVE=0,659)		
MS1	The medications or vitamins available during the homecare visit are sufficient	0.821
MS2	The homecare team ensures I receive all necessary medicines and vitamins	0.822
MS3	I can obtain additional medicines or vitamins when needed.	0.776
MS4	The variety of medicines and vitamins provided are sufficient for my care.	0.827
Information transparency & administrative procedure (ITAP) (CR= 0,897, AVE= 0,556)		
ITAP1	The homecare service process is clearly communicated to the patient.	0.751

ITAP2	The patient is clearly informed about their health condition during the homecare visit.	0.790
ITAP3	The patient is clearly informed about the treatment provided at home.	0.709
ITAP4	The patient is clearly informed about the treatment schedule and progress of recovery.	0.739
ITAP5	The patient receives consultation about the homecare services that will be provided.	0.744
ITAP6	The patient is informed about the service costs before homecare procedures are performed.	0.762
ITAP7	The pricing of homecare services is transparent and easy to access by patients.	0.721
Service Value (SV) (CR= 0,898, AVE= 0,594)		
SV1	I find the homecare service to be of great overall value.	0.733
SV2	The homecare service meets most of my care goals.	0.788
SV3	The homecare service meets most of my care needs.	0.751
SV4	I believe the cost of homecare service is worth the benefits received.	0.783
SV5	I feel that the value I receive from the homecare service is high compared to the time spent.	0.802
SV6	I feel that the value I receive from the homecare service is high compared to the effort spent.	0.764
Service Quality (SQ) (CR= 0,879, AVE= 0,645)		
SQ1	The homecare service delivers what it promises.	0.711
SQ2	Homecare staff promptly address any patient issues.	0.778
SQ3	The homecare service is satisfactory from the first visit.	0.761
SQ4	The homecare service is delivered on schedule as promised.	0.724
SQ5	Homecare staff are always ready to assist patients.	0.751
SQ6	Homecare staff are ready to respond to patients' requests.	0.820
Patient Satisfaction (PS) (CR= 0,884, AVE= 0,560)		
PS1	I am satisfied with the overall experience of using homecare services.	0.751
PS2	The medical service I receive from the homecare team is very good.	0.820
PS3	The homecare service continually improves its quality.	0.823
PS4	The homecare service I receive meets my expectations.	0.815
Patient Loyalty (PL) (CR= 0,895, AVE= 0,631)		
PL1	I encourage friends and relatives to use this homecare service.	0.797
PL2	I consider myself loyal to this homecare provider.	0.780
PL3	I would recommend this homecare service to others.	0.763
PL4	This homecare provider is my first choice for home health services.	0.783
PL5	I share positive feedback about this homecare service with others.	0.845
<i>Notes: CR= Composite Reliability; AVE= average variance extracted.</i>		

Source: SmartPLS bootstrapping output (2026).

All CR values exceeded 0.70, and all AVE values were above 0.50, confirming that the measurement model satisfies reliability and convergent validity requirements.

4.2.2 Discriminant Validity (HTMT)

Discriminant validity was assessed using the Heterotrait–Monotrait ratio (HTMT) criterion. According to Hair et al. (2021), HTMT values below 0.90 indicate adequate discriminant validity, particularly when constructs are conceptually related.

Table 3. Discriminant Validity (HTMT)

	CA	SP	MS	ITAP	SV	SQ	PS	PL
CA								
SP	0.827							
MS	0.770	0.726						
ITAP	0.788	0.700	0.694					
SV	0.681	0.699	0.697	0.758				
SQ	0.835	0.789	0.842	0.831	0.841			
PS	0.716	0.661	0.628	0.720	0.693	0.778		
PL	0.649	0.580	0.648	0.735	0.736	0.847	0.709	

Source: SmartPLS bootstrapping output (2026).

As shown in Table 3, HTMT values range from 0.580 to 0.847, remaining below the recommended threshold of 0.90. The highest HTMT value occurs between Service Quality and Patient Satisfaction (HTMT = 0.847), which is theoretically acceptable given their conceptual proximity. Overall, the results confirm that the constructs are empirically distinct and suitable for structural model analysis.

4.2.3 Multicollinearity Testing (VIF)

Multicollinearity was assessed using Variance Inflation Factor (VIF) values for predictors of patient satisfaction and loyalty.

Table 4. Collinearity Statistics (VIF)

	CA	SP	MS	ITAP	SV	SQ	PS	PL
CA						2.67		
SP						2.11		
MS						2.05		
ITAP						2.44		
SV						2.17		
SQ								
PS						1.96		
PL								1.00

All VIF values were below 5.0, indicating no multicollinearity issues among predictors.

4.2.4 Coefficient of Determination (R²)

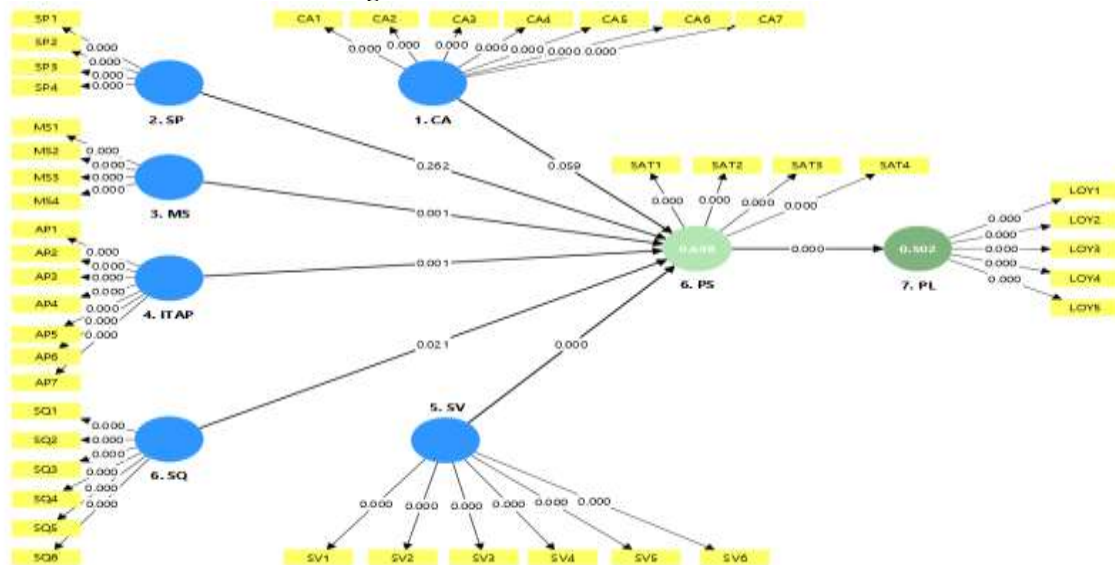
The explanatory power of the structural model was evaluated using the coefficient of determination (R²) for the endogenous constructs. R² indicates the proportion of variance in an endogenous variable that is explained by its exogenous predictors. According to Hair et al. (2021), R² values of approximately 0.75, 0.50, and 0.25 can be interpreted as substantial, moderate, and weak, respectively.

Table 5. Coefficient of Determination (R²)

Endogenous Construct	R ²
Patient Satisfaction (PS)	0.698
Patient Loyalty (PL)	0.502

Source: SmartPLS bootstrapping output (2026).

Figure 2. Structural Assessment Model



The results show that the six service factors—communication & attitude, service promptness, medical supplies, administrative procedure, service value, and service quality—collectively explain 69.8% of the variance in patient satisfaction, indicating a strong explanatory power of the model. This suggests that patient satisfaction in homecare services is largely determined by the proposed service-related dimensions. Furthermore, patient satisfaction explains 50.2% of the variance in patient loyalty, which represents a moderate to strong level of explanatory power. This finding supports the central role of patient satisfaction as a key driver of loyalty in homecare services, reinforcing its function as a mediating construct between service performance and long-term behavioral intentions.

Overall, the R^2 results indicate that the proposed model demonstrates adequate predictive capability and is suitable for explaining satisfaction and loyalty outcomes in the homecare context.

4.3 Hypothesis Testing

Hypothesis testing was performed using bootstrapping with 5,000 resamples in SmartPLS. Path coefficients (β) indicate the strength and direction of relationships. Statistical significance was evaluated using t-values, p-values, and 95% bias-corrected and accelerated (BCa) confidence intervals. A relationship was considered significant when $p < 0.05$ ($t > 1.96$, two-tailed) and when the BCa confidence interval did not include zero. The results are presented in Table 6.

Table 6. Hypothesis Testing Results

Hypothesis	Path	Path Coefficient (β)	T statistics	p-value	95% BCa CI	Result
H1	CA \rightarrow PS	0.158	1.887	0.059	[-0.008, 0.313]	Not Supported
H2	SP \rightarrow PS	0.080	1.121	0.262	[-0.047, 0.230]	Not Supported
H3	MS \rightarrow PS	0.229	3.310	0.001	[0.096, 0.365]	Supported
H4	ITAP \rightarrow PS	0.165	3.264	0.001	[0.076, 0.276]	Supported
H5	SV \rightarrow PS	0.242	4.267	0.000	[0.137, 0.359]	Supported
H6	SQ \rightarrow PS	0.708	11.445	0.000	[0.561, 0.802]	Supported
H7	PS \rightarrow PL	0.142	2.305	0.021	[0.031, 0.269]	Supported

Source: SmartPLS bootstrapping output (2026).

DISCUSSION OF HYPOTHESIS TESTING RESULTS

Communication and Attitude (H1) does not exert a statistically significant influence on Patient Satisfaction ($\beta = 0.158$; $p = 0.059$; 95% BCa CI [-0.008, 0.313]). Although the coefficient is positive, the inclusion of zero within the confidence interval indicates a borderline and statistically unstable effect. This result supports prior evidence indicating that improvements in interpersonal communication alone do not necessarily translate into higher satisfaction outcomes. Sirera et al. (2024) similarly reported that patient-centered communication did not lead to improved patient satisfaction scores, consideration should also be given to the possibility of the effect of information overload, which can be thought of as ‘too much’ information, not only in the amount but also in the intensity and complexity of the information, that makes it difficult to understand the issues(s) being discussed, suggesting that communication quality may function as a baseline service requirement rather than a differentiating determinant of satisfaction.

The non-significant effect can be further contextualized by the generational composition of the sample, which is dominated by respondents aged 18–44, corresponding largely to Gen Z and Millennial cohorts. Prior research shows that Millennials rely heavily on digital technologies and place greater value on on-demand access to health information and services, while Gen Z exhibits high digital health literacy and self-directed information-seeking behavior (Ceconi et al., 2025; Jiao et al., 2023). In such contexts, interpersonal communication attributes—such as politeness, friendliness, and clarity—are more likely to be perceived as standard professional norms. This interpretation is reinforced by Chen et al. (2025), who found that emotional and cognitive communication dimensions were not significantly associated with patient satisfaction, whereas technical and informational aspects were more salient. Consequently, while communication and attitude remain essential for service delivery, they may not differentiate satisfaction once minimum expectations are consistently met.

Similarly, the findings indicate that service promptness does not significantly influence patient satisfaction ($\beta = 0.080$; $p = 0.262$; 95% BCa CI [-0.047, 0.230]). This result is consistent with Gül et al. (2023), who reported that service promptness had a positive but non-significant effect on patient satisfaction, concluding that perceived promptness is not a priority factor in shaping outpatient satisfaction. These findings suggest that promptness operates primarily as a hygiene factor, whereby its absence may generate dissatisfaction, but its presence does not necessarily enhance satisfaction when services are delivered within acceptable timeframes.

Previous healthcare research further indicates that patients are generally unwilling to trade service quality for punctuality alone, implying that timeliness is not a primary determinant of satisfaction when outcome-related considerations dominate (Pockros et al., 2021). Accordingly, service promptness is more likely to be perceived as a standard requirement rather than a differentiating factor in this sample.

Moreover, the predominance of procedure-oriented services—such as immune booster treatments and medical check-ups, which together account for over 60% of service types—further explains the limited role of service promptness. These services are typically standardized, short in duration, and outcome-focused, reducing patients' sensitivity to minor variations in scheduling. As a result, patients are more likely to evaluate satisfaction based on whether the service was delivered effectively and safely, rather than how quickly it was delivered.

In contrast, medicine supply (MS) demonstrates a significant positive effect on patient satisfaction ($\beta = 0.229$; $p = 0.001$; 95% BCa CI [0.096, 0.365]), underscoring the importance of tangible service outcomes in homecare settings. This finding aligns with Gül et al. (2023), who identified medicine supply as the most effective service factor influencing patient satisfaction. Reliable availability of medical items directly supports treatment continuity and reduces patient burden, making it a critical satisfaction driver.

The results also show that information transparency and administrative procedures (ITAP) significantly enhance patient satisfaction ($\beta = 0.165$; $p = 0.001$; 95% BCa CI [0.076, 0.276]). This finding is consistent with outpatient satisfaction research identifying information transparency and administrative procedures as a distinct satisfaction domain (Nguyen et al., 2022). In homecare services, clear administrative processes—such as scheduling, billing, documentation, and information provision—reduce uncertainty and coordination complexity, thereby contributing positively to satisfaction.

Furthermore, service value (SV) significantly influences patient satisfaction ($\beta = 0.242$; $p < 0.001$; 95% BCa CI [0.137, 0.359]) indicating that satisfaction reflects patients' evaluations of benefits relative to costs and effort. This interpretation is directly supported by Ha et al. (2023), who emphasize that perceived service value and service quality represent the two key determinants of satisfaction. When homecare services are perceived as offering favorable cost–benefit trade-offs, satisfaction levels increase accordingly.

Among all predictors, service quality (SQ) exhibits the strongest effect on patient ($\beta = 0.708$; $p < 0.001$; 95% BCa CI [0.561, 0.802]), highlighting its central role in satisfaction formation. This result is consistent with Ha et al. (2023), who position service quality as a primary determinant of satisfaction. Moreover, Huang et al. (2025) provide a complementary mechanism by demonstrating that improvements in service quality enhance patient satisfaction partially through improved information flow, indicating that information flow mediates the relationship between service quality and satisfaction. Collectively, these findings suggest that superior service quality—supported by effective information flow—constitutes the principal pathway through which homecare services generate patient satisfaction.

Finally, patient satisfaction significantly predicts patient ($\beta = 0.142$; $p = 0.021$; 95% BCa CI [0.031, 0.269]) confirming the satisfaction–loyalty relationship in healthcare services. This finding is consistent with Gül et al. (2023), who reported a strong positive effect of patient satisfaction on loyalty. In the homecare context, higher satisfaction is therefore expected to translate into stronger retention intentions and positive word-of-mouth, although the magnitude of this relationship may vary across service settings.

5. CONCLUSIONS

5.1 Conclusions

This study examined the effects of key service-related factors on patient satisfaction and loyalty in the homecare context. The findings demonstrate that medicine supply, information transparency and administrative procedures, service value, and service quality significantly and positively influence patient satisfaction, while communication & attitude and service promptness do not show statistically significant effects.

The results indicate that patient satisfaction in homecare services is predominantly outcome- and value-driven. Tangible service outcomes, reliable service performance, clear administrative processes, and perceived value play a more decisive role in shaping satisfaction than interpersonal communication or timeliness attributes. Although communication quality and promptness are evaluated positively, they appear to function as baseline service expectations, particularly among a respondent group dominated by Gen Z and Millennial patients who are digitally fluent and accustomed to standardized service delivery.

Furthermore, the study confirms that patient satisfaction significantly enhances patient loyalty, reinforcing its central role in sustaining long-term relationships in healthcare services. Overall, the findings highlight that improving patient satisfaction in homecare requires prioritizing service quality, value creation, and reliable clinical support, rather than focusing solely on interpersonal or process-related enhancements.

5.2 Implications

5.2.1 Theoretical Implications

Academically, this research provides empirical support for prior healthcare service research by offering valuable insights into patient satisfaction and patient loyalty within homecare contexts. It broadens the existing body of knowledge on communication & attitude and service promptness, service quality, service value, information transparency and administrative procedures, and medicine supply in homecare while addressing challenges unique to homecare.

5.2.2 Managerial Implications

The findings yield several important managerial implications for homecare providers and healthcare policymakers. First, medical supply readiness should be treated as a core operational priority. Providers must ensure that essential medications, medical equipment, and nutritional support are consistently available during each homecare visit, with sufficient quantity and appropriate variety to meet patient needs. Strengthening logistics

coordination, inventory planning, and rapid replenishment mechanisms can prevent treatment disruptions and substantially enhance patient satisfaction.

Second, information transparency and administrative procedures should be systematically embedded into routine service delivery. Homecare organizations need to standardize clear communication regarding service processes, treatment plans, recovery progress, visit schedules, and service costs prior to care provision. Integrating clinical explanations with administrative guidance, such as pre-service consultation and transparent pricing, can reduce uncertainty, build trust, and improve satisfaction.

Third, service value creation requires aligning service outcomes with patients perceived benefits relative to the time, effort, and costs incurred. Managers should focus on ensuring that homecare services effectively meet patients' health goals while clearly justifying both financial and non-financial sacrifices. The development of personalized care plans bundled services, and flexible visit arrangements may further strengthen patients' value perceptions.

Fourth, service quality and operational consistency must be continuously reinforced. Ensuring that services are delivered as promised, according to schedule, and with prompt resolution of patient issues is essential. Training programs that emphasize reliability, professional competence, and readiness to assist—particularly from the first visit—can improve the overall service experience and patient satisfaction.

Although Communication & Attitude (CA) and Service Promptness (SP) are not significant direct predictors of satisfaction, the results indicate a threshold (must-be) effect. These dimensions operate as non-negotiable minimum standards and should be maintained in homecare services: their absence may trigger dissatisfaction, yet their presence alone does not generate satisfaction unless accompanied by stronger performance in medical supply, administrative transparency, service value, and service quality.

5.3 Limitations and Future Research

This study has several limitations. First, its cross-sectional design restricts causal inference over time. Second, the use of purposive sampling may limit the generalizability of the findings beyond the observed population. Future research is encouraged to adopt longitudinal designs, broaden geographical coverage, and incorporate additional constructs, such as trust, perceived risk, technology-enabled care, and clinical outcomes, to further enrich understanding of patient satisfaction and loyalty in homecare services.

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