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Building Trust in Pharmacy: Understanding the Intricate Process

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ABSTRACT

Customer satisfaction serves as a key indicator of success in pharmaceutical services and is closely linked to trust in the pharmacy. Satisfaction with pharmaceutical services plays a crucial role in encouraging patient adherence to healthcare recommendations. This study aims to explore the relationship between customer satisfaction and trust in pharmacies. Employing a quantitative approach with a cross-sectional survey design, the research was carried out in June 2023 with a sample of 252 community pharmacy customers in Magelang, Indonesia, selected through purposive sampling. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that infrastructure, medication information, and trust in pharmacists significantly impact customer satisfaction ($p<0.05$). Furthermore, consumer satisfaction influences trust in pharmacies, which in turn affects trust in individual pharmacists. Trust is a dynamic element of service that evolves according to consumer needs, market conditions, and pharmacy competition, highlighting its importance in service management.

Keywords: Indonesia, Trust in pharmacy, Trust in pharmacist, Pharmacy customer, Satisfaction

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Introduction

Pharmacies, as primary distributors of medicines and medical devices within the business sector, have experienced notable growth over recent years, as reflected in Indonesia's increasing number of pharmacies from 16,725 in 2011 to 26,658 in 2018 [1]. The Universal Health Coverage (UHC) era has further expanded business opportunities for pharmacies, intensifying competition. However, Public Health Centers (PHCs) and hospitals also provide UHC medicines, posing significant competition for community pharmacies. In response, pharmacies must shift the paradigm of pharmacist services from mere supervision to comprehensive, face-to-face service delivery (2018).

Trust is a crucial element in the healthcare provider-patient relationship, representing patients' confidence that healthcare providers will act in their best interest [2]. Patients with low trust perceive service deficiencies more strongly [3]. While trust has been extensively explored in physician-related studies [4, 5], it has received limited attention in pharmacy service research. Patient trust is vital, as higher trust correlates with greater satisfaction, adherence to treatment, and improved clinical outcomes compared to patients with low trust [3, 6-8] Thus, identifying factors that enhance trust in pharmacists is essential for achieving customer satisfaction and loyalty to pharmacies.

Factors promoting trust in healthcare providers include perceived competence and positive attitudes in meeting patients' needs [9-11]. Positive patient relationships can also motivate healthcare providers, linking workplace trust to provider-patient trust [12]. This framework is useful for analyzing interpersonal and organizational elements of trust relationships, including trust between providers and patients [13]). Understanding service quality and satisfaction is critical for designing strategies to improve healthcare services [14]. Previous research has

investigated patient satisfaction in pharmacy settings [12-15], yet few studies have examined factors specifically fostering trust in pharmacists.

With the rise of digital pharmacies, conventional pharmacies must adopt effective marketing strategies to maintain consumer trust, loyalty, and adaptability to market changes. Studying the mechanisms of building and sustaining trust in pharmacies is therefore essential. Research on trust development in pharmacy settings, particularly in developing countries, remains limited [16]. This study aims to examine how product availability, communication, infrastructure, and medication information influence customer satisfaction and trust in pharmacists, providing a more comprehensive understanding of trust development in pharmacy services.

Materials and Methods

Study design

This cross-sectional study was conducted in June 2023 among community pharmacy customers in Magelang, Indonesia, using purposive sampling. The study included 252 respondents who met the following criteria: aged over 17 years, familiar with the terms of the study, willing to participate, and had visited the pharmacy at least twice.

Research instruments

The questionnaire consisted of seven constructs: satisfaction (3 items), trust in pharmacy (3 items), trust in pharmacist (3 items), infrastructure (6 items), product availability (3 items), communication (3 items), and medication information (4 items). Items were adapted from Castaldo *et al*. [17] and Fahmi Khudair & Raza [16] . To ensure accuracy and cultural relevance, the questionnaire was translated into Indonesian by a linguist, evaluated by two experts (community pharmacists and academics) for clarity, simplicity, and cultural appropriateness, and pre-tested for readability. A total of 25 items were finalized, rated on a four-point Likert scale from 1 (fully agree) to 4 (fully disagree).

Data analysis

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 3.0 software. The analysis involved two stages: evaluating the measurement model (outer model) and the structural model (inner model). PLS-SEM is widely used in marketing research to predict path coefficients in structural models and is suitable for modeling latent constructs with small samples and non-normal data distributions [18].

Results and Discussion

Table 1 presents the demographic profile of respondents. The majority were female (54.8%), aged 18–25 years (52.4%), and had completed senior high school (49.2%). Students comprised 34.9% of respondents, and most respondents (67.5%) reported low monthly incomes.

Table 1.The respondents' demographic profile.

Characteristic	Category	n (%)
Sex	Male	114 (45.2%)
	Female	138 (54.8%)
Age	18–25 years	132 (52.4%)
	26–35 years	42 (16.7%)
	36–45 years	38 (15.1%)
	46–55 years	23 (9.1%)
	56–65 years	13 (5.2%)
	>65 years	4 (1.6%)
Education	Elementary school	19 (7.5%)
	Junior high school	31 (12.3%)
	Senior high school	124 (49.2%)
	Diploma/bachelor	77 (30.6%)
	Master	1 (0.4%)
Occupation	Students	88 (34.9%)

	Government employee	14 (5.6%)
	Entrepreneur	50 (19.8%)
	Private employee	52 (20.6%)
	Farmer	20 (7.9%)
	Other	28 (11.2%)
Monthly income (Indonesian Rupiah)	≤1.500.000	170 (67.5%)
	1.500.00–2.500.000	56 (22.2%)
	2.500.000–3.500.000	15 (6.0%)
	>3.500.000	11 (4.4%)

Outer model analysis

Based on the results shown in **Tables 2 and 3**, the evaluation of the outer model confirms that the measurement model adequately fulfills the standards for convergent validity as well as discriminant validity.

Table 2. Convergent validity.

Variable	Item code	Factor loading	AVE	Composite reliability
Product availability	AVA1		0.614	0.827
	AVA2	0.804		
	AVA3	0.753		
Communication	COM1	0.820	0.686	0.868
	COM2	0.838		
	COM3	0.827		
Infrastructure	INF1	0.692	0.567	0.887
	INF2	0.761		
	INF3	0.792		
	INF4	0.736		
	INF5	0.791		
	INF6	0.741		
Medication information	MED1	0.589	–	–
	MED2	0.803		
	MED3	0.787		
	MED4	0.748		
Satisfaction	SAT1	0.863	0.708	0.879
	SAT2	0.855		
	SAT3	0.806		
Trust in pharmacist	TIP1	0.867	0.693	0.871
	TIP2	0.859		
	TIP3	0.767		
Trust in pharmacy	TRS1	0.833	0.671	0.859
	TRS2	0.861		
	TRS3	0.761		

Note: AVA (Product Availability), COM (Communication), INF (Infrastructure) MED (Medication Information), SAT (Satisfaction), TIP (Trust In Pharmacist), TRS (Trust In Pharmacy).

Table 3. Discriminant validity.

	Communication	Infrastructure	Medication information	Product availability	Satisfaction	Trust in pharmacist	Trust in pharmacy
Communication	0.828						
Infrastructure	0.568	0.753					
Medication Information	0.572	0.573	0.736				
Product Availability	0.590	0.666	0.541	0.784			
Satisfaction	0.431	0.604	0.525	0.449	0.842		

Trust In Pharmacist	0.429	0.492	0.479	0.476	0.476	0.832	
Trust In Pharmacy	0.431	0.528	0.534	0.517	0.584	0.677	0.819

Note: In this study, data were analyzed using the PLS-SEM approach via SmartPLS 3.0 software, which involves two main steps: evaluating the measurement model (outer model) and assessing the structural model (inner model).

The loading factor indicates how well an item represents its corresponding latent variable, with values above 0.70 considered excellent, while values between 0.50 and 0.60 are acceptable. Average Variance Extracted (AVE) assesses the proportion of Variance in the indicators explained by the latent variable relative to measurement error; an AVE above 0.50 signifies adequate convergent validity, meaning the latent variable accounts for more than half of the Variance in its indicators. Composite reliability measures the overall consistency of the construct, with values above 0.70 preferred, though 0.60 is considered tolerable.

Discriminant validity is evaluated by comparing the square root of AVE for each construct against its correlations with other constructs in the model; satisfactory discriminant validity is achieved when the square root of AVE exceeds the inter-construct correlations.

Structural model (inner model) analysis

The inner model examines the relationships among latent variables in the structural framework. This study analyzed three main models: Model I (satisfaction), Model II (trust in pharmacist), and Model III (trust in pharmacy). The model results and hypothesis tests are summarized in **Table 4** and illustrated in **Figure 1**, both providing consistent interpretations.

Model I (Satisfaction): The R^2 value is 0.443, indicating that 44.3% of the Variance in customer satisfaction is explained by infrastructure, communication, medication information, product availability, and trust in pharmacists, while 55.7% is influenced by other factors not included in the model.

Model II (Trust in Pharmacist): The R^2 value is 0.303, showing that 30.3% of the Variance in trust toward pharmacists is accounted for by infrastructure, communication, medication information, and product availability, with the remaining 69.7% explained by external variables.

Model III (Trust in Pharmacy): The R^2 value is 0.546, meaning that satisfaction and trust in pharmacists together explain 54.6% of the Variance in trust toward the pharmacy, while 45.4% is attributed to other variables outside the model.

Table 4.The result of path analysis.

Model	Hypothesis	Relationship			R-square	Coefficients		Conclusion
						Original Sample	P-value	
I	H1	Infrastructure	à	Satisfaction	0.443	0.378	0.000	Supported
	H2	Product availability	à	Satisfaction		-0.033	0.635	Not supported
	H3	Communication	à	Satisfaction		0.007	0.920	Not supported
	H4	Medication information	à	Satisfaction		0.255	0.000	Supported
	H5	Trust in pharmacist	à	Satisfaction		0.189	0.001	Supported
II	H6	Infrastructure	à	Trust in pharmacist	0.303	0.232	0.003	Supported
	H7	Product availability	à	Trust in pharmacist		0.166	0.032	Supported
	H8	Communication	à	Trust in pharmacist		0.112	0.125	Not supported
	H9	Medication information	à	Trust in pharmacist		0.147	0.039	Supported
III	H10	Satisfaction	à	Trust in pharmacy	0.546	0.339	0.000	Supported

H11	Trust in pharmacist	à	Trust in pharmacy	0.516	0.000	Supported

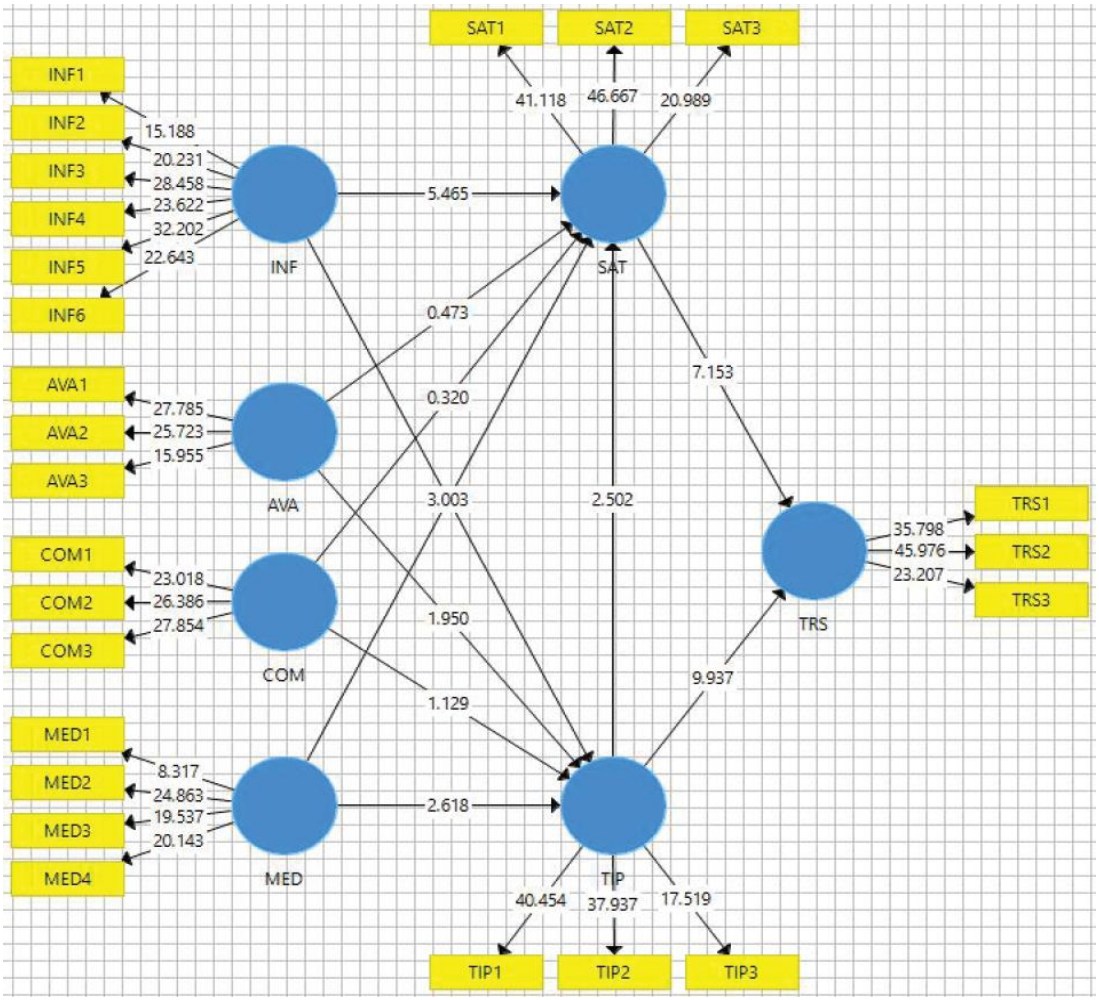

Figure 1. Path coefficients and t-statistics.

The analysis showed that infrastructure significantly influenced both customer satisfaction and trust in pharmacists ($p<0.05$), which aligns with findings by Castaldo *et al.* [17]. Other factors contributing to satisfaction include the availability of facilities, cleanliness, and the comfort of the waiting area [19]. The convenience and overall atmosphere of the pharmacy play an essential role in shaping customer experience, and pharmaceutical retailers must tailor store attributes to their target consumers [18].

In contrast, communication did not have a significant effect on satisfaction or trust in pharmacists ($p>0.05$), which is surprising and inconsistent with prior studies [17, 19, 20]. Previous research emphasizes that nonverbal communication is as important as verbal communication, and poor interactions between pharmacists and patients are often linked to inadequate nonverbal cues. Effective provider-patient communication contributes to satisfaction, treatment adherence, and improved health outcomes [20]. Studies by Antari *et al*. [22] show that empathy and closeness enhance patient trust, while Perrault and Beal [21] note that patients appreciate proactive pharmacist involvement in their care. Improving communication has been found to positively influence patient health outcomes [23].

Medication information had a significant positive effect on both satisfaction and trust in pharmacists ($p<0.05$), consistent with earlier research ([15, 16, 24]. According to Tjong, consumers rely on pharmacists for guidance on non-prescription drugs, drug administration, and managing minor illnesses such as colds, headaches, diarrhea, and constipation, though information on herbal products is less known [25]. Lexchin and Mintzes [26] found that consumers trust information on drug usage, side effects, and pricing for prescription medications. Abdullah *et al*. and Sridevi *et al*. [27] emphasized that while customers value drug information services, they often doubt

pharmacists' ability to deliver them effectively; thus, pharmacists must actively provide accurate drug information to earn consumer trust.

Product availability significantly affected trust in pharmacists ($p<0.05$) but did not significantly influence satisfaction ($p>0.05$). This differs from earlier studies that reported a positive association between patient satisfaction and drug supply [28, 29]. As pharmacy services expand beyond medicine supply, patients increasingly value additional factors such as counseling, medication monitoring, and patient-centered care [16]. Consequently, pharmacy services must evolve from focusing solely on drug management to offering comprehensive care that supports safe and rational drug use and improves patients' quality of life.

Limitations of this study include a relatively small and potentially unrepresentative sample, a short data collection period, and modest R^2 values (44.3%, 30.3%, 54.6%), suggesting that other unmeasured factors also influence satisfaction and trust in pharmacies. Future research should employ larger, more representative samples, longitudinal designs, and explore additional variables, including emotional factors, that may impact customer satisfaction and trust.

Conclusion

Customer satisfaction was significantly influenced by infrastructure, medication information, and trust in pharmacists. Trust in pharmacists was affected by infrastructure, medication information, and product availability, while communication showed no significant impact on either satisfaction or trust. Trust in the pharmacy itself was shaped by both customer satisfaction and trust in pharmacists. Trust is dynamic, evolving with consumer needs, market conditions, and pharmacy competition. Among service components, infrastructure and provision of medication information were key drivers of both trust in pharmacists and customer satisfaction.

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