

The complex mechanism of developing trust in pharmacy

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Abstract

Indicators of the success in pharmaceutical services at pharmacy can be seen from customer satisfaction which is influenced by trust in pharmacy. The existence of customer satisfaction related to pharmaceutical services is potentially important in patient adherence to their health care. The aims of this study is to examine the relationship model of satisfaction and trust in pharmacy. This research is a quantitative study with a survey design using a cross-sectional approach. It was conducted in June 2023 on a sample of 252 customers of community pharmacies in Magelang, Indonesia. The sampling technique used in this study was purposive sampling method. Data analysis using Partial Least Square Path Modeling (PLS-SEM). The results of hypothesis testing based on probability values ($p < 0.05$) indicate that the infrastructure, medication information and trust in a pharmacist had an effect on customer satisfaction. Trust in pharmacies that are influenced by consumer satisfaction can influence consumers to trust pharmacists. Trust is a service component that is dynamic in line with consumer needs following market conditions and pharmacy competition. Therefore it must be considered.

Keywords

trust in pharmacist, trust in pharmacy, satisfaction, pharmacy customer, Indonesia

Introduction

The pharmacies, as the main distribution facility for drugs and medical devices from the perspective of the business world, continue to experience developments. This can be seen from the increasing number of pharmacies in Indonesia in 2011–2018. In 2011 there were 16,725 pharmacies, in 2013 there were 21,058 pharmacies, in 2015 there were 25,339 pharmacies, and in 2018 there were 26,658 pharmacies throughout Indonesia (Athiyah et al. 2019). The pharmacy business opportunities in the Universal Health Coverage (UHC) era are more wide open and the healthy business competition between pharmacies

will certainly be tighter. However, Public Health Center (PHC) and Hospitals also serve UHC medicines. This can be a strong competitor for pharmacies. With these conditions, community pharmacy must change the paradigm of pharmacist services from supervisory to full-service provider or face to face service (2018).

Trust is an important component of the healthcare provider-patient relationship that has emerged in the literature. In healthcare service, trust has been defined as the patient's confidence that health workers as service providers will do the best for the patients (Anderson and Dedrick 1990). Negative service delivery will be more perceivable to patients who have a relationship with low trust (Hall et

al. 2001). In physician literature, trust has been extensively studied (Hillen et al. 2011; Rolfe et al. 2014). However, in the pharmacy services literature; trust received little attention. Therefore, it is important to consider patient confidence because patients who trust their clinicians usually demonstrate increased satisfaction, treatment adherence, and better clinical outcomes compared to patients who have low trust (Safran et al. 1998; Hall et al. 2001; Thom et al. 2004; Farin et al. 2013). Based on this, aspects or components that can increase trust in pharmacists need to be considered. This is important to get consumer satisfaction therefore consumers can trust in pharmacy.

The factors that enable the development of trust in the healthcare provider can allow patients to assume that health workers are sufficiently competent and have a positive attitude to meet the needs and expectations of health care for patients (Mechanic 1998; Kramer 1999; Gilson 2006). Moreover, positive relationships with patients can also motivate health workers, which leads to interactions between trust in the workplace and provider-patient trust (Gilson et al. 2005). This framework is useful in analyzing and identifying interpersonal and organizational elements from aspects of trust relationships, including trust between providers and patients (Okello and Gilson 2015). Understanding satisfaction and service quality have been recognized to be critical to developing service improvement strategies (Gill and White 2009). Several studies related to patient satisfaction and the factors that influence it with pharmacy settings have been carried out (Larson et al. 2002; Gilson et al. 2005; Gill and White 2009; Okello and Gilson 2015). However, there are some limitations in their research that is not measuring the factors that can foster trust in pharmacists.

Given the recent changes in pharmaceutical practices in the digital era especially since the advent of e-pharmacy, conventional pharmacies need to determine more appropriate marketing strategies therefore consumers continue to trust and have loyalty to pharmacies and are committed to changes in the latest market conditions. Therefore, it is important to study the mechanism of building and maintaining trust in pharmacies. To our knowledge, the number of studies discussing this field of research within pharmacy settings in the developing countries is still very limited (Fahmi Khudair and Raza 2013). The purpose of this study was to determine the effect of product availability, communication, infrastructure, and medication information on satisfaction and trust in pharmacist. In addition, this study provides a more comprehensive explanation regarding the development of trust in pharmacy.

Method

Study design

This study was a cross-sectional study. The survey was conducted in June 2023. The study population was customers of community pharmacies in Magelang. The

sampling technique used in this study was purposive sampling method. The samples were used in this study of 252 respondents. The inclusion criteria were: participants know the terms and conditions and are willing to be research respondents, more than 17 years old, pharmacy customers who had visited at least two times and willing to participate in the study.

Research instruments

This questionnaire contains seven constructs. Statements related to constructs: satisfaction (3 items), trust in pharmacy (3 items), trust in pharmacist (3 items), infrastructure (6 items), product availability (3 items), communication (3), items were adapted from Castaldo (Castaldo et al. 2016), medication information (4 items) were adapted from Khudair (Fahmi Khudair and Raza 2013). First, a linguist was asked to translate the questionnaire into Indonesian to avoid translation errors and ensure the meaning appropriateness. Second, in evaluating words, simplicity, clarity, and cultural equality, two experts were involved (community pharmacist practitioners and academics). Pre-tests were conducted to ensure the readability, simplicity, and clarity. A total of 25 items were finally selected and measured on a four-point Likert scale from 1 (fully agree) to 4 (fully disagree).

Data analysis

The data analysis in this study used the PLS-SEM method using the Smart-PLS 3.0 software. PLS-SEM includes 2 stages, namely the analysis of the measurement model (outer model) and the structural model (inner model). The results of the analysis of the research model are used to obtain an explanation based on the quantitative data that has been obtained. PLS is a technique used to predict path coefficients in structural models and has been widely used in marketing literature. PLS has the ability to model latent constructs in non-normality conditions and does not require large samples (Jack and Ling 2016).

Results and discussion

Table 1 shows the demographic profile of the respondents. More than half of respondents were females (54.8%). Most of the respondents aged 18 to 25 years (52.4%) and 49.2% of the respondents had last education was senior high school. The total of 34.9% respondents were students in this study. Viewed from monthly income, most of the respondents had low income which were (67.5%).

Outer model analysis

The results of the outer model analysis in Table 2 and Table 3 show that the measurement model has met the convergent and discriminant validity requirements.

The loading factor is a parameter used to indicate the suitability level of an item explaining a variable. An item can explain a variable very well if the loading factor value is more than 0.70. However, in range 0.50 to 0.60 is tolerable.

AVE is used to measure the number of variances that can be compared to variances caused by measurement errors. The AVE value must be greater (>0.5) because this value represents a convergent validity which means that one latent variable is able to explain more than half the variants of its indicators in the average. Composite Reliability can be used to measure the true reliability value of a model. The composite reliability value should be greater than 0.7 but a value of 0.6 is acceptable.

Discriminant Validity can be done by comparing the square root of average variance extracted (AVE) value with the correlation between other variables in the model, so the discriminant validity value is said to be good if the AVE value is above 0.5.

Inner model analysis

This model focuses on the latent variable structure model. The inner model is the part of the model that describes the relationships among the latent variables that make up the model. There are 3 core models in this study, namely Model I (satisfaction), Model II (trust in pharmacist), and Model III (trust in pharmacy). The model and the results of hypotheses testing are shown in Table 4 and presented with different outputs in Fig. 1, but both have the same interpretation. Model I shows the magnitude of R2 (coefficient of determination) is 0.443, these value indicates that 44.3% of the variance of satisfaction can be explained by variance of the five independent variables namely infrastructure, communication, medication information,

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)	$\leq 1.500.000$	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%)

product availability, and trust in pharmacists while the remaining 55.7% is explained by other variables outside the model. Model II shows that the magnitude of R2 is 0.303, this value indicates that 30.3% of the variance in trust in pharmacists can be explained by infrastructure,

Table 2. Convergent validity.

Variable	Item code	Factor loading	AVE	Composite reliability
Product availability	AVA1	0.804 0.753	0.614	0.827
	AVA2			
	AVA3			
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: The data analysis in this study used the PLS-SEM method using the Smart-PLS 3.0 software. PLS-SEM includes 2 stages, namely the analysis of the measurement model (outer model) and the structural model (inner model).

Table 4. The result of path analysis.

Model	Hypothesis	Relationship		R-square	Coefficients		Conclusion	
			→		Original Sample	P-value		
I	H1	Infrastructure	→	Satisfaction	0.443	0.378	0.000	Supported
	H2	Product availability	→	Satisfaction		-0.033	0.635	Not supported
	H3	Communication	→	Satisfaction		0.007	0.920	Not supported
	H4	Medication information	→	Satisfaction		0.255	0.000	Supported
	H5	Trust in pharmacist	→	Satisfaction		0.189	0.001	Supported
II	H6	Infrastructure	→	Trust in pharmacist	0.303	0.232	0.003	Supported
	H7	Product availability	→	Trust in pharmacist		0.166	0.032	Supported
	H8	Communication	→	Trust in pharmacist		0.112	0.125	Not supported
	H9	Medication information	→	Trust in pharmacist		0.147	0.039	Supported
III	H10	Satisfaction	→	Trust in pharmacy	0.546	0.339	0.000	Supported
	H11	Trust in pharmacist	→	Trust in pharmacy		0.516	0.000	Supported

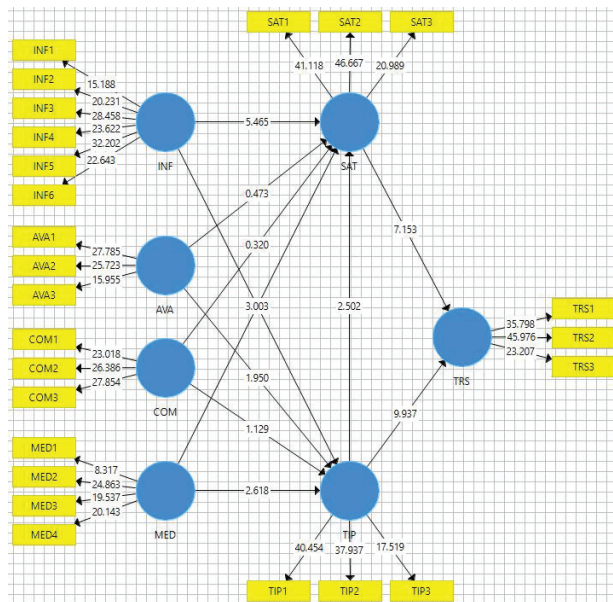


Figure 1. Path coefficients and t-statistics.

communication, medication information, and product availability while the remaining 69.7% can be explained by other variables outside the model. Model III shows the magnitude of R2 is 0.546. This value indicates that 54.6% of the variance in trust in pharmacy can be explained by satisfaction and trust in pharmacists while the remaining 45.4% is explained by other variables outside the model.

The infrastructure had a significant effect on satisfaction and trust in pharmacist ($p < 0.05$), these findings are in accordance with research conducted by Castaldo (Castaldo et al. 2016). Other factors that can also affect customer satisfaction include facilities, clean location, and the comfort of the waiting room (Pribadi et al. 2019). The convenience and atmosphere of the store have an important role in predicting customer experience. Pharmaceutical retailers must also consider target consumers in determining store attributes (Jack and Ling 2016). Communication had non-significant effect on satisfaction and trust in pharmacist ($p > 0.05$). This finding is certainly very surprising because it is not consistent with the results of Pribadi, Castaldo, and Wang studies (Castaldo et al. 2016; Wang et al. 2018; Pribadi et al. 2019). Many studies show that nonverbal communication is as important as verbal communication. The poor relationship between the pharmacist and the patient is the result of poor nonverbal communication. Provider-patient communication is a factor that contributes to patient satisfaction, adherence, and health outcomes (Wang et al. 2018). Research conducted by Antari et al. which examines the factors that influence the level of trust when observed in terms of communication, they found the empathy and closeness affect the level of patient trust (Antari et al. 2019). Research by Perrault indicates that many patients appreciate the active role of pharmacists in their care, most patients prefer to take the less active role (Perrault and Beal 2018). According to Gordon et

al, improving communication is more valuable and able to affecting health outcomes of patients (Gordon et al. 2015).

Medication information had a significant effect on satisfaction and trust in pharmacist ($p < 0.05$). This finding consistent with previous studies Khudair, Larson, and Panvelkar (Larson et al. 2002; Panvelkar et al. 2009; Fahmi Khudair and Raza 2013). According to Tjong, consumer trust towards types of information from pharmacists included advice on non-prescription drugs, how to take drugs, and how to deal with minor illnesses such as headaches, coughs, and colds, diarrhea, constipation, and hemorrhoids. However, information regarding herbal products are still unknown by consumers (Allam et al. 2014). Another study conducted by Lexcin et al. found that the types of information trusted by consumers include information on how to consume drugs, side effects of drugs, and the price of drugs purchased by prescription from a doctor (Lexchin and Mintzes 2002) Research conducted by Abdullah et al. Stated that the majority of pharmacy customers believe that drug information services can be beneficial for consumers. However, pharmacy consumers do not believe in the pharmacist's ability to provide drug information services. Therefore, to gain the trust of pharmacy consumers, pharmacists must play an active role in providing drug information services in pharmacies (Sridevi et al. 2017).

Product availability had a significant effect on trust in pharmacist ($p < 0.05$). However, it had no significant effect on satisfaction ($p > 0.05$). This finding is contrary to studies by MacKeigan and Larson which found a positive relationship between patient satisfaction and drug supply (Mackeigan and Larson 1989). The availability of over-the-counter (OTC) drugs has a significant relationship with patient satisfaction (Kamei et al. 2001). The context of pharmaceutical services is now expanding not only to the supply of medicines but also patients are now looking for other factors when they visit the pharmacy (Fahmi Khudair and Raza 2013). Therefore, service activities that initially focused on drug management as a commodity must be changed to a comprehensive service that includes providing information to support the correct and rational use of drugs, monitoring drug use, preventing the possi-

bility of medication errors, and patient-centered care to improve the quality of life of patients.

Several limitations in this study include: the sample size of this study was less representative of the population, the research period is relatively short, R-Square values which were relatively small 44.3%; 30.3%; and 54.6% showed that there are still many other variables outside this study that affect customer satisfaction and trust in pharmacy. Further research needs to consider the use of a larger sample, the use of the longitudinal survey method is likely to provide better results, other independent variables not measured in this study need to be investigated. Emotional factors seem to have an influence on satisfaction and trust.

Conclusion

The infrastructure, medication information and trust in a pharmacist had an effect on customer satisfaction. Infrastructure, product availability, and medication information had an effect on trust in pharmacist. However, communication had no effect on customer satisfaction and trust in pharmacist. Trust in pharmacy was affected by customer satisfaction and trust in pharmacist. Trust is dynamic in line with consumer needs following market conditions and pharmacy competition. Service components that give rise to trust in pharmacists and satisfaction were infrastructure and medication information.

Ethics statement

This study was approved by the Faculty of Medicine Ethics Committee of Universitas Islam Sultan Agung, with reference number No. 188/V/2023/ Bioethics Commission.

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