

Consumer Preferences in Choosing Pharmacies in Semarang City: Comparative Study between Independent and Franchise Pharmacies

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Abstract

Independent and franchise pharmacies have different characteristics, leading to variations in community preferences when choosing pharmaceutical services. This study aimed to analyze factors influencing community preferences in choosing pharmacy types in Semarang City. The study employed a cross-sectional observational analytic design with 150 respondents using univariate, bivariate (Chi-Square), multivariate (logistic regression), and stratified Mantel-Haenszel analyses. Bivariate analysis showed that pharmacy location, drug price perception, pharmacy appearance, and additional services were significantly associated with pharmacy type selection ($p < 0,001$). Multivariate analysis identified drug price perception ($OR = 0,098$; $p = 0,001$), pharmacy appearance ($OR = 3,893$; $p = 0,004$), and additional services ($OR = 2,876$; $p = 0,023$) as independent factors. Drug price perception was the most dominant factor ($Wald = 19,458$). Mantel-Haenszel analysis confirmed pharmacy location ($OR \text{ difference} = 98\%$) and additional services ($OR \text{ difference} = 98\%$) as confounding variables in the relationship between drug price perception and pharmacy type selection. Independent pharmacies were preferred by price-sensitive consumers, while franchise pharmacies attracted consumers prioritizing physical appearance and additional services.

Key words: confounding variable; consumer preferences; drug price perception; franchise pharmacy; independent pharmacy

Introduction

Community pharmacy has been recognized as the most accessible point of primary health care, with pharmacy visit rates proven higher than doctor visits at a ratio of 1,7:1 (Valliant et al., 2022). In Indonesia, the number of pharmacies has reached over 32.110 units as of 2025

(Chameleon Pharma, 2025), reflecting growing demand for accessible pharmaceutical services. The practice of pharmacy has undergone a significant transformation from a product-oriented to a patient-oriented approach, expanding the role of pharmacists in the healthcare system (Hermansyah et al., 2020).

In Indonesia, community pharmacies are categorized based on ownership models. Independent pharmacies are owned and operated by pharmacists individually with independent operational decisions, while franchise pharmacies operate under standardized brand systems of franchise companies such as K-24 and Viva Apotek (Athiyah et al., 2019). As of 2025, approximately 77,8% of pharmacies in Indonesia are independent pharmacies (Bahar et al., 2025). Semarang City was selected as the research setting as it has the highest number of pharmacies in Central Java, increasing from 328 units in 2021 to 433 units in 2024, with the majority being privately owned (BPS, 2024; Dinas Kesehatan Kota Semarang, 2024). This ratio far exceeds the recommended ideal ratio of 1:2.000 population (Sanjiwani & Astuti, 2024), indicating high demand for pharmaceutical services and the potential for diverse consumer preferences.

The differences in characteristics between independent and franchise pharmacies, including management systems, service standards, pricing, and physical appearance potentially influence consumer preferences. Previous studies have examined patient satisfaction with pharmaceutical services, but comparisons of consumer preferences between independent and franchise pharmacies remain limited. Therefore, this study aims to analyze factors influencing community preferences in choosing pharmacy types in Semarang City.

Methods

This study employed a cross-sectional observational analytic design. The study was conducted in Semarang City from January to February 2026. The study population was residents who had visited both independent and franchise pharmacies in Semarang City. A sample of 150 respondents was recruited using snowball sampling technique. Sample size was determined using the Lameshow formula for unknown population, yielding a minimum of 100, increased to 150 to account for potential dropout.

Inclusion criteria were: domicile in Semarang City, had visited both pharmacy types, aged ≥ 17 years, willing to participate, and able to use a smartphone. Exclusion criteria were healthcare workers and those who had never visited a pharmacy. Data were collected using a structured questionnaire via Google Form with a 4-point Likert scale (Strongly Disagree=1 to Strongly Agree=4), consisting of 21 items covering seven independent variables: pharmacy location, drug price perception, drug availability, service quality, pharmacy appearance, additional services, and pharmacy reputation. The dependent variable was pharmacy type selection (independent vs. franchise pharmacy).

Instrument validity was confirmed with r-values exceeding the r-table (0.361), and reliability was confirmed with Cronbach's alpha > 0.60 for all variables. Data analysis was performed in three stages: (1) univariate analysis for frequency distribution; (2) bivariate analysis using Chi-Square test (with Fisher's Exact as alternative when assumptions were violated) and Mantel-Haenszel stratified analysis to identify confounding variables (threshold: OR difference $> 10\%$); and (3) multivariate analysis using logistic regression for variables with $p < 0.25$ in bivariate analysis.

Results and Discussion

Respondent Characteristics. The majority of respondents were aged 21–30 years (44%), female (56,7%), students/university students (34,7%), with education level of senior high school (39,3%) or bachelor's degree (42,7%), and income in the range of Rp1.000.000–Rp3.000.000 per month (25,3%). Overall, 82 respondents (54,7%) chose independent pharmacies and 68 respondents (45,3%) chose franchise pharmacies.

Table 1 Bivariate Analysis Results

Variable	p-value	RP/OR
Pharmacy Location	< 0,001	1,749
Drug Price Perception	< 0,001	4,926
Drug Availability	1,000	-
Service Quality	1,000	-
Pharmacy Appearance	< 0,001	1,905
Additional Services	< 0,001	1,761
Pharmacy Reputation	constant	-

Bivariate analysis results are presented in Table 1. Four variables showed significant associations with pharmacy type selection: pharmacy location ($p<0,001$; $RP=1,749$), drug price perception ($p<0,001$; $RP=4,926$), pharmacy appearance ($p<0,001$; $RP=1,905$), and additional services ($p<0,001$; $RP=1,761$). Drug availability ($p=1,000$), service quality and staff ($p=1,000$), and pharmacy reputation (constant) showed no significant associations.

Table 2 Multivariate Logistic Regression Results

Variable	B	Wald	Sig.	OR (Exp B)	95% CI
Constant	-1,151	-	0,197	0.316	-
Pharmacy Location	1,185	3,365	0,067	3,271	0,922–11,601
Drug Price Perception	-2,323	19,458	0,001	0,098	0,035–0,275
Pharmacy Appearance	1,359	8,099	0,004	3,893	1,527–9,926
Additional Services	1,056	5,193	0,023	2,876	1,159–7,132

Multivariate logistic regression results (Table 2) showed three variables independently influencing pharmacy type selection: drug price perception ($OR=0,098$; $p=0,001$), pharmacy appearance ($OR=3,893$; $p=0,004$), and additional services ($OR=2,876$; $p=0,023$). Pharmacy location was no longer significant ($p=0,067$) after controlling for other variables. The Nagelkerke R^2 value of 0,463 indicates that the model explains 46.3% of the variation in pharmacy type selection. The logistic regression model is: $Y = -1,151 + 1,056 \text{ (Additional Services)} + 1,185 \text{ (Pharmacy Location)} + 1,359 \text{ (Pharmacy Appearance)} - 2,323 \text{ (Drug Price Perception)}$.

Table 3 Mantel-Haenszel Stratified Analysis Results

Confounding Variable	cOR	ORmh	Difference (%)	Conclusion
Pharmacy Location	5,867	0,087	98%	Confounder
Additional Services	4,233	0,089	98%	Confounder

Mantel-Haenszel stratified analysis (Table 3) confirmed that both pharmacy location (OR difference=98%) and additional services (OR difference=98%) acted as confounding variables in the relationship between drug price perception and pharmacy type selection, as both exceeded the 10% threshold.

Drug Price Perception. Drug price perception was the most dominant factor in pharmacy type selection (Wald=19,458; OR=0,098). Consumers perceiving drug prices as low were approximately 10 times more likely to choose independent pharmacies. This finding aligns with Setyaningsih et al. (2025) who stated that price perception significantly influences consumer purchasing decisions. Independent pharmacies tend to offer more flexible and competitive pricing compared to franchise pharmacies (Arora et al., 2017). Kotler & Keller (2016) emphasized that price perception is a subjective evaluation of value influenced by experience and comparison with alternatives.

Pharmacy Appearance. Pharmacy appearance significantly influenced pharmacy selection (OR=3,893), with consumers perceiving attractive appearances being 3,893 times more likely to choose franchise pharmacies. This finding is consistent with Fahriza et al. (2025) who noted that physical evidence is an important factor in healthcare marketing. Franchise pharmacies generally have more standardized and modern physical appearances due to centralized management systems (Bratkowska et al., 2020; Saputra et al., 2019).

Additional Services. Additional services significantly influenced pharmacy selection (OR=2,876). Consumers with access to additional services were 2,876 times more likely to choose franchise pharmacies. This is consistent with Yussof et al. (2022) who demonstrated that value-added services such as delivery, health check, and online consultation improve service efficiency and consumer convenience. Franchise pharmacies generally offer more diverse additional services (Mardiyani & Yuwono, 2025).

Confounding Variables. Pharmacy location and additional services acted as confounding variables in the relationship between drug price perception and pharmacy type selection. This is consistent with the concept that in studies involving multiple risk factors, a variable can act as both an independent factor and a confounder depending on the specific relationship being examined (Gao et al., 2025). Location influenced price perception because consumers perceive nearby pharmacies as more cost-effective when considering transportation costs (Wrześniewska-wal et al., 2025). Additional services influenced price perception as consumers tend to view prices as more reasonable when accompanied by better additional services (Patel et al., 2019).

Non-significant Variables. Drug availability and service quality showed no significant associations with pharmacy type selection, indicating these variables have been relatively uniform across both pharmacy types. Nearly all respondents (99,3%) reported adequate drug availability and 99,3% reported good service quality in both pharmacy types, consistent with national pharmaceutical service standards (Permenkes RI No. 73, 2016). Pharmacy reputation could not be

statistically analyzed due to homogeneous data, as all respondents rated both pharmacy types positively.

Conclusion

Drug price perception, pharmacy appearance, and additional services are independent factors influencing community preferences in choosing pharmacy types in Semarang City. Drug price perception is the most dominant factor. Independent pharmacies are preferred by price-sensitive consumers, while franchise pharmacies are favored by consumers prioritizing physical appearance and additional services. Pharmacy location and additional services act as confounding variables in the relationship between drug price perception and pharmacy type selection. Pharmacy managers should focus on competitive pricing strategies, physical appearance improvements, and additional service development to enhance competitiveness.

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