



When price determines choice: A study on immunity supplement consumers in urban pharmacy

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ABSTRACT

The increased use of immune supplements, particularly in urban areas post-pandemic, has raised questions about the reasons behind consumer purchasing behavior regarding these products. This study aims to explore the impact of product quality, price, and brand image on consumer purchasing decisions for immune supplements in Indonesia, specifically for purchases through national pharmacy chains. The study used a quantitative approach, surveying 125 urban consumers using purposive sampling, and analyzed the data using multiple linear regression analysis. The results showed that price was the most significant decision driver, followed by brand image and product quality, with all factors significantly influencing purchasing decisions. This study provides insights into how price, trust, and perceived value significantly influence consumer purchasing decisions. The results are practical for pharmacy managers and health product companies in developing pricing, branding, and product communication strategies aimed at health-conscious urban residents who prefer affordable products.

Keywords: purchase decision, price, product quality, brand image, urban pharmacy consumers.

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1. INTRODUCTION

The global spread of COVID-19 has changed how people focus on their health, with more emphasis on healthy immune system support and supplementation (ALkharashi, 2021). A similar trend has also been observed in various parts of the world, where public interest in supplements to boost immunity has increased sharply, ranging from 16% to 33% during the pandemic (Hamulka et al., 2020). In urban areas, the demand for supplements is increasing due to fast-paced lifestyles and irregular eating patterns. This has led many people to choose supplements as a practical way to maintain their health (Arlauskas et al., 2022). Previous studies have also confirmed the importance of adequate nutritional intake, particularly vitamins and minerals, in supporting immune health and reducing the risk of infection (Calder et al., 2020; Eggersdorfer et al., 2022; Maggini et al., 2018). Consequently, immunity supplements have become a daily staple for many, especially in regions with widespread access to pharmacies and healthcare services.

With the increasing demand for health supplements, the market has become increasingly competitive. Research shows that the global supplement industry is now valued at billions of dollars and is projected to keep growing as public interest in health and wellness continues to expand (ALkharashi, 2021). In response, brands are actively seeking ways to differentiate themselves, whether through novel active ingredients, enhanced product safety certifications, or more efficient distribution systems. This competitive push is reflected in increased investment in research and development aimed at optimizing formulations and meeting the evolving preferences of health-conscious consumers (Hamulka et al., 2020).

Price is a constant, a decision factor in consumer decision-making, a cost factor, and a signal of the quality and value of a product. Instead of merely searching for the lowest price, buyers determine whether the price properly reflects the value they anticipate. Research indicates that consumers tend to associate higher quality with higher-priced products.. Hendratmoko et al. (2024) A combination of pricing strategy and product offering can affect order, pricing strategies link to custom and if a strategy offer incentives in the form of a discount to the consumer, Arlauskas et al. (2022) found that consumers are willing to pay more for products they perceive as valuable. Dwijantoro et al. (2022) This finding is further strengthened by the assertion that price, along with quality and promotion, has a significant impact on purchasing behaviour. These findings highlight the importance of perceived value in determining consumer choices (Calder et al., 2020; Hamulka et al., 2020).

However, aside from price, brand image is frequently a main influencer of consumer impression and selection of similar health products. Companies with great brands generally create trust and quality perceptions, which later convert into customer loyalty, even at high costs (Khan et al., 2022). This aspect is paramount in the health and sustainability sectors, which are extreme trust economies. When a brand projects values, lifestyles, or aspirations consistent with a consumer's definition of personal identity, the connection evolves from a physiological-based, functional purchase to a personal choice (Li et al., 2022). This alignment not only strengthens perceptions of quality but also creates an emotional bond that encourages repeat purchases and tolerance for premium prices (Feng et al., 2019). In a competitive marketplace, such brand resonance can be a decisive differentiator.

While price has been regarded as a significant consideration for consumers to purchase a product, the moderation of price as a variable remains under research on health products, especially immune supplements, in Indonesia. Most previous studies have focused on price relative to multiple components, including product quality, country of origin, and brand image (Ahmad et al., 2022). However, its specific role in the context of health products, particularly immune supplements in Indonesia, remains understudied. Most existing studies tend to discuss price alongside other elements, such as product quality, country of origin, or brand image. However, a limited number of studies have genuinely investigated how price perceptions factor into health product purchases, where consumers typically view both economic factors and functional values such as safety and effectiveness (Ahmad et al., 2022; Huda, 2020). For instance, Nugraha and Firdausy (2022) highlighted the influence of brand image on consumer loyalty; however, few studies have extended this framework specifically to the health supplement market.

Recent studies increasingly emphasize a holistic perspective, examining how price, product quality, and brand image interact to shape consumer behavior. Paramita & R. Adjie (2023) found that while product quality strengthens the customer satisfaction-oriented marketing strategy. Likewise, brand image and perceived quality become especially important in times of uncertainty, such as during the pandemic, when trust in brands plays a central role (Nugraha & Firdausy, 2022). In this context, branding efforts that include educational content, testimonials, and influencer endorsements can significantly enhance brand perception and influence purchase behaviour, particularly for health-related products (Martianto et al., 2023).

These developments reflect a growing consensus in healthcare marketing research: to fully understand purchase decisions—especially in the Indonesian supplement market—researchers must consider these factors in tandem rather than in isolation.

Building on the preceding discussion, this study specifically examines the influence of price, product quality, and brand image on consumer purchasing decisions related to immunity supplements sold in urban pharmacies. It aims to address a gap in the existing research on Indonesia's health product market, where an integrated analysis of these three variables remains limited. Prior studies have confirmed their individual effects on consumer preferences (Dwyer et al., 2018), yet few have explored their interaction in a health-focused retail context, particularly among consumers who prioritize not just value, but also safety and perceived efficacy (Kwon, 2023; Mahdavi-Roshan et al., 2021). By applying a quantitative approach, this study seeks to generate empirical insights that can support pharmacy managers and health product marketers in designing more targeted and effective pricing and branding strategies.

2. RESEARCH METHOD

This study employed a quantitative approach using a survey method to examine how product quality, price, and brand image influence consumer purchasing decisions in the health supplement industry. This approach was selected to enable statistical analysis of causal relationships using primary data gathered directly from respondents. This study adopts an explanatory research design that seeks to determine the extent to which independent variables affect a dependent variable (Sani et al., 2022). Data collection was conducted using structured questionnaires in a cross-sectional format, capturing responses at a single point in time.

The population consisted of consumers who purchased health supplements from a national pharmacy chain in Bekasi. A full population survey was not feasible owing to practical limitations, such as time and accessibility. As such, a representative sample was selected using accidental sampling, a technique that draws respondents who are conveniently accessible and meet the study criteria (Creswell, J. W., & Poth, 2014; Etikan, 2016). This method is widely used in market research, where the target demographic is known but difficult to fully enumerate (Fowler, 2013). To determine the number of respondents, this study used the Slovin formula with a margin of error of 10%, resulting in a minimum requirement of 125 respondents. This number is considered adequate for statistical analysis and is in line with common standards in survey research (Cohen, L.; Manion, L.; Morrison, 2011; Fowler, 2013).

This study focuses on four main variables: product quality, price, brand image, and purchasing decisions. Product quality is measured through four sub-variables: form, features, performance quality, and perceived quality, each represented by indicators such as physical structure, functional completeness, and consumer perceptions of overall product quality. The price variable encompasses aspects of affordability, discount availability, and payment flexibility, which are reflected in market price indicators and promotional programs. For brand image, this variable is divided into three aspects: corporate image, product-consumer suitability, and user perception. Indicators used include brand popularity, credibility level, and user social image. The purchasing decision is represented through three stages: information search, alternative evaluation, and the final purchase decision-making. The indicators in this stage include ease of access to information, consistency in decision-making, and brand loyalty. All indicators are measured on an ordinal scale to ascertain the degree of agreement among respondents. Validity was tested using Pearson's product-moment correlation, and reliability was assessed using Cronbach's alpha

coefficient. The results in Table 1 show that all statement items are declared valid ($r\text{-count} > r\text{-table}$) and reliable, with an alpha value above the minimum limit of 0.60.

Table 1. Summary of Validity and Reliability Tests for Research Variables

Variable	Number of Items	Range of r-Count	r-Table	Validity	Cronbach's Alpha	Reliability
Product Quality (X ₁)	11	0.291 – 0.700	0.174	All items valid	0.723	Reliable
Price (X ₂)	5	0.577 – 0.779	0.174	All items valid	0.751	Reliable
Brand Image (X ₃)	3	0.675 – 0.736	0.174	All items valid	0.668	Reliable
Purchase Decision (Y)	6	0.737 – 0.897	0.174	All items valid	0.909	Reliable

3. RESULT AND DISCUSSION

In this section, the research findings will be displayed in a sequence starting with the demographics of the 125 respondents. The next section conveys the results of the statistical tests regarding product quality, price, and brand image, which were found to be positive and significant in influencing purchasing decisions. Multiple linear regression analysis was performed, supported by a correlation test between the independent variables, F-test, and t-test, and the coefficient of determination (R^2), which measures the proportion of variance of the dependent variable that can be explained by the independent variable or variables. In the following subsections, we report the detailed results for each stage of the analysis.

3.1 Characteristic of Respondent

Tabel 2. Demographic Characteristic

Demographic Characteristic	Category	Frequency (n)	Percentage (%)
Gender	Male	35	18%
	Female	89	82%
Age	20-25 years	27	22%
	26-30 years	50	40%
	31-35 years	35	28%
	>35 years	13	10%
Education Level	Elementary	9	6%
	Junior High	21	14%
	Senior High	33	24%
	Diploma	73	56%
Income	< IDR 1 million	7	6%
	IDR 1-3 million	30	24%
	IDR 4-6 million	55	44%
	> IDR 6 million	33	26%
Visit Frequency (per year)	< 10 times	40	32%
	10-30 times	53	45%
	> 30 times	31	23%
Purchase Frequency	Once	62	50%
	2-3 times	45	36%
	> 4 times	18	14%

Source: [Research data, 2024](#)

Based on the respondent characteristics data in Table 2, the majority of consumers in this study were female (82%), with the largest age group being in the 26–30-year range (40%). In terms of education, most respondents had completed a diploma (56%) and had a monthly income of IDR 4–6 million (44%). The most dominant frequency of visits to the pharmacy was in the 10–30 times per year category (45%), while the majority of respondents recorded only a single product purchase (50%). These findings indicate that the main consumer segment is young adult women with secondary to higher education and middle incomes but with relatively low purchasing intensity.

3.2 Multiple Linear Regression Analysis

Multiple linear regression analysis was employed to assess the influence of product quality, price, and brand image on the purchasing decisions. This statistical method allows for estimating the extent to which each independent variable contributes to predicting the dependent variable. The resulting regression models are presented in Table 3.

Table 3. Multiple Linear Regression

Model		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.035	5.691		0.709	0.484
	X1	0.224	0.109	0.254	2.058	0.049
	X2	0.955	0.181	0.659	5.278	0.00
	X3	0.687	0.279	0.29	2.465	0.02
a. Dependent Variable: Y						

Source: [Research data, 2024](#)

Based on the analysis, the regression equation obtained is as follows:

$$Z = 4.035 + 0.224X_1 + 0.955X_2 + 0.687X_3,$$

Where Z represents purchasing decisions, and X₁, X₂, and X₃ represent product quality, price, and brand image, respectively. The constant value of 4.035 suggests that if all independent variables are zero, the baseline purchasing-decision score would be 4.035. Holding other variables constant, a one-unit increase in product quality contributes an additional 0.224 units to the purchase decision-making. Price had the most substantial effect, with a coefficient of 0.955, while brand image contributed 0.687. These findings indicate that price exerts the strongest influence on consumer purchasing behavior among the three variables.

3.3 Multiple Correlation Test

Based on Table 4, the multiple correlation coefficient (R) is 0.806, indicating a strong and positive relationship between the independent variables (product quality, price, and brand image) and the dependent variable (purchase decision). This suggests that higher perceived quality, favorable pricing, and stronger brand image are associated with increased consumer likelihood of purchase.

Table 4. Simultaneous Correlation Analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.806 ^a	0,650	0,611	2.669
a. Predictors:(Constant) X₁, X₂, X₃				

Source: [Research data, 2024](#)

3.4 Hypotheses Test

The ANOVA results (Table 5) show that the regression model is statistically significant, with an F-value of 16.711 and a p-value of 0.000 ($p < 0.05$). This indicates that product quality (X_1), price (X_2), and brand image (X_3) significantly affect purchase decisions (Y). In other words, the null hypothesis was rejected, confirming that the three independent variables collectively explained a meaningful proportion of the variation in purchase decisions.

Table 5. Simultaneous Hypothesis Testing (F Test)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	357.095	3	119.032	16.711	.000 ^b
	Residual	192.325	27	7.123		
	Total	549.419	30			
a. Dependent Variable: Y						
b. Predictors: (Constant), X₁, X₂, X₃						

Source: [Research data, 2024](#)

Table 6 summarizes the results of the partial hypothesis testing using t-tests to evaluate the individual effects of product quality (X_1), price (X_2), and brand image (X_3) on purchase decisions (Y). All three variables were significant at the 5% level. Price emerged as the strongest predictor ($\beta = 0.659$; $t = 5.278$; $p < 0.001$), followed by brand image ($\beta = 0.290$; $t = 2.465$; $p = 0.020$) and product quality ($\beta = 0.254$; $t = 2.058$; $p = 0.049$). These results are further supported by the partial and part correlation values, which highlight price as the variable with the most substantial unique contribution to the model. Collectively, the findings confirm the importance of all three predictors in explaining consumer purchasing behavior.

Table 6. Partial Hypothesis Testing (t-test)

Coefficients ^a									
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlation		
		B	Std. Error	Beta			Zero Order	Partial	Part
1	(Constant)	4.035	5.691		0.709	0.484			
	X1	0.224	0.109	0.254	2.058	0.049	0.848	1.179	0.234
	X2	0.955	0.181	0.659	5.278	0.00	0.831	1.203	0.601
	X3	0.687	0.279	0.29	2.465	0.02	0.939	1.065	0.281
a. Dependent Variable: Y									

Source: [Research data, 2024](#)

3.5 Discussion

The results of this study indicate that product quality, price, and brand image significantly influence consumers purchasing decisions for immune supplements in urban pharmacies. Among these three factors, the most dominant was price, evidenced by the highest regression coefficient ($\beta = 0.955$) and a very strong significance level ($p < 0.001$). This finding aligns with studies by [Taufik, \(2021\)](#) and [Akbar et al., \(2019\)](#), which highlight that price is often a key determinant of consumer behaviour, even in the context of health products considered essential. Likewise, [ALkharashi, \(2021\)](#) and [Hamulka et al., \(2020\)](#) found that although consumers care about health outcomes or benefits, affordability remains a priority. This underscores the importance of cost efficiency and perceived economic value in influencing purchasing decisions.

Urban consumers are price-sensitive due to the increased cost of living, narrow pack disposable income, and the approach of treating health as a commodity. Studies by [Fauzi et al., \(2024\)](#) and [Farradia & Sunarno, \(2020\)](#) suggests that while consumers recognise the health benefits of immune supplements, they generally opt for less expensive ones—especially for daily intake. This is also in line with [Waworuntu & Hasan, \(2021\)](#) who observed that economic challenges emphasize the desire for reasonable costs in the insuring process. [Dwijantoro et al., \(2022\)](#) support these findings by stating that while quality and promotions influence choice, price is often the primary signal of product value, driving trial and repeat purchases—particularly in the highly competitive pharmacy market.

Reinforcing earlier findings, price remains the most influential factor in shaping consumer decisions regarding immunity supplements, as indicated by its strong standardized coefficient ($\beta = 0.955$, $p < 0.001$). This is in line with [Hermiyenti & Wardi, \(2019\)](#), who emphasize price as a central driver of consumer behaviour—particularly in the health sector, where affordability is often prioritized over other attributes. In the Indonesian context, [Sudaryanto et al., \(2021\)](#) similarly noted that urban consumers tend to be highly price-sensitive, highlighting the importance of competitive pricing strategies in markets where economic considerations often outweigh product differentiation.

On the other hand, brand image also proved to have a positive and significant effect on purchase intention ($\beta = 0.687$; $p = 0.020$), indicating that brand trust and credibility play an important role in shaping consumer behavior. A positive brand image – especially a brand that matches the consumer's perception of self – can increase perceived quality and consumer satisfaction ([Feng et al., 2019](#)), and acts as a signal of safety and legitimacy in health-related products ([Lee et al., 2011](#)). This is strengthened by [Nurfahmiyati et al., \(2023\)](#) where brand trust still plays vital role, especially for highly price-sensitive market. The relationship between price and brand image suggests a multilevel decision-making process: first, price determines initial purchase intentions; second, brand image is an important criterion for securing customer loyalty. As [Khuan et al., \(2024\)](#) argue, business players in the Indonesian health supplement industry need to develop an integrated strategy—one that combines value-based branding with affordable pricing—to maintain competitiveness and retain customers. businesses in the Indonesian health supplement sector must craft integrated strategies that blend value-based branding with accessible pricing to maintain competitiveness and consumer retention.

Product quality significantly influenced purchasing decisions ($\beta = 0.224$; $p = 0.049$), although its impact was smaller than that of price and brand image. This supports findings by [Saputri & Supriyono, \(2023\)](#), who noted a positive link between perceived quality and purchase intention across various product types. However, the perceived value of quality is dynamic and often shaped by branding, market differentiation, and promotional exposure ([Nasution et al., 2022](#)). In urban markets, external cues, such as viral marketing, can amplify trust and increase the likelihood of purchase when paired with credible quality claims ([Kurniasari et al., 2023](#)). However, for commodity products such as daily supplements, attention to details with respect to criteria such as a composer or effectiveness may not be a high priority compared to cost and brand name. Most of the time, narratives and product positioning tactics can play a more decisive role than actual product features. That is, while product quality is important, its position is as a part of a larger symbolic and perceptual ecology where other factors, such as trust, affordability,

and alignment with consumer identity, play a larger role in determining what influences purchasing decisions, especially among health-conscious consumers (Yulistiawan et al., 2023).

The three variables explain 65% of the variance in consumer purchasing decisions ($R^2 = 0.650$), demonstrating the model's strength and relevance. This underscores the need for a holistic understanding of consumer behaviour—one that integrates price sensitivity, product quality, and brand perception, as highlighted by Paramita & R. Adjie (2023) and Nugraha & Firdausy (2022) when aligned strategically, these factors can be powerful drivers of consumer engagement. For health supplement market players, this includes maintaining competitive pricing, a unique brand positioning and transparent quality assurance. And in the post-covid 19 worlds, as consumer trust becomes all the more important, brands now more than ever, need to ground themselves by offering educational information, affordable yet effective products and real backed up claims. Such tactics are essential not only to spur immediate sales but also to cultivate long-term consumer loyalty amid market pressure.

4. CONCLUSION

The findings indicate that price is the most influential factor of purchase intention in urban pharmacies embedded with immunity supplements, followed by brand image and product quality. All of these factors influence consumer taste, but price is still the main element, particularly in urban centers, where cost is the bottom line in every daily decision. However, if the brand image or perceived quality is good, trust is created, which leads to high loyalty (despite the many alternatives available). This means that even though consumers usually have to go through the product attributes, the consumer signals of brand and affordability are enough to decide whether to buy or not.

The findings of this study provide important insights into the health supplement industry. Although affordable products are crucial, they are insufficient. Companies must also build trust through credible brand images, consistent communication, and transparent product information. While quality is not always a top priority for consumers, ensuring product effectiveness and communicating this clearly can foster long-term loyalty. In the competitive and evolving supplement market, the key to success lies in combining three key elements—affordability, credibility, and consistency—into a strategy that resonates with consumers' everyday needs. Going forward, these insights will be useful not only for brands and pharmacies but also for researchers and policymakers seeking to understand and respond to the increasingly health-conscious habits of urban consumers.

Ethical Approval

Not Applicable

Informed Consent Statement

Not Applicable

Authors' Contributions

IGNDW contributed to the conceptualization of the study, development of the research design, and the data analysis. He also led the writing of the manuscript and coordinated the overall research process. AS contributed to data collection, statistical testing, and interpretation of the findings. He also assisted in drafting and revising the manuscript to ensure clarity and academic rigor.

Disclosure Statement

The Authors declare that they have no conflict of interest

Data Availability Statement

The data presented in this study are available upon request from the corresponding author for privacy.

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