The Pricing Effectiveness Index (PEI) for Performance Measurement of Fresh Vegetable Sales by Retailers to Secure Sustainable Profitability

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DOI: https://dx.doi.org/10.47772/IJRISS.2025.91100522

Received: 30 November 2025; Accepted: 08 December 2025; Published: 22 December 2025

ABSTRACT

Utilizing price margin as a metric for price effectiveness is deemed inappropriate, as margin serves merely as an intermediate indicator of performance. This research introduces the concept of the Pricing Effectiveness Index (PEI) to assess price effectiveness, specifically employing the profit change index to evaluate price fluctuations expressed in proportional or percentage terms. The study was conducted across all traditional markets in Mataram City utilizing census methodologies. Data collection encompassed both observational and survey techniques. Observations and surveys were executed within the commercial establishments of retailers dealing in vegetables, particularly water spinach (Ipomoea aquatica). The findings indicate that the PEI is a viable tool for measuring the price effectiveness of water spinach in traditional markets and holds potential for assessing the price effectiveness of other products. Furthermore, it can serve as a strategic framework for adjusting prices to enhance profitability for business operators.

Keywords: market, retailer, performance, vegetable, water spinach

INTRODUCTION

In 2023, Indonesia will be profoundly impacted by the ramifications of extreme climate change. Commencing in June 2023, the West Nusa Tenggara province will endure severe drought conditions and elevated temperatures, adversely affecting agricultural productivity. The culmination of the dry season is anticipated in October 2023. Throughout the interval from June to October 2023, rainfall will be virtually non-existent, resulting in significant water shortages for rice paddies, gardens, and fields cultivated by farmers [1]. Numerous dams on Lombok Island, including the Batu Jai Dam and the Pengga Dam in central Lombok, as well as the Pandan Duri Dam in eastern Lombok, have suffered a marked decline in surface water levels, rendering them inadequate for irrigation purposes.

One of the significant ramifications of El Niño is the necessity for meticulous management of agricultural lands, particularly rice fields. A substantial quantity of irrigation water becomes inaccessible, akin to the plight faced by water spinach (Ipomoea aquatica) plants. This climbing plant exhibits a high demand for water; however, due to the anticipated El Niño phenomenon in 2023, numerous rice fields are rendered unsuitable for cultivating water spinach, especially in the Central Lombok Regency and East Lombok Regency. Fields that once thrived with water spinach are now repurposed for other crops or, in some instances, left fallow [2]. Consequently, the production of water spinach on the island of Lombok has witnessed a marked decline, with yields in these two districts virtually non-existent, save for a few isolated locations. The average area of rice fields capable of supporting water spinach cultivation is less than 0.5 hectares in West Lombok Regency and Mataram City (Ibrahim, 2023; Pratiwi, 2023). There remain some rice fields where water spinach can still be cultivated.

In general, seasonal droughts precipitate a decline in vegetable production, which subsequently exerts a significant influence on price volatility. As vegetable prices adhere to market dynamics, research conducted by Ibrahim (2023) [3] and Pratiwi (2023) [4] reveals that farmers possessing landholdings of less than 0.5 hectares in the Lingsar and Narmada districts cultivate water spinach due to the availability of irrigated land. Moreover, the prices of these products are not regulated by the government, resulting in fluctuations that are contingent upon the interplay of supply and demand within the market.

The findings of the research conducted by Diana (2023) [5] and Mauliya (2023) [6] indicate that the sales volume of vegetables at the Mandalika store exhibits considerable fluctuations month by month throughout 2022. Furthermore, in 2023, it is anticipated that these variations will continue, exacerbated by recurring price volatility amidst persistently high demand and constrained supply during off-season harvest periods, significantly influenced by the repercussions of El Niño. Consequently, the production of fresh vegetables in West Nusa Tenggara province falls short of meeting the requisite demands in Mataram city. To address the vegetable needs in this region, merchants are compelled to source fresh produce from outside West Nusa Tenggara Province, including Bali, East Java, and Central Java [4; 7].

In a competitive market environment where the quantity and quality of goods offered, as well as the demand and pricing, are dictated by market mechanisms, no individual possesses the ability to manipulate market prices. In the short term, each participant in the market operates as a price taker; conversely, in the long term, prices are permitted to align with the allure of demand and/or supply dynamics. Traders in conventional markets do not establish prices for their products [8]; rather, prices are determined through negotiations between traders and consumers. Merchants are inclined to sell their goods if they have achieved a profit margin that meets their expectations, while consumers will procure goods based on their price anticipations and their capacity for expenditure.

The issue of pricing has been a persistent dilemma since the inception of commerce and will undoubtedly continue to pervade the annals of trade. Although prices can be readily adjusted [9], the intricacy of establishing prices lies in the perceived challenges associated with the advantages of pricing strategies. Specifically, it is essential to ascertain that the prices set will yield both short-term and long-term ramifications, despite the relative ease of customization. In the short term, a merchant's objectives center on securing reasonable and normative marketing margins and profits. Conversely, in the long term, the aspiration of the business or trader is to cultivate a profound market presence. Over an extended period, the enterprise aims to evolve into a robust entity capable not only of augmenting sales volume but also of expanding its market reach.

The crux of the research problem pertains to the measurement of price effectiveness, a conundrum that remains unresolved to this day [10]. Furthermore, Barach (2023) [10] posits that the ambiguity surrounding the definition of success is a significant factor contributing to the absence of a formula for assessing price effectiveness. Such measurements must be intricately aligned with the principles of price effectiveness.

Pricing must reflect the interests of all stakeholders involved. Establishing prices that are excessively low may result in losses for traders seeking to achieve a profit margin. As a crucial element (Conlon, 2012) [11] of the advantages associated with effective pricing strategies, margin serves as an intermediate objective. Ultimately, the primary aim is to secure a reasonable net profit. Conversely, setting prices too high can lead to a shortfall in sales volume, potentially preventing the company or merchant from anticipating losses. Every trader aspires to attain a profit margin, as it is a vital consideration in the pricing process [11]. Profit margin is a direct consequence of the benefits derived from effective pricing. For traders, profit margin remains the paramount objective.

Effective pricing should encompass both short-term and long-term strategic objectives [12]. In the short term, effective pricing compels traders to pursue reasonable profits; however, in the long term, it aspires to position the company as the preeminent holder of market share within a specific region. Consequently, effective pricing is advantageous not only for traders but also serves to fulfill particular organizational goals.

The elevated prices of vegetables contradict the expectations of consumers who seek more affordable options for vegetable products. When prices escalate excessively, individuals from low-income demographics may find themselves unable to access the recommended quantity of vegetables. The suggested plant-based dietary intake of at least 400 grams per day can be achieved with minimal sacrifices [13].

In the city of Mataram, procuring vegetables at traditional markets and street stalls is not only more convenient but also more economical than at contemporary retail establishments (supermarkets and mini markets) [14; 15]. Consequently, low-income households tend to favor purchasing from these traditional venues, whereas high-income households have the luxury of accessing vegetables through modern retail channels, a trend similarly observed in the United States.

Sustainable income growth significantly influences the diversification of individuals' dietary consumption patterns, thereby amplifying the demand for vegetables. However, this escalation in vegetable demand does not parallel the burgeoning appetite for meat, fish, and eggs. Vegetable consumption must be harmonized with the intake of other food groups. Understanding the dynamics of vegetable demand is deemed crucial for the formulation of policies aimed at mitigating malnutrition and ensuring sustainable food security [16].

Vegetables constitute an essential component of the human diet, rich in vitamins, fiber, and water—nutrients that are imperative for optimal bodily function. As awareness regarding the importance of vegetable consumption rises in tandem with increasing disposable incomes, there exists a significant opportunity for both the quantity and quality of vegetable demand to escalate. Consumers are increasingly inclined towards acquiring fresh, high-quality vegetables at more affordable prices. Research conducted by Han and Wahl (2015) [17] in China reveals that lower-value vegetables exhibit greater price elasticity in comparison to other categories of vegetables, while fruits demonstrate an even higher degree of price elasticity than vegetables. Price elasticity refers to the relationship between the percentage change in price and the corresponding percentage change in quantity demanded.

Knowing price elasticity is a longstanding theory that remains relevant today, as it serves as a valuable simulation tool in production planning to achieve sales volume objectives. However, price elasticity fails to elucidate the correlation between fluctuations in prices and the profitability of a company or merchant. To address this research dilemma, it becomes imperative to conceptualize the Pricing Effectiveness Index (PEI). PEI is defined as the ratio of the percentage change in profits to the percentage change in prices. Consequently, the integration of Price Elasticity with PEI will yield advantages by estimating the profit generated by companies or traders on one hand, and the corresponding demand on the other.

Water spinach retailers in traditional markets encounter the challenge of accurately gauging price effectiveness due to the volatility of sales prices. This difficulty in assessing price effectiveness extends not only to plant products but also to a myriad of other goods. The findings of this research will prove beneficial for a wide array of products sold directly to consumers [18].

To mitigate the challenges faced by retailers in establishing pricing strategies, the concept of the Pricing Effectiveness Index (PEI) has been formulated.

LITERATURE REVIEW

Relationship between Sales Volume, Costs, and Profits

Sales volume is intricately linked to total variable costs, and these variable costs are likewise positively correlated with the company's profitability [19]. The interplay between sales volume, costs, and revenues can be articulated as follows:

$$TC = a + b \frac{\sum_{i=1}^{n} Q_i}{n} \quad (2.1)$$

$$TR = p \frac{\sum_{i=1}^{n} Q_i}{n} \quad (2.2)$$

Information:

TC = total costs (IDR)

a = fixed costs (IDR)

b = average variable costs (IDR/unit)

TR = gross income (IDR)

p = price (IDR/kg)

Q = sales volume (units)

Balance point or balance point

The Break Even Point (BEP) signifies the juncture at which revenues are equivalent to total costs [20]. In other terms, the BEP represents a state for the enterprise whereby the sales volume fails to yield any profit for the organization or the trader. From a mathematical perspective, the sales volume corresponding to the BEP can be articulated as follows [21];

BEPq= a/(p-b) x 1 unit..... (2.3)

Information:

BEPq = break-even point (units)

a = total fixed costs (IDR)

b = average variable costs (IDR/unit)

p = average sales price of the product (IDR/unit)

p – b = contribution margin.

In addition to BEPq, one can also compute the Break-Even Revenue (BEPr). The corresponding mathematical equation is:

BEPr = a / (1 - b/p) x IDR 1..... (2.4)

Information:

BEP r = revenue break-even point (IDR)

a = total fixed costs (IDR)

b = average variable costs (IDR/unit)

p = average sales price of the product (IDR/unit)

At a specified sales volume (Q), the BEP price (BEPp) can be derived. The formula for BEPp is articulated as follows:

BEPp=(a+bQ)/Q x IDR 1……. (2.5)

p=(L+ a+bQ)/Q x IDR 1……..…. (2.6)

p=(L+ C)/Q x IDR 1..... (2.7)

Information

BEPp = equilibrium price (IDR/unit)

a = total fixed costs (IDR)

b = average variable costs (IDR/unit)

C = total cost

L = profit

Q = sales volume (units)

RESEARCH METHODS

Place and time of the investigation

The research was conducted across all traditional markets in Mataram city. A total of 78 retail establishments were selected as units of analysis utilizing the census method. Of this total, 75 units were subjected to analysis, as the data from 3 units was deemed excessively extreme. Consequently, these 3 units were excluded from the study.

Data collection techniques

Data collection was conducted through meticulous observation, comprehensive surveys, and in-depth interviews. The observational and interview processes were further elaborated within commercial establishments of retail traders located in the Mandalika Main Market in the Sandubaya District, Pagesangan Market in the Mataram District, and Kebon Roek Market in the Ampenan District. The survey employed structured interview methodologies, executed through face-to-face interactions. These structured interviews utilized a pre-prepared list of questions. The questionnaire underwent preliminary testing, followed by a reliability assessment. The data amassed was subsequently entered via Google Forms. The individuals undertaking the role of surveyors were eighth-semester students engaged in their final projects.

Data analysis

The data was meticulously scrutinized employing the subsequent mathematical equation:

$$L = TR - TC \quad \text{.....} \quad (3.3)$$

$$L = p\frac{\sum_{i=1}^{n} Qi}{n} - (a + b\ \frac{\sum_{i=1}^{n} Qi}{n}) \text{.....} \quad (3.4)$$

$$p\frac{\sum_{i=1}^{n} Qi}{n} = L + (a + b\ \frac{\sum_{i=1}^{n} Qi}{n}) \text{.....} \quad (3.5)$$

$$p = \frac{L + a + b\frac{\sum_{i=1}^{n} Qi}{n}}{\frac{\sum_{i=1}^{n} Qi}{n}} \quad \text{.....} \quad (3.6)$$

$$p = \frac{L + TC}{Q} \text{ x IDR } 1 \text{.....} \quad (3.7)$$

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Information:

p = average market price (IDR/unit)
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L = merchant's profit (IDR)

a = fixed cost (IDR/month)

b = average variable cost (IDR/unit)

C = Total costs (IDR/month)

Q = sales volume

Equation (3.7) elucidates a positive correlation between price and profit, as well as between price and cost. An elevation in price invariably leads to an increase in profits, assuming that costs and production levels remain constant. Conversely, a rise in costs will also necessitate an increase in price, provided that profits and production levels do not fluctuate.

Pricing Effectiveness Index

The Pricing Effectiveness Index (PEI) serves as a sophisticated analytical instrument designed to assess the efficacy of pricing strategies for a given product or service. PEI quantitatively evaluates the relationship between percentage fluctuations in sales profit and the corresponding percentage alterations in the price of the product or service.

$$PEI = \frac{L2-L1}{L} / \frac{P2-P1}{P} \text{.....} \quad (3.8)$$

$$PEI = \frac{\Delta L}{\Delta P} * \frac{P}{L} \text{.....} \quad (3.9)$$

Information:

PEI = Pricing Effectiveness Index

L1 = Profit at P1

L2 = Profit at P2

P1 = initial price

P2 = subsequent price

L2 - L1 = change in profit (ΔL)

P2 - P1 = price alteration (ΔP)

If PEI > 0, then the price can be elevated.

If PEI = 0, then the price is in a state of efficiency.

If PEI < 0, then the price can be reduced.

In this context, Barach (2023) [10] posits that the Pricing Effectiveness Index (PEI) serves as a metric for evaluating the pricing efficacy of a product or service; however, I have yet to formulate a definitive PEI equation. The PEI assesses the relationship between the price of a product or service and the quality or benefits it offers. A higher ratio indicates greater profitability for the product or service. The PEI is instrumental for businesses in establishing optimal pricing strategies, thereby enhancing both profitability and competitive standing. Barach (2023) articulates this perspective, yet it requires clarification, as it is essential to recognize that not all high-quality products are necessarily expensive, nor are all costly products indicative of quality [10]. Consequently, the effectiveness of pricing can be evaluated through its capacity to stimulate sales volume

or the responsiveness of price to changes in quantity demanded. The Pricing Effectiveness Index ought to be correlated with consumer demand and the profit generation potential of the enterprise or merchant. In this discourse, a proposed formulation for the PEI is delineated as shown in equation (3.9).

RESULTS AND DISCUSSION

Price Formation of Water Spinach in Traditional Markets

The negotiation process between vendors and purchasers is pivotal in determining the price of water spinach and other varieties of vegetables within traditional markets. Typically, the seller proposes a price that exceeds the prevailing market rate, while the buyer counteroffers at a figure below the market price. Should the seller's quoted price remain above the buyer's proposition, the transaction will not materialize, prompting the buyer to seek alternative vendors until an agreeable price is established. Ultimately, the price of water spinach is contingent upon a mutually accepted accord between the seller and the buyer.

Demand Elasticity

In accordance with the principles of supply and demand, market prices are shaped by the dynamic interplay of these forces. A decrease in price generally results in an increase in the quantity demanded; conversely, an escalation in price tends to diminish the quantity demanded. Similarly, when prices decline, the quantity of goods supplied may also decrease; in contrast, an uptick in prices typically stimulates an increase in the quantity of goods supplied.

Table 1. Elasticity of demand for water spinach

No	Parameter	Margins (Δ)	Average
1	Quantity (Q) Sales (kg/month)	-497.60	622.12
2	Selling price (P) (IDR/kg)	7,400.17	8,100.15
3	Ratio	-0.0672	12.9306
4	Elasticity	-	-0.8695

Information:

$Ed = \Delta Q/\Delta P \times P/Q$

$Ed = (-497.60)/7,400.17 \times (8,100.15/622.12)$

$Ed = 0.8695$

A price alteration of 1% precipitates a corresponding change in the quantity demanded of water spinach by 0.8695%, thereby categorizing the elasticity of demand for this vegetable as inelastic. These findings align with the research conducted by Ayanwale et al. (2016) [22], which posited that wet vegetables exhibit an inelastic price elasticity of demand and are classified as normal goods. Wet vegetables are typically consumed in conjunction with other varieties to create a distinctive flavor profile; it is rare for any single type of vegetable to be consumed in isolation. Water spinach is classified as a normal product, wherein an increase in price leads to a decline in quantity demanded, and it is invariably combined with other vegetables during preparation or presentation. This assertion resonates with the observations of Ayanwale et al. (2016) [22], who elucidated that nearly all varieties of vegetables are prepared by amalgamating them with others.

In Table 3.1, it is evident that the escalation in the price of water spinach has a detrimental effect on retailers' profits due to a concomitant decline in sales volume. An increase in prices precipitates a reduction in sales volume, which subsequently leads to a downturn in revenue. Thus, raising the price of water spinach is not an

advisable strategy, as it may culminate in diminished profits for retailers. Consumers are afforded the opportunity to pursue substitute options, thereby shifting their consumption from water spinach to alternative vegetable varieties. Ayanwale et al. (2016) elucidate that the cross-elasticity of demand for vegetables is characterized as inelastic [22].

The price hike of water spinach, which resulted in a contraction of sales volume within Classer P2, consequently led to a decrease in retailers' profits. The sales volume in Clusters P1 and P2 stands at 741.54 kg/month and 243.94 kg/month, respectively. A one percent increase in price corresponds to a decline in sales volume exceeding 1%, consistent with the inelastic nature of demand, quantified at less than 1 (0.8695).

Retailer Profit

The pricing of water spinach significantly influences sales volume; specifically, an elevated sales price correlates with a diminished sales volume compared to the volume achieved at a lower sales price. Sales volume directly impacts revenue; thus, an increase in sales volume translates to a corresponding increase in income (Table 2). Since revenue and total costs are contingent upon the quantity sold, the volume of sales is positively correlated with both revenue and total costs, ultimately determining profitability. Within Cluster P2, the profits realized by retailers are comparatively inferior to those in Cluster P1.

Table 2. Total Profits of Vegetable and Water Spinach Retailers in Mataram City.

No	Parameter	Cluster P2	Cluster P1	Amount
1	Quantity (Q) Sales (kg/month)	243.94	741.54	985.48
2	Selling price (P) (IDR1.000/kg)	13.67	6.275	8.10
3	Income (IDR1000/month)	3,334.30	4,648.23	7,982.53
4	Total Cost (IDR1.000/month)	2,005.57	3,234.09	5,239,66
	• Variable cost	1,433.07	2,819.35	4,252.42
	• Fixed cost	572.50	414,736.84	987,236.84
4	Profit (IDR1.000/month)	1,328.73	1,414.15	2,742.874

pp = proportion

Volume, revenue, costs, and profits exhibit a positive correlation and can be represented on an equilibrium curve, presuming a linear relationship among these variables.

Table 3. Analytical Outcomes of the Break-Even Point for Merchant Retailer Spinach.

No	Parameter	Cluster P2	Cluster P1
1	Selling price (P) (IDR/kg)	13,668.52	6,268.35
2	Average variable cost (IDR/kg)	4.315.07	4.315.07
3.	Margin contribution (IDR/month)	9,353.45	1,953.28
4.	Fixed rate (IDR/month)	572,500.00	414,736.84
5	Balance Point (kg/month)	61.21	232.32
6	Break Even point (IDR/month)	836,650.11	1,456,263.07

Pricing Effectiveness Index

Table 2 illustrates that an escalation in price from IDR 6,268.35/kg to IDR 13,668.52/kg will result in a decline in profit margins. The strategy of raising the price of water spinach does not appear to be a prudent approach for enhancing profitability. Instead, water spinach should be marketed at a more competitive price point to stimulate higher sales volume, thereby ultimately augmenting profits for retailers. This assertion is further substantiated by [23], who contend that merchants should refrain from offering products at inflated prices. Moreover, the implementation of more stringent social distancing measures may further depress the prices consumers are willing to pay.

Table 4. Analysis Results the Pricing Effectiveness Index of Water Spinach Vegetables

No	Parameter	Margins	Average
1	Profit (IDR/month)	-85,422.44	1,393,003.62
2	Price (IDR/kg)	7,400.17	8,100.15
3	Retio	-11.54	0.0058
4	PEI		-0.0671

From Table 4, it is evident that a mere 1% escalation in price precipitates a 6.71% contraction in profits. Consequently, to enhance pricing efficacy, the optimal strategy involves adopting more economical pricing, as a reduction in prices can potentially augment sales volume, thereby generating increased revenue. Presuming that costs remain unchanged, an elevation in sales volume will inherently contribute to profit enhancement. Consumers with constrained financial resources may possess the capacity to achieve the recommended levels of vegetable consumption. In this manner, households will be incentivized to increase their vegetable intake up to the advised thresholds. This perspective stands in contrast to Colón's (2012) [11] assertion that consumers exhibit a lack of sensitivity to the magnitude of price fluctuations. This underscores that "establishing the appropriate price" is of lesser significance compared to capturing consumer attention towards product quality and the convenience of service.

The selection of a demand forecasting model at the retail level is predicated on its superior efficacy in predicting inventory reserves [24]. An alternative model employs the marketing margin as a performance metric; however, its principal drawback lies in the fact that the marketing margin fails to accurately reflect actual outcomes, necessitating further scrutiny [20]. The optimal measure of performance is profit, which constitutes the primary objective of all enterprises engaged in commercial activities.

Given their reputation for containing essential vitamins, minerals, and water, vegetables have witnessed a notable surge in demand within household food consumption. Consequently, researchers have delved into the demand for trust attributes in food products, positing that this trend will gain even greater significance in the future, particularly as verification systems become increasingly robust [25]. Water spinach, in particula, enjoys heightened demand among consumers in various Asian nations, including Malaysia, Vietnam, Thailand, Myanmar, India, and Japan [26]. Over the past two years, exports of water spinach seeds have proliferated to these Asian countries.

Retailers in traditional markets are perceived as requiring the cultivation of customer trust. This trust can be fostered through the implementation of stringent quality and food safety standards, alongside enhancements in the quality attributes of fresh produce. For modern retailers, it is prudent to preserve customer trust and elevate product offerings by adopting premium standards. Policies and initiatives that promote income growth, as well as public nutrition education, can be more effectively instituted to stimulate heightened demand for vegetables, while superior quality products aim to achieve dietary diversification. Moreover, the government should advocate for the development and enforcement of credible standards, in addition to product and process

certification systems. Informational campaigns designed to educate consumers about food safety and quality will broaden the market reach of fresh produce and yield benefits for farmers [27].

Vegetables play a crucial role in fostering growth and enhancing well-being, but their significance escalates with age. Numerous studies indicate that dietary choices are instrumental in mitigating the risk of severe conditions and diseases. Certain vegetables are categorized as "superfoods," signifying their status as natural reservoirs of vitamins, minerals, and other essential nutrients that promote healthy living and confer various health benefits, including antioxidant, anti-inflammatory, prebiotic, antimicrobial, chemopreventive, and hypercholesterolemic properties. The recent surge in chronic degenerative diseases, such as cardiovascular ailments, diabetes, obesity, osteoporosis, and cancer, has prompted a reevaluation of dietary practices as a means to sustain human health. Consequently, superfoods—provided they adhere to hygiene standards and balanced nutrition—are posited as a viable solution to bolster preventive health strategies and diminish the necessity for therapeutic interventions, ultimately enhancing public health [28].

Rationality exerts a favorable influence on pricing strategies. While intuitive pricing may be applicable to high-quality products, it proves ineffective for those of lower quality. Water spinach, typically categorized as medium to low-quality produce in traditional markets, presents numerous challenges when priced intuitively, primarily due to the abundance of alternative vegetable options available as substitutes. Conversely, Feurer et al. (2018) [29] assert that managers in contemporary markets possess the autonomy to employ intuition in establishing rational prices, thereby facilitating the opportunity to utilize intuitive methods for pricing new products. In contrast, Kim et al. (2014) [23] demonstrate that pricing strategies anchored in external references yield advantages for sellers, as the prices consumers are willing to pay tend to escalate. However, sellers must exercise caution in offering products perceived as possessing high value. For water spinach vegetables, which fall within the medium to low-quality category and are sold in traditional markets, it is prudent to adopt a pricing strategy that emphasizes affordability, thereby ensuring accessibility for consumers with limited financial means.

Share Margin Ratio

Share margin ratio serves as an alternative metric for evaluating price effectiveness. When utilizing the equity margin index as a benchmark for price efficacy, autocorrelation is likely to manifest; specifically, an increase in the sales price of a product or service correlates with an elevation in the equity margin index, attributable to the equity share margin ratio. This ratio is derived from the division of margin relative to price. The share margin ratio signifies the relationship between the margin and the sales price. In Classer P1, the equity margin ratio is calculated at 0.3847, which is lower than that of Classer P2. Within Classer P2, the stock margin ratio for water spinach at retail outlets is recorded at 0.4761, indicating that the marketing margin at retail establishments constitutes 47.61% of the selling price (IDR 13,668.52/kg). Conversely, in Classer P1, the selling price of water spinach is IDR 6,268.35, leading to a share margin ratio of 38.48%. Thus, it is evident that as the sales price escalates, so too does the equity margin ratio.

Table 5. Margin ratio of water spinach vegetable shares among retail traders in Mataram city.

No	Parameter	Margins	Average
1	Selling price (IDR/kg)	7,400.17	8,100.15
2	Purchase price (IDR/ kg)	3,304.38	4,674.48
3	Price margin (IDR/kg)	4,095.79	3,425.67
4	Share Margin Ratio	-	0.4229

Determining prices utilizing the equity margin index is considerably less effective than employing the Pricing Effectiveness Index, primarily due to the challenges inherent in establishing a standard value for the share margin ratio. This difficulty arises from the fact that the costs incurred, and the income generated by investors

have not been adequately considered. Conversely, the application of the PEI encompasses sales volume, revenue, and costs, rendering it a more suitable metric than the equity margin index. This assertion aligns with [10], who posits that margin should not be regarded as a performance measure, as it remains an intermediate metric. Furthermore, while the PEI serves as a tool for evaluating price effectiveness, it is not without its shortcomings, as it predominantly reflects the merchant's perspective, neglecting consumer satisfaction and comfort. Nevertheless, the PEI is regarded as superior to the equity margin index.

CONCLUSIONS

In traditional markets, the price elasticity of demand for water spinach is characterized as inelastic. For inelastic commodities such as water spinach and various other fresh produce, it is more advantageous to establish lower price points, thereby enabling economically disadvantaged consumers to meet the recommended levels of vegetable consumption while simultaneously allowing merchants to enhance their profitability. Imposing elevated prices on fresh vegetables like water spinach is an imprudent strategy, as it is likely to diminish consumer purchases and subsequently curtail merchants' profits. Employing the Pricing Effectiveness Index (PEI) as a metric for price effectiveness proves to be more pertinent than utilizing the shared margin ratio, given that PEI can be interpreted as the correlation between price alterations and the subsequent impact on company or merchant performance.

ACKNOWLEDGMENT

I extend my heartfelt gratitude to the Rector of Mataram University and the Director of the Institute of Research and Community Service at Mataram University for their generous funding for the execution of the research activities and the publication of the manuscript (Grant numbers: 2607/UN18.L1/PP/2023).

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