

BUSINESS STRATEGIES AND PROFITABILITY OF PUSH CART FRUIT VENDORS: A COST–RETURN AND OPERATIONAL CHALLENGE PERSPECTIVE

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ABSTRACT

In order to identify the strategic and economic determinants of vendor profitability in an understudied area of the informal retail economy, this study examines the business strategies, cost–return structure and operational challenges of push cart fruit vendors in Salem city, a Tier-2 city in Tamil Nadu, India. The study adopted a descriptive and analytical research design. Primary data were collected through purposive sampling using a structured questionnaire from 57 push cart fruit vendors, including both single-commodity and multi-commodity vendors. Cost structures, success factors, vendor segments and factors influencing daily profit were analysed using cost–return analysis, percentage analysis, mean score analysis, weighted average ranking, independent samples t-test and multiple linear regression. The findings revealed that product diversification reduced the risk of unsold perishable stock, with multi-commodity vendors earning almost twice the daily profit of single-commodity vendors. Customer relationship management ($\beta = 0.53$) and dynamic pricing ($\beta = 0.51$) were the strongest drivers of daily profit, followed by multi-commodity selling and value addition. The regression model explained 74.2% of the variation in daily profit ($R^2 = 0.742$, $p < 0.001$). Financial difficulties, particularly restricted access to institutional credit and irregular income, were identified as the most critical challenges, followed by marketing and personal health issues. Although the findings are limited to push cart fruit vendors in a single Tier-2 city and a purposive cross-sectional sample, the study demonstrates that vendor income can be enhanced through low-cost interventions such as product diversification, value addition, flexible pricing and stronger customer relationships rather than relying solely on large capital investments. The study also highlights the need for policy support through microcredit access and authorised vending zones to strengthen livelihood security. It contributes new micro-level, commodity-disaggregated evidence on the cost–return structure and strategy–profit relationship of push cart fruit vendors, extending the literature on informal retail enterprises in underexplored Tier-2 Indian cities.

KEYWORDS: Push cart vendors, Fruit vending, Business strategy, Street vendors, Informal retail, Cost-return analysis, Vendor profitability, Salem city, Agribusiness, Emerging economies

INTRODUCTION

Retailing, the final phase of the distribution chain, involves delivering products and services in small quantities to the final consumer for personal use (McNair, 1958). India has one of the world's largest retail networks, comprising nearly 12 million retail outlets, the majority of which belong to the unorganized sector, including street vendors, kirana stores, and small independent retailers (Invest India, 2025). Although organized retail has expanded rapidly through modernization and digital commerce, the unorganized sector continues to account for nearly 85% of the retail market, while organized retail contributes the remaining 15% (Invest India, 2025). Cart vending, a subset of street vending in which goods are sold from movable carts, is particularly common in developing countries because it requires limited capital investment, offers operational flexibility, and enables direct consumer interaction (Krishnan and Thirumathi, 2023). India has an estimated 10 million street vendors, representing between 2 and 2.5% of the population in major cities and nearly 14% of the country's informal workforce (Singh, 2021; Rafee and Kumar, 2025). Collectively, street vendors generate an estimated annual revenue of ₹29.2 lakh crore while providing affordable fruits, vegetables, and household products to urban consumers (NASVI, 2023; National Hawkers Federation [NHF], 2024; Pappeswari and Rajalakshmi, 2021).

Despite their economic significance, push cart fruit vendors remain one of the least researched segments of India's informal retail sector. Existing studies have largely focused on the informal economy, livelihood issues, regulatory challenges, and urban planning aspects of street vending (Bhowmik, 2005, 2010, 2012; Chen, 2012; National Association of Street Vendors of India [NASVI], 2012; Khan and Tariq, 2025). Comparatively little attention has been given to push cart fruit vendors as micro-entrepreneurs who make daily decisions regarding sourcing, pricing, product diversification, mobility, and customer relationships that directly influence profitability (Mitra, 2003, 2018). Furthermore, empirical

evidence from Tier-2 cities remains limited, and few studies have compared single-commodity and multi-commodity vendors to examine whether product diversification results in measurable income advantages (Skinner, 2008). This study addresses these research gaps by analysing the cost–return structure of single- and multi-commodity push cart fruit vendors, identifying the factors associated with vending success, examining the business strategies statistically associated with daily profit, and assessing the major challenges affecting vendor livelihoods using a sample of 57 push cart fruit vendors. The remainder of the paper is organised as follows. Section 2 reviews the relevant literature and develops the study justification. Section 3 describes the research design, sampling procedure, and analytical methods. Section 4 presents the findings and discussion based on the research objectives, while Sections 5, 6, and 7 provide the conclusions, practical and policy implications, and the study limitations with directions for future research.

2. Objectives and Research Methodology

2.1 Objectives of the study

In view of the research gaps identified in Section 2, the study was guided by the following four objectives:

To analyse the cost and returns of push cart fruit vendors.

To identify the factors contributing to the success of push cart fruit vendors.

To examine the business strategies associated with success among push cart vendors.

To evaluate the challenges faced by push cart fruit vendors.

2.2 RESEARCH METHODOLOGY

A descriptive and analytical research design was adopted for the study. The descriptive component was used to describe the demographic profile, business practices, and operational patterns of push cart fruit vendors, while the analytical component employed statistical techniques to examine the factors influencing vendor success, profitability, and business strategy. This combined approach enabled the study to capture the current status of vendors' operations as well as the relationship between business strategies and profitability.

The study focused on push cart fruit vendors operating within the Salem city limits, including both single-commodity vendors (selling only one type of fruit) and multi-commodity vendors (selling multiple fruit varieties). This population represents the informal fruit-vending segment of the urban retail system. Salem, Tamil Nadu, was selected as the study area because push cart fruit vending is widely practiced across its residential and commercial areas, vendors actively operate in markets, bus stops, and residential streets, providing a representative cross-section of vending conditions, and the surrounding district is a major fruit-producing region, particularly for bananas, mangoes, and guavas.

Primary data were collected directly from push cart fruit vendors through personal interviews using a structured questionnaire. The questionnaire covered five major aspects: demographic characteristics, business practices, cost and revenue structure, business strategies, and challenges faced by vendors. The field survey was further supplemented with geotagged photographic evidence and discussions with the State Secretary of the Street Vendors Association at the Salem Old Bus Stand, which provided institutional and contextual insights into the prevailing vending conditions in the city.

2.3 Sampling and Data Analysis

A purposive (non-probability) sampling technique was adopted to select respondents based on their engagement as push cart fruit vendors in Salem City. This approach was considered appropriate because the study focused on a specific occupational group rather than the general population. A total of 57 vendors, comprising both single-commodity and multi-commodity vendors, were surveyed to examine their business practices, profitability, business strategies, and operational challenges.

Percentage analysis was used to describe the demographic characteristics and operational profile of the vendors, including age, gender, educational qualification, procurement source, and mode of transportation. Cost–return analysis was employed to estimate total cost, total income, and net profit. Mean score analysis, based on a five-point Likert scale consisting of 37 statements grouped under eight factor categories proposed by Mitra (2018), was used to assess the relative importance of the factors influencing vendor success. An independent samples t-test examined differences between single-commodity and multi-commodity vendors across the eight success factor categories.

Following the strategic framework of Shaikh and Luhar (2026), multiple linear regression analysis was performed in SPSS to evaluate the influence of seven business strategies customer relationship, multi-commodity selling, mobility, dynamic pricing, procurement, value addition, and digital payment on vendors' daily profit. The regression model was evaluated using the coefficient of determination (R^2), adjusted R^2 , and the ANOVA F-test. In addition, based on the problem framework proposed by Karthika and Chinnu (2025), the major categories of challenges faced by vendors were identified and prioritised using weighted average ranking, supported by descriptive statistics comprising the mean and standard deviation.

2.4 Ethical Considerations

This study involved face-to-face interviews with push cart fruit vendors and posed no more than minimal risk to participants. In accordance with accepted ethical standards for social science research, the study was conducted with respect for participants' rights, privacy, and confidentiality. Prior to each interview, respondents were informed about the objectives of the study, the voluntary nature of their participation, and the intended academic use of the information collected. Participants were assured that their identities would remain anonymous, that no personally identifiable information would be disclosed, and that they could refuse to answer any question or withdraw from the interview at any time without any consequences. Verbal informed consent was obtained from all 57 respondents before data collection, and all information was treated confidentially and reported only in aggregated form.

3. RESULTS AND DISCUSSION

3.1 Demographic and operational profile of respondents

Push cart fruit vending in Salem City is a generally gender-inclusive profession, as evidenced by the fact that 30 (52.6%) of the 57 vendors polled were men and 27 (47.4%) were women. 11 vendors (19.3%) were between the ages of 21 and 30, 16 (28.1%) were between the ages of 31 and 40, 15 (26.3%) were between the ages of 41 and 50, 11 (19.3%) were between the ages of 51 and 60, and 4 (7.0%) were between the ages of 61 and 70. Vending revenue frequently supports a household rather than a single person, as evidenced by the fact that the majority of vendors 78.9 percent (45 respondents) were married, while 12.3 percent (7 respondents) were widowed and 8.8 percent (5 respondents) were single.

Vendors' levels of education were generally low: 16 (28.1%) were illiterate, 11 (19.3%) had completed primary school, 13 (22.8%) had completed middle school, 9 (15.8%) had completed secondary school, 2 (3.5%) had completed senior secondary school, 1 (1.8%) had a diploma, and 5 (8.8%) had graduated. This profile aligns with the larger body of research that describes street vending as a low-skilled, low-literate vocation (Singh, 2021). The majority of vendors support small to medium-sized households, as evidenced by the most common household sizes of 4 to 5 members (28 vendors, 49.1%) and 2 to 3 members (19 vendors, 33.3%). Smaller proportions reported 6 to 7 members (4 vendors), 1 member (2 vendors), and 8 to 10 members (3 vendors) (Banerjee and Duflo, 2007).

Vending experience ranged widely: 8 vendors (14.0%) had 31 years or more of experience, while 12 vendors (21.1%) had less than five years. The remaining vendors were spread over the intermediate experience bands. This range indicates that Salem's push cart fruit vending industry serves both newcomers and seasoned business owners, frequently serving as an intergenerational source of income.

3.1.1 Operational practices

The majority of vendors operate on a fixed-location, owned-cart basis: 51 out of 57 vendors (89.5%) operate from a fixed location, while only 6 (10.5%) move their carts between locations; cart ownership is divided between vendors who rent their carts (23, 40.4%) and those who own them (34, 59.6%). With 29 vendors (50.9%) using the wholesale market, commission agents (19 vendors, 33.3%), distributors (6 vendors, 10.5%), and direct sourcing from farmers (3 vendors, 5.3%) are the next most popular sources for procurement. Produce is most frequently transported by two-wheeler (34 vendors, 59.6%), auto-rickshaw (19 vendors, 33.3%), and public transportation (4 vendors, 7.0%).

Due to the perishable nature of the product and the lack of cold storage facilities, the vast majority of vendors 45 out of 57 (78.9%) purchase fruit every day; 9 vendors (15.8%) procure on alternate days, and 3 vendors (5.3%) acquire twice a day. The labor-intensive nature of the job is shown by the fact that vendors work an average of 11.3 hours per day (ranging from 4 to 21 hours), 6.1 days per week (ranging from 5 to 7 days), and travel an average of 5.1 km (ranging from 1 to 10 km) to procure product.

3.2 Cost and return structure of push cart fruit vendors

The daily cost–return structure for single-commodity and multi-commodity vendors is presented in Table 5. Single-commodity vendors incurred an average daily working capital (stock procurement cost) of ₹1,840, along with transportation costs of ₹113.33, miscellaneous expenses of ₹131.33, and waste loss of ₹221.33, resulting in a total daily expenditure of ₹2,306. They generated an average daily revenue of ₹3,165.62 and an average daily profit of ₹859.62. In comparison, multi-commodity vendors incurred a total daily expenditure of ₹4,260.71, comprising working capital of ₹3,500, transportation costs of ₹122.62, incidental expenses of ₹238.57, and waste loss of ₹399.52. Their average daily revenue was ₹5,980.95, with an average daily profit of ₹1,720.24, which was approximately twice that of single-commodity vendors.

Daily working capital (fruit procurement cost) constituted the largest cost component for both groups, accounting for 79.8% of total cost for single-commodity vendors and 82.0% for multi-commodity vendors, indicating that procurement costs primarily determine the cost structure. Waste loss represented a comparable share of total cost in both groups, reflecting the spoilage risk associated with perishable produce. Profit analysis revealed considerable income disparity, with the highest-performing vendors earning an average daily profit of ₹2,066, compared with ₹1,654.05 for the medium-performing group and ₹730 for the lowest-performing group. Thus, the highest-performing vendors earned nearly three times the daily profit of the lowest-performing vendors, highlighting substantial variation in financial performance and the importance of identifying the strategic and structural factors discussed in Sections 4.3 and 4.4.

The revenue and profit performance of both vendor groups is summarised in Table 7 using mean, maximum, and minimum values. Multi-commodity vendors generated higher average revenue and profit and exhibited a wider performance range, with a maximum daily revenue of ₹7,000 and a maximum daily profit of ₹2,150, compared with ₹3,750 and ₹770, respectively, for single-commodity vendors. Moreover, the minimum daily profit of multi-commodity vendors (₹1,370) exceeded the mean daily profit of single-commodity vendors (₹645.00), indicating that commodity diversification provides both greater earning potential and a higher income floor.

For both categories of vendors, seasonality has a significant impact on profitability. As shown in Table 8, the mean daily profit for single-commodity vendors is ₹953.3 in summer, ₹736 in winter, and ₹626.7 during the monsoon, while multi-commodity vendors earn ₹2,172.6, ₹1,756, and ₹1,496.4, respectively, following the same seasonal trend. The summer peak is consistent with increased demand for cooling, water-rich fruits like watermelon, whereas the monsoon decline reflects reduced foot traffic and higher spoilage risk. Even during the monsoon, multi-commodity vendors earn more than 2.3 times the profit of single-commodity vendors, highlighting the importance of product diversification in stabilizing revenue.

Push cart fruit vending is profitable but capital-light, with procurement costs dominating the cost structure, and multi-commodity vending consistently outperforms single-commodity vending on revenue, profit, profit stability across seasons, and resilience at the lower end of the performance distribution. These findings offer a direct empirical response

to the study's first objective. The conceptual claim that product diversification reduces the risk of unsold perishable stock is supported by this study, which also extends it empirically (Skinner, 2008).

3.3 Factors contributing to vendor success

There are 37 distinct items were categorized into eight major categories economic, product-related, operational, marketing, location, vendor-related, environmental, and supply chain factors in accordance with Mitra's (2018) factor framework. Respondents were asked to rate each item on a five-point Likert scale. To determine the relative impact of each factor group on vendor performance, mean scores were calculated for each category and ranked; higher mean values indicated a greater perceived influence on vendor performance.

Vendors identified customer-facing relational practices as the most influential driver of business performance, with marketing factors receiving the highest mean score (3.86), including personal relationships, trust, word-of-mouth promotion, and service delivery. This is consistent with the regression results in Section 4.4, where customer relationship and pricing strategies emerged as the strongest predictors of profit, supporting the findings of Roever and Skinner (2016). Operational factors ranked second (3.82), followed by environmental and vendor-related personal factors (3.81 each), location (3.807), supply chain (3.802), product-related (3.78), and economic factors (3.76). Overall, vendors perceived relational, operational, and personal capabilities as more important determinants of business success than cost-related economic factors.

3.3.1 Comparison between single and multi-commodity vendors

An independent samples t-test was used to examine differences in perceptions of the eight success-factor categories between single-commodity and multi-commodity vendors. As shown in Table 10, a statistically significant difference was observed only for economic factors (mean = 3.714 vs. 3.920; $t = 0.206$, $p = 0.005$), indicating that multi-commodity vendors view cash flow, margins and cost management more favourably, consistent with their higher profitability reported in Section 4.2. No significant differences were found for operational, product-related, marketing, location, environmental, supply chain or vendor-related factors ($p > 0.05$), suggesting that both groups operate under similar conditions and rely on comparable success drivers. Overall, the findings for Objective 2 indicate that, except for economic-factor perception, push cart fruit vending success is primarily a relational and operational phenomenon rather than a purely economic one.

3.4 Business strategies and their influence on profitability

Building on the strategic framework proposed by Shaikh and Luhar (2026), the field survey identified seven business strategies adopted by push cart fruit vendors in Salem City: customer relationship, multi-commodity selling, mobility, dynamic pricing, procurement, value addition and digital payment. Based on the complete sample of 57 vendors, a multiple linear regression model was estimated in SPSS using daily profit (₹) as the dependent variable and the seven business strategies as independent variables to examine their impact on profitability.

3.4.1 Model fit

Table XI. Regression model summary

R	R ²	Adjusted R ²	Standard error
0.861	0.742	0.705	66.49

Source: Primary survey data (2026), multiple linear regression output (SPSS).

Table XII. ANOVA for the regression model

Model	Sum of squares	df	Mean square	F	Sig.
Regression	623,101.662	7	89,014.523	20.135	< 0.001
Residual	216,626.058	49	4,420.940		
Total	839,727.719	56			

Source: Primary survey data (2026), multiple linear regression output (SPSS).

The set of business strategy variables and vendor profitability have a high overall association, as indicated by the model's R value of 0.861. The seven strategy variables collectively account for 74.2% of the variation in daily profit across the 57 sampled vendors, according to the coefficient of determination ($R^2 = 0.742$). The adjusted R^2 of 0.705 indicates that the model maintains strong explanatory power even after accounting for the number of predictors. The hypothesis that intentional business strategy, rather than chance or scale alone, is a major determinant of profitability among push cart fruit vendors is strongly supported by the ANOVA F-statistic of 20.135 ($p < 0.001$), which confirms that the regression model as a whole is highly statistically significant.

3.4.2 Regression coefficients and strategy impact

All seven independent variables were statistically significant predictors of daily profit ($p < 0.05$), indicating that each business strategy contributes significantly to vendor profitability. Customer relationship ($\beta = 0.53$, $t = 6.67$, $p < 0.001$) and dynamic pricing ($\beta = 0.51$, $t = 6.34$, $p < 0.001$) exerted the strongest positive effects, consistent with Shaikh and Luhar (2026) and Roever and Skinner (2016), and supporting the findings in Section 4.3. Value addition ($\beta = 0.43$, $t = 5.38$, $p < 0.001$) and multi-commodity selling ($\beta = 0.43$, $t = 5.51$, $p < 0.001$) also had significant positive effects, consistent with Devi and Lakshmi's (2023) findings on value-addition practices among fresh produce vendors reinforcing the findings in Section 4.2 that product diversification improves profitability. Mobility ($\beta = 0.32$, $t = 4.22$, $p < 0.001$) and procurement strategy ($\beta = 0.24$, $t = 3.22$, $p = 0.002$) showed moderate positive effects, while digital payment adoption ($\beta = 0.20$, $t = 2.66$, $p = 0.01$) had the smallest but significant effect, possibly owing to limited digital and banking literacy among vendors (Bakhshi et al., 2024). Overall, customer relationship and dynamic pricing strategies exerted the greatest influence on daily profitability.

3.5 Challenges faced by push cart fruit vendors

The challenges reported by vendors were classified into five categories based on the taxonomy of Karthika and Chinnu (2025): financial, infrastructure, marketing, personal health and technological. These categories were evaluated using weighted average ranking and descriptive statistics (mean and standard deviation). Financial challenges comprised working capital, institutional credit, borrowing costs, income, savings or insurance and raw material costs. Infrastructure challenges included vending spaces, roads and drainage, shelter, sanitation, drinking water, waste disposal and traffic congestion. Marketing challenges covered competition, pricing power, demand fluctuations, customer base and promotional capabilities, while personal health and technological challenges included healthcare, mental stress, digital literacy, market information and digital payment adoption.

3.5.1 Descriptive ranking of challenge categories

Push cart fruit vendors in Salem City were most severely constrained by financial difficulties, which had the highest mean score (3.89). The comparatively high standard deviation (0.82) shows that the degree of financial hardship varies significantly among vendors. Vendor operations are also significantly impacted by marketing challenges (mean = 3.81) and personal health challenges (mean = 3.80). Infrastructure challenges (mean = 3.75) have a moderate impact, and technological challenges (mean = 3.68) were rated as the least severe of the five categories, which is consistent with the relatively modest regression impact of digital payment strategy on profit reported in Section 4.4.

3.5.2 Weighted average ranking of challenges

In line with Karthika and Chinnu's (2025) conclusion that financial instability resulting from restricted access to formal credit is a defining characteristic of street vendor livelihoods in Tamil Nadu, the weighted average ranking validates the descriptive analysis, with financial challenges ranking first (3.89) as the most critical constraint, followed by marketing issues (3.81), reflecting competitive pressure from organized retail, online channels and informal rivals. These findings directly address the fourth research objective by establishing financial instability particularly limited access to institutional credit, irregular income, and the absence of savings or insurance as the foremost constraint on the livelihoods of push cart fruit vendors in Salem city, ahead of marketing competition, personal health, infrastructural deficits and technological gaps. Personal health issues ranked third (3.80), reflecting the physically demanding nature of work that often exceeds 11 hours per day (Table 4). Infrastructure challenges ranked fourth (3.75), a pattern also observed in other rapidly urbanizing contexts where vendor space is politically contested (Recio and Gomez, 2013), while technological challenges ranked fifth (3.68), indicating that vendors currently view digital infrastructure as a secondary concern compared with financial and marketing pressures, although this may change as digital payment adoption increases.

4. Summary of Major Findings

The principal findings indicate that most vendors operate with limited capital and depend on daily earnings for household survival, supporting the capital-light nature of cart vending described by Krishnan and Thirumathi (2023). Direct wholesale procurement and cart mobility minimise procurement costs and enable vendors to respond to customer demand, consistent with Roever and Skinner (2016). Multi-commodity vendors achieved higher and more stable profits than single-commodity vendors, while customer relationships, trust, repeat business and direct wholesale procurement emerged as the most influential success factors. Inadequate storage facilities, lack of weather protection, irregular income and limited access to institutional credit were the most severe challenges. The study recommends strengthening customer relationship management, promoting multi-commodity selling, utilising digital payment systems, adopting scientific procurement practices and improving value addition. At the policy level, microcredit facilities, skill development programmes, and formal vending zones with essential infrastructure, as recommended by Karthika and Chinnu (2025) and Khan and Tariq (2025), should be introduced to improve the operating environment and support the sustainable livelihood of push cart fruit vendors.

5. Limitations and Directions for Future Research

The findings should be interpreted in light of several limitations. Although the sample of 57 vendors was adequate for the analyses, it was selected through purposive (non-probability) sampling from a single Tier-2 city and is therefore not representative of vendors in other cities or vending formats. The cross-sectional design captured conditions at a single point in time, while cost, income and business strategy data were self-reported, introducing possible recall and social-desirability bias. Although the regression model explained 74.2% of the variation in daily profit, factors such as individual risk preference, household labour availability and GPS-based footfall data were beyond the scope of the study. Future research should replicate the analysis across Tier-2 and Tier-3 cities, adopt longitudinal designs, evaluate policy interventions such as designated vending zones and microcredit, and extend the cost–return framework to other street-vending categories.

6. CONCLUSION

Push cart fruit vending in Salem City provides sustainable livelihoods for low-investment urban vendors. Vendor profitability is primarily driven by customer relationship management, dynamic pricing, product diversification, value addition and operational mobility, while inadequate infrastructure, restricted access to formal credit and limited digital adoption remain major constraints. The study contributes empirical evidence that business strategies significantly influence profitability among push cart fruit vendors in a Tier-2 Indian city.

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Conflict of Interest Statement:

The authors declare that there is no conflict of interest.

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Data Availability Statement

The data supporting the findings of this study are available within the article and its tables. Additional data are available from the corresponding author upon reasonable request.

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Appendix

Table I. Structure of the Indian retail sector by 7norganized7 type

Sector	Share in retail market (%)
Unorganised retail (street vendors, small shops, kirana stores)	85
Organised retail (malls, supermarkets, chain stores)	15

Source: Invest India (2025).

Table II. Composition of the 7norganized retail market in India

Unorganised retail segment	Market share (%)
Kirana stores	65
Small specialty shops	15
Street vendors	15
Weekly markets	8
Push cart vendors	7

Source: IBEF (2025).

Table III. Demographic profile of respondents (n = 57)

Characteristic	Category	Number of vendors	Percent
Gender	Male	30	52.6
	Female	27	47.4
Age group (years)	21–30	11	19.3
	31–40	16	28.1
	41–50	15	26.3
	51–60	11	19.3
	61–70	4	7.0
	71–80	6	10.6
Marital status	Married	45	78.9
	Widow/widower	7	12.3
	Unmarried	5	8.8
Education	Illiterate	16	28.1
	Primary	11	19.3
	Middle	13	22.8
	Secondary	9	15.8
	Senior secondary	2	3.5
	Diploma	1	1.8
	Graduate	5	8.8
Family size	1	2	3.5
	2–3	19	33.3
	4–5	28	49.1
	6–7	4	7.0
	8–10	3	5.3

Source: Primary survey data (2026).

Table IV. Operational practices of push cart fruit vendors

Variable	Maximum	Minimum	Mean
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Working hours per day	21	4	11.3
Working days per week	7	5	6.1
Distance travelled for procurement (km)	10	1	5.1

Source: Primary survey data (2026).

Table V. Daily cost–return structure: single versus multi-commodity vendors (₹)

Cost/return component	Single-commodity vendors	Multi-commodity vendors
Product transport cost per day	113.33	122.62
Daily working capital	1,840.00	3,500.00
Miscellaneous expense per day	131.33	238.57
Wastage loss per day	221.33	399.52
Total expenditure per day	2,306.00	4,260.71
Total revenue per day	3,165.62	5,980.95
Total profit per day	859.62	1,720.24

Source: Primary survey data (2026), computed using cost–return analysis.

Table VI. Profit distribution across vendor performance groups

Performance group	Average profit per day (₹)	Share of total profit (%)
Top performers	2,066.00	46.4
Middle performers	1,654.05	37.2
Bottom performers	730.00	16.4

Source: Primary survey data (2026).

Table VII. Revenue and profit comparison by vendor type (₹ per day)

Statistic	Revenue single	Revenue multi	Profit single	Profit multi
Mean	3,165.62	5,980.95	645.00	1,760.20
Maximum	3,750.00	7,000.00	770.00	2,150.00
Minimum	2,300.00	5,200.00	520.00	1,370.00

Source: Primary survey data (2026).

Table VIII. Season-wise mean daily profit by vendor type (₹)

Season	Single-commodity (mean)	Multi-commodity (mean)
Summer	953.3	2,172.6
Winter	736.0	1,756.0
Monsoon	626.7	1,496.4

Source: Primary survey data (2026).

Table IX. Ranking of factors influencing vendor business performance

Factor category	Mean score	Rank
Marketing factors	3.86	I
Operational factors	3.82	II
Environmental factors	3.81	III (tie)
Vendor-related factors	3.81	III (tie)
Supply chain factors	3.807	IV
Location factors	3.802	V
Product-related factors	3.78	VI
Economic factors	3.76	VII

Source: Primary survey data (2026), Likert-scale mean score analysis (n = 57).

Table X. Independent samples t-test: single versus multi-commodity vendors' perception of success factors

Factor	Single-commodity mean	Multi-commodity mean	t-value	p-value	Result
Economic	3.714	3.920	0.206	0.005	Significant
Operational	3.947	3.776	1.615	0.112	Not significant
Product	3.693	3.824	0.131	0.164	Not significant
Marketing	3.813	3.881	0.068	0.536	Not significant
Location	3.883	3.797	0.086	0.393	Not significant
Environmental	3.750	3.833	0.083	0.408	Not significant

Supply chain	3.817	3.804	0.013	0.919	Not significant
Vendor-related	3.947	3.771	0.176	0.111	Not significant

Source: Primary survey data (2026), independent samples t-test.

Table XIII. Standardised regression coefficients for business strategy variables

Strategy	Beta	t-value	Sig.	Impact level
Customer relationship	0.53	6.67	< 0.001	Very high impact
Dynamic pricing	0.51	6.34	< 0.001	Very high impact
Multi-commodity	0.43	5.51	< 0.001	High impact
Value addition	0.43	5.38	< 0.001	High impact
Mobility	0.32	4.22	< 0.001	Moderate impact
Procurement	0.24	3.22	0.002	Moderate impact
Digital payment	0.20	2.66	0.01	Low impact

Source: Primary survey data (2026), multiple linear regression output (SPSS).

Table XIV. Descriptive statistics for challenge categories

Challenge category	Mean	Standard deviation
Financial challenges	3.89	0.82
Marketing challenges	3.81	0.76
Personal health challenges	3.80	0.74
Infrastructure challenges	3.75	0.88
Technological challenges	3.68	0.79

Source: Primary survey data (2026), descriptive analysis (n = 57).

Table XV. Weighted average ranking of challenge categories

Category of challenge	Number of items	Average weighted score	Rank
Financial challenges	6	3.89	1
Marketing challenges	6	3.81	2
Personal health challenges	5	3.80	3
Infrastructure challenges	6	3.75	4
Technological challenges	5	3.68	5

Source: Primary survey data (2026), weighted average ranking (n = 57).