Factors for Pricing Decision of Food Products in Mbeya City, Tanzania

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ABSTRACT

This study examined factors in the pricing decision of food products in Mbeya City. It employed non- experimental research design where every participant had an equal chance of being selected in which a sample of 100 food vendors through a cross-sectional time dimension was collected using questionnaires at Mwanjelwa, SIDO and Soweto markets in Mbeya City. Multiple regression techniques were employed in data analysis using both SPSS and STATA packages. Variable inflationary factors and link tests were used to predict multi-collinearity and model specification. Findings showed that dependents of food dealers were inversely correlated with the pricing of food products. Furthermore, the income level of customers was inversely related to the price of food products while the type of customers and customer beliefs were both positively related to the price of food. Study concluded that vendors' dependents, income level of customers, type of customers, and customer beliefs on food vending services influence the pricing decision of food products. It is, therefore, recommended that local government authorities should empower food dealers on pricing decision of food products services.

Keywords: Food Vendors, Pricing Decision, Pricing Knowledge, Food Products.

Background of the Study

Sustainable food consumer evaluation is based on product values and credibility to health and ethical concerns (Kovacs & Kreszetes, 2022). The motivations to consume available and accessible food products include benefits for human health contrary to higher prices (Guiné *et al*., 2022). On the other hand; the benefits, costs, opportunity costs and risk aspects of food products describe the condition of the food industry (Suhel *et al.*, 2022). Accordingly, Yang *et al.* (2022) believe that quality-based pricing decisions and information disclosure improve profits than actual levels. Thus, most superior aspects in food products include innovation, product, promotion, price, and collusion strategies (Suhel *et al.*, 2022). As a result, Yang *et al.* (2022) observed that quality-based pricing strategy yields lower prices than a pricing strategy that does not consider quality. Subsequently, Sutaguna *et al.* (2023) argue that promotions on social media, prices, and menu variety simultaneously have effects on purchasing decisions of food products. He *et al*. (2020) found that food products' deterioration rate and quality dropping rate affects the delivery time as well as the pricing decisions.

Conversely, Mensah *et al.* (2021) observed that low-income groups spent a greater proportion of their household food expenditure on street foods. Thus, the benefit of value-added food products services remains important to maximize the profit of the food dealer and the customer value at the same time (Rajabu, 2015). Consequently, pricing decisions as the value which users compare with the price of a competitor's product is an important element of the marketing product mix that determines the business. Little is known about factors that influence pricing decisions on food products by food dealers that will ensure profit realization and sustainability despite of having more customers. This study, therefore, investigated factors that influence pricing decision of food products in Mbeya City.

Statement of the Problem

It is argued that market supply and demand of food products affect price pattern and the sales volume in relation to the delivery systems, e-commerce and advertisement (Liu *et al*., 2022). Wei *et al*. (2020) found out that the ratio of online and offline profit to the total dual-channel profit of food products depends on the location of customers and the values of the logistics costs. As a

result, the overall profit of the food products supply chain obtained by pricing food products through a decentralized decision-making model is lower than that created under centralized decision-making (Wang *et al.*, 2022). Similarly, Liu *et al*. (2019) found out that when organic food products do not dominate the initial market, green subsidies do not affect the prices of the two products. Food products services have a substantial sensitivity due to its highly competitive nature of the industry and the direct relationship with different levels of income of consumer groups (Deljouyan *et al*, 2019). Subsequently, Yang *et al.* (2022) observed that lower prices drive demand, thus improving profits and reducing food waste. Additionally, Yang *et al.* (2022) argue that, when an information strategy is employed, the prices in a quality-based pricing strategy of food stay the same or even increase during the selling season. Thus, price decision is a critical component for any business and crucial to its survival. Consequently, pricing decisions among food dealers differ from one dealer to another depending on different factors that are considered during pricing decisions (Cant *et al.,* 2016). However, little information is available on what influence pricing decisions of food products in the food sector. Therefore, this study therefore investigated factors that influence the pricing decision of food products in Mbeya City.

Research Methodology
Study Location
This study was conducted at Mwanjelwa, SIDO and Soweto markets in Mbeya City. Mbeya City is within Mbeya District. It is located between latitudes 80 50' and 80 57' South of the equator and between longitudes 330 30' and 350 35' East of the Greenwich meridian. It has a total land area of 214 sq. km and borders Mbeya District Council on all sides. Mbeya City is the headquarters of Mbeya Region. Administratively the City has two divisions (Sisimba and Iyunga), 36 wards, and 181 streets with a population of 640, 320 and growth rate of 4.68% per annum. The study locations were chosen because of the availability of data as Food Vendors who were available so as to achieve the study objectives. To achieve the study objective, a stratified proportionate number of heterogeneous food vendors were investigated.

Research Design
The present study employed non - experimental research design in which each respondent from different food products and customers who purposively had

knowledge in food products were selected (Krysik & Finn, 2010; Neuman, 2014). The present study used a sampling frame of food vendors from Mwanjelwa where data was collected at once from Food Vendors to determine the pricing decision of their food products.

Sample Size Determination

The proportion of target study levels of food vendors with desirable characteristics was 10% of the population who were assumed to be food dealers in the z –statistic from which 1.96 were chosen, and the desired accuracy of margin error was at the 0.05 confidence level. The proportion of respondents who were sampled was denoted by $p = 10\%$, and those who were not sampled was denoted by $q = 90\%$, confidence level = 95%, and tolerance of error = 5%. A confidence level of 95% means that if the same study were conducted 100 times with random samples drawn from the same population, it would have represented the true population value 95 times. This definition implies that 5 times out of 100, the sample would not represent true population value.

Consequently, the sample size n was given by:

$$n = \left(\frac{Z}{e}\right)^2 .p.q \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

$n = \left(\frac{1.96}{0.05}\right)^2 (0.1)(0.1) = 138.2976$. The adjusted minimum sample size was computed using the formula:

$$nf = \frac{(n)}{1 + \left(\frac{n}{N}\right)} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

Where n= 138.2976, N = 400

Therefore, $nf = \frac{138.2976}{1 + \left(\frac{138.2976}{400}\right)} = \frac{138.2976}{1.3457} = 102.77$. Therefore, a minimum

sample of 100 food vendors were interviewed (Saunder *et al.*, 2009).

Sampling Strategies

Stratified proportionate and purposive sampling plans were used because there was a possibility that the outcome of interest could vary among subgroups and

avoid over or under-representation. Also, systematic random sampling was used where the class size of particular strata was large. Therefore, the sampling interval was computed to get the required number of food vendors while university graduates in each stratum were purposively included to avoid them being underrepresented (Neuman, 2014; Saunders *et al.,* 2009; Tracy, 2013).

Data Collection Instruments
Cross-sectional data were collected from food dealers at Mwanjelwa market. However, the pre-test for the research questionnaires was done on 10 food vendors and found how effective the questionnaires were since respondents were given room to recommend on questionnaires and corrected. Cross-sectional data collection was done as the simplest and least costly approach (Neuman, 2014; Krysik & Finn, 2010). Questions were asked in the same manner for both graduates and non-graduates. Cross-sectional data sought to describe the pricing of food products by self-employed food vendors in their location (Saunders *et al*., 2009).

Analysis of Factors Influencing the Pricing Decisions of Food Products
The relationship between factors influencing the prices of food products with socio-economic characteristics towards the food vending model of business was ascertained. The present study used a linear regression model, specified as pricing decisions of food products as a function of: vendors' dependents, income level, experience, customers' beliefs, and pricing knowledge, attracting customers and satisfaction of customers on services offered by food vendors. Thus, the food vending model was expressed as follows:

$$\text{Pricing decision of food products}(Y) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \varepsilon \quad (3)$$

$\beta_0 =$ constant term; $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ & β_7 are coefficients of variables that were estimated;

$X_1 =$ number of dependents; $X_2 =$ income level; $X_3 =$ Experience in business; $X_4 =$ Customers' believes; $X_5 =$ Pricing knowledge, ;

$X_6 =$ Attract customers; $X_7 =$ Satisfaction of customers; and

$\varepsilon =$ Error term of variables not included in the regression model.

The model was tested for multi-collinearity problems, model specification, and adjusted R-Square to estimate the model fit. Also, t-statistics was

employed to estimate the degree of relationship and its extent of association between the dependent variable and predictor variables.

Data Analysis
Both SPSS and STATA packages were employed to analyze data in which descriptive information were obtained. Adjusted R- square, t-statistic, link test, and variance inflation factors (VIF) were used to determine the goodness of fit of the model, measures standard errors the estimate is, model specification (variable of prediction, _hat, and the variable of squared prediction, hatsq.) and to detect the extent of multi-collinearity problem, respectively (Greene, 2018; Wooldridge, 2009).

Results and Discussions
Demographic Information of Food Vendors
Gender of Food Vendors
Research findings in Figure 1 showed that 51% and 49% of food vendors were female and male, respectively. This is because of the nature of business, most Tanzanians believe that women are the ones responsible for cooking activities hence, most women are more involved in the food vending business than men. Present findings are similar to observations made by Juma (2018) who supports that females engage more in food vending activities than males on compliance of food vendors to food vending regulations in Tanzania. Study findings (Figure 1) showed that 65% of food vendors were aged between 23-32 years followed by 15% aged between 13-22 years while 7% of food vendors were aged between 43-52 years. The majority (65%) of participants were engaged in food vending activities.

The reason for this age comprised of graduates from school and due to lack of employment opportunities people try to employ themselves and engage in businesses that need low capital as food vending businesses. Present findings are similar to observations made by Papulova (2020) that entrepreneurship behavior is centered in the eyes of the young generation to changing customer requirements. Findings in Figure 1 showed that 36% followed by 35% of food vendors in Mbeya City have attained secondary and diploma education, accordingly while 12% had attained a degree and above level of education. Results indicated that most of the food vendors in Mbeya City have secondary education levels. This is because people who have a secondary education are

many when compared with the degree and above graduates. This is caused by a challenge in employment opportunities for secondary graduates that is why they employ themselves.
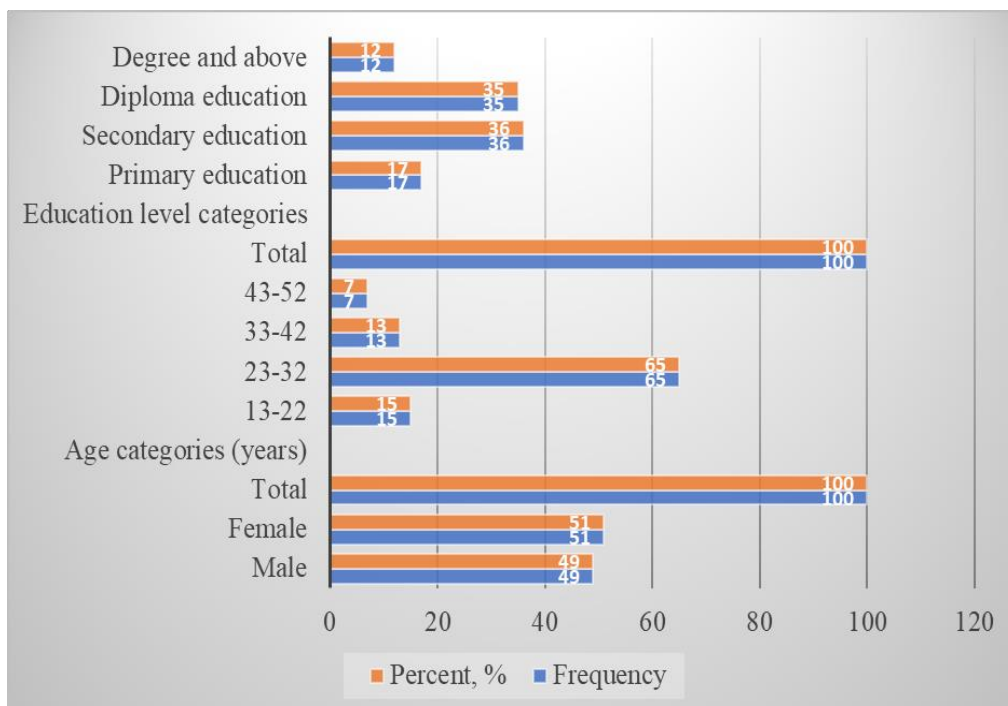

Figure 1: Gender, Age Categories, and Education Level of Food Vendors

Marital Status, Household Size of Participants and Dependents of Food Vendors

Study findings in Figure 2 showed that 46% followed by 45% of food vendors in Mbeya City were married and single, respectively while 1% of them were divorced. Results indicated that food vendors in Mbeya City most of them were married. This is because married people have a responsibility to make sure that the family receives its basic needs so they are more focused on finding money. Study results (Figure 2) showed that 67% followed by 22% of food vendors in Mbeya City had household sizes between 5-8 and 9-12, respectively while 11% had a household size between 1-4 of family members. Results indicated that most of the food vendors had 5-8 household sizes. The findings were above the National Census (2012) which reported that Mbeya City Council had a 4.2 average household size. This difference could be associated with time variation since 2012 of long-run family generation.

Furthermore, research findings (Figure 2) showed that 72% followed by 25% of food vendors in Mbeya City had dependents between 0-3 and 4-7, accordingly while 3% of them had 8-11 dependents. This indicated that the majority of food vendors had less than three (3) dependents. This is because many of them were young so they had fewer dependents than old people.
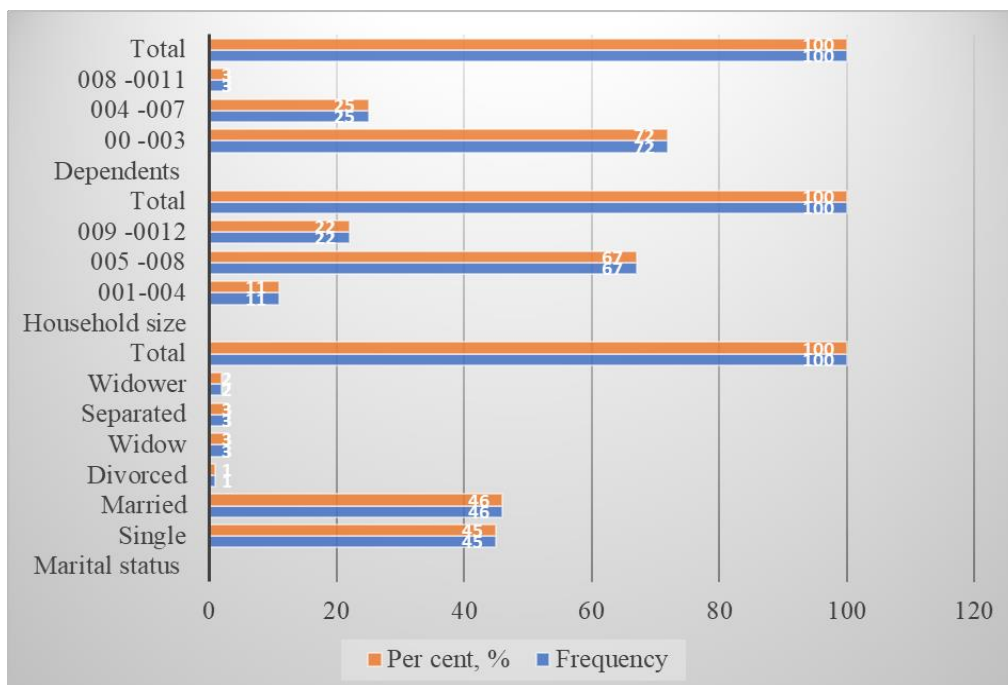

Figure 2: Marital Status, Household Size, and Dependents of Vendors

Income Level, Experience, and Pricing Knowledge of Food Vendors

Present findings in Figure 3 showed that 71% of food vendors had income level between 60 000-560 000 followed by 25% with income level between 561 000-1 061 000 while 2% had income level between 1 062 000 - 1 562 000 and 2 064 000 – 2 564 000. Results indicated that majority of food vendors in Mbeya City had income levels between 60 000 - 560 000. This is because the majority (71%) of food vendors lacked pricing decision knowledge as a reason why they failed to sustain their business activities resulting into low-income levels (Acs & Kallas 2020). Study findings (Figure 3) showed that 72% of food vendors had an experience between 1-5 years, followed by 24% with experience between 6-10 years while 4% of them had an experience between 11-15 years. Results indicated that most of the food vendors had low

experience as a result they failed to ensure their business sustainability in the food vending market due to different challenges (Justino, 2015). Present findings (Figure 3) showed that 92% of food vendors faced challenges with pricing decision knowledge while 8% did not. Results indicated that majority of food vendors lacked pricing knowledge as a result, they got low profits and sometimes lost and failed to sustain their businesses. Findings (Figure 3) indicated that majority of food vendors lacked pricing knowledge as a result they had low monthly income. Study findings were similar to observations made by Cant *et al*. (2020) that pricing decision setting was influenced by competitors' information in the food vending market.
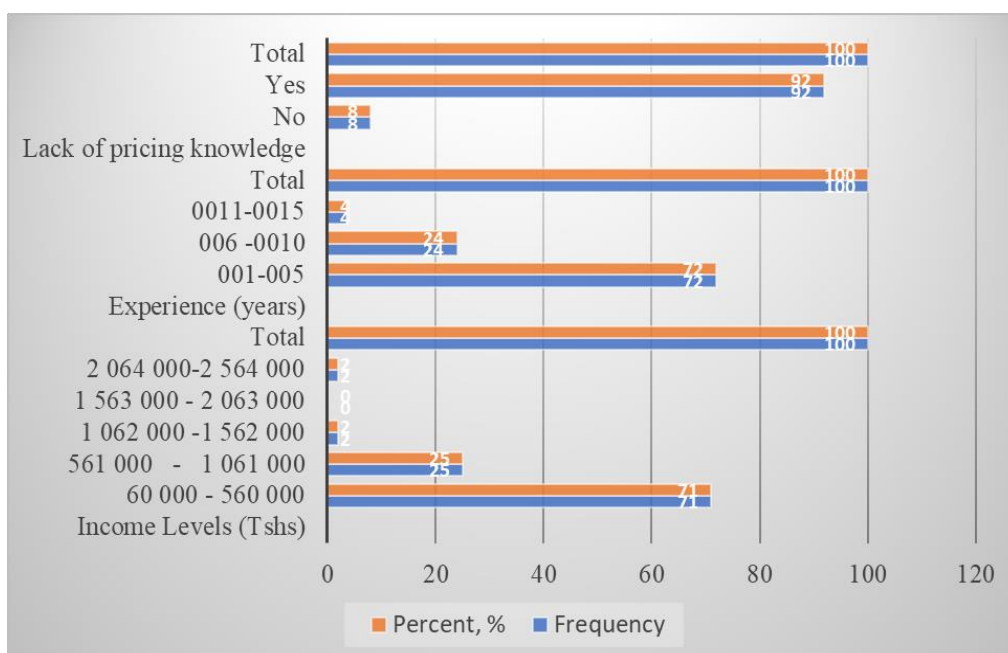

Figure 3: Income Level, Experience, and Pricing Knowledge of Food Vendors

Value/Quality of Food Products

The study assessed whether food vendors determined the price of food products by considering how much the customer believed the value of food products they sold. Findings (Figure 4) showed that 91% of food vendors considered the value of their food products during price determination while 9% did not. Results indicated that majority of food vendors value their food products during price determination of their food services in order to meet

what their customer believed and their expected income level. Research findings (Figure 4) showed that 75% of food vendors lacked knowledge of 8ps while 25% had knowledge of 8ps. Results indicated that the majority of food vendors lacked knowledge of pricing decisions of food products. As a result, the majority of food vendors did not sustain themselves despite having more customers due to a lack of pricing knowledge. Knowledge help business to perform within business objectives because it is concerned about what product to produce, price, place, promotions, people, process, physical evidence, and philosophy that guide business. Similarly, Ahmed (2020) found out that businesses use the marketing mix to determine how to promote and position their products so as to appeal to their target audiences. Findings (Figure 4) showed that 97% of food vendors' customers were satisfied when using food from food vendors while 3% did not. This indicates that the majority of food vendors produced food with high quality that meets customers' satisfaction. As a result, customers increase to a specific food vendor(s) because they get what they want at a specific period of time.
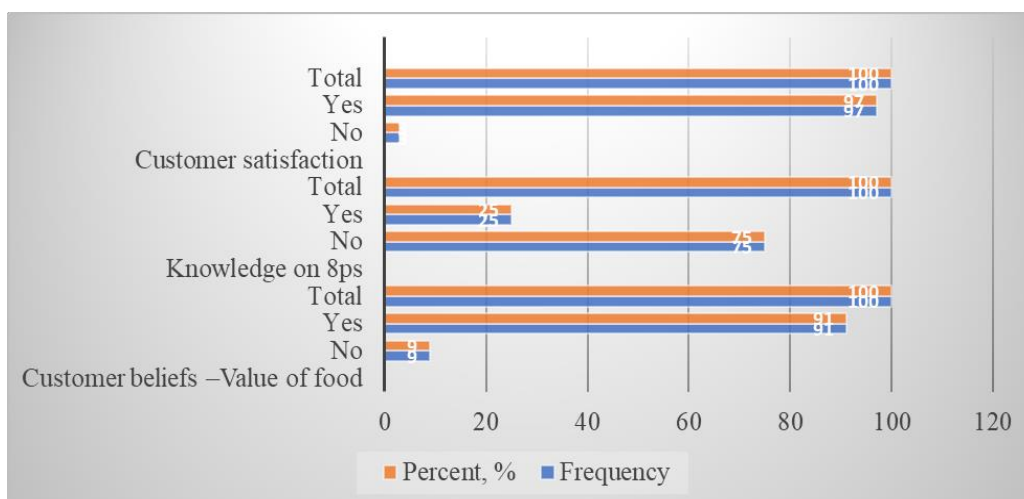
Figure 4: Customer Beliefs, Knowledge on 8ps and Satisfaction of Customers

Analysis of Factors Influencing Pricing Decisions of Food Products

Multiple linear regression analysis was used in which multi-collinearity problems and link tests for model specification were tested. Results showed that there was no multi-collinearity problem since the mean-variance inflationary factor was 1.17 (Greene, 2018). Furthermore, model specification

(variable of prediction, _hat, and the variable of squared prediction, _hatsq) was not significant at p>0.05 signifying that the model was correctly specified (Table 1).

Table 1: Link Test of Model Specification

Variable	Coef.	Std. Err.	T	P>|t|
_hat	1.876031	.4175258	4.49	0.000
_hatsq	-.5990027	.2759745	-1.17	0.062
_cons	-.2785673	.1639143	-1.70	0.092

Results in Table 2 showed that vendor dependents were inversely correlated with the price for food products and statistically significant at p<0.01 level. Results meant that the price of food decreases by 3.9% with an increase of one dependent. This suggests that as dependent as manpower to serve in food vending activities, charges that were paid to supporting laborers were saved and reduce costs in food processing hence the price of food declines (Hafeez *et al.*, 2020; Singh, 2019). Also, findings in Table 2 showed that the income level of customers was inversely related to the price of food products at p<0.05 level. Results meant that the income level of customers' increase by one unit, which keeps them away from consuming food from food vendors by 7.8%.

This suggests that the more income level of consumers increases the more the broad choice of food varieties other than food vendors which becomes inferior to them due to financial freedom (URT, 2018). However, results as shown in Table 2 showed that the type of customer was statistically significant and positively related to the price of food at p<0.01 level. This suggests that as one unit of customers increased, the price of food increased by 100% due to the demand law (URT, 2018). Similarly, customers' beliefs were statistically significant and positively correlated with the price of food at p<0.01level. Results meant that as customer beliefs increased by one unit on the food vendors' service, the price of food tends to increase proportionately by 37.8% (Mensah *et al.*, 2021).

Table 1: Estimation of Determinants of the Price of Food Products

Variable	Coef.	Std. Err.	t	P>|t|
Number of dependents	-.0392789	0106047	-3.70	0.000
Income level of customers	-.0785844	.0286215	-2.75	0.007
Experience	.0668532	0409683	1.63	0.106
Type of Customers	1.047663	.1851075	5.66	0.000
Customer beliefs	.3780682	.0683749	5.53	0.000
Pricing Knowledge	.0435063	.0459033	0.95	0.346
Attract customers	-.330405	.1947184	-1.70	0.093
Satisfaction of customers	-.021712	.1079347	-0.20	0.841
_cons	.0250589	.2850393	. 0.09	0.930

R-squared = 0.4625; Adj. R-squared = 0.4152; Mean VIF = 1.17; Number of obs = 100

Conclusion and Recommendations

Findings showed that number of dependents were inversely correlated with the pricing of food products and were statistically significant at $p<0.01$ level. Furthermore, the income level of customers was inversely related to the price of food products at $p<0.05$ while the type of customers and customer beliefs were both statistically significant and positively related to the price of food at $p<0.01$ level. The present study concluded that number of dependents, income level of customers, level of customers, and customer beliefs/taste on food vending services influenced the pricing decisions of food products. It is therefore recommended that local government authorities should empower food dealers with pricing decision knowledge and customer care on food products services so as to improve their livelihoods.

REFERENCES

Ahmed, A. (2020). Applying the Eight P's of the Marketing Mix in the Service Industry.Newsletter, available at https://smallbusiness.chron.com/ applying-eight-ps-marketing-mix-service-industry-58585.html.

Cant, M. C., Wiid, J., & Sephapo, C. M. (2016). Key Factors Influencing Pricing Strategies for Small Business Enterprises (SMEs): Are They Important? *Journal of Applied Business Research* (JABR), 32(6), 1737-1750.

Deljouyan, N., Jafari, D., and Darigh, A. (2019). Investigating the Impact of Multiple Competition on Producer Pricing in the food industry. *Industrial Engineering Letters*, 9(4): 54-64.

Greene, W.H. (2018), "Econometric Analysis". 8th ed. New York: Pearson.

Guin, R.P.F.; Florença, S.G.; Costa, D.T.V.A.; Çelik, S.; Ferreira, M.; Cardoso, A.P.; Çetin, S.; Costa, C.A. (2022). Comparative Study about the Consumption of Organic Food Products on Samples of Portuguese and Turkish Consumers under the COVID-19 Pandemic Context. *Agronomy*, 12, 1385. https:// doi.org/10.3390/agronomy12061385.

Hafeez, A., Subhan, S, and Jamil, M. (2020). Determinants of Unemployment among Educated Youth: A Case Study of District, Pakistan. *Pakistan Economic Review*, 3(2):61-79.

He, Y., Huang, H. & Li, D. (2020) Inventory and pricing decisions for a dual-channel supply chain with deteriorating products. *Operation Research* 20, 1461–1503 (2020). https://doi.org/10.1007/s12351-018-0393-2.

Juma, M. (2018). Compliance of Food Vendors to Food Vending Regulations in Tanzania: A Case of Dodoma Municipality. *Social Science*, 8(5):109-123.

Justino, M.V. (2015). *Factors Influencing the Failure of Small Enterprises in a Selected Municipality in Luanda*, Angola. 138.

Kovacs, I. and Kreszetes, E.R. (2022). Perceived Consumer Effectiveness and Willingness to Pay for Credence Product Attributes of Sustainable Foods. *Sustainability,* 14(7):4338. https://doi.org/10.3390/su14074338.

Krysik, J. L. and Finn, J. (2010). *Research for effective social work practice*. Routledge, New York, and the United Kingdom.

Liu, R., Sun, Y. and Wang, J. (2022). *Influential Factors of Sales Revenue in the Fast-Food Industry.* Proceedings of the 2022 7th International Conference on Financial Innovation and Economic Development (ICFIED2022). https://www.atlantis press.com/ proceedings /series/a ebmr. https://doi.org/10.2991/aebmr.k.220307.459.

Liu, K., Lan, Y., Li, W., and Cao, E. (2019). Behavior-Based Pricing of Organic and Conventional Agricultural Products Based on Green

Subsidies. *Sustainability*, *11*(4), 1151. https://doi.org/ 10.3390 /su11 041151.

Mensah, J.O, Aidoo, R. and Teye, A.N. (2013). Analysis of Street Food Consumption across Various Income Groups in the Kumasi Metropolis of Ghana. *International Review of Management and Business Research*, 2(4): 951-961.

Neuman, W.L. (2014). *Social Research Methods. Qualitative and Quantitative Approaches,* Seventh ed., Pearson Education Limited. Edinburgh Gate Harlow, England.

Papulova, E. (2020). Promoting process approach to management. Current Problems of the Corporate Sector. *SHS Web of Conferences* 83, 0150: 1-8.

Mramba, N. (2015). The Conception of Street Vending Business (SVB) in Income Poverty Reduction Reduction". *The International Business Research,* 8(5): 120-129.

Saunders, M., Lewis, P., and Thornhill, A. (2009). *Research Methods for Business Students*. 5th ed. Prentice Hall. Edinburgh Gate Harlow, England.

Singh, S.N, (2019). Business Inefficiencies and Youth Unemployment in Ethiopia: A Case Study of Mettu Town. *Business Ethics and Leadership,* 3(2):93-106.

Suhel, S., Mukhlis, M., Bashir, A., & Fitriyanti, E. (2022). The development of halal food industry in Bangka Belitung Island: An analytic network process. *Journal Perspektif Pembiayaan Dan Pembangunan Daerah*, *9*(6), 447 - 460. https://doi.org/10.22437/ppd.v9i6.14434.

Sutaguna, N. T., Sumerli, A., Razali, G. and Yusuf, M. (2023). Hanan Catering's Instagram promotions, pricing, and menu variety influence consumer purchasing decisions in Bandung. *International Journal of Economics and Management Research*, *2*(1): 76–87. https://doi.org/10.55606/ijemr.v2i1.67.

Tracy, S. J. (2013). *Qualitative research methods: Collecting evidence, Crafting analysis, and communicating impact*. Wiley-Blackwell.

Wang, J., Huo, Y., Guo, X., and Xu, Y. (2022). The Pricing Strategy of the Agricultural Product Supply Chain with Farmer Cooperatives as the Core Enterprise. *Agriculture*, *12*(5):732. https://doi.org/ 10.3390/ agriculture,12050732.

Wei, C., Asian, S., Ertek, G. and Hu, Z. (2020). Location-based pricing and channel selection in a supply chain: a case study from the food retail industry. *Annals of Operations Research*, 291:959-984.