

## ARAŞTIRMA MAKALESİ / RESEARCH ARTICLE

# ECONOMIC PERFORMANCE of WOMEN HONEY MARKETERS in ENUGU STATE, NIGERIA

## Nijerya Enugu Eyaleti Kadın Bal Piyasacılarının Ekonomik Performansı

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### ABSTRACT

Honey marketing is an important off-farm economic activity for women's livelihood and sustenance. Despite this, there is scant information in the literature about the economic performance of women honey marketers. Therefore, this study investigates the economic performance of women marketers, its drivers, and its challenges. Data collected from 120 women honey marketers were analyzed using descriptive statistics, gross profit, net profit, benefit-cost ratio, return on capital invested, operating ratio, marketing margin, and multiple regression. We found that honey marketing was a profitable venture, as indicated by the high gross profit (USD 262.08), net income (USD 257.03), marketing margin (56%), benefit-cost ratio (1.72), and return on capital invested (0.72) per 58.14 liters sold. Honey marketing also had a low operating ratio of 0.57. Thus, women honey marketers performed economically well. The significant factors that enhanced the profitability of honey marketing were education, experience in honey marketing, credit, and membership in an association. While age, purchasing costs, and transportation costs reduced honey marketing profitability. Inadequate capital and credit, price fluctuations, a poor road network, high transportation costs, adulteration, and poor marketing information were the major severe constraints faced in honey marketing. These call for the provision of credit, training, and education to honey marketers by the government to enhance the profitability of the enterprise.

**Keywords:** Economic, Honey marketing, Performance, Profitability, Women marketers

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### ÖZ

Bal pazarlaması, kadınların geçimi ve geçimi için önemli bir çiftlik dışı ekonomik faaliyettir. Buna rağmen literatürde kadın bal pazarlamacılarının ekonomik performansı hakkında çok az bilgi bulunmaktadır. Bu nedenle, bu çalışma kadın pazarlamacıların ekonomik performansını, itici güçlerini ve zorluklarını araştırıyor. Yüz yirmi kadın bal pazarlamacısından toplanan veriler, tanımlayıcı istatistikler, brüt kâr, net kâr, fayda-maliyet oranı, yatırılan sermaye getirisi, işletme oranı, pazarlama marjı ve çoklu regresyon kullanılarak analiz edildi. Yüksek brüt kar (262,08 ABD Doları), net gelir (257,03 ABD Doları), pazarlama marjı (%56), fayda-maliyet oranı (1,72) ve yatırılan sermaye getirisinin gösterdiği gibi bal pazarlamanın satılan 58,14 litre başına karlı bir girişim olduğunu bulduk (0,72). Bal pazarlaması da 0,57 gibi düşük bir işletme oranına sahipti. Böylece kadın bal pazarlamacıları ekonomik olarak iyi performans gösterdi. Bal pazarlamasının karlılığını artıran önemli faktörler eğitim, bal pazarlama deneyimi, kredi ve dernek üyeliği. Yaş, satın alma maliyetleri ve nakliye maliyetleri bal pazarlama karlılığını azaltmaktadır. Yetersiz sermaye ve kredi, fiyat dalgalanmaları, zayıf bir yol ağı, yüksek nakliye maliyetleri, taşış ve yetersiz pazarlama bilgisi, bal pazarlamasında karşılaşılan başlıca ciddi kısıtlamalardı. Bunlar, işletmenin karlılığını artırmak için hükümet tarafından bal pazarlamacılarına kredi, eğitim ve öğretim sağlanmasını gerektirir.

**Anahtar kelimeler:** Ekonomik, Bal pazarlaması, Performans, Karlılık, Kadın pazarlamacılar

### GENİŞLETİLMİŞ ÖZET:

**Çalışmanın amaçları:** Bal pazarlamasının kadınların geçiminde oynadığı kilit role rağmen, literatürde kadın bal pazarlamacılarının ekonomik performansına ilişkin bilgilerin yetersiz olması nedeniyle, bu çalışma (i) kadın bal pazarlamacılarının ekonomik performansını araştırmış, (ii) kadınlar arasında bal pazarlama karlılığını etkileyen faktörleri incelemiş ve (iii) kadınların bal pazarlamasında karşılaştıkları kısıtlamaları belirlemiştir.

**Materyaller ve yöntemler:** Çalışma alanı Nijerya'nın Enugu Eyaletidir. Veriler, rastgele seçilen 120 kadın bal pazarlamacısından yapılandırılmış anketlerle toplanmıştır. Veriler tanımlayıcı istatistikler (ortalama, frekans ve yüzde), karlılık analizi (brüt kar, net çiftlik geliri, fayda-maliyet oranı, yatırılan sermaye, işletme oranı ve pazarlama marjı), çoklu regresyon modeli ve Likert ölçekli derecelendirme kullanılarak analiz edilmiştir.

**Bulgular:** Kadın pazarlamacılar bal satışından ortalama 614,95 ABD doları gelir elde etmiştir. Ortalama 58,14 litre balı 269,69 ABD Doları karşılığında satın almışlardır. Bal pazarlamacılarının toplam değişken maliyeti 352,87 ABD Doları olup, bu tutar 5,05 ABD Doları olan toplam sabit maliyetten daha yüksektir. Ham bal satın alma maliyeti, işçilik maliyeti, nakliye maliyeti ve markalama maliyetleri kadın pazarlamacılar arasında bal pazarlamasının başlıca maliyetleridir. Kadın bal pazarlamacıları, küçük ölçekli faaliyet düzeyleri dikkate alındığında

pozitif ve nispeten yüksek brüt kâr (262,08 ABD Doları) ve net kâr (257,03 ABD Doları) elde etmişlerdir. Yüksek bir fayda-maliyet oranına (1,72), yatırılan sermayenin getirisine (0,72) ve pazarlama marjına (%56) sahiptirler. Faaliyet oranları ise 0,57 ile düşüktür. Tüm bu ekonomik performans ölçütleri, bal pazarlamasının kadınlar arasında karlı bir tarımsal işletme olduğunu göstermektedir.

Bal pazarlamasının ekonomik performansını (karlılık) olumlu yönde etkileyen önemli değişkenler eğitim, bal pazarlamasında deneyim, alınan kredi miktarı ve dernek üyeliğidir. Bu durum, bu değişkenlerdeki artışın kadın bal pazarlamacılarının karlılığını artırdığını göstermektedir. Yaş, satın alma maliyeti ve nakliye maliyetleri ise kadın bal pazarlamacılarının ekonomik performansını negatif ve anlamlı olarak etkilemektedir. Bu durum, bu değişkenlerdeki artışın kadın bal pazarlamacılarının karlılığını azalttığını göstermektedir.

Kadın bal pazarlamacılarının bal pazarlama faaliyetlerinde karşılaştıkları kısıtlarla ilgili olarak, yetersiz sermaye ve kredi eksikliği, fiyat dalgalanmaları, balın yüksek maliyeti, zayıf yol altyapısı ve yüksek nakliye maliyetleri sırasıyla kadınların bal pazarlamasında karşılaştıkları birinci, ikinci, üçüncü, dördüncü ve beşinci ciddi kısıtlardır. Bal pazarlamasında karşılaşılan diğer ciddi kısıtlar, önem derecelerine göre, bal pazarlaması için zayıf işletme gelişimi, bazı üreticilerin balda taşış yapması, zayıf pazarlama bilgisi, modern bal depolama tesislerinin eksikliği, balın önemi

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konusunda tüketici bilincinin zayıf olması ve kalifiye işgücü azlığı ve yüksek işgücü maliyetidir.

**Sonuç:** Bal pazarlaması, hem kırsal hem de kentli kadınların ekonomik durumlarını ve refahlarını iyileştirmek için kullanılabilir karlı, ekonomik ve uygulanabilir bir tarım dışı faaliyettir. Bu çalışma, hükümet organlarına, kalkınma ajanslarına ve finans kuruluşlarına, işletmelerinin karlılığını artırmak için kadın pazarlamacılara yardımcı olmaları çağrısında bulunmaktadır. Bu, mali yardım (hibe ve/veya kredi) ve kadın bal pazarlamacılarına pazarlama ve işletme geliştirme konularında eğitim ve öğretim sağlanması şeklinde olabilir.

### INTRODUCTION

Honey is a naturally sweet food product, complex in nature, that has extraordinary flavor and aroma, sugars, pollen grains, waxes, pigments, flavonoids, phenols, lipids, vitamins, minerals, enzymes, amino acids, organic acids, and other phytochemicals (Belay et al. 2017, Machado et al. 2018, Mulugeta & Belay 2022). It is made by honeybees from honeydew or nectar and is widely consumed worldwide due to its health benefits (Gebeyehu & Jalata 2023). Globally, honey is known to have several applications and uses in industry, medicine, and nutrition (Gela et al. 2021). It plays a critical role in human health, nutrition, and treatment of diseases (Asari et al. 2022, Cırık & Aksoy 2020; Demirkaya & Sagdicoglu Celep 2022 Ranneh et al. 2021). As a result, it is in high demand locally, is traded globally, and commands a higher premium (García 2018; Gela et al. 2021). Honey also plays an important role in the economic status of both rural and urban dwellers, and it contributes to the nation's economy (Arowolo et al. 2020, Gebeyehu & Jalata 2023; Mulugeta & Belay 2022, Verma et al. 2018). Honey, through production and marketing, is also an important economic activity that can be used to fight against poverty (Shrestha 2017).

In Nigeria, honey marketing is an important off-farm agricultural activity among both rural and urban women, with several benefits and advantages over other agricultural practices. In comparison to other agribusiness enterprises that are highly capital intensive, the honey marketing business, for example, requires little capital as a start-up. Also, it does not require the purchase of land, which makes the women venture into it as most African women have no access to land. It, therefore, serves as a

means of livelihood and sustenance for women in Nigeria and other sub-Saharan African nations. Women honey marketers play a significant role in getting honey to consumers through their marketing functions. Marketing functions such as labeling, branding, and packaging show the benefits of honey to consumers, which motivates their decision to purchase (Madas et al. 2020). Honey marketers, therefore, directly and indirectly, contribute to honey producers' well-being and economic status by assisting them to get revenue from their production activities.

Production without an efficient marketing system will lead to the spoilage of goods and economic losses in the agricultural enterprise. Therefore, agricultural marketing is an important agricultural activity as it deals with all activities that happen from the farm gate to the final consumer (Mukaila et al. 2021). Honey farmers' output will remain on the farm without agricultural marketers that distribute the produce to the final consumer who pays for the product. Despite the critical role agricultural marketing plays in honey, most attention has been on the production side.

There exists a large volume of literature on honey production, productivity, economic value, and profitability (Adedeji & Omoba 2016, Ajao & Oladimeji 2015, Akinade 2019, Akinmulewo et al. 2017, Bhatta et al. 2020, Chiemela et al. 2022, DeGrandi-Hoffman et al. 2019, Elzaki & Tian 2020, Masuku 2013, Ogunola et al. 2019, Otim et al. 2019, Onyekuru et al. 2010, Shrestha 2017, Stojanov et al. 2021, Vaziritabar & Esmaeilzade 2016, Verma et al. 2018, Vrabcová & Hájek 2020). These studies have shown that honey production is profitable. Meanwhile, there exist limited studies on the profitability of honey marketing (Arowolo et al. 2020, Mshelia et al. 2013, Yeserah et al. 2019). Arowolo et al. (2020) and Yeserah et al. (2019) assessed honey marketing, structure, and conduct. The analysis of Mshelia et al. (2013) was based on only gross margin, which was not enough to show the profitability or economic performance of honey marketing. These previous studies did not extensively investigate the economic performance of honey marketing and were not focused on women marketers, creating a gap in the honey marketing literature that the current study intends to fill. This study, therefore, contributed to the literature by (i) investigating the economic performance of women honey marketers, (ii) determining the factors influencing honey marketing profitability among

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women, and (iii) identifying the constraints faced by women in honey marketing.

This study provides detailed empirical literature on women's honey marketing performance for future studies to build on. As a result of revealing the determinants of women marketers' economic performance and the barriers they faced in efficient marketing, it would serve as a policy framework for interventions. Thus, women marketers would benefit from the outcome of this work, which would consequently increase women's participation in honey marketing, which is needed in light of the current global health challenges.

### MATERIALS AND METHODS

#### Study area

Enugu State was the study area. Enugu state is located in southeastern Nigeria on the coordinates 6.5364° N, 7.4356° E. Women entrepreneurs in the state are engaged in on-farm and off-farm agricultural activities such as honey marketing and processing. They also engaged in other entrepreneurship activities like trading, and artisanship.

#### Sampling procedure

Three local government areas (LGAs)—Nsukka, Uzouwani, and Enugu South—were purposefully selected from Enugu State, Nigeria, for the study due

to the high concentration of honey marketers. From the three selected LGAs, four communities were randomly selected. Finally, ten honey marketers were randomly selected from each community. This resulted in a total of 120 honey marketers.

According to Bannor et al. (2022), a sample size of  $n \geq 50+8p$  is sufficient for regression analysis ( $p$  is the number of independent variables). For this study,  $p = 8$ . Following this formula, the minimum sample size ( $n$ ) for this study is 114. This suggests that the sample size of 120 is adequate for the regression analysis.

#### Data collection

The primary data were elicited through the use of a structured questionnaire. The data collected include the socio-economic characteristics of women honey marketers, the cost and returns associated with honey marketing, and the constraints faced in honey marketing.

#### Data analysis

**Descriptive statistics:** Descriptive statistics such as mean, frequency, and percentage were used to describe the socio-economic characteristics of women honey marketers.

**Gross profit:** Gross profit is the difference between the total revenue accrued from the marketing enterprise and the total variable cost (Falola et al. 2022a). It is stated as follows:

$$\text{Gross profit} = \text{Total revenue} - \text{Total variable cost}$$

Total revenue is generated by multiplying the unit price by the quantity sold by honey marketers. That is  $P$  (price)  $\times$   $Q$  (quantity).

**Net farm income:** Net farm income was further estimated to show the net profit of honey marketing

because gross profit did not include total fixed costs in its estimation (Falola et al. 2022a). The fixed cost was estimated using a straight-line method to depreciate the fixed items used in honey marketing. The NFI is expressed as:

$$\text{Net farm income} = \text{Gross profit} - \text{Total fixed cost} \text{ or}$$

$$\text{Net farm income} = \text{Total revenue} - \text{Total cost}$$

**Benefit-cost ratio:** The benefit-cost ratio is estimated by dividing total revenue by total cost (Falola et al. 2022a; Mukaila et al. 2022). It

measures the viability and strength of the honey marketing enterprise and its benefits in monetary terms. It is expressed as:

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$$\text{Benefit cost ratio} = \frac{\text{Total revenue}}{\text{Total cost}}$$

**Return on capital invested:** This estimates the amount received by women honey marketers per currency invested and measures the efficiency of the

enterprise. It is estimated as "net farm income" divided by the "total cost" (Falola et al. 2022a; Mukaila et al. 2022). It is expressed as:

$$\text{Return on capital invested} = \frac{\text{Net farm income}}{\text{Total cost}}$$

**Operating ratio:** This is estimated to measure the proportion of honey marketing revenue used as a variable cost (operational cost). A low operating ratio indicates that the marketing enterprise is profitable,

and vice versa (Mukaila et al. 2022). Thus, the lower the operating ratio, the higher the profitability of honey marketing among women. It is expressed as:

$$\text{Operating ratio} = \frac{\text{Total variable cost}}{\text{Total revenue}}$$

**Marketing margin:** Marketing margin analysis was used to determine the marketing margins of honey marketing. It depicts the marketers' share of the consumer price (Mukaila et al. 2021; Obetta et al. 2020a). Following Mukaila et al. (2021) and Obetta

et al. (2020a), it is determined by finding the difference between the consumer price and the price paid by honey marketers to the producers, dividing it by the consumer price, and taking the result as a percentage. It is expressed as:

$$\text{Marketing margin} = \frac{\text{Selling price} - \text{Purchasing price}}{\text{Selling price}} \times \frac{100}{1}$$

**Multiple regressions:** The multiple regression model was used to investigate the factors responsible for honey marketing profitability (economic performance). This was used because the dependent variable net income is a continuous variable and other similar studies have used multiple

regression in their analysis (Arowolo et al. 2020, Mshelia et al. 2013). Net farm income was used as a proxy for profitability because economic performance depends on the net return from the business enterprise. The multiple regression model is specified as:

$$Y = \beta_0 + \beta_1 A + \beta_2 ED + \beta_3 HS + \beta_4 EX + \beta_5 C + \beta_6 AM + \beta_7 PP + \beta_8 TC + e$$

Where Y = net income from honey marketing (amount in USD); A = age of honey marketers (years); ED = education level (years spent in school); HS = Household size (number of persons in the household); EX = experience in honey marketing (years); C = credit (the amount borrowed in USD);

AM = association membership (yes = 1, no = 0); PP = purchasing price; TC = transportation cost;  $\beta_0$  = constant term;  $\beta_{1-8}$  = coefficients of the regression model; and e = error term.

**Likert rating scale:** A four points Likert rating scale by Likert (1932) was used to identify the severe

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constraints in honey marketing among women. The severity scales used in this study are extremely serious (four points), very serious (three), moderately serious (two), and not at all serious (one). The mean score of the four points scale was calculated to be 2.5  $[(4+3+2+1)/4]$ . This was used to decide if a problem is severe or not. Any Likert score equal to or greater than 2.5 was considered a severe problem, while those less than 2.5 were considered not to be severe constraints faced by women in honey marketing.

### RESULTS

#### Socio-economic characteristics of honey marketers

Table 1 presents the socioeconomic characteristics of women honey marketers. The majority (97.5%) of honey marketers were under 51 years old. They had an average age of 40.3 years, which is an indication that they were still within their economically active age where they can market honey efficiently. Most of the honey marketers had formal education, as only 20% of them had no formal education. This could influence their marketing and profitability positively because education paves the way for marketing information and economic sustainability. The majority of the marketers were married; 15.83% were single; and 5.83% were divorced. Fifty-two percent of the honey marketers had between five and eight household members, while 48% had between one and four household members. They had an average household size of about five people, which could serve as cheap family labor.

Regarding their major occupation, honey marketing was the major occupation of most of the respondents, which is an indication that this study targeted the right population. Only a few had crop farming and trading as their major occupation. The larger proportion had less than or equal to five years of honey marketing experience, followed by six to ten years, between eleven and fifteen years, and above fifteen years. They had an average of 8.75 years of honey marketing experience; thus, they are

experience honey marketers. Membership in the association was extremely low among honey marketers, with only 22% belonging to the cooperative association. In the same vein, access to credit was also very low among this group of marketers, as only 26% could access credit. This could affect their level of operation by limiting their activities to a small scale. The honey marketers had an average monthly income of USD 183.63, which is higher than the Nigerian minimum wage. This is an indication that honey marketing serves as a means of income generation for women.

#### The economic performance of women honey marketers

Table 2 shows the profitability of honey marketing among women, which was used as a proxy for the economic performance of women in the honey marketing enterprise. The average quantity purchased by honey marketers in a month was 58.14 liters at a purchasing price of USD 4.64 per liter. Thus, the average cost of honey purchased was USD 269.69. At an average selling price of USD 10.58, the women marketers received an average revenue of USD 614.95 for the 58.12 liters of honey sold. The total variable cost incurred in honey marketing was USD 352.87, and the total fixed cost incurred was USD 5.05. This gave a total cost of USD 357.92.

The cost of purchasing honey from the honey producers or farmers constituted the highest share of the total cost (Figure 1). The cost of labor which accounted for 15.21% of the total cost had the second largest share of the total cost of honey marketing. The cost of transporting honey from the apiary to the market accounted for 5.6% of the total cost, and branding costs accounted for 1.87% of the total cost. Cost of rent accounted for 0.98%, packaging costs accounted for 0.56%, and marketing taxes or levies accounted for 0.32% of the total cost incurred in honey marketing. In addition, the cost of a bucket, a jerry can, and the sieve used in storing and processing (filtration) honey accounted for 0.32%, 0.03%, and 0.03%, respectively.

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**Table 1: Socio-economic characteristics of women honey marketers**

Variable	Category	Frequency	Percentage
Age (years) Mean = 40.3	≤ 30	26	21.67
	31 – 40	48	40
	41 – 50	43	36
	51 – 60	3	2.5
Educational level	No education	24	20
	Primary	29	24.17
	Secondary	63	52.5
	Tertiary	4	3.33
Marital status	Married	94	78.33
	Single	19	15.83
	Divorced	7	5.83
Household size Mean = 4.59	1 – 4	58	48.33
	5 – 8	62	51.67
Major occupation	Honey marketing	108	90
	Crop farming	5	4.17
	Trading	7	5.83
Honey marketing experience Mean = 8.75	< 5	49	40.83
	6-10	36	30
	11-15	23	19.17
	> 15	12	10
Membership in a cooperative association	Yes	27	22.5
	No	93	77.5
Access to credit	Yes	31	25.83
	No	89	74.17
Monthly income (USD) Mean = USD 183.63	≤ 100	31	25.83
	101 – 200	51	42.50
	201 – 300	32	26.67
	≥ 301	6	5

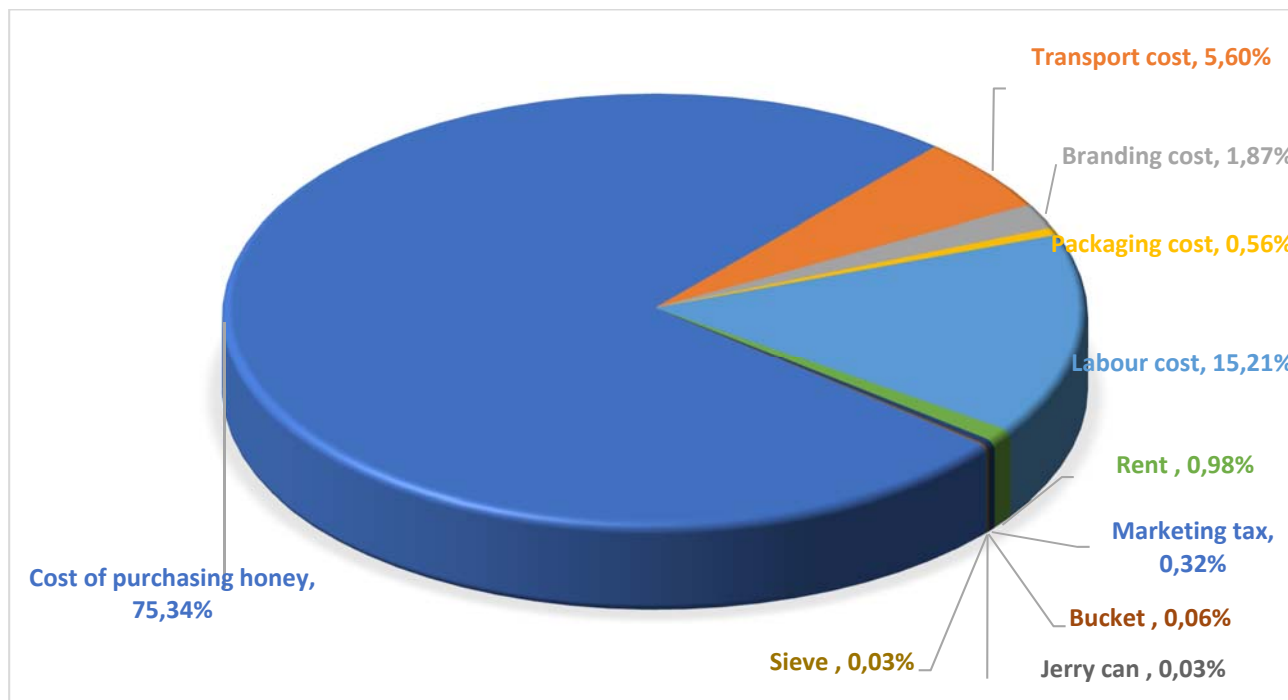


Figure 1: The percentage share of each cost item in the total cost of honey marketing

Table 2 further shows that the women honey marketers made a gross profit of USD 262.08 and a net profit of USD 257.03, respectively. This shows that honey marketing among women was a profitable venture. The women honey marketers had a benefit-cost ratio of 1.72, a return on capital invested of 0.72, an operating ratio of 0.57 and a marketing margin of 56.14%.

**Factors Influencing Honey Marketing Profitability**

Table 3 shows the results of a multiple regression analysis that was used to investigate the factors influencing honey marketing profitability. The significant variables were age, education, experience in honey marketing, amount of credit borrowed, association membership, purchasing cost, and transportation cost. At the 5% level of significance, the age coefficient had a negative

impact on the profitability of honey marketing. The coefficient of education positively influenced the profitability of honey marketing at a 5% level of significance. The coefficient of experience in honey marketing positively influenced the profitability of honey marketing at a 5% level of significance.

Furthermore, the coefficient of credit positively influenced the profitability of honey marketing at a 1% level of significance. The coefficient of association membership positively influenced the profitability of honey marketing at a 10% level of significance. The coefficient of purchasing cost negatively influenced the profitability of honey marketing at the 1% level of significance. At the 5% level of significance, the transportation cost coefficient had a negative impact on the profitability of honey marketing.



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**Table 2: The cost and returns of honey marketing**

Items	Value (USD)
Quantity purchased (Liters)	
Purchasing price	4.64
Selling price	10.58
Revenue	614.95
Variable costs	
Cost of purchasing honey	269.69
Transport cost	20.05
Branding cost	6.69
Packaging cost	2.01
Labor cost	54.44
Total variable cost	352.87
Fixed cost	
Rent	3.50
Marketing tax/levies	1.15
Bucket	0.20
Jerry can	0.09
Sieve	0.11
Total fixed cost	5.05
Total cost	357.92
Gross profit	262.08
Net profit	257.03
Benefit-cost ratio	
Net return on capital invested	
Operating ratio	
Marketing margin (%)	

**Table 3: Factors influencing honey marketing profitability**

	Coefficient	Standard Error	T	P>t
Age	-5526.808**	2675.709	-2.07	0.045
Education	8436.018**	3415.392	2.47	0.017
Household size	-9470.667	8974.058	-1.06	0.297
Experience in honey marketing	12925.32**	6334.747	2.04	0.048
Credit	.0204718***	.0048976	4.18	0.000
Association membership	40307.85*	22307.61	1.81	0.078
Purchasing price	-6.162657***	1.527352	-4.03	0.000
Transportation cost	-2.531561**	.9517147	-2.66	0.012
Constant	726267.3	171295.2	4.24	0.000
F	5.47			
Prob > F	0.0000			
R-squared	0.4893			
Adj R-squared	0.3992			

\*\*\* means significant at 1% level, \*\* means significant at 5%

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### Constraints faced in honey marketing

Table 4 presents the constraints faced by women honey marketers in their efficient honey marketing. The first ranked severe constraints in efficient honey marketing among women was inadequate capital and a lack of credit. This was followed by price fluctuation, the high cost of honey, poor road infrastructure and high transportation costs, poor

enterprise development for honey marketing, adulteration of honey by some producers, and poor marketing information. Other severe constraints faced in honey marketing, according to their severity, were the lack of modern honey storage equipment, the high cost of labor or lack of skilled labor, and poor awareness of the importance of honey to consumers, which inhibits consumers' willingness to pay more for honey.

**Table 4: Constraints in honey marketing**

	Mean	Std. Dev	Rank
Inadequate capital and lack of credit	3.94*	0.238	1 <sup>st</sup>
Price fluctuation	3.65*	0.522	2 <sup>nd</sup>
High cost of honey	3.63*	0.528	3 <sup>rd</sup>
Poor road network and high cost of transportation	3.39*	0.777	4 <sup>th</sup>
Poor enterprise development towards honey marketing	3.37*	0.720	5 <sup>th</sup>
Adulteration	3.35*	0.868	6 <sup>th</sup>
Poor marketing information	3.29*	0.576	7 <sup>th</sup>
Lack of modern honey storage equipment	3.12*	0.683	8 <sup>th</sup>
High cost of labor/Lack of labor	2.88*	0.765	9 <sup>th</sup>
Poor awareness of the importance of honey to consumers	2.82*	0.785	10 <sup>th</sup>

\* Means severe

### DISCUSSION

Regarding the economic performance of women honey marketers, the women marketers received an average revenue of USD 614.95 from the sales of honey in a month. They purchased an average quantity of 58.14 liters for USD 269.69. The honey marketers incurred a total variable cost (USD 352.87) higher than the total fixed cost (USD 5.05). Therefore, it can be inferred from this finding that the variable cost accounted for the highest proportion (98.59%) of the total cost. This supports Mshelia et al. (2013), who found that variable costs accounted for the highest share of total costs in honey marketing. The cost of purchasing honey from the honey producers or farmers constituted the highest share of the total cost incurred in honey marketing. This is in line with Mshelia et al. (2013) that the cost of purchasing honey had the highest share of the total cost in the honey marketing enterprise. This was followed by the cost of labor, the cost of transporting honey from the apiary to the market, and branding costs. Mshelia et al. (2013) discovered

that labor and transportation costs accounted for the second and third largest shares of total costs in the honey marketing enterprise, respectively. Other costs incurred in honey marketing among the women in descending order of their contribution were the cost of rent, packaging costs, marketing taxes or levies, the cost of a bucket, the cost of a jerry can, and the cost of a sieve used in storing and processing (filtration) honey. Thus, the cost of purchasing raw honey, the labor cost, and the cost of transportation were the major costs of honey marketing among women marketers. This indicates that any intervention to reduce these costs will go a long way to enhance the economic performance of women honey marketers.

After subtracting the total variable cost and fixed cost from the total revenue, the women honey marketers made a positive and relatively high gross profit (USD 262.08) and net profit (USD 257.03), respectively based on their small-scale level of operation. This shows that honey marketing among women was a profitable enterprise. This is in line with Arowolo et

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al. (2020) and Mshelia et al. (2013), who opined that marketing honey was a profitable venture. The benefit-cost ratio (1.72), which was greater than 1, further ascertains the profitability of honey marketing among women. The return on capital invested of 0.72 implies that for every USD 1 invested in honey marketing, USD 0.72 was realized as profit among the women marketers. This high return on investment further shows that honey marketing was a profitable, viable, and economical venture. The operating ratio of 0.57 implies that 57% of the total revenue from honey marketing was used for operational costs, which is relatively low. This further shows that honey marketing was a profitable off-farm agricultural enterprise among women. The marketing margin of 56.14% implies that the honey marketers had a 56% share of the consumer price. This shows that the honey marketers had the larger share of the consumer price, which also indicates that the marketing enterprise gives a higher return.

The significant variables that positively influenced honey marketing economic performance (profitability) were education, experience in honey marketing, amount of credit borrowed, and association membership. While age, purchasing cost, and transportation costs negatively and significantly influence women honey marketers' economic performance. The positive influence of women honey marketers' education on their profitability is an indication that their level of education increased the profitability (economic performance) of honey marketing enterprises. Thus, education is an enhancing factor in honey marketing profitability. This could be because education paves the way for the relevant information needed to boost revenue (Akanbi et al. 2022). A similar finding was reported by Arowolo et al. (2020), who found that years spent in school enhanced the marketing performance of honey. The positive influence of honey marketers' years of experience on honey marketing profitability is an indication that an increase in honey marketing experience increased the profitability of honey marketing enterprises. This is because years spent in an agribusiness enterprise determine the owner's skills and understanding of the business, which are needed to boost income. Thus, years of experience is an enhancing factor in honey marketing performance (profitability). This is in line with the findings of Arowolo et al. (2020) and Mshelia et al. (2013) that years of experience in honey marketing positively influenced the marketing profitability of honey.

The positive influence of access to credit (the amount borrowed) on the profitability of honey marketing implies that the profitability of honey marketing increases as the amount of credit borrowed and used in honey marketing increases. This is because credit serves as a means of capital used for investment (Falola et al. 2022b), which consequently increases the revenue generated from honey marketing. Thus, women honey marketers who could access credit had a higher net income than their counterparts who could not access credit facilities. The positive influence of association membership on the profitability of honey marketing is an indication that an increase in the probability of being a member of an association increases the profitability of honey marketing agribusiness enterprises. This could be because of the benefits derived from an association such as the pooling of resources to buy in large quantities (Mukaila et al. 2022; Musinguzi et al. 2018). This reduces the purchasing price and transportation cost which leads to the enjoyment of economies of scale among women (Mukaila et al. 2022). Therefore, honey marketers who belong to the association made a higher profit than their counterparts who did not.

The negative influence of age on women honey marketers' profitability is an indication that their economic performance (profitability) is reduced with an increase in their age. As a result, younger honey marketers profited more than older ones. This is because younger marketers are more educated, enlightened, and have access to relevant marketing information, which is needed for efficient marketing and consequently will result in an increase in the profitability of the ventures (Mukaila et al. 2021). The negative influence of purchasing costs on the profitability of honey marketing implies that an increase in purchasing costs will reduce the profitability of the honey marketing enterprise. This agrees with the a priori expectation, as purchasing costs are the most important variable costs (and have the highest share) in honey marketing. Thus, the lower the purchasing cost, the higher the profitability of honey marketing among women as long as the quality remains the same. The negative impact of transportation costs on the profitability of honey marketing implies that transportation costs reduced the profitability of honey marketing. This is because transportation and distribution are key marketing functions and an important variable cost. In addition, the cost of transportation increases the variable cost of the agricultural enterprise and

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consequently decreases the profitability of the enterprise (Mukaila et al. 2022).

Regarding the constraints faced inefficient honey marketing among women, inadequate capital and a lack of credit were the most serious constraints faced by women in honey marketing. The women honey marketers complained of a lack of access to credit and low capital. This had an impact on their operations, limiting them to a small-scale level. This is because capital is an important aspect of agribusiness and contributes to farm investments (Falola et al. 2022b). Arowolo et al. (2020) and Yeserah et al. (2019) also reported that lack of credit access was a serious constraint in honey marketing. The second-most severe constraint was price fluctuation. Price fluctuation remains a serious barrier to off-farm agricultural activities among women as it comes with several uncertainties (Obetta et al. 2020b). The third-ranked constraint faced by women honey marketers was the high cost of honey. They lamented that the producers' price of honey has drastically increased in recent times, which forced them to also increase their price, and the consumers have not yet gotten used to the current increased price of honey in the study area. Yeserah et al. (2019) also reported that high producers' price was a severe constraint to honey marketing. Poor road infrastructure and high transportation costs were also cited as major impediments to women's honey marketing. This added to their variable cost of production and consequently reduced the net income from the enterprise. Poor enterprise development for honey marketing was also a severe constraint, as the women marketers have not been receiving special training on enterprise development either from the government or extension agents. Adulteration of honey by some producers was also a severe problem faced by honey marketers. This is in line with Arowolo et al. (2020), who reported that honey adulteration was a severe constraint in honey marketing.

Poor marketing information was another severe constraint hindering efficient honey marketing among women marketers. Information plays a critical role in agricultural marketing; some lamented that they do not receive information about the increase in the price of honey, especially from the producers, which was due to a poor network in the rural areas. They mostly learn about price increases when they get to the producers, which limits the amount they can buy because they have not planned

for it. The lack of modern honey storage facilities also limits women's marketing activities. There are some seasons when the price of honey is relatively low; however, women marketers were unable to purchase large quantities during these times in order to store it for an extended period due to concerns about spoilage or a reduction in the quality of the honey. Poor consumer awareness of the importance of honey was also a severe constraint affecting efficient honey marketing among women. Some consumers were unaware of honey's numerous health benefits, such as the recently discovered key health benefits of honey in boosting the immune system during COVID-19 and mitigating COVID-19 risks, as reported by Al Naggat et al. (2021) and Lima et al. (2021). These low levels of awareness prevent consumers from being willing to pay more for honey during periods of price inflation. There was also a scarcity of skilled labor and those who are available charge women marketers a high premium. However, this was the least ranked constraint affecting female honey marketers.

### Conclusion

This study reveals that honey marketing is a profitable venture and women honey marketers performed economically well. Education, experience in honey marketing, credit, membership in the association, age, purchasing costs, and transportation costs were responsible for their economic performance. The severe constraints faced in honey marketing were inadequate capital and lack of credit, price fluctuation, high cost of transportation, poor enterprise development, adulteration, and poor marketing information.

These findings call for financial assistance by government bodies and financial institutions to boost women marketers' capital, which is needed to expand their marketing businesses. Women marketers can form cooperative societies to get financial assistance and enjoy economies of scale. The provision of marketing and enterprise development training by extension agents to honey marketers is needed to boost their profit. Universities and research centers need to disseminate the benefits of using honey to treat a variety of ailments and strengthen body immunity in order to increase demand for honey. Future studies can focus on other honey bee hive products, which are also of great importance.

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