Evaluation of Yam Trading on The Happiness of Yam Vendors: A Survey of Minna Metropolis

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Abstract

This study investigates the evaluation of yam trading on the happiness of yam vendors in Minna metropolis. The purposive sampling technique is employed to select two hundred and forty-eight (248) yam vendors. Using an adapted structured questionnaire with a Likert scale from the World Values Survey (WVS), factor analysis is applied to identify underlying factors influencing the vendors' happiness. A probit regression model is used to explore the relationships among the variables. The population for this study consists of yam vendors in Minna metropolis. Findings from the analysis suggest that heightened anxiety and stress are linked to reduced happiness among yam vendors. Additionally, older yam vendors experience reduced happiness, likely due to the physical energy demands and stress associated with yam trading. Larger households, however, provide greater social support, contributing positively to the vendors' well-being. The policy recommendations suggest establishing well-equipped trading points along major roads to reduce stress, fatigue, and safety risks for vendors. Furthermore, addressing market uncertainties and the challenges of fragile income is vital. Emphasis is also placed on supporting yam vendors in adopting modern practices through targeted training and technology initiatives designed to enhance digital literacy and encourage the use of online platforms.

Keywords: Happiness, Well-being, Yam Vendors, Trading, State of Mind, Income
JEL Classification:

1.0   Introduction

Yam (Dioscorea spp.) is a diverse and widespread group of tuber-producing plants belonging to the Dioscoreaceae family. These plants, with over 603 domesticated and wild species identified, have a long history of cultivation and are essential food crops in many tropical and subtropical regions (Amponsah et al., 2023). Yams are the fourth most important root and tuber crop globally, playing a crucial role in global food security, medicine, and the economy. The world's annual yam production reaches approximately 74.9 million tons, contributing to an impressive gross value of 14 billion US dollars (Amponsah et al., 2023).

Africa contributes 97.8% of global yam production, with West Africa accounting for 94% of the total production. Yams are a primary starchy staple food in Africa, positively impacting the lives of over 200 million people, especially in West Africa, where extensive commercial production creates significant economic opportunities (Aighewi et al., 2023). In Nigeria, yam is the second most important root crop after cassava, and the country is the world's largest producer of yam, contributing over 66% of global production (Kalu et al., 2023). Yams serve as a critical source of sustenance and financial stability for many Nigerians, with 31.8% of

the population relying on yams for food security and income through marketing (Ema et al., 2023).

Marketing in Nigeria primarily takes place in open-air markets, with over 65% of Nigerians preferring these traditional markets and hawkers (Adetayo et al., 2022). The yam supply chain involves facilitators, brokers, transporters, wholesalers, and retailers (Akura et al., 2023). Efforts to improve yam marketing include the introduction of e-commerce platforms like yam.ng, which provide access to a wider market (Ike et al., 2021).

Understanding the relevance of yam production and its trading in Nigeria involves recognizing their potential to contribute to economic growth and the happiness of the people. Happiness economics is a new wine in an old bottle; it has long existed under different names such as utility or welfare which is a universal human characteristic and the ultimate goal of human activity. Richard Easterlin in 1974 was an early pioneer in modern Economics, equally, among the first to shift the focus back to the notion of happiness during the early 1970s (Ewugi & AbdKarim, 2018; De Vries, 2016). Studies have shown mixed trends in happiness levels in Nigeria; with the country ranking 91st in the 2018 World Happiness Report and 118th in the 2019-2021 report (Helliwell et al., 2022). Happiness encompasses positive and negative emotions, life satisfaction, and feelings of belonging, and it plays a vital role in predicting productivity, creativity, income, and work-related behaviors (Shams & Kadow, 2023; Dwyer, 2023; Benjamin et al., 2023; Ballas & Thanis, 2022).

Despite the substantial global production of yams, little attention has been directed towards understanding the happiness of yam vendors, particularly within the context of their trading. Most available studies in Nigeria (such as Ike; & Inoni, 2006; Adegbuyi, 2011; Regina, et al. 2011) focus on yam production and storage, with few recent ones (like Ema, et al. 2023 and Ike, et al. 2021) addressing yam trading structures and strategies. No previous research has empirically examined the psychological state of mind of yam vendors who carry yam on their heads to seek for buyer despite the availability of e-commerce windows such as yam.ng. This study seeks to address this scholarly gap by assessing the broad practices of yam marketing strategy and its particular relevance to happiness of yam vendors in Minna metropolitan.

Over the past three decades, happiness has become a buzzword in academia, politics, and daily life (Stoia, 2016). The term "happiness" originated in English in the early 16th century, evolving from the late 14th-century adjective "happy," this initially conveyed a sense of fortune and luck (McMahon, 2006). This etymology traces back to the Old Norse word "hap," also the root for "happenstance" (McMahon, 2006). By the 1950s, happiness had evolved to represent the broadly desirable mental state we recognize today.

Research by Phillips, et al. (2017) has advanced our understanding of happiness through a threefold concept encompassing high positive affect, low negative affect, and robust life satisfaction. Contemporary psychology views happiness as comprising these interrelated elements of subjective well-being. Life satisfaction involves overall life evaluations and satisfaction with key life domains like work, income, environment, health, and relationships. Positive affect refers to the prevalence of positive moods, while negative affect involves less

frequent negative feelings (Ballas & Thanis, 2022). This paper is structured as follows: section one dwelled on the introduction, section two is the literature review, section three is methodology; and the final section covers results, discussion, conclusion and recommendation.

2.0 Literature Review

Theoretically, the study encompasses Crawford's Agricultural Marketing System Efficiency Theory (1997) with Bentham's Utility Theory (1748-1832), which creates a comprehensive framework for understanding the dynamics of yam trading and the happiness of yam vendors. While Crawford's theory focuses on the efficiency of the trading system in terms of cost minimization and service provision, Bentham's theory provides an ethical lens to evaluate the overall happiness and well-being of those involved in the trading process. By integrating these two perspectives, the study assesses not only the operational efficiency of yam marketing practices but also their impact on the subjective well-being of vendors. This dual approach allows for a more holistic understanding of how marketing strategies and practices can be optimized to enhance both economic efficiency and human happiness, ultimately contributing to a more effective and humane marketing system for yams in Minna Metropolis.

Yams hold significant cultural importance, especially in West African societies, where they symbolize abundance, fertility, and social unity (Nweze et al., 2023). By integrating cultural narratives into yam trading, vendors can foster pride and connection among consumers, potentially boosting happiness. Such marketing can evoke positive emotions and strengthen consumer loyalty. Furthermore, promoting sustainable farming practices in yam cultivation aligns with the growing consumer preference for sustainability, enhancing feelings of happiness and fulfilment.

The Food and Agriculture Organization (FAO) of the United Nations (2019) highlights that sustainable agricultural practices in yam production improve soil health, reduce greenhouse gas emissions, and conserve biodiversity. Trading yams as sustainably farmed products can attract environmentally conscious consumers, contributing to their sense of well-being. By emphasizing sustainability, yam vendors can appeal to a broader audience and support consumer happiness.

Ema et al. (2023) delves into the socio-cultural dimensions shaping yam production, processing, distribution, and marketing processes in communities in southern Nigeria. Employing a multi-method approach, including semi-structured interviews, public meetings, observation, local informants, and secondary material review, the research aimed to understand the indigenous wisdom and ritual practices influencing yam farming practices. The findings revealed a significant dependence on traditional farming practices, with over 90% of farmers relying on experiential knowledge to navigate seasonal challenges, storage techniques, and fertility enhancement. Nearly 70% of yam producers were aged 60 years and above, employing crude tools and traditional land management and production methods.

Chima, (2023) examine agricultural marketing and economic growth in Nigeria. The study collected data from 225 marketing professionals, agriculturalists, and economists in some tertiary institutions in Nigeria. The main instrument used for data collection was a structured questionnaire which was designed on a 4 point rating scale. The findings revealed positive and significant relationships between various aspects of agricultural marketing and key economic indicators in Nigeria. The study concluded that agricultural marketing would significantly enhance economic growth in Nigeria.

Olawa, et al. (2023) conducted a study investigating the indirect effects of somatic symptoms and psychological distress on the loneliness-happiness relationship during the COVID-19 lockdown. The cross-sectional sample used comprised 538 Nigerian adults (Mean age = 36.48 ± 12.03) with 43% females. Data collection utilized structured self-report instruments and underwent path analyses in SPSS AMOS. The findings revealed a negative relationship between loneliness and happiness.

Helliwell (2022) provides an empirical review of COVID-19's impact on global happiness, trust, and death rates. Despite the pandemic, global happiness rankings remained stable, though negative emotions like sadness and worry increased. Trust in public institutions and social cohesion were crucial in supporting well-being and lowering death rates. Countries with higher trust levels and lower income inequality fared better in controlling the pandemic. Female leadership and prior SARS experience also contributed to effective management. Notably, prioritizing virus suppression led to both healthier populations and stronger economic performance.

3.0   Methodology

This study uses a cross-sectional data and well-structured questionnaire featuring a four-point likert scale from World Values Survey (WVS) questions. A population of 700 registered yam vendors in Minna metropolis and a sample of 248 yam vendors were randomly collected using Krejecie and Morgan (1970) sample size criteria. The variables used in this study consist of state of mind, age, household size, marital status and education.

Table 1: List of Independent Variables and their Measurements

Independent Variables	Empirical Measurements
State of Mind	State of mind is coded on a four-point Likert scale, with responses coded as 4 for very happy, 3 for quite happy, 2 for not very happy, and 1 for not at all happy.
Age	measured in years
household size	measured by number of individuals
Marital status	Marital status is coded as 1 for single, 2 for married, and 3 for divorced or widowed
Education	It is coded 1 for no formal education, 2 for primary education, 3 for secondary education, 4 for Diploma/NCE, 5 for a degree, and 6 for a

	postgraduate degree.

Source: Authors' Survey (2024)

This study employs the use of factor analysis to identify underlying factors influencing variable state of mind. Probit regression (PM) model was used in analyzing the data obtained and the model is specified as in equation (3.1): $Pr(Hpi=1/Xi) = \Phi (\beta 0 + \beta 1smti + \beta 2edui + \beta 3agi + \beta 4hhzi + \beta 5msti + ut)$ ...3.1. Where Pr (Happiness = 1) is Probability of individual yam vendor being happy in yam marketing, smti is State of Mind of individual yam vendor, agi is age of individual yam vendor, edui is education level of individual yam vendor, hhzi is household size of individual yam vendor; msti is marital status of individual yam vendor, ut is the error term, βs is the coefficients of the independent variables and Φ is the cumulative distribution function of the standard normal distribution.

4.0   Results and Discussion

Table 2: Demographic Profile of the Yam Vendors

Demographics		Frequency	Percentage %
Age	< 25	61	25
	26 – 35	82	33
	36 – 45	88	35
	46 – 55	15	6
	56 & above	2	1
Edu level:	Non-formal	93	37.50
	Formal	155	62.50
Marital Status:	Single	41	16.53
	Married	206	81.02
	Widow/Divorcee	1	2.42
Hhold Size	< 3	172	69.36
	4-6	73	29.44
	7-10	3	1.21

Source: Authors' Survey (2024)

Reliability Test

This study used Cronbach's alpha reliability to test the internal steadiness for different dimension. Cronbach Alpha ranges from 0 to 1, according to George and Malley (2003) any value below 0.5 is unacceptable.

Table 3: Descriptive Statistics of Reliability

Measure	Number of Items	Cronbach's Alpha
State of Mind	8	0.69

Source: Authors' Computation

Exploratory Factor Analysis

This study employed Exploratory Factor Analysis (EFA) to identify common factors influencing each construct, as it effectively handles the covariance among constructs (Kahn, 2006). The Kaiser (1960) eigenvalue criterion was applied, retaining only factors with eigenvalues greater than 1.0 and removing items with loading factors less than 0.30. Consequently, the interacting variables were grouped into identifiable factors based on their loading values. Each factor retained homogeneous variables that are strongly correlated, contributing cohesively to the construct.

Table 4: Rotated factor loadings and unique variances for the variable State of Mind

Variables	Factor loading	Loading Point	unique variance	Factor Rename
I'm pleased with the way I operate in the yam market (som1)	0.6830	2	0.4495	State of Mind (som)
I'm engaged and interested in my daily activities (som2)	0.9280	2	0.1250	
I'm optimistic about my future (som3)	0.7414	1	0.1773	
Most days I feel a sense of accomplishment from what I do (som4)	0.4976	3	0.4810	
I have a lot of energy in my marketing activities (som5)	0.8727	1	0.1534	
I'm satisfied with my ability to perform my daily living activities (som6)	0.6970	4	0.3074	
I'm satisfied with your personal safety in my marketing strategy (som7)	0.4869	2	0.4010	
In general, I feel very positive about myself (som8)	0.8242	3	0.2978	

Note: Extraction Method: Exploratory Factor Analysis; Rotation Method: Varimax with Kaiser Normalization at .3 loading and above. Source: Authors' Computation.

Table 3 presents the rotated factor loadings (pattern matrix) and unique variances for the variable "State of Mind." The results are as follows: SOM1: Factor loading of 0.6830 suggests a moderate positive association with State of Mind. Unique variance is 0.4495,

indicating a substantial portion of variance is specific to this variable. SOM2: High factor loading of 0.9280 indicates a strong positive association with State of Mind. Unique variance is 0.1250, suggesting less unique information. SOM3: Factor loading of 0.7414 shows a moderate positive association. Unique variance is 0.1773, indicating low variance specific to this variable. SOM4: Factor loading of 0.4976 suggests a low positive association. Unique variance is 0.4810, indicating a relatively high variance specific to this variable. SOM5: High factor loading of 0.8727 indicates a strong positive association. Unique variance is 0.1534, suggesting relatively low specific variance. SOM6: Factor loading of 0.6970 signifies a moderate positive association. Unique variance is 0.3074, indicating a moderate amount of specific variance. SOM7: Factor loading of 0.4869 suggests a moderate positive association. Unique variance is 0.4010, indicating a moderate amount of specific variance. SOM8: High factor loading of 0.8242 indicates a strong positive association. Unique variance is 0.2978, indicating low specific variance.

These factors have been renamed as "SOM." The choice to maintain these factor loadings aligns with the guidelines provided by Beavers et al. (2013). According to their recommendations, an item should be retained if it exhibits a substantial loading, indicating a statistically significant contribution. Conversely, if an item lacks significant correlation with any of the factors (typically considered to be less than 0.30) and does not offer a conceptually crucial dimension to the measure, it is advisable to exclude the item from consideration

Regression Results and Discussion

Table 5: Probit estimates for state of mind, age, education, marital status, household size

Hppi	Coefficient	Margins
Somi	.-.6333774	-.1362805
	(0.059)**	(0.049)**
Agi	-.0399761	-.0086015
	(0.031)**	(0.031)**
Edui	-.0721503	-.0157136
	(0.776)	(0.779)
Mstatusi	-.0856862	.0184367
	(0.806)	(0.806)
Hhmsizi	2527902	.0543915
	(0.023)**	(0.022)**
Obs 248		
Prob>Chi2 0.0573		
Pseudo-R^2 0.0983		

Notes: P values are in parentheses, significance level: *10%; **5%; ***1%

State of Mind (SOM)

The finding shows that one-unit increase in the state of mind such as anxiety, stress, is associated with a -13.63-percentage point decrease in the likelihood for a yam vendor to be

happy. The state of mind is found to be statistically significant in predicting the happiness status of yam vendors at (p-value = 0.049) at 5 percent level. The implication of this result is that the yams vendors in Minna metropolis were not likely to be pleased with the way they operate in the yam market, not interested in their daily activities and do not feel optimistic about their future. Also, in most days they are not likely feel a sense of accomplishment from what they do neither do they have a lot of energy in their trading activities since it involves hawking of yam from one point to another in getting the buyer of their farm produce. The yam vendors were not likely to be satisfied with their ability to perform their daily living activities. In general, they do not feel happy with the personal safety in their yam trading strategy which mostly takes place along the major busy roads. They do also have the fear of being hit by a car or motor cycle and they are unlikely to feel very positive about themselves engaging in this vague and hectic yam marketing strategy.

This discovery aligns with the findings of Olawa, et al. (2023) which revealed a negative relationship between loneliness and probability of happiness. Additionally, loneliness and likelihood of happiness were indirectly connected to the successive association between somatic symptoms and psychological distress. Also, Helliwell et al. (2022b) study, which examined distinct components of negative affect such as worry, sadness, and anger, as well as stress, all relating to an individual's emotions. Worry and sadness experienced an upward trajectory over the past decade, particularly spiking in 2020 during the initial impact of COVID-19, before showing some improvement in 2021. The average for negative affect remained around 0.25 for the initial five years, with a generally ascending trend, interrupted by a sharp increase in 2020, mostly reverting to the underlying trend in 2021. Stress, not included in the negative affect measure, displayed relative stability in the first five years but has consistently risen since, surpassing the rates of worry and sadness, with the most significant surge observed in 2020.

Happiness Relationship with Age

Finding shows that a unit increases in the age of the individual yam vendor are associated with -0.86 percentage point decreases in the probability of a yam vendor to be happy. This effect is statistically significant at (p-value = 0.031) at 5 percent level. The negative marginal effect suggests that, an average, aged yam vendor is likely to have lower happiness scores either due to physical energy demand, anxiety and stress that is associated with the local yam trading within the Minna metropolis. That is as age increases, there is a statistically significant decrease in the happiness status of yam vendors.

Happiness Connection with Household Size (hhsizei)

Finding shows that a one-unit increase in the household size of the individual yam vendor is associated with 54 percentage point's increase in the chances for the vendor to be happy. This effect is statistically significant at 5% (p-value = 0.022). The result indicating a statistically significant positive association between household size and the happiness status of yam vendors in Minna metropolis suggest a meaningful correlation between these two variables. A larger household size might be indicative of increased social support and familial

resources. This support can contribute to the overall well-being and happiness of yam vendors, possibly through shared responsibilities, emotional support, or financial assistance.

5.0   Conclusion

The findings from this research indicate that heightened anxiety and stress are significantly linked to reduced happiness among yam vendors. Additionally, older yam vendors experience reduced happiness, likely due to the physical energy demands and stress associated with yam trading. Larger households, however, provide greater social support, contributing positively to the vendors' well-being. This underscores the need for strategic interventions to enhance the well-being and overall satisfaction of these vendors.

5.2   Recommendations

1.   Establish Well-Equipped Trading Points: Setting up well-equipped marketing points along major roads can help reduce stress, fatigue, and safety concerns for yam vendors. These points should offer amenities that support the vendors' daily operations and improve their working conditions.

2.   Address Market Uncertainties and Fragile Income: Implement policies and programs aimed at stabilizing market conditions and providing financial support to yam vendors. This can include initiatives such as microloans, insurance schemes, and market price stabilization mechanisms to protect vendors from income volatility.

3.   Support Modern Practices through Training and Technology: Provide training programs to enhance the digital literacy of yam vendors, enabling them to use online platforms effectively. This can help them access broader markets, manage their businesses more efficiently, and ultimately increase their income and satisfaction. Emphasizing technology initiatives will ensure that yam vendors are well-equipped to navigate the digital economy and benefit from modern marketing strategies

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