



ASSESSING RURAL WOMEN ENTREPRENEURIAL TRAITS IN RURAL HOUSEHOLD-BASED ENTERPRISES IN KATSINA STATE, NIGERIA

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ABSTRACT: *The study was designed to assess rural women entrepreneurial traits/skills possessions in household-based enterprises in Katsina state, Nigeria. Descriptive survey design was adopted and 216 rural entrepreneurs were sampled from the population of registered rural women entrepreneurs in the state using multistage sampling technique. Data were collected on the socioeconomic characteristics, involvement in rural household-based enterprises, benefits derived and traits/skills possessed using structured interview guide. Frequency counts, percentages, means, ANOVA and multiple regression analysis were employed in data analysis. The study revealed that majority were young, married, low income earners, Muslims, had Quranic education, and appreciable years of experience. Levels of involvement, benefits derived, and traits/skills possessions were high. On the other hand, scale of access to intervention was low. Whereas, entrepreneurs' levels of traits/skills possessions differ significantly among senatorial districts; age, marital status, years of experience, educational attainment, benefit derived and monthly income did not significantly determine the scale of household-based enterprise traits/skills possession by rural women entrepreneurs. It is concluded that high level of benefit derived existed regardless respondents' low levels of intervention access and relevant operational traits/skills. Government should provide complimentary assistance by institutionalizing policy framework that will targets rural women entrepreneurial capacity building programmes on business management and sustainability.*

KEYWORDS: Rural women, house-based enterprise, involvement, benefit, intervention, traits.



INTRODUCTION

Rural women entrepreneurs play a vital role in economic development and poverty alleviation in many developing countries (Satish, 2021). However, they often face significant challenges stemming from socio-cultural norms, lack of access to resources, and limited entrepreneurship education and training (Chinomona & Maziriri, 2015).

This scenario is prevailing despite the fact that rural household-based enterprises provide an important avenue for women's economic empowerment. Specifically, their involvements have been phenomenal due to a combination of benefits (self employment, means of survival and support to their families). Consequently, and in today's traditional African economy women seem to have been pulled out their shells forming as the case may be primary producers, food processing and marketing as well as weaving, spinning and several handicrafts. Relatively however, little is known about the specific entrepreneurial traits and capabilities needed for success in this context (Adesua-Lincoln, 2022).

The Food and Agriculture Organization estimates that if women had the same access to productive resources and skills as men, they could increase yields on their farms by 20-30%, lifting 100-150 million people out of hunger (FAO, 2019). However, female entrepreneurship rates in rural areas remain relatively low compared to urban centers (Woldie & Adersua, 2021). Understanding the mix of entrepreneurial competencies, motivations, and mindsets of successful rural women entrepreneurs is crucial for designing effective support programs and policies.

Recent studies have highlighted the multidimensional nature of entrepreneurial traits and the need to consider both psychological/cognitive factors as well as practical business skills (Lertpratchya, Walsh, & Anantanatorn, 2020; Urban & Tuppara, 2021). Risk-taking propensity, opportunity recognition, self-efficacy, goal-setting, and resilience have emerged as critical entrepreneurial competencies (Cuervo & Panther, 2022). However, most of this research has focused on male entrepreneurs or urban/high-growth ventures (Misango & Cullen, 2024) to the neglect of rural women entrepreneurs.

It was against this backdrop that this study assessed the specific configuration of entrepreneurial traits possessed by successful rural women entrepreneurs operating household-based enterprises in Katsina State.

Statement of the Problem

Rural women play a significant role in household-based enterprises, contributing to the economic development of rural communities (Akter, Walia, & (2021). However, their entrepreneurial traits and potential are often overlooked or undervalued, hindering their growth and success in their entrepreneurial efforts (Brush et al., 2019). Also, despite this increasing recognition of the importance of women's entrepreneurship, there is a lack of comprehensive research assessing the entrepreneurial traits of rural women specifically in the context of household-based enterprises.

Available study has also highlighted the challenges faced by rural women entrepreneurs, such as limited access to resources, lack of education and training, and sociocultural barriers (Alam, Jani & Omar, 2019). These challenges can hinder their ability to develop and



demonstrate entrepreneurial traits, which are crucial for the success of their enterprises (Brush, Edelman, Manolova, & Welter, 2019)

On the other hand, gap in literature are evident in women entrepreneurs' possession of relevant traits/skills and motivations that are germane for success. Therefore, understanding these characteristics and motivations, as they may differ from their urban counterparts or male entrepreneurs are necessary (Brush et al., 2019). Assessing these entrepreneurial traits however can provide insights into their strengths, weaknesses, and potential areas for intervention, and policy. Also by understanding the entrepreneurial traits of rural women in household-based enterprises, policymakers, development organizations, and researchers can better tailor their support mechanisms to address the specific needs and challenges faced by this group. This, in turn, can contribute to improved economic empowerment of rural women, the sustainability of their enterprises, and the overall development of rural communities.

Objectives of the study

The main focus of the study is to unravel prevailing rural-based enterprises and women entrepreneurs' possession of the required entrepreneurial traits in Katsina State. The specific objectives are to:

1. examine rural household-based enterprises that rural women entrepreneurs are involved in Katsina state
2. identify benefits women entrepreneurs derive from their involvement in rural household based enterprises in Katsina State
3. find out women entrepreneurs' level of access to rural household-based enterprises' interventions in Katsina State
4. Find out level of rural women entrepreneurs' acquisition of required entrepreneurial traits in Katsina State

LITERATURE REVIEW

Across the globe and particularly in traditional sub-Saharan African economy which Nigeria is one, women have not only performed critical roles but have excelled both as entrepreneurs in the production, processing and marketing enterprises. These enterprising roles range from those in agriculture, food processing, and preservation, storage to trading surpluses, weaving, spinning and several other handicrafts. These engagements; rural or urban are not only empowering but socially transforming.

In line with this, a growing body of literature has highlighted the potentials of entrepreneurship to economically empower rural women in developing countries (Satish, 2021) Reportedly, that rural female entrepreneurs play a vital role in poverty reduction, food security, and sustainable development in their communities are not doubtful (Agarwal & Malhotra, 2022). However, compared to their urban counterparts, they often face greater socio-cultural barriers, fewer opportunities, and more restricted access to productive



resources like land, credit, education and training (Buli, 2022). Despite these challenges, Singh, Reynolds, & Muhammad, (2019) observed that rural women have continued to display remarkable resilience and resourcefulness in starting small businesses, often operating from the household.

Additionally, household-based enterprises provide flexibility to balance economic activities with domestic responsibilities and childcare. These enterprises include but not limited to food production/processing, handicrafts, tailoring, retail shops, and personal services (Bhushan, 2020) These enterprises reportedly can grow into sustainable livelihoods and employment generators (Satish & Bharathi, 2021).

It has also been confirmed that success in any of these enterprises are determined by the unique configuration of traits, motivations, skills and behaviors an individual possesses (Lertpratchya, Walsh, & Anantanorn, 2020). In this sense, Cuervo & Panther, (2022) and Neneh, (2022) have identified these key entrepreneurial competencies include among others as opportunity recognition, risk-taking propensity, self-efficacy, goal-setting, resilience, and resource marshaling capabilities.

Interestingly, studies have found significant gender differences in these entrepreneurial traits. For example, compared to men, women entrepreneurs tend to exhibit higher risk aversion, less over-confidence, stronger ethical standards, and different leadership styles (Acheampong, 2021; Ennaji, Fadilah & Chourak, (2021). In other studies, the reverse reportedly has continue to be the norm as female entrepreneurship rates in rural areas and competencies possessions are relatively low (Woldie & Adersua, 2021).

METHODOLOGY

The study was carried out in Katsina State which consists of 34 LGAs from the three senatorial districts. The state covers an area of 23,938 sq. km and is located between latitudes $11^{\circ}08'N$ and $13^{\circ}22'N$ and longitudes $6^{\circ}52'E$ and $9^{\circ}20'E$ (Adewale, Olowu & Ladele, 2005). The state also shares common boundary with Niger Republic in the north, Jigawa and Kano States in the east, Kaduna State in the South and Zarnfara State in the West. The main occupations of the people in the area included farming, processing, marketing wide range of crops.

All rural women entrepreneurs formed the population of the study. Multistage sampling procedure was used in sampling the respondents. In the first stage, two LGAs were selected from each of the three senatorial districts using random sampling technique. These are Katsina central, Katsina South and Katsina South. The second stage involved a random selection of 2 villages from each selected LGAs to give 12 villages. In the third stage, simple random sampling technique was further used to select 18 rural entrepreneurs from each selected villages to give a sample size of 216 rural women entrepreneurs that were used in the study.

A descriptive survey design was employed for the study due to its high propensity of inclusiveness and the ease with which participants' opinions on the variables under study were obtained. A structured interview schedule was developed, validated and tested for reliability. A reliability index of 0.86 was obtained and adjudged good for the instrument.



The interview schedule comprised sections A, B, C and D based on the objectives of the study (socioeconomic characteristics, involvement, reasons for involvement, and women entrepreneurs' possession of entrepreneurial traits).

These variables were measured as follows: level of involvement in rural-based enterprises was determined on a three-point scale using scores of Not at all = 0, Occasionally = 1 Always = 2. The mean score and standard deviation were generated and used to categorize the respondents into low ($< \text{mean} \pm 1\text{SD}$), moderate (within $\text{mean} \pm 1\text{SD}$) and high ($> \text{mean} \pm 1\text{SD}$) levels of involvement for all enterprise categories. Benefits derived from were measured using 3-point scale of Low = 1, Moderate = 2, High = 3. The mean and standard deviation of the respondents' scores for level of benefit will be obtained and used to categorize them into having low ($< \text{mean} \pm 1\text{SD}$), and high ($> \text{mean} \pm 1\text{SD}$) level of benefit.

Respondents' frequency of access to intervention inputs was measured on a 3-point likert scale as always (2), occasionally (1) and not at all (0). The scores for level of access to intervention inputs were obtained, upon which the mean score was generated. Based on below and above mean criterion, respondents were categorized into having low ($< \text{mean}$ access scores) and high ($\geq \text{mean}$ access scores) levels of access.

In measuring respondents' possession of entrepreneurial traits, a list of possible rural-base enterprises was presented to respondents, from which they indicated the traits they possess. The level of traits possession was then be determined on a 4 – point response scale of highly possessed = 3, moderately possessed = 2, slightly possessed = 1, and Not possessed = 0. The mean values for the traits were obtained and used to rank respondents' traits possession into high ($> \text{mean}$) and low ($< \text{mean}$). Data analysis was carried out using descriptive (frequency, mean, standard deviation and percentages) and inferential (ANOVA, and regression) statistics.

RESULTS

Respondents' socioeconomic characteristics

Table 1 presents result on respondents' socioeconomic characteristics. The result shows that both overall (36.1%), Katsina central (36.1%), south (36.1%) and north were within the age range of 31-40 year with average age of 38, 36, 43 and 35 years respectively. Result on monthly income revealed that both overall (84.7%), Katsina central (84.7%), south (84.7%) and north (84.7%) earned $\leq \text{N}50000$ with mean income earning of $\text{N}59608.796$, $\text{N}24666.67$, $\text{N}27166.6$ and $\text{N}126993.06$ respectively. Similarly, both overall (75.9%), Katsina central (75.9%), south (75.9%) and north possessed Quaranic educational qualification just as overall (79.6%), Katsina central (79.6%), south (79.6%) and north (79.6%) were married. Islamic religion was revealed to be the religion of 97.7% of both the overall, Katsina central, south and north respondents. Result on years of experience revealed that overall (61.6%), Katsina central (61.6%), south (61.6%) and north had between 1-10 years with average years of experience of 1-10, 14, 14 and 11 years.

**Table 1: Distribution of respondents based on socio-economic characteristics**

Category	Level	Overall	Central	South	North
Age	<=20	3.7	3.7	3.7	3.7
	>60	1.9	1.9	1.9	1.9
	21-30	25.9	25.9	25.9	25.9
	31-40	36.1	36.1	36.1	36.1
	41-50	24.5	24.5	24.5	24.5
	51-60	7.9	7.9	7.9	7.9
			38.067±1 0.95	35.86±12.38	43.01 10.265
Monthly income	<=500000	84.7	84.7	84.7	84.7
	>150000	7.9	7.9	7.9	7.9
	100001-150000	0	0	0	0
	50001-100000	7.4	7.4	7.4	7.4
			59608.79 6±20292. 418	24666.67± 21056.60	27166.6± 22430.49
Educational status	Primary	10.6	10.6	10.6	10.6
	Quranic	75.9	75.9	75.9	75.9
	Secondary	13.4	13.4	13.4	13.4
Marital status	Divorced	6	6	6	6
	Married	79.6	79.6	79.6	79.6
	Single	4.2	4.2	4.2	4.2
	Widow	10.2	10.2	10.2	10.2
Religion	Christianity	2.3	2.3	2.3	2.3
	Islam	97.7	97.7	97.7	97.7
Years of experience	>30	2.3	2.3	2.3	2.3
	1-10	61.6	61.6	61.6	61.6
	11-20	25	25	25	25
	21-30	11.1	11.1	11.1	11.1
			11.28± 35.28	14.28± 3534.28	14.18± 9.32

Type of rural household-based enterprises involved

Table 2 presents result on types enterprises the respondents were involved. The result revealed that overall, trading (94%), processing agricultural produce (69.4%), animal husbandry (51.4%), food service (44.4%) and oil (32.9%) were the enterprises involved always by the respondents. Using mean the values however, overall respondents were mostly involved in trading (1.884), processing agricultural produce (mean = 1.495), animal husbandry (mean = 1.111) and food service (mean= 0.963). In Katsina central also, respondents were mostly involved in processing agricultural produce (mean = 1.597), trading



(mean = 1.861), food service (mean = 0.944) and animal husbandry (mean = 0.847). Similar trend obtained in the north with respondents mostly involved in trading Mean = 1.944), processing agricultural produce (mean = 1.069), animal husbandry (mean = 1.042) and food services (mean = 0.694). In south, trading (mean = 1.847), processing agricultural produce (mean = 1.819), animal husbandry (mean = 1.444) and oil milling (mean = 1.111) were the enterprises involved by the respondents.

Table 2: distribution of respondents based on type enterprise involved

Enterprise	Never	Occasionally	Always	Kastina Central	Kastina North	Kastina South	Overall
Processing agric produce	19.9	10.6	69.4	1.597	1.069	1.819	1.495
Local soap making	80.6	6.5	13	0.236	0.236	0.5	0.324
Tailoring	65.7	7.4	26.9	0.694	0.306	0.833	0.611
Earthen pot making	98.6	0	1.4	0	0.083	0	0.028
Hair dressing	67.1	15.3	17.6	0.458	0.444	0.611	0.505
Trading	5.6	0.5	94	1.861	1.944	1.847	1.884
Mat weaving	91.2	1.4	7.4	0.028	0.292	0.167	0.162
Oil milling	63	4.2	32.9	0.375	0.611	1.111	0.699
Food service	48.1	7.4	44.4	0.944	0.694	1.25	0.963
Basket making	94	1.4	4.6	0.028	0.167	0.125	0.106
Confectionary	65.3	13.4	21.3	0.639	0.347	0.694	0.56
Animal husbandry	40.3	8.3	51.4	0.847	1.042	1.444	1.111

Benefits derived

Table 3 presents result on benefits respondents derived from household-based enterprises. The result indicated that employment (63%), sustaining family income during hard times (63%), legacy for children (63%), family business sustenance (50.9%) and independence (62%) were the high benefits derived by overall respondents. Using weighted mean values, overall respondents also had achieving personal ambition (2.394), independence (2.333), and legacy for children (2.315) and family business sustenance (2.227) as their most areas of benefits derived. In Katsina central, the areas of high benefits were independence (2.639), personal ambition (2.542), legacy for children (2.542) and sustaining family income during hard times (2.486). The benefits of family business sustenance (2.278), achieving personal ambition (2.236), employment (2.181) and community development (1.181) were also high in Katsina north. In the south also, the benefits of achieving personal ambition (2.403), independence (2.264), and legacy for children (2.236) and family business sustenance (2.181) were high. Table 3b further revealed that the level of benefit derived among the overall (97.7%), Katsina central (98.6%), north (98.6%) and south (95.8%) was high.

**Table 3a: distribution of respondents based on benefits derived**

Benefits	Very Low	Low	High	Very High	Kastina Central	Kastina North	Kastina South	Overall
Family business sustenance	4.2	6.9	50.9	38	2.222	2.278	2.181	2.227
Employment	1.9	11.1	63	24.1	2.097	2.181	2.000	2.093
Personal ambition	0	2.8	55.1	42.1	2.542	2.236	2.403	2.394
Independence	0	2.3	62	35.6	2.639	2.097	2.264	2.333
Sustaining family income during hard times	0.5	10.2	63	26.4	2.486	2.000	1.972	2.153
Legacy for children	0	2.8	63	34.3	2.542	2.167	2.236	2.315
Community development	37.5	17.1	35.6	9.7	1.375	1.181	0.972	1.176

Table 3b levels of benefits derived

Senatorial district	Benefit category	F	%	Mean±SD
Kastina Central	High	71	98.6	15.902±2.600
	Low	1	1.4	
Kastina North	High	71	98.6	14.138±2.105
	Low	1	1.4	
Kastina South	High	69	95.8	14.02±2.020
	Low	3	4.2	
Total	High	211	97.7	14.689±2.4056
	Low	5	2.3	

Access to intervention

Table 4 presents results on areas respondents received interventions. The result indicates that 7.9%, 0.5%, 0.5%, and 0.5% of the rural women entrepreneurs in the state always received intervention in the following areas marketing outlets, labour, processing equipment and centers respectively. Also marketing outlets (23.6%), land/shop (3.2%), processing centers (3.2%) and processing equipment were the occasional areas they received intervention. Rare areas of interventions included marketing (16.7%), feeder roads (8.8%), and storage facilities (6.5%), and processing centers (5.1%). Using the weighted mean results, marketing outlets (0.875), processing centers (0.130) and feeder roads (0.116) were the most areas of the received intervention. In Katsina central, marketing outlets (0.847), processing centers (0.361), feeder roads (0.222) and land/shop (0.208) were the interventions mostly provided. Similar trend obtained in Katsina north where marketing outlets (1.042), land/shop (0.014), workshop/training (0.014) and storage facilities (0.014) were provided. Katsina south also recorded marketing outlets (0.736), feeder roads (0.125), land/shops (0.069) and storage



facilities (0.056) as intervention. Table 4b further revealed that overall (100%), Katsina central (100%), north (100%) and south (100%) both had low level of access to intervention.

Table 4a: distribution of respondents based on access to intervention

Intervention	Never	Rarely	Occasionally	Always	Kastina Central	Kastina North	Kastina South	Overall
Marketing outlets	51.9	16.7	23.6	7.9	0.847	1.042	0.736	0.875
Land/shop	93.5	3.2	3.2	0	0.208	0.014	0.069	0.097
Loan	98.1	0.9	0.9	0	0.083	0.000	0.000	0.028
Labour	94.9	4.6	0	0.5	0.167	0.000	0.014	0.060
Tractor services	98.1	1.9	0	0	0.056	0.000	0.000	0.019
Extension service	98.6	1.4	0	0	0.042	0.000	0.000	0.014
Workshop/training	96.3	3.2	0.5	0	0.083	0.014	0.028	0.042
Processing equipment	94.9	2.8	1.9	0.5	0.208	0.000	0.028	0.079
Processing centers	91.2	5.1	3.2	0.5	0.361	0.000	0.028	0.130
Feeder roads	89.8	8.8	1.4	0	0.222	0.000	0.125	0.116
Storage facility	93.1	6.5	0.5	0	0.153	0.014	0.056	0.074
Insecticide/herbicide	95.8	3.7	0.5	0	0.125	0.014	0.000	0.046
Fertilizer	99.5	0.5	0	0	0.014	0.000	0.000	0.005

Table 4b: distribution of respondents based on Level of access to intervention

Senatorial district	Intervention category	F	%	Mean±SD
Kastina Central	Low	72	100	2.569±3112
Kastina North	Low	72	100	1.097±1.089
Kastina South	Low	72	100	0.083±1.24
Total	Low	216	100	1.583±2.142

Possession of entrepreneurial traits

Table 5a presents result on entrepreneurial traits/skills possessed by rural women entrepreneurs in the Katsina State. The result revealed that overall 41.2%, 40.3%, 39.8%, and 39.8% slightly possessed abilities to identify seasonal fluctuations, determine factors that indicate competitors' strength and weakness, acquire demand and supply situation and capture, maintain and retain customers' attention respectively. Also 34.3%, 31.5 and 26.4% of the respondents averagely possessed abilities to determine customers' needs, carry out effective marketing information research and capture, maintain and retain customers' attention respectively. Only 15.3%, 5.1% and 3.7% highly possessed abilities to carry out effective marketing information research, determine customers' needs, identify new marketing trends and capture, maintain and retain customers' attention respectively.

The overall result shows using the weighted mean values that ability to carry out effective marketing information research (1.389), determine customers' needs (1.204) and capture, maintain and retain customers' attention (1.037) were entrepreneurial traits/skills the respondents possessed. In Katsina central however, abilities to carry out effective marketing



information research (1.431), determine customers' needs (1.194) and capture, maintain and retain customers' attention (0.917) were the most possessed skills. In the vein, Ability to carry out effective marketing information research (1.097), determine customers' needs (0.972) and capture, maintain and retain customers' attention (0.917) were the prevailing skills among rural women entrepreneurs southern district of Katsina State. Katsina south like its central and northern counterparts mostly possessed abilities to carry out effective marketing information research (1.639), determine customers' needs (1.444), and capture, maintain and retain customers' attention (1.278). Table 5b further revealed respondents level of skills possessed. The result shows that both overall (84.7%), Katsina central (86.1%) north (93.1%) and (75.0%) had low level of skills possession.

Table 5a: distribution respondents based on possession of entrepreneurial traits

Traits	Not possessed	Slightly possessed	Average ly possessed	Highly possessed	Kastina Central	Kastina North	Kastina South	Overall
Ability to carry out effective marketing information research	23.1	30.1	31.5	15.3	1.431	1.097	1.639	1.389
Ability to determine customers' needs	24.1	36.6	34.3	5.1	1.194	0.972	1.444	1.204
Ability to capture, maintain and retain customers' attention	30.1	39.8	26.4	3.7	0.917	0.917	1.278	1.037
Negotiation skills	45.8	36.1	17.1	0.9	0.653	0.667	0.875	0.731
Effective sales techniques	48.6	34.3	14.8	2.3	0.708	0.639	0.778	0.708
Ability to acquire demand and supply situation	43.1	39.8	14.8	2.3	0.639	0.694	0.958	0.764
Ability to make goods and services available to customers at the right place and time	44	38.9	15.7	1.4	0.722	0.611	0.903	0.745
Good advertising technique	50	37	11.1	1.9	0.667	0.389	0.889	0.648
Ability to identify new marketing trends	44.4	37	14.8	3.7	0.847	0.417	1.069	0.778
Ability to determine factors that indicate competitors' strength and weakness	44.4	40.3	13	2.3	0.681	0.597	0.917	0.731
Ability to identify	44.4	41.2	13	1.4	0.722	0.417	1	0.713



seasonal fluctuations								
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Table 5b level of entrepreneurial traits

Senatorial district	Traits category	F	%	Mean±SD
Kastina Central	High	10	13.9	9.1805±5.6526
	Low	62	86.1	
Kastina North	High	5	6.9	7.4166±5.000
	Low	67	93.1	
Kastina South	High	18	25.0	11.750±6.966
	Low	54	75.0	
Total	High	33	15.3	9.449±6.166
	Low	183	84.7	

Difference in traits/skills possessed

The ANOVA results in Table 6 revealed a significant effect of senatorial districts on entrepreneurial traits, $F(2, 213) = 9.7232$, $p = 0.0001$. This indicates that the mean entrepreneurial trait scores differ significantly among the three senatorial districts: Katsina Central, Katsina North, and Katsina South. The Post Hoc Analysis result displayed on Table 6b indicate that Katsina Central ($M = 9.1806$) is significantly different from both Katsina North ($M = 7.4167$) and Katsina South ($M = 11.7500$). However, Katsina North and South are not significantly different from each other.

Table 6a: distribution of ANOVA result comparing senatorial districts by entrepreneurial traits

Model	Df	Sum Sq	Mean Sq	F value	Pr(>F)
Senatorial district	2	683.7870	341.8935	9.7232	0.0001
Residuals	213	7489.6528	35.1627		

Table 6b: LSD separating the means for the senatorial districts

Comparison	Traits scores	Std	Se	Groups
Kastina Central	9.1806	5.6527	0.6988	a
Kastina North	7.4167	5.0007	0.6988	b
Kastina South	11.7500	6.9662	0.6988	b

Determinants of entrepreneurial traits

Table 7 presents regression analysis result to identify the determinants of entrepreneurial traits among entrepreneurs. The regression model includes several predictors: age, years of experience, education (represented as a dummy variable), marital status, benefits scores,



intervention scores, and monthly income. The intercept (11.784) is statistically significant ($p = 0.000$), indicating the baseline level of entrepreneurial traits when all predictors are zero.

Age showed a positive coefficient (0.042) though not statistically significant ($p = 0.292$) in effect. The result also suggests a potential increase in entrepreneurial traits with age. Years of experience showed coefficient of zero, indicating no effect on entrepreneurial traits, and statistically not significant ($p = 0.720$). The negative coefficient (-0.469) of entrepreneurs' educational attainment suggests lower entrepreneurial traits among educated entrepreneurs, though not statistically significant ($p = 0.738$).

In the same vein, the positive coefficient (0.372) of their marital status suggests a potential increase in entrepreneurial traits among married entrepreneurs, even when it is not statistically significant ($p = 0.730$). Also, the negative coefficient (-0.273) of benefit derived suggests lower entrepreneurial traits with higher benefits scores, that are not statistically significant ($p = 0.129$) in effect. Intervention scores showed positive coefficient (0.096) which indicates a potential positive effect, but not statistically significant ($p = 0.633$). For annual income, the coefficient is zero, indicating a no effect on entrepreneurial traits, and statistically non significant ($p = 0.163$).

Table 7: determinants of entrepreneurial traits

Model	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	11.784	3.285	3.588	0.000
Age	0.042	0.039	1.057	0.292
Years of experience	0.000	0.000	-0.358	0.720
Educational status	-0.469	1.401	-0.335	0.738
Married	0.372	1.076	0.346	0.730
Benefits derived	-0.273	0.179	-1.525	0.129
Intervention	0.096	0.200	0.478	0.633
Monthly income	0.000	0.000	-1.401	0.163

DISCUSSION OF RESULTS

The result that most rural women entrepreneurs were within the age of 31-40 years indicates relatively young, active and productive population. This was in line with a priori considering the prevalence of cultural and traditional backed early marriage practice in the area. This is in tandem with Bodai, Alenzi, Boustani & Alkandari (2023) on Kuwait women entrepreneurs. The monthly income earning of $\leq \text{N}50000$ is an indication that majority were low income earners who may find it difficult to acquire relevant productive resources to expand their enterprises. This has been corroborated by the finding of Ikwuakam, Tsagem, & Giwa (2023) on sesame farmers and marketers in Katsina State. Quaranic education was found to be highest educational attainment. This was expected given the prevailing gender discrimination against rural girl child in the area. This has implications of limited access and utilization of information, interpretation and technology especially those written in English language other than Hausa language (Ikwuakam & Lawal (2015). However, it contradicts Bodai, et al (2023) who found that women entrepreneurs in Kuwait attained a bachelor's degree. That majority was married and of Islamic faith was also in line with a priori as the dominance of Islam in



the area which encourages early marriage for the girl child has never been in doubt. The result that majority had 14 years experience implied that they entered their distinctive areas of entrepreneurship at tender age.

The involvements of majority in trading, processing agricultural produce, animal husbandry, and food service was expected as these areas of enterprises may have fallen within their low income level. Perhaps the level of benefits derived and encouraging patronages necessitated their involvements in these areas. Various studies have also reflected that women have maintained ownerships and operations of around one-third of all formal and informal businesses (Bardasi, et al, 2007; Aderemi, et.al, 2008).

The high level of benefit arising from their entrepreneurial involvements implies that women, whether in the farm or non-farm ventures, have never proved to be counter-productive. The result implies also that the low level of access to intervention did not in any form pose serious effect. United Nations Industrial Development Organization (UNIDO) (2001) corroborated that; be it in the formal or informal small and medium scale, women's entrepreneurial activities have continued to be a strong economic survival strategy with positive social repercussions for the women themselves and their social environment.

The low level of access to intervention was expected considering their low educational status. This may not have helped them to read and understand how, where and when to access relevant interventions. A high level of intervention access could have meant vibrant involvements in more areas of enterprises and improved income earnings. Incidentally, the result is in conformity with the finding of International Fund for Agricultural Development (IFAD) (2001) that limited access to intervention inputs is a common phenomenon in Nigeria; a factor that impedes production, processing and marketing enterprises.

The low level of traits/skills was not expected in view of the high levels of involvement and benefits derived. It means that the low entrepreneurial traits/skills possession did not translate into low level of involvement and benefits. This further implies that the women entrepreneurial skills needs is high and therefore needs attention. The result corresponds with Ikwuakam, et.al (2023) who found that sesame farmers and marketers in Katsina State lack relevant skills.

The result that entrepreneurs levels of traits/skills possessions differ significantly among the three senatorial districts were least expected in view of the respondents' socio-cultural and economic similarities. However, age, marital status, years of experience, educational attainment, benefit derived and monthly income did not significantly determine rural women entrepreneurial traits/skills possession. This shows that these variables are of less relevance to whatever level of enterprise traits /skills rural women entrepreneurs possessed.

CONCLUSION/RECOMMENDATIONS

The study assessed rural women entrepreneurial traits in household-based enterprises in Katsina state, Nigeria. Based on the result, it is concluded that rural women entrepreneurs in Katsina State were young with low literacy level but involved in diverse areas of household based enterprises. Notwithstanding their low income earning status, level of benefit derived



was high. The high level of benefit derived existed regardless their low levels of intervention access and relevant operational traits/skills.

It is therefore recommended that:

1. Rural women entrepreneurs should take advantage of their young and active age to sustain or improve on their areas of entrepreneurial involvement and income status.
2. The government should formulate policies with a view to creating intervention packages and accessibility targeted at rural women entrepreneurs in State
3. Self empowerment through: reflection, education, training and development are sacrosanct in improving rural women entrepreneurial traits/skills
4. Government should also provide complimentary assistance by institutionalizing policy framework that targets rural women entrepreneurial capacity building programmes on business management and sustainability

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