

Assessment of Periwinkle Gathering and Marketing on the Wellbeing of Women in Ogbia Local Government Area, Bayelsa State

Gbasinghan, E. E. Elenwa, C. O. and Nlerum, F. E.

Department of Agricultural Extension and Rural Development, Rivers State University,
Port Harcourt, Nigeria.

Corresponding Author Email: erickdeyi@gmail.com

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Abstract

The study assessed periwinkle gathering and marketing on women well-being in Ogbia Local Government Area, Bayelsa State. A two-stage sampling procedure was used to select 150 respondents. Structured questionnaire was used for collection of data for the study. Descriptive statistic such as mean, frequency, tables and percentage was used to present data. From the results, the mean age of the respondents was 40 years; the mean house-hold size of the respondents was 5; the mean monthly net income of the respondents was ₦60,500. For areas of periwinkle gathering and marketing, the result revealed that 86.6% were selling the removed periwinkle meat to consumers, while 61.9% sells the periwinkle shells to construction workers. The socio-economic effect of periwinkle gathering and marketing on women includes source of income, source of livelihood (87.6%) and helps relief pains and memories (42.1%). The study concludes that periwinkle gathering and marketing has positive influence on the women socioeconomic wellbeing. The study recommended that, women who are not gainfully employed should identify one of the areas of periwinkle gathering and marketing to cushion the effect of unemployment in order to meet up economic demands.

Keywords: Assessment, Periwinkle, Gathering and Marketing, Wellbeing, Women

INTRODUCTION

Periwinkle, in zoology, is any small marine snail belonging to the family *Littorinidae* (class *Gastropoda*, phylum *Mollusca*). Periwinkles are widely distributed shore (littoral) snails, chiefly herbivorous, usually found on rocks, stones, or pilings between high- and low-tide marks; a few are found on mud flats, and some tropical forms are found on the prop roots or mangrove trees. Approximately 80 species in the world, 10 are known from the western Atlantic (Egonmwan & Odieta, 2013). Periwinkles are soft-body shellfish found mostly in brackish and coastal regions of the sea. They are gastropods of the phylum *Mollusca*. They are found in lagoons, estuaries, mangroves, and swamps in Nigeria. The two genera common in Nigeria are *Tympanotosus fuscatus* and *Pachymelania aurita* (Bob-Manuel, 2012). Periwinkle serves as food in most Nigerian homes, making it an essential ingredient in preparing various delicacies, especially among people in the coastal areas where it is found (Bob-Manuel, 2012). They are used for cooking

delicacies such as periwinkle soup, native soup, fisher man soup, afang soup, ekpangnkukwo, ofensala, okra soup, etc. It can be cooked with or without its shell. The mouth extracts the meat from the shell when cooked with the shell. The meat can also be removed from the shell using either a toothpick, needle, or nail. The two species are morphologically different (Ekop et al, 2013).

The economic importance of periwinkles cannot be over emphasized and it therefore becomes a very lucrative commercial commodity. People gather and sell periwinkles and sell for commercial means of livelihood. Hence, Periwinkle, *Tympanotonus fuscatus* is one of the fisheries products common to the coastal areas of Nigeria, most especially Bayelsa State. They are found at the intertidal zone of brackish water, creeks, estuaries and lagoons in the Niger Delta area (Adebayo-Tayo et al., 2006). It is of economic importance as it serves as a source of protein to many Nigerians. It also serves as a source of income to the collectors/ gatherers and marketers, thus forming an important industry in the entire Niger Delta region of the country (Egonmwan et al, 2013). Furthermore, the shells of these periwinkles are used in place of gravels in the building industry, as decorative arts and in the production of animal feed (Oyenekan, 2017).

In Bayelsa State, two varieties of periwinkle are common, *T. fuscatus var fuscatus* and *Tympanotonus fuscatus var radula*. *T. fuscatus var fuscatus* is distinguished from the other variety by its turreted granular and spiny shells. They are harvested from the swamp during low tide and retailed by market traders who remove the meat from the shells for sale (Powell et al., 2018). Despite the importance of this specie, the supply is being gradually depleted by the day. A sure means of solving the demand supply gap is by embarking on culture of this species. There are many people who relied on periwinkle gathering as a means of livelihood. The standard of measurement of periwinkle is in cup, custard buckets and semovita bags. It is very possible to see a family removing and selling up to 10 custards a day. This in no doubt is impacting lives of people especially the low-income citizens.

These women because some of them did not attend formal education, they are poor and do not have the capital or funds to go into business and have resorted to periwinkle gathering and marketing, which is an activity that does not require money or skill. With this activity they have assisted their husbands in the family. The widows have used it to keep the family, train their children in school, cloth themselves amongst others. It is important to assess how periwinkle gathering and marketing have affected or improved the wellbeing of women in Ogbia LGA of Bayelsa State. Ogbia LGA is surrounded by river and covered or occupied by mangrove (*Rhizophora racemosa (L)*) (Albert et al, 2012) and it plays good host to periwinkle and oyster (Albert & Ekine 2012). The scenario made the women in Ogbia LGA to go into periwinkle gathering and marketing. Periwinkle gathering and marketing is a source of livelihood to some women in Bayelsa State especially in Ogbia LGA. It is based on this that the study assessed the effect of periwinkle gathering and marketing on women well-being in Ogbia local government area, Bayelsa State.

Objective of the Study

The specific objectives were to:

- i. describe the socio-economic characteristics of the respondents in the study area;
- ii. identify channels of periwinkle gathering and marketing;

- iii. examine the socio-economic effect of periwinkle gathering and marketing on women wellbeing; and
- iv. ascertain the constraints to periwinkle gathering and marketing in the study area.

Materials and Methods

The Study Area

The study area was Ogbia Local Government Area of Bayelsa State. The study area is approximately situated between latitude N4 0 33' and N4 0 45' and longitude E6 0 15' and E6 0 29'. The topography of Ogbia is low lying with elevations below sea level in the southwestern flank to about 20m above sea level further inland. It lies within the salt and fresh water swamp geomorphic units of the Niger Delta sedimentary basin. The major activities of the ogbia people are fishing, periwinkle gathering, snail hunting etc, that is why Ogbia is one of the major suppliers of periwinkle in Bayelsa State. The topography and the environment of the study area is such that it is favorable for agricultural activities which include crop production, livestock and fish farming as well as palm wine tapping, local gin making, carving weaving and trading, which have contributed to the economic group of the study area.

A two-stage sampling procedure was used. From the registered 6 cooperative societies, a 50% proportionate simple random sampling was used to select 150 periwinkle gatherers and marketers in the study area. First, purposive sampling was used to put the six (6) registered cooperative societies to gathering and marketing. Secondly, a 50% proportionate simple random sampling was used to select 150 respondents. Data for this study was mainly collected from primary source. The instrument that was used for data collection was interview schedule. The data collected were analysed using descriptive statistics such as mean, frequency tables, and percentage and regression analysis. The model for the regression is thus:

The linear regression model is defined by

$$Y = (X_1, X_2, X_3, X_4... \dots\dots\dots, e)$$

(3.1)

Where:

Y = Wellbeing of women in periwinkle gathering and marketing.

X₁ = Age (years)

X₂ = Years of Experience: (years)

X₃ = Marital status: single =1, married =2, separated =3, Divorced =4 Widow/Widower =5

X₄ = Household Size 1-2 =1, 3-5 =2, 6-8 =3

X₅ = Educational Level: No formal education =1, primary =2, Secondary =3, Tertiary Education =4

X₆ = Occupation: farming =1, trading =2, civil service =3, Skilled works=4

X₇ = Net monthly income: (₦)

e = error term

Results and Discussion

Socio-Economic Characteristics of the Respondents in the Study Area

From the result in Table 1, 42.4% were within the age bracket of 28-37 years, the mean of respondents' age was 40 years, 38.4% were married, 34.4% have a household size of 1-3 persons and the mean of house-hold size was 5 persons. This finding is in line with the study of Elenwa and Allen (2019) and Elenwa et al (2019) on oyster harvesting and marketing among rural women in kalabari kingdom and mushroom harvesting in Ikwerre Local Government Area all of Rivers state were majority of oyster/mushroom harvesters were married with household size of 5 persons. By education, 22.2% of periwinkle gatherers had no formal education, 40.7% had primary education, and 19.3% had secondary education while 17.8% had tertiary education. The mean year of experience was 9 years and the mean monthly net income of the respondents was ₦60,500. Benson and Omelecha (2019) found that rural women involved in one rural job vary significantly, depending on situation and circumstance surrounding them.

Table 1: Socio-economic characteristics of the respondents in the study area

Variable	Category	Frequency	(%)	Mean
Age (years)	18-27	31	22.3	40yrs
	28-37	59	42.4	
	38-47	22	15.8	
	48-57	11	7.9	
	58 and above	16	11.5	
Marital Status	Single	61	44.2	
	Married	53	38.4	
	Separated	9	6.5	
	Divorce	4	2.9	
	Widowed	11	8.0	
House-hold size (Person)	1-3	45	34.4	5persons
	4-6	62	47.3	
	7-9	16	12.2	
	10 and above	8	6.1	
Educational Level	No formal Education	30	22.2	
	Primary Education	55	40.7	
	Secondary Education	26	19.3	

Years of Experience in the cooperative	Tertiary Education	24	17.8	9yrs
	1-5 years	64	50.0	
Monthly net income (₦)	6-10 years	37	28.9	₦60,500
	11-15 years	27	21.1	
	10,000 and below	25	18.4	
	11,000-30,000	40	29.4	
	31,000-50,000	32	23.5	
	51,000-70,000	26	19.1	
	71,000-100,000	7	5.1	
100,000 and above	6	4.4		
	Total	136	100.0	

Source: Field Survey (2023)

Areas of Periwinkle Gathering and Marketing

Areas of Periwinkle Gathering and Marketing

The table 2 below shows the areas of periwinkle gathering and marketing. It reveals that 86.6% sells the removed periwinkle meat to consumers, 85.0% of the women sell the periwinkle with shells to consumers, 72.7% of the women buys from harvesters to retailers (those who remove from the shells), 71.1% of women picks periwinkle from mangrove while 61.9 sell the periwinkle shells to construction workers. The study agreed with Simeon (2014) who found that the women demographic variables are key factors leading them to menial occupation with intension of making survival just like others.

Table 2: Areas of periwinkle gathering and marketing

S/N	Areas of periwinkle gathering and marketing	Frequency (n=150)	Percentage	Ranking
1	Picking periwinkle from mangrove	101	71.1%	4 th
2	Buying from harvesters to retailers (those who removes from shell)	102	71.3%	3 rd
3	Selling the removed periwinkle meat to consumers	123	86.6%	1 st
4	Selling the periwinkle with shells to consumers	119	85.0%	2 nd
5	Selling the periwinkle shells to builders	86	61.9%	5 th

Source: Field Survey (2023)

Multiple Response

Socio-Economic Effect of Periwinkle Gathering and Marketing on Women

Table 3 reveals that the respondents of the study accepted that as their source of income/ source of livelihood (87.6%), provision of meat always(83.4%), purchase of other household needs (82.8%), opportunity to meet with other women(73.8%), recreational for friends to meet (64.1%), derived satisfaction from the periwinkle business (61.4%), material for building houses (59.3%), means of recreation, (58.6%), means of exercising their body (52.4%) and helps relief pains and memories (42.1%) are the socio-economic effect of periwinkle gathering and marketing on women. The study agreed with Matthew and Ngei (2017) findings that selling of periwinkle shell has been a very reliable source of income to women with low-income, even though selling of periwinkle has provided job to women especially among the uneducated population.

Table 3: Socio-economic effect of periwinkle gathering and marketing on women

S/N	Socioeconomic effects	Frequency (n=150)	Percentage	Ranking
1	Means of exercising my body	76	52.4%	9 th
2	Provision of meat always	121	83.4%	2 nd
3	Opportunity to meet with other women	107	73.8%	4 th
4	Material for building houses	86	59.3%	7 th
5	Purchase of other household needs	120	82.8%	3 rd
6	Source of income/ Source of Livelihood	127	87.6%	1 st
7	Recreational for friends to meet	93	64.1%	5 th
8	Derived satisfaction from the periwinkle business	89	61.4%	6 th
9	Helps relief pains and memories	61	42.1%	10 th
10	Means of recreation	85	58.6%	8 th

Source: Field Survey (2023)

Constraints Encountered by Women in Periwinkle Gathering and Marketing

The table 4 shows that the constraints encountered by women in periwinkle gathering and marketing. Are: lack of access to finance (\bar{x} =3.41, SD=0.83), poor return on business (\bar{x} 3.00, SD=0.93), inadequate infrastructure (\bar{x} =3.25, SD=0.75), poor market infrastructure (\bar{x} =3.29, SD=0.79), high risk in business (\bar{x} =3.24, SD=0.75), price fluctuation (\bar{x} =3.43, SD=0.74), high cost of input (\bar{x} =3.17, SD=0.81), inadequate skilled labour (\bar{x} =3.14, SD=0.82), theft/ insecurity (\bar{x} =3.30, SD=0.78), sea pirating (\bar{x} =3.34, SD=0.81) and seasonality of periwinkle gathering (\bar{x} =3.33, SD=0.73) are the constraints encountered by women in periwinkle gathering and marketing (\bar{x} =3.26, SD=0.79). Onyekachi (2010) outline the various challenges confronting periwinkle gathering. According to him such factors may include high cost of poor return on business,

inadequate skilled labour, application of manual method in meat processing as well as poor technological application in the process.

Table 4: Constraints encountered by women in periwinkle gathering and marketing

S/N	Constraints	Mean	SD	Remark
1	Lack of access to finance	3.41	0.83	Agreed
2	Poor return on business	3.00	0.93	Agreed
3	Inadequate infrastructure	3.25	0.75	Agreed
4	Poor market infrastructure	3.29	0.79	Agreed
5	High risk in business	3.24	0.75	Agreed
6	Price fluctuation	3.43	0.74	Agreed
7	High cost of input	3.17	0.81	Agreed
8	Inadequate skilled labour	3.14	0.82	Agreed
9	Theft/ Insecurity	3.30	0.78	Agreed
10	Sea Pirating	3.34	0.81	Agreed
11	Seasonality of periwinkle gathering	3.33	0.73	Agreed
	Grand Total	3.26	0.79	Agreed

Source: Field Survey (2023)

H0₁: There is no significant relationship between the socio-economic characteristics of women and their involvement in periwinkle gathering and marketing in the study area.

The result in Table 5 highlights the coefficient of the relationship between the respondent's socio-economic characteristic of women and their involvement in periwinkle gathering and marketing in the study area. The table shows the co-efficient of the relationship between the socio-economic characteristics of women and their involvement in periwinkle gathering and marketing in the study area to be 0.374. The R-squared (R^2) value is 0.140 which implies that the socio-economic characteristics of the respondents account for about 14.0% of the variability of women involvement in periwinkle gathering and marketing in the study area, meaning that the remaining 86.0% of women involvement in periwinkle gathering and marketing area is explained by other variables not included in the model. The F-value of 3.749 as shown in Table 4.7 is less than 0.05 established level of significance. Therefore, the null hypothesis was rejected. That is, there is no significant relationship between the socio-economic characteristics of women and their involvement in periwinkle gathering and marketing in the study area (F-Significance = 0.002). This indicated that the socio-economic characteristics of women and their involvement in periwinkle gathering and marketing in the study area were significant. However, the women age (0.004) and monthly income (0.002) are statistically significantly related to their involvement in periwinkle gathering and marketing in the study area, whereas marital status (0.0743), house hold size (0.362), educational level (0.061) and years of experience in periwinkle gathering and marketing (0.518) are not significantly related.

Table 5: Summary of Regression Analysis on the Relationship between the Socio-Economic Characteristics of Women and their Involvement in Periwinkle Gathering and Marketing in the Study Area

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	19.080	1.133		16.836	.000	16.839	21.320
Age	1.097	.374	.380	2.932	.004	.357	1.836
Marital status	-.110	.336	-.035	-.328	.743	-.775	.554
Household Size	-.373	.408	-.088	-.915	.362	-1.179	.433
Educational level	.555	.294	.155	1.889	.061	-.026	1.135
Year of Experience in PGM	.325	.502	.072	.649	.518	-.666	1.317
Monthly income	-.815	.256	-.298	-3.183	.002	-1.321	-.308

R=.374, R-Square (R²) 0.140 F-Value (3.749)

Multiple Response

Conclusion and Recommendation

Summary

The study concluded that periwinkle gathering and marketing has positive influence on the women socioeconomic wellbeing of rural women in the study area. Although, periwinkle gathering and market has different area of specialization by women, some specialize in one or more of these areas such as selling the removed periwinkle meat to consumers, selling the periwinkle with shells to consumers, buying from harvesters to retailers (those who remove from the shells), picking periwinkle from mangrove and selling the periwinkle shells to builders. Based on the findings, the study recommends that women who are not gainfully employed should identify one of the areas of periwinkle gathering and marketing to cushion the effect of unemployment in order to meet up economic demands.

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