



POTENTIALS OF COOPERATIVES IN THE MARKETING OF VEGETABLE PRODUCTS IN BENUE STATE OF NIGERIA

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Abstract

This study assessed the potentials of cooperatives in the marketing of vegetable products in Benue state of Nigeria. The study was guided by four objectives and five hypotheses. The study adopted a descriptive survey. A sample size of 336 registered cooperative and non-cooperative vegetable marketers was used for the study. Data were generated using well-structured questionnaire. Descriptive statistics and Z-test were used to achieve the objectives and hypotheses, respectively. The findings revealed that vegetables marketed in the state by cooperative and non-cooperative members were tomato, pepper, okra, garden egg/plant, pumpkin leaves, onions, spinach, waterleaf and bitter leaves. Also, the marketing services accessed by cooperative vegetable marketers were bulk buying of vegetables, assembling, grading/sorting, storing, processing, distribution, selling, trainings/seminars, information on available markets and networking strategies with other dealers. On the other hand, that of non-cooperative members were bulk buying of vegetables, strategies for assembling of vegetables, grading/sorting, storing, distribution, selling and networking strategies with other dealers. Again, it was found that economic benefits in credit (loan) revealed that while cooperative marketers received an average loan of N193,726.19k, their non-cooperative counterparts got N137,540.44k. The cooperative vegetable marketers made annual income and savings of N320,029.76k and N204,750.00k respectively, while their non-cooperative counterparts were able to make annual income and savings of N223,022.05k and N96,852.94k, respectively. On assets acquisition, majority of cooperative vegetable marketers 113 (67.3%) and 48 (35.3%) of non-cooperative members were found to have acquired mostly planting/harvesting tools. The constraints common to cooperative and non-cooperative marketers were high transportation cost, lack of packaging/processing techniques, and lumping/vehicle heat. The study recommended that non-cooperative vegetable marketers should be enlightened on the essence or need for joining cooperatives, the challenges of bad road networks and far distance to markets should be addressed to ensure ease of doing business.

Keywords: Cooperatives, marketing, vegetable products.

Introduction

Agriculture has returned to the forefront sector of the Nigerian economy, employing over 65% of its adult labour force, contributing more than 37% of the GDP and 88% of non-oil foreign exchange earnings (Idris, 2020). However, the agricultural productivity is low due to land degradation, use of low level of improved agricultural technologies, risks associated with weather conditions, diseases and pests (Obianefo and Onugu, 2020; Osuafor *et al.*, 2021). Moreover, due to the ever increasing population pressure, the land holding per household is



declining leading to low level of production to meet the consumption requirement of the households (Behjat and Ostry, 2013). Vegetable production gives an opportunity for production of high value added products and increases smallholder farmers' participation in the market. Vegetable production ranges from small farms producing few vegetables for family use or marketing to the highly organized vegetable farms common in the advanced countries (Haji and Andersson, 2006). The production of Vegetable crops is a major element of the farming system of some farmers in eastern agricultural zone Benue state and others areas of the state. Vegetable production is a major source of income for the cooperatives marketers in the various markets in the study area. Vegetable products are supplied to the local markets and vegetable marketing are the major sources of livelihood for a large number of farmers, transporters, middlemen and traders in the area (Mburu, 2021). The government's increasing support for market integration and agro-enterprise development provides an opportunity for the vegetable growers and marketers. This indicates that the government is using policy support as one of the mechanisms for creating investment opportunities in the vegetable promotion sector for production, grading, marketing and financing the venture. It has been, however, witnessed that farmers are getting low price for the agricultural commodities and the middlemen and exporters are major gainers from the business. Farmers are often losers or receive a marginally low share of the price paid by the consumers for the vegetable products. The rural farmers individually simply do not have the capital needed to handle efficiently the tasks of producing, processing, storage and ultimate marketing of their produce. One way of providing adequate marketing of these vegetable produce is through the formation of cooperatives, where farmers can pool together their resources and solve their problems through collective efforts. According to Ogaboh *et al.* (2015) cooperatives effectively reduce market barriers that would impede groups in developing and transformational countries from fully participating in the economic sphere.

This study is indeed being driven by the fact that similar studies related to it in the study area were not on vegetable marketing. It is equally important to empirically document the potential of vegetables market through cooperatives in the study area because of its health and economic benefits to the mostly poor farmers. Therefore, what difference in the livelihood of members of cooperative vegetable marketers in key indicators of credit access, income, business worth (assets), saving and their production constraints as it exist in Benue state indeed drives the quest for this study.

The aim of the study was to assess the potentials of cooperatives in the marketing of vegetable products in Benue State of Nigeria. The specific objectives were to:

- i. identify the types of vegetables marketed by the cooperative and non-cooperative members in the area;
- ii. identify the marketing services accessible to cooperative and non cooperative members in the study area;
- iii. compare the economic benefits (credit, income, saving and assets) of vegetables marketing by cooperative and non-cooperative members in the study area; and
- iv. identify the constraints facing cooperative and non cooperative vegetable marketers in the study area.

The following hypotheses were formulated to guide the study:



- Ho₁: There is no significant difference in marketing services accessible by cooperative and non-cooperatives vegetables marketers in Benue state
- Ho₂: There is no significant difference in the volume of credit (loan) accessed by cooperatives and non-cooperative vegetable marketers in Benue state
- Ho₃: There is no significant difference in income level of cooperative and non-cooperative vegetables marketers' in Benue state
- Ho₄: There is no significant difference in saving capability of the cooperativemembers and non-cooperative vegetable marketers' in Benue state
- Ho₅: There is no significant difference in the business worth (assets) of cooperative and non-cooperative vegetable marketers in Benue state

Methodology

The study area is Benue state of Nigeria. Benue State is located in the middle belt of the country approximately between Latitudes 6.3⁰N to 8.1⁰N and longitudes 8⁰E to 10⁰E with a total land area of about 33,955 square kilometres. According to the 2006 National Census, the state has a population of about 4,780,389 people (NPC, 2006). The study area has a variety of vegetable crops grown and marketed in different rural areas by small farmers such as tomatoes, pepper, okra, pumpkin; onions, spinach, waterleaf, garden eggplant. The plants are produced under rain fed and irrigated conditions. It is produced both in mixed cropping system and in monoculture. The cultivation of vegetable during the dry season with the aid of irrigation is termed dry season vegetable farming. Dry season vegetable farming in Benue State of Nigeria can be described as a small-scale vegetable irrigation farming system usually practice along river banks (flood plains or Fadama land) by farmer who take responsibility for the investment and management of their farms (Iwala, 2014). Benue State administratively consists of 23 Local Government Area and is broadly divided into three (3) agricultural zones. The population of the study is two thousand and one hundred (2,100) registered vegetable marketing cooperatives and non-cooperative members in Benue State. This data was gotten from Bureau for Cooperative and Rural Development in Makurdi, Benue State (2019). The sample size of the study was statistically generated from the population of 2100 using Taro Yamane (1967). The formula is stated thus;

$$n = \frac{N}{1 + N(e)^2}$$

Where: n is sample size, N is the population size and e is the level of precision (0.05)². The sample size for the study is calculated as follows:

$$\begin{aligned} n &= \frac{2100}{1 + 2100(0.05)^2} \\ &= \frac{2100}{1 + 2100(0.0025)} \\ &= \frac{2100}{1 + 5.25} \\ &= \frac{2100}{6.25} \end{aligned}$$

$$n = 336$$

The stratified random sampling technique was used in selecting the study participants. Three (3) LGAs were randomly selected from each agricultural zone. In apportioning of the sample size, the study adopted the Bowley's proportional allocation formula and the distribution is as shown in Table 3.5.1. The formula is stated thus:

$$nh = \frac{nNh}{N}$$

Using the formula, proportional sampling of the cooperatives and non-cooperative vegetable marketers in Benue State was East Zone = 121, North Zone = 121, and South Zone = 94. A well-structured questionnaire was used for data collection. The questionnaire was given to research experts in NnamdiAzikiwe University, Awka for face validation. To cover content validation, the Cronbach Alpha was carried out to ascertain the instrument's level of reliability. Thirty-two (32) sets of questionnaire were not properly filled and therefore were discarded. Data were analysed using descriptive statistics. Z-test was used for the hypotheses testing.

Results and Discussion

1. Demographic Characteristics of Respondents

The demographic characteristics of the respondents are presented in Table 1.

Table 1: Demographic Characteristics of the Respondents

<i>Variables</i>	<i>n=304</i>	<i>(%)</i>	<i>\bar{x}</i>
Gender			
Male	128	42.1	
Female	176	57.8	
Marital Status			
Married	201	66.1	
Single	27	8.8	
Widowed	62	20.3	
Separated/Divorced	14	4.6	
Age (Years)			
≤ 30	10	3.2	
31 – 40	42	13.8	
41 – 50	154	50.6	
51 – 60	72	23.6	52
61 & Above	26	8.5	
Education Level			
Non-Formal Education	80	26.3	
Primary school	166	54.6	
Secondary	47	15.4	
Tertiary	11	3.6	
Experience in Vegetable Marketing (Years)			
≤ 5	8	2.6	
6 – 10	92	30.2	
11 – 15	149	49.0	12
16 – 20	51	16.7	
20 & Above	4	1.3	
Dependants			

≤ 3	55	18.0	
4-6	70	23.0	
7-9	111	36.5	7
10 & Above	68	22.3	
Monthly Income (₦)			
1000-10,000	22	7.2	
11,000-20,000	56	18.4	
21,000-30,000	153	50.3	₦25,253.28k
31,000-40,000	60	19.7	
41,000 & Above	13	4.2	
Monthly Saving (₦)			
1000-5000	34	11.1	
6000-10,000	62	20.3	
11,000-15,000	170	55.9	₦11,610.19k
16,000-20,000	33	10.8	
21,000 & Above	5	1.6	
Category of Respondents			
Cooperative Members	168	55.2	
Non-Cooperative Members	136	44.7	

Source: Field Survey, 2020

Table 1 reveals that majority of the respondents 176 (57.8%) were females and 128 (42.1%) were males. On marital status, the majority 201(66.1%) of the respondents were married and 62(20.3%) were widowed. The average age of the respondents is 52 years. The highest educational level of majority of the respondents 166(54.6%) is first school leaving certificate. Furthermore, the respondents were found to have had 12 years of experience in vegetable marketing and an average of seven (7) dependants in their families. The average monthly income and savings of the respondents are ₦25,253.28k and ₦11,610.19k respectively. Majority of the respondents 168(55.2%) were found to be cooperative vegetable marketers, while 136(44.7%) were non-cooperative members.

2. Vegetables Marketed by Cooperative and Non-Cooperative Farmers in Benue State

Table 2: Vegetables marketed by the respondents in Benue State

Vegetables	Coop. Memb.		Non-Coop. Memb.		Total
	F=168	%=100	F=136	%=100	
Tomato	21	12.5%	15	11.0%	36(11.8%)
Pepper	13	7.7%	9	6.6%	22(7.2%)
Okra	25	14.8%	20	14.7%	45(14.8%)
Garden egg/leave/plant	12	7.1%	7	5.1%	19(6.2%)
Pumpkin leaves	46	27.3%	27	19.8%	73(24.0%)
Onions	14	8.3%	21	15.4%	35(11.5%)

Spinach	10	5.9%	12	8.8%	22(7.2%)
Waterleaf	17	10.1%	13	9.5%	30(9.8%)
Bitter leaf	8	4.7%	7	5.1%	15(4.9%)
Others	2	1.9%	5	3.6%	7(2.3%)
Total					304(100%)

Source: Field Survey, 2020

Table 2 shows that the highest number of the cooperative 46(27.3%) and non-cooperative 27(19.8%) vegetable marketers were into selling of pumpkin leaves. While 25(14.8%) of the cooperative marketers are into okra selling, about 21(15.4%) of their non-cooperative marketers deal on onions. Again, the table reveal that 21(12.5%) of the cooperative members market tomato, while 20(14.7%) of the non-cooperatives sell okra. Also, a reasonable portion of the cooperative 17(10.1%) and non-cooperative 13(9.5%) members, sell waterleaf. Others were 13(7.7%), 12(7.1%) and 10(5.9%) of the cooperative members that were into pepper, garden egg/leave/plant and spinach marketing respectively. Similarly, 9(6.6%), 7(5.1%) and 12(8.8%) of non-cooperative members were found to be into same vegetables in the pre-listed order. However, 8(4.7%) and 7(5.1%) of the cooperatives and non-cooperatives were observed to market bitter leaves respectively. The least of the respondents 2(1.9%) and 5(3.6%) of cooperative vegetable marketers and non-cooperatives marketed other forms of vegetables respectively. This suggests that vegetables marketed in Benue State were mainly tomato, pepper, okra, garden egg/leave/plant, pumpkin leaves, onions, spinach, waterleaves and bitter leaves.

3. Marketing Services Accessed by Cooperative and Non-Cooperative Vegetable Marketers in Benue State

Table 3: Respondents opinion on accessible marketing services in Benue state

Services	Coop. Memb. = 168								Non-Coop. Memb. = 136							
	Very Accessible (5)	Accessible (4)	Somehow Accessible (3)	Less Accessible (2)	Not Accessible (1)	X	Stdv.	Remarks	Very Accessible (5)	Accessible (4)	Somehow Accessible (3)	Less Accessible (2)	Not Accessible (1)	X	Stdv.	Remarks
Bulk buying of vegetables	41	79	13	34	1	3.74	1.235	Accepted	83	29	8	6	10	4.24	1.764	Accepted
Assembling of vegetables	25	34	91	3	15	3.30	1.730	Accepted	18	66	31	-	21	3.44	1.531	Accepted
Vegetables grading/sorting	60	29	9	52	18	3.36	1.424	Accepted	22	30	59	9	16	3.24	1.945	Accepted
Storing of vegetables	36	21	77	30	4	3.32	1.811	Accepted	47	5	62	15	7	3.51	1.163	Accepted
Processing of vegetables	59	53	33	23	-	3.88	1.349	Accepted	3	26	20	73	14	2.49	1.112	Rejected
Packaging of vegetables	11	2	6	99	50	1.95	0.640	Rejected	-	19	27	51	39	2.19	1.019	Rejected
Distribution of vegetables	44	5	64	17	38	3.00	1.910	Accepted	75	23	-	33	5	3.95	1.143	Accepted
Transportation of vegetables	28	12	57	-	71	2.55	1.062	Rejected	17	-	45	50	24	2.52	1.075	Rejected
Selling of vegetables	97	54	10	7	-	4.43	1.538	Accepted	58	37	11	26	4	3.87	1.355	Accepted
Training/programmes/Seminars	27	83	31	22	5	3.62	1.921	Accepted	-	-	8	92	36	1.79	1.024	Rejected
Extension services	1	37	40	61	29	2.52	1.114	Rejected	9	1	-	72	54	1.81	1.106	Rejected
Information on available markets	88	69	-	11	-	4.45	1.635	Accepted	12	6	63	29	26	2.63	1.221	Rejected
Networking strategies with other dealers	26	86	19	23	14	3.51	1.721	Accepted	40	55	19	13	9	3.76	1.832	Accepted

Source: Field Survey, 2020

Table 3 showed the respondents' opinion on marketing services they accessed in Benue state. Result of the table indicates that out of the various marketing services available, topmost of them for cooperative vegetable marketers were information on available markets and selling of vegetables with mean ratings of 4.45 and 4.43 respectively. To the non-cooperative members, the topmost available service to them was bulk buying of vegetables ($x=4.24$). Again, while the cooperative members shows to be exposed to how to process most of those vegetables ($x=3.88$), their non-cooperative counterparts disclaimed that ($x=2.49$), implying that they have not received that training. Similarly, while the average of the cooperative respondents benefitted from training/programmes/seminars ($x=3.62$), the average non-cooperative members ($x=1.79$) indicated to have not benefitted. Other services received by cooperative and non-cooperative vegetable marketers are assembling of vegetables with mean

ratings of (x=3.30) and (x=3.44); vegetables grading/sorting (x=3.36) and (x=3.24); storing of vegetables (x=3.32) and (x=3.51); distribution of vegetables (x=3.00) and (x=3.95); networking strategies with other dealers (x=3.51) and (x=3.76) respectively. However, both group of marketers shows to have not received training on packaging of vegetables (x=1.95) and (x=2.19) respectively. Transportation of vegetables and extension services were found to be a herculean task to both marketers (x=2.55; x=2.52) and (x=2.52; x=1.81) respectively.

4. Benefits in Credit (Loan), Income, Savings and Assets by Vegetable Marketers

Table 4: Economic Benefits Derived by Coop. and non-Coop. Vegetable Marketers

Benefits	Coop. Memb.			Non-Coop. Memb.		
	F=168	%=100	x	F=136	%=100	x
Credit (Loan) in ≤ 5Yrs (₦)						
≤ 50,000	31	18.4		78	57.4	
51,000-150,000	42	25.0		19	13.9	₦137,540.44k
151,000-250,000	22	13.1	₦193,726.19k	26	19.1	
251,000-350,000	64	38.1		13	9.6	
351,000&Above	9	5.4		-	-	
Annual Income (₦)						
100,000-200,000	38	22.6		74	54.4	
201,000-300,000	16	9.5		25	18.4	₦223,022.05k
301,000-400,000	81	48.2	₦320,029.76k	37	27.2	
401,000-500,000	29	17.3		-	-	
501,000&Above	4	2.4		-	-	
Annual Saving (₦)						
≤100,000	57	33.9		102	75.0	₦96,852.94k
101,000-300,000	79	47.0	₦204,750.00k	29	21.3	
301,000-500,000	21	12.5		5	3.7	
501,000&Above	11	6.5		-	-	
Assets						
Planting/ harvesting tools	113	67.3		48	35.3	
Land	25	14.9		43	31.6	
Processing equipments	14	8.3		7	5.1	
Vehicle for products	6	3.6		2	1.5	
Others	10	5.9		36	26.5	

Source: Field Survey, 2020

Table 4 shows the economic benefits in credit (loan), annual income, annual savings and assets acquisition of the respondents. The results revealed that the average loan received by the cooperative members was N193,726.19k. Their average annual income and savings were found to be N320,029.76k and N204,750.00k respectively. More still, the assets acquisition of the highest number of the cooperative vegetable marketers 113(67.3%) was found to be planting/harvesting tools. The least of them 6(3.6%) were having vehicle for conveying of products. However, the average credit received annually by non-cooperative vegetable sellers was just N137,540.44k. They had an average annual income of N223,022.05k and a meagre annual savings of N96,852.94k. Similar to their cooperatives counterparts, the highest number of their respondents 48(35.3%) shows to have acquired planting/harvesting tools. Again as

25(14.9%) of the cooperative marketers indicated to have cultivating lands, their non-cooperative members 43(31.6%), shows to have same. On processing equipments, 14(8.3%) of the cooperative members have acquired that, while just 7(5.1%) of their counterparts had same. Interestingly, while a good number of the non-cooperative members 36(26.5%) appears to have acquired other forms of assets, a smaller proportion of their cooperative counterparts 10(5.9%) shows to have same.

5 Constraining Factors to Cooperative and Non-cooperative Vegetable Marketers in Benue State

Table 5: Respondents opinion on factors constraining vegetable marketing in Benue State

Challenges	Coop. Memb. = 168								Non-Coop. Memb. = 136							
	To a Very High Extent (5)	To a High Extent (4)	To a Small Extent (3)	Undecided (2)	Not at All (1)	X	Stdv.	Remarks	To a Very High Extent (5)	To a High Extent (4)	To a Small Extent (3)	Undecided (2)	Not at All (1)	X	Stdv.	Remarks
High transportation cost	72	64	9	23	-	4.10	1.812	Accepted	41	53	28	11	3	3.86	1.592	Accepted
Poor handling methods	19	34	27	30	58	2.55	1.046	Rejected	7	22	2	62	43	2.17	1.121	Rejected
Lack of packaging/processing techniques	49	11	55	12	41	3.08	1.524	Accepted	59	34	10	19	14	3.77	1.803	Accepted
Rough handling	6	25	10	92	35	2.25	1.117	Rejected	16	-	1	44	75	1.80	1.032	Rejected
Lack of market/buyers	15	39	19	43	52	2.53	1.003	Rejected	55	37	21	6	17	3.78	1.140	Accepted
Lumping/vehicle heat	86	14	42	25	1	3.94	1.629	Accepted	20	71	4	18	23	3.34	1.951	Accepted
Inadequate storage facilities	57	36	16	31	28	3.37	1.490	Accepted	48	5	66	5	12	3.52	1.643	Accepted
Low pricing	4	40	33	22	69	2.33	1.103	Rejected	15	3	42	27	49	2.32	1.030	Rejected
Dilapidated/bad road networks	63	5	87	-	13	3.62	1.642	Accepted	84	25	9	16	2	4.27	1.496	Accepted
Inadequate communication channels	24	7	36	63	38	2.50	1.015	Rejected	40	36	50	3	7	3.72	1.732	Accepted
Small/scattered holdings	-	17	54	-	97	1.94	1.132	Rejected	26	93	13	-	4	4.00	1.914	Accepted
Lack of uniformity in grading	21	3	13	75	56	2.15	1.202	Rejected	-	24	12	31	69	1.93	1.106	Rejected
Lack of market bargaining power	-	32	-	81	55	2.05	1.417	Rejected	51	8	46	14	17	3.45	1.774	Accepted
Far distance to market	78	50	29	2	9	4.11	1.795	Accepted	96	7	33	-	-	4.46	1.620	Accepted
Low demand for products	20	8	67	36	37	2.63	1.074	Rejected	4	38	-	65	29	2.43	1.002	Rejected
Stealing/robbery	-	-	46	99	23	2.13	1.195	Rejected	39	5	41	2	49	2.88	1.111	Rejected
Lack of financial support/credit	34	16	5	66	47	2.55	1.693	Rejected	6	89	12	7	22	3.36	1.659	Accepted

Source: Field Survey, 2020

Table 5 shows that the topmost of the challenges confronting cooperative vegetable marketers is far distance to market ($x=4.11$) and high transportation cost ($x=4.10$). Similarly, their non-cooperative counterparts were found to be constrained most by far distance to market ($x=4.46$), dilapidated/bad road networks ($x=4.27$) and small/scattered holdings ($x=4.00$). On the contrary, while cooperative marketers disclaimed lack of market/buyers as a challenge ($x=2.53$), their non-cooperative counterparts identified that as one ($x=3.78$). Again, while cooperative respondents shows to be having adequate communication channels ($x=2.50$), inadequate communication channels poses a threat to their non-cooperative respondents ($x=3.72$). In addition, as lack of market bargaining power was not an issue to cooperative vegetable sellers ($x=1.94$), that was considered an impediment to non-cooperatives. While lack of financial support/credit was not a serious issue to the cooperative marketers ($x=2.55$), this was observed to be a great challenge to the non-cooperative members ($x=3.36$). Other challenges shared or confronting both cooperative and non-cooperative vegetable marketers in the state are lack of packaging/processing techniques ($x=3.08$) and ($x=3.77$), lumping of leaves/vehicle heat ($x=3.94$) and ($x=3.34$), inadequate storage facilities ($x=3.37$) and ($x=3.52$), as well as dilapidated/bad road networks ($x=3.62$) and ($x=4.27$) respectively.

Test of Hypotheses

Ho1: There is no significant difference in marketing services accessed by cooperative and non-cooperative vegetable marketers in Benue state

Table 6: Result of hypothesis one

Index	Vegetable Marketers	N	Mean	Std. Deviation	Std. Error	t	df	Sig.
Marketing services accessible by the farmers	Coop. Memb.	168	7923.6	822.15	2706.43	13.73	4	.000 ^a
	Non-Coop. Memb.	136	5823.1	634.02				

SPSS field data, 2020

The t-test result in Table 6 showed that the mean difference in services accessed by the cooperative and non-cooperative vegetable marketers is 7923.6 and 5823.1 respectively. Again, the t-value is observed to be 13.73, which is greater than the p-value (.000). Based on this and clearer evidence from the table, the null hypothesis was rejected and alternate accepted. This implies that there is a significant difference in marketing services accessed by cooperative and non-cooperative vegetable marketers in Benue state.

Ho2: There is no significant difference in volume of credit (loan) accessed by cooperatives and non-cooperative vegetable marketers in Benue state.

Table 7: Result of hypothesis two

Index	Vegetable Marketers	N	Mean	Std. Deviation	Std. Error	t	df	Sig.
Credit (loan) accessed	Coop. Memb.	168	5641.7	6602.17	4192.11	22.10	4	.010 ^a
	Non-Coop. Memb.	136	4918.3	6014.31				

SPSS field data, 2020

Table 7 revealed that the mean difference in loan accessed by the cooperative and non-cooperative vegetable marketers is 5641.7 and 4918.3 respectively. Again, the t-value is observed to be 22.10, which is greater than the p-value (.010). Based on the clearer evidence from the table and the fact that the p-value is less than the t-value, the null hypothesis was rejected and alternate accepted. This means that there is a significant difference in volume of credit (loan) accessed by cooperatives and non-cooperative vegetable marketers in Benue state.

Ho3: There is no significant difference in income level of cooperative and non-cooperative vegetable marketers in Benue state.

Table 8: Result of hypothesis three

Index	Vegetable Marketers	N	Mean	Std. Deviation	Std. Error	t	df	Sig.
Income level	Coop. Memb.	168	8317.6	744.13	2512.71	11.81	4	.001 ^a
	Non-Coop. Memb.	136	6520.3	602.29				

SPSS field data, 2020

Table 8 displayed analysis of t-test on income level of the cooperative and non-cooperative vegetable marketers in Benue state. Based on the mean outputs, it was observed cooperative marketers had 8317.6 mean, while that of their non-cooperative counters is 6520.3. However, the t-value is observed to be 11.81, which is greater than the p-value (.001). Since the p-value is lesser than the t-ratio and clear difference observed in the mean outputs, the null hypothesis was rejected. Therefore, the alternate was accepted, implying that there is a significant difference in income level of cooperative and non-cooperative vegetable marketers in Benue state.

Ho4: There is no significant difference in savings of cooperative and non-cooperative vegetable marketers in Benue state.

Table 9: Result of hypothesis four

Index	Vegetable Marketers	N	Mean	Std. Deviation	Std. Error	t	df	Sig.
Savings	Coop. Memb.	168	6239.7	572.81	74321.06	19.35	4	.000 ^a
	Non-Coop. Memb.	136	3301.1	193.63				

SPSS field data, 2020

Table 9 showed the t-test result on savings of the cooperative and non-cooperative vegetable marketers. A glaring difference was observed in savings of cooperators (6239.7) and non-cooperative vegetable marketers at (3301.1). In addition, the t-ratio output is 19.35, suggesting to be greater than the .010 p-value. Based on this, the study accepted the alternate and rejected the null hypothesis, indicating that there is a significant difference in savings of cooperative and non-cooperative vegetable marketers in Benue state.

Ho5: There is no significant difference in the assets acquisition of cooperative and non-cooperative vegetable marketers in Benue state.

Table 10: Result of hypothesis five

Index	Vegetable Marketers	N	Mean	Std. Deviation	Std. Error	T	df	Sig.
Assets	Coop. Memb.	168	2873.1	673.16	1305.17	11.21	4	.875 ^a
	Non-Coop. Memb.	136	2593.2	237.04				

SPSS field data, 2020

Table 10 showed the t-test output of the assets acquisition of the vegetable marketers in the state. The mean output indicates that there is no significant difference, as cooperative members had (2873.1), non-cooperative members had (2593.2). Again, the t-ratio is observed to be very low 11.21 as indicated by the insignificant p-value of .875. Based on the evidence on the table and mean ratings, the study upheld the stated null hypothesis. This suggests that there is no significant difference in the assets acquisition of cooperative and non-cooperative vegetable marketers in Benue state.

Conclusion and Recommendations

The aim of the study was to assess the potentials of cooperatives in the marketing of vegetable products in Benue State of Nigeria. Findings from the study revealed that cooperative vegetable marketers were clearly ahead of non-cooperative vegetable marketers. Cooperative marketers have access to trainings, programmes and seminars more than their non-cooperative counterparts. Cooperative members sold more vegetable products than non-cooperative marketers. There were many vegetable products marketed in the state and cooperative marketers receive more marketing services than the non-cooperative marketers. Similarly, cooperative vegetable marketers had more credit, more income and more savings than the non-cooperative marketers. This is not surprising and well expected as cooperative societies enhance improved agricultural activities and income generation. Above all, there were challenges facing both cooperative and non-cooperative vegetable marketers in the state, many of which limit the vegetable marketers in their business enterprise and may continue to impede their growth if not controlled.

This study made the following recommendations for possible policy implementation:

1. Non-cooperative vegetable marketers should be enlightened on the essence or need for joining cooperative. This can be carried out by the State’s Ministry of Agriculture and help them to access more marketing services, thereby transcending to improved benefits.
2. Agricultural cooperative societies should encourage members to acquire higher education at a subsidized rate. This can be achieved through adult education and help eliminate mass illiteracy amongst the marketers.
3. Cooperative societies should strive to harness other avenues of credit/fund assessment amongst their members. They can queue to the Federal Government’s anchor borrowers fund and improve more on teaching their members on how to save.
4. The various agencies for road maintenance, like FERMA and Benue State Road Maintenance Agency should ensure immediate rehabilitation of roads in the state. Again, more daily markets should be created close to the marketers and this will help curtail the risk of conveying the products to long distances within the state.



5. The government should provide adequate storage facilities to vegetable producing communities and ensure steady power supply to enhance the course. This is because building such important facilities without guaranteed power supply would amount to 'white elephant' project.

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