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Multidimensional poverty and commercialization level of sweet potato farmers in Kwara and Osun states

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Abstract
Smallholder farming remains the livelihood of rural farmers who constitute majority of poverty ridden population in the rural area. Commercialization of smallholder farms has the potential to enhance food security, nutrition, incomes and welfare outcomes and takes smallholder farmers out of poverty. This study examined the Multidimensional Poverty and Commercialization level of Sweet Potato Farmers in Kwara and Osun States Multistage sampling technique was used to select 485 sweet potato farmers. An interview guide was used through structured questionnaire to obtain primary data which were analysed using multidimensional poverty index and commercialization index. The study revealed that majority the sweet potato farmers were considered to be multidimensionally poor, since majority of the indicators were above the cutoff level of deprivation level (36%). Also, the mean of agricultural commercialization level was 84% for the respondents. Indicating that majority of the respondent engaged in commercializing their agricultural crop. The study concludes that sweet potato farmers were multidimensional poor in the study areas. It is therefore recommended that Government and Non-Governmental Organizations involved in agricultural development should give more attention to rural development to reduce their multidimensional poverty level. Also, effort to encourage the commercial production and commercialization of sweet potatoes as a competitive alternative to yam by reducing its postharvest losses should be given the needed attention.

Keywords: Poverty, commercialization, sweet potato, multidimensional, deprivation

Introduction
Background of the Study: Sweet potato (*Ipomoea batatas* L. Lam) is a climber and perennial plant belonging to the Convolvulaceae family (Yan *et al*., 2014) [9] sweet potato ranks as the fifth most important food crop in the tropics and the seventh in the world food production after wheat, rice, maize, potato, barley, and cassava (FAO 2019) [2]. In the world production of sweet potato, Asia accounts for closeto76%, followed by the African continent (19.5%). Among the top five producers are China, Nigeria, Uganda, Indonesia, and the United Republic of Tanzania. China is the highest producer, producing about 75.6 million tons, followed by Tanzania and Nigeria which produced 3.57 and 2.73 million tons, respectively (FAO 2019) [2]. Sweet potato is consumed without much processing in most parts of the tropical countries. It is either eaten boiled, roasted or fried. In countries like the United States, it is dehydrated into chips, canned, cooked and frozen, creamed and used as pie fillings. It is also dried and ground into flour to make biscuits, bread and other pastries. Sweet potato can also be pounded together with yam to give a delicious meal. Although sweet potato is a crop that is consumed in all parts of the country, its level of production still remains low. As a result of climate change, the reduction of arable land, increasing population, and frequent occurrence of natural disasters (Adewumi and Adebayo, 2016) [1].
In terms of nutritional value, adaptability to diverse environments and yield potential, the potato is a preferred crop, especially in developing countries, where most undernourished households depend on potatoes as primary or secondary sources of food and nutrition. Sweet potato crop can potentially address issues including income generation, healthy food crop, nutritional deficit, poverty reduction, and food security in developing and less developed countries (Woolfe, 1992) [8].

Agriculture is important to live most especially; people living in rural areas and relies on farming for securing their daily livelihood. On average the sector contributes 33% of national income, 70% of full-time employment and 40% of total export earnings in Africa (Otsuka *et al*., (2013) [5]. Availability of storage is a precursor for improved post-harvest management and marketing practices, Lack of access to storage facility often leads to selling at lower price due to the perishability nature of the produce, thereby resulting in sub-optimal outcomes. Access to storage facility on the other hand offers the farmer the flexibility to postpone the sale to a later date when the market conditions are more favorable and also to choose the agency with which to enter into a sale transaction.

Although, food insecurity has been attributed to factors such as soil infertility and inadequate capacity to adoption and sustain new innovation production practices such as adoption of production technology, fertilizer use, improved seed and irrigation (Sahley *et al,* 2005) [7]. This clearly shows that transforming subsistence to a more commercialized production could improve the household access to diverse types of food due to increased purchasing power. Sweet potato is particularly a suitable food security crop as it produces high yields in a short growing season even under low rainfall (Kone, 1992) [3]. Olarinde *et al.,* (2020) [4] estimated multidimensional poverty of cassava producers in Nigeria, by determining the factors responsible for poverty increase and contribution(s) of these factors to poverty, and found that about 74% of the respondents were multi-dimensionally poor, Assets and public/housing utility as the main contributors to aggregate multidimensional poverty index (MPI), while education and health contributed most to poverty reduction. Also, that major contributing indicators to MPI to be formal employment, school enrolment, years of schooling, frequency of hospital visits, and household assets' ownership. The estimated coefficient of age, farming experience, years of schooling, household size, and access to informal credit were significant determinants of poverty in the study area. The study examined the multidimensional poverty and commercialization level of sweet potato farmers in Kwara and Osun States.

Research Methodology
The study Areas
The study was carried out in Kwara and Osun States of Nigeria.

Sampling Procedure and Sample Size
Multistage sampling technique was used in the selection of the respondents, due to the population density of the study area and also, for the selection of major producers and processors of sweet potato. Firstly, two states were purposively selected, secondly, four Local Government Areas (LGAs) were selected purposively from each selected state that are major producers of sweet potatoes crop, making a total of eight LGAs. Thirdly, from each of the four LGAs per state, four sweet potatoes farming and processing villages were randomly selected making a total of 32 communities for the two states. Lastly, Krejcie and Morgan (1970) [10] sample table was used to select 248 farmers for each of the two selected states respectively based on their population size of 700, making a total of 486 famers selected for this study.

Table 1: Krecjie and Morgan (1970) Table for Sample Size

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	14)0	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2070	322
55	48	320	175	2200	327
60	52	340	181	24)0	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	60)0	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note: Nis population size. S is sample size., ***Source***: Krejcie & Morgen. 1970 [10]

Krecjie and Morgan (1970) [10]
Total number of respondents used was constructed using the following formula for calculating sample size.

$$s = X^2 NP(1-P) \div d^2(N-1) + X^2 P(1-P).$$

s = required sample size.
X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).
N = The population size. = 700
P = the population proportion (assumed to be .50 since this would provide the maximum sample size).
d = the degree of accuracy expressed as a proportion (.05).

Farmer's population: N was selected to be 700
Sf = 3.841x700x0.50 (1-0.05)/ (0.05)²(700-1) +3.841x0.5 (1-0.5)
Sf = 1344.35(0.5)/ (0.0025) (699) +1.9205(0.5)
Sf = 672.175/1.7475+0.96025
Sf = 672.17/2.70775
Sf = 248.24
Sf = 248 Farmers Respondents per state

Nature and Sources of Data
Primary data was used for this study and data was obtained through the administration of structured questionnaire to the respondents in selected study areas.

Analysis of data collected
Multidimensional poverty index was used to analyze the poverty level of sweet potato and Commercialization Index to analyze the commercialization level of the farmers in the study area.

Results and Discussion
Poverty level of Sweet Potato Farmers in the Study Areas
Table 1 shows the result of Multi-dimensional Poverty Index (MPI) output with a summary of the deprivation indicators. The indicators are organized in deprivations domains, and for each of them MPI shows the data type and the share of deprived individuals from the total population. These binary indictors were constructed under four domains (Education, health, living standard and agricultural commercialization) and the AF measure was estimated with a poverty cutoff of 0.36 (36%). In Kwara state, Education domain deprivation was: 6.2% level of education, and 36.6% level of Child school enrolment. Domain 2, which is Health contains Hospital at deprivation level of 33.3%, Action taken when sick with 73.7%, and Daily food frequency at 54.7%.
Living standard which is domain 3 contains of Toilet facility with deprivation level of 60%, Water source 37.4%, Electricity 37.8%, and Land 83%. Then the last domain which is Agricultural commercialization comprises of Training participation, and Absence of training which have deprivation level of 46.5% and 26.7% respectively. This implies that since the numbers of indicators that have deprivation value greater than the cut off level of 36% are more than four simultaneous deprivations, it therefore indicates that Kwara state sweet potato farmers were considered poor.
And for Osun state sweet potato farmers, Education domain deprivation was: 47.9% level of education, and 34.3% level

of Child school enrolment. Domain 2, which is Health contains Hospital at deprivation level of 39.3%, Action taken when sick with 40.5%, and Daily food frequency at 42.1%. Living standard which is domain 3 contains of Toilet facility with deprivation level of 54.9%, Water source 37.6%, Electricity 47.5%, and Land assets at 91.7%. afterward domain 4 which is Agricultural commercialization comprises of Training participation, and Absence of training which have deprivation level of 31.8% and 45.8% respectively. This also shows that Osun state sweet potato farmers were also considered to be poor, since majority of the indicators were above the cutoff level of deprivation level (36%).
Where after, the pooled deprivation revealed the result of MPI output with a summary of the deprivation indicators which begins with Education domain deprivation to be 26.4% level of education, and 35% level of Child school enrolment. Domain 2, which is Health contains Hospital at deprivation level of 34.6%, Action taken when seek with 58.8%, and Daily food frequency at 45.5%. Living standard which is domain 3 contains of Toilet facility with deprivation level of 59%, Water source 37.8%, Electricity 43%, and Land 82.4%. Then the last domain which is Agricultural commercialization comprises of Training participation, and Absence of training which have deprivation level of 43% and 32.2% respectively. This implies that since the numbers of indicators that have deprivation value greater than the cut off level of 36% are more than four simultaneous deprivations, it therefore indicates that sweet potato farmers in the study areas were considered poor.

Multidimensional Poverty Index Parameters for Sweet Potato Farmers
Table 2 displays the AF (MPI) poverty measures with the related standard errors. The tables consist of three MPI parameters: M_0 (the MPI estimate); H (the incidence of the poor in the population); and A (the average intensity of simultaneous deprivations among the poor). Since the model made use of only binary indicators the MPI computes only M_0. The result shows that the MPI of the population of sweet potato farmers in Kwara state accounted for 29.6%. This reflects that the respondents in Kwara state were severely in poverty and the degree to which they are deprived. H which is the poverty incidence estimates the proportion of the population are multi-dimensionally poor at 0.568. This implies that 56.8% of potato farmers in Kwara state are multi-dimensionally poor.
The final MPI parameter A, which is the average intensity of simultaneous deprivations among the poor accounted for 0.522. This gives an indication that the intensity of deprivations across the dimensions is 52.2%, which is averagely high. At the same time the result also shows the MPI of the population of sweet potato farmers in Osun state to be accounted for this reflects that the respondents in Osun state were severely poor and the degree to which they are deprived. H which is the poverty incidence estimates the proportion of the population are multi-dimensionally poor at 0.678. This implies that 67.8% of potato farmers in Osun state are multi-dimensionally poor. The final MPI parameter A, which is the average intensity of simultaneous deprivations among the poor accounted for 0.530. This gives an indication that the intensity of deprivations across the dimensions is 53%.

Whereas, the pooled result shows that the MPI of the population potato farmers in the both states accounted for 32.1%. This reflects both the share of the respondents in poverty and the degree to which they are deprived. H which is the poverty incidence, estimates the proportion of the population that are multi-dimensionally poor at 0.614. This implies that 61.4% of potato farmers in both states are multi-dimensionally poor. Then MPI parameter A, which is the average intensity of simultaneous deprivations among the poor accounted for 0.523. This gives an indication that the intensity of deprivations across the dimensions is 52.3%, this pooled result confirmed the severity of poverty level of the respondents in both Kwara and Osun states.

Multidimensional Poverty Index Overall Decomposition of Sweet Potato Farmers

Table 3 of the MPI output shows the percentage of contribution of each of the indicators to the overall index in Kwara state that is, the overall decomposition of the domains and indicators. For education domain, the deprivation in level of education accounted for 2.6% of the overall value of M_0, 13.5% accounted for Child school enrolment. In the Health domain: deprivation level for Hospital access was 7.9%, the action taking when seek accounted for 13.3%, and daily food frequency accounted for 8.6%. Under the standard of living of the respondents; owning toilet facility accounted for 8.8%, water source has a deprivation of 6.0% that of electricity was 5.4%, while land asset was 10.3%. Lastly, under Agricultural commercialization awareness; training participation accounted for 14.6%, and Absence of training accounted for the deprivation level of 9%.

It also shows the percentage of contribution of each of the indicators to the overall index in Osun state that is, the overall decomposition of the domains and indicators. For education domain, the deprivation in level of education accounted for 2.6% of the overall value of M_0, 13.5% accounted for Child school enrolment. In the Health domain: deprivation level for Hospital access was 7.9%, the action taking when seek accounted for 13.3%, and daily food frequency accounted for 8.6%. Under the standard of living of the respondents; owning toilet facility accounted for 8.8%, water source has a deprivation of 6.0% that of electricity was 5.4%, while land asset was 10.3%. Lastly, under Agricultural commercialization awareness; training participation accounted for 14.6%, and Absence of training accounted for the deprivation level of 9%.

The pooled result of the MPI output shows the percentage of contribution of each of the indicators to the overall index, that is, the overall decomposition of the domains and indicators. For education domain, the deprivation in level of education accounted for 9.2% of the overall value of M_0, 11.9% accounted for Child school enrolment. In the Health domain: deprivation level for Hospital access was 7.9%, the action taking when seek accounted for 10.5%, and daily food frequency accounted for 7.5%. Under the standard of living of the respondents; owning toilet facility accounted for 7.9%, water source has a deprivation of 5.7% that of electricity was 6.2%, while land asset was 10.6%. Lastly, under Agricultural commercialization awareness; training participation accounted for 11.9%, and Absence of training accounted for the deprivation level of 10.8%.

Multidimensional Poverty Index Derivative per Domain of Sweet Potato Farmers

Table 4 of MPI output provides the contribution of each of the deprivations per domains. For Kwara state farmers, domain 1 whose indicators are level of education and child/children school enrollment contributed 16.6% to the overall value of M_0, Domain 2 whose indicators are contributed 29.7% to the overall value of M_0, Domain 3 whose indicators are contributed 30 5% to the overall value of M_0. And Domain 4 whose indicators are training participation and absence of training contributed 23.6% to the overall value of M_0. This implies that the contribution of each of the deprivations per domain was not up to the cut off value of deprivation which means that at each domain, the sweet potato farmers are not poor.

This is also applicable for Osun state sweet potato farmers of which domain 1 whose indicators are level of education and child/children school enrollment contributed 25.1% to the overall value of M_0, Domain 2 whose indicators are contributed 22.7% to the overall value of M_0, Domain 3 whose indicators are contributed 30.2% to the overall value of M_0. And Domain 4 whose indicators are training participation and absence of training contributed 22% to the overall value of M_0. This implies that the contribution of each of the deprivations per domain was not up to the cut off value of deprivation which means that at each domain, the sweet potato farmers are not poor.

The pooled result of MPI output provides the contribution of each of the deprivations per domains. For instance, domain 1 whose indicators are level of education and child/children school enrollment contributed 21% to the overall value of M_0, Domain 2 whose indicators are contributed 25.7% to the overall value of M_0, Domain 3 whose indicators are contributed 30% to the overall value of M_0. And Domain 4 whose indicators are training participation and absence of training contributed 23% to the overall value of M_0. This implies that the contribution of each of the deprivations per domain was not up to the cut off value of deprivation which means that at each domain, the sweet potato farmers not poor in the study areas. This corroborates with the results got per each state of the respondents.

Commercialization Index of sweet potato Farmers

The result in table 5 revealed that the mean value of sweet potato household commercialization index of sweet potato farmers in both Kwara and Osun state was about 0.8 which falls on the household commercialization index greater than 0.8 ratio of quantity sold to quantity produce by the sweet potato farmers in both states have low level of commercialization. It also showed that the highest level of commercialization was 49.8% in kwara state, and 51.2% in Osun state. The pooled result revealed also confirm the individual state of sweet potato farmers considered, that the mean value of sweet potato household commercialization index of sweet potato farmers in both states was also 0.8 which falls on the household commercialization index greater than 0.8 ratio of quantity sold to quantity produce by the farmers. This implies that sweet potato farmers in the study area moved a little bit above average towards commercialization of sweet potato. This corroborates with the findings of Oyebamiji *et al.*, (2019) [6], that "commercialization can be measured along a continuum

from zero (total subsistence – oriented production) to unity (100% production sold)". It also showed that the highest level of commercialization was 51%, this also corroborates with the findings of Oyebamiji *et al*., (2019) [6] were between the ranges of 50.01 – 75.00 which amounted to 51.7% maize commercialization level.

Commercialization level Profile Distribution by Socio-economic Characteristics

The categorization of sweet potato farmers into commercialization level profile was done to relate differences in commercialization level to socio-economic characteristics. Table 6 presents the socio-economic characteristics in relation to the commercialization level of the respondents in both Kwara and Osun States respectively. Generally, it was revealed that there was relationship between the socio-economic characteristics of the respondents in both state and commercialization level most especially at the index range between 0.8-0.9. This implies that sweet potato farmers in both states engage in commercialization of their crop.

The result reveals that 85% of farmers in Kwara State were male within the commercialization index range of 0.8 – 0.9 index, and 86% for the Osun farmers with the same index value range between 0.8-0.9. it was shows that between the age ratio of 36-45 years of the respondent in both states were well commercialized (37.1% and 28.7%) respectively, within the index range of 0.8-0.9. about 64% of level of education between 7-12 years (secondary school) of the respondent in Kwara State engaged in commercialization which falls within the index range of 0.8 – 0.9, whereas in Osun State farmers with non-formal education engaged majorly in sweet potato commercialization (50.9%) which falls within the index range of 0.8-0.9. This supports the idea that educational level of the sweet potato farmers has effect on commercialization level of the crop.

About 63% and 57% of farmers in both states with less than 5 members fall under the index ranges between 0.8–0.9 respectively. It is noteworthy that respondents within 5 -10 household members followed with 35.8% and 38.9% at index of >0.9 in Kwara and Osun States respectively. Also, 92.5% of the index within 0.8–0.9 categories were married in Kwara State, while 57.4% of the same index ranges or category were married followed by 66.3% at index > 0.9. Therefore, the socio-economic characteristics in the study area are perceived to have enhanced commercialization level of sweet potato.

Conclusion

It is concluded that the mean age of the respondents was between 42 and 45years which implies that they were more responsive and alert strong and at their active age. For their poverty status, the sweet potato farmers were considered poor, since, they have more than four indicators having deprivation values greater than the cut-off level of deprivation (36%). Moreover, commercialization index revealed that the mean level of sweet potato commercialization of the respondents was 84% in both states. This implies that commercializing sweet potato crop and its products have improved the sweet potato farmer's well-being.

Recommendation

Farmer's poverty level is increasing on daily basis due to economic challenges and lack or inadequate level of commercialization of their produces. Therefore, the followings were recommended to minimize poverty level if farmers in the study area.

- There should be more awareness of the importance of sweep potato value addition to generate more income and improve their standard of living.
- Government and Non-Governmental Organizations involved in agricultural development should give more attention to rural development to reduce their multidimensional poverty level.
- Effort to encourage the commercial production and commercialization of sweet potatoes as a competitive alternative to yam by reducing its postharvest losses should be given the needed attention.

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Appendixes

Table 1: Percentage Distribution Poverty level of Sweet Potato Farmers

Indicator	Data type	Kwara Farmer Deprivation (%)	Osun Farmer's Deprivation (%)	Pooled Deprivation (%)
Domain 1: Education				
Level of education	Binary	6.17	47.93	26.44
Child school enrolment	Binary	36.63	34.29	34.81
Domain 2: Health				
Hospital access	Binary	33.33	39.26	34.58
Action taken when sick	Binary	73.66	40.49	58.78
Daily food frequency	Binary	54.73	42.15	45.48
Domain 3: Living standard				
Toilet facility	Binary	60.08	56.95	58.95
Water source	Binary	37.45	37.60	37.77
Electricity	Binary	37.86	47.52	43.02
Land asset	Binary	83.13	91.73	82.43
Domain 4: Agric commercialization				
Training participation	Binary	46.50	31.82	43.02
Absence of training	Binary	26.75	45.87	32.18

Source: Field Survey 2022.

Table 2: Poverty Measures with the related Standard Errors of Sweet Potato Farmers

MPI	Kwara Coefficient	Kwara Standard Error	Osun Coefficient	Osun Standard Error	Pooled Coefficient	Pooled Standard Error
M_0	0.568	0.032	0.678	0.030	0.614	0.020
H	0.296	0.017	0.360	0.017	0.321	0.011
A	0.522	0.009	0.530	0.009	0.523	0.006

Source: Field Survey 2022

Table 3: Contribution of each indicator to MPI of Sweet Potato Farmers

Indicator	Kwara M_0 (%)	Osun M_0 (%)	Pooled M_0 (%)
Domain 1: Education			
Level of education	0.026	0.147	0.092
Child school enrolment	0.135	0.105	0.119
Domain 2: Health			
Hospital access	0.079	0.079	0.079
Action taken when sick	0.133	0.081	0.105
Daily food frequency	0.086	0.067	0.075
Domain 3: Living standard			
Toilet facility	0.088	0.072	0.079
Water source	0.060	0.054	0.057
Electricity	0.054	0.068	0.062
Land asset	0.103	0.108	0.106
Domain 4: Agricultural commercialization			
Training participation	0.146	0.098	0.119
Absence of training	0.090	0.122	0.108

Source: Field Survey 2022

Table 4: Contribution of each domain to MPI of Sweet Potato Farmers

Domain	Kwara M_0 (%)	Osun M_0 (%)	Pooled M_0 (%)
Domain 1	0.161	0.251	0.211
Domain 2	0.297	0.227	0.259
Domain 3	0.305	0.302	0.303
Domain 4	0.236	0.220	0.227

Source: Field Survey 2022

Table 5: Commercialization Index of Sweet Potato Farmers

Variable	Kwara Farmers			Osun Farmers			Pooled Farmers		
Household Commercialization Index	Freq	%	Mean	Freq.	%	Mean	Freq	%	Mean
<0.60	2	0.82		0	0.00		2	0.41	
0.60 -0.70	50	20.58	0.79	51	21.07	0.82	101	20.82	0.81
0.71 – 0.80	70	28.81		67	27.69		137	28.25	
>0.8	121	49.79		124	51.24		245	50.52	
Total	243	100.00		242	100.00		485	100.00	

Source: Field Survey 2022

Table 6: Distribution of respondents based on commercialization level in relation to socio-economic variables

Variable	Kwara Farmers					OSUN Farmers					Pooled				
	<=0.5	0.6-0.7	0.8-0.9	>0.9	Total	<=0.5	0.6-0.7	0.8-0.9	>0.9	Total	<=0.5	0.6-0.7	0.8-0.9	>0.9	Total
Gender															
Female	0(0.0)	5(9.8)	24(15.1)	4(12.1)	33(13.6)	0(0.0)	3(5.9)	15(13.9)	12(14.6)	30(12.4)	0(0)	8(7.81)	39(14.6)	16(14.2)	63(13.0)
Male	2(100.0)	46(90.2)	135(84.9)	27(87.1)	210(86.4)	2(100.)	48(94.1)	93(86.1)	70(85.4)	212 (87.6)	3(100.0)	94(92.2)	228(85.4)	97(85.8)	422 (87.0)
Age group (yrs)															
<25	0(0.0)	2(3.9)	1(0.6)	0(0.0)	3 (1.2)	0(0.0)	6(11.8)	5(4.6)	2(2.4)	13 (5.4)	0(0.0)	8(7.8)	6(2.2)	2(1.8)	16 (3.3)
25-35	0(0.0)	8(15.7)	21(13.2)	10(32.3)	39 (16.0)	0(0.0)	15(29.4)	20(18.5)	17(20.7)	52(21.5)	0(0.0)	23(22.5)	41(15.4)	27(23.9)	91 (18.8)
36-45	1(50.0)	16(31.4)	59(37.1)	13(41.9)	89(36.6)	1(000.0)	14(27.5)	31(28.7)	26(30.5)	71(29.3)	2(66.7)	30129.4)	90(33.7)	38(33.6)	160(33.0)
46-55	0(0.0)	16(31.4)	49(30.8)	7(22.6)	72(29.6)	0(00.0)	9(17.6)	31(28.7)	28(34.1)	68(28.1)	0(0.0)	25(24.5)	80(30.0)	35(31.0)	140(28.9)
>55	1(50.0)	9(17.6)	29(18.2)	1(3.2)	40 (16.5)	0(0.0)	7(13.7)	21(19.4)	10(12.2)	38 (15.7)	1(33.3)	16(15.7)	50(18.7)	11(9.7)	78 (16.1)
Education															
0	0(0.0)	3(5.9)	15(9.4)	3(9.7)	21(8.6)	1(100.0)	26(51.0)	55(50.9)	34(41.5)	116(47.9)	1(33.3)	29(28.4)	70(26.2)	37(32.7)	137(28.2)
1-6	0(0.0)	11(21.6)	26(16.4)	6(19.4)	43(17.7)	0(0.0)	8(15.7)	16(14.8)	12(14.6)	36(14.9)	0(0.0)	19(18.6)	42(15.7)	18(15.9)	79(16.3)
7-12	1(50.0)	33(64.7) 4(7.8)	102(64.2) 16(10.1)	19(61.3)	155 (63.8)	0(0.0)	9(17.6)	28(25.9)	19(23.2)	56(23.1)	1(33.3)	42(41.2)	130(48.7)	38(33.6)	211 (43.5)
>=13	1(50.0)	3(5.9)	15(9.4)	3(9.7)	24 (9.9)	0(0.0)	8(15.7)	9(8.3)	17(20.7)	34 (14.0)	1(33.3)	1211.8)	25(9.4)	20(17.7)	58 (12.0)
Household size															
<5	0(0.0)	28(54.9)	100(62.9)	18(58.1)	146 (60.1)	1(100.0)	24(47.1)	62(57.4)	41(50.0)	128 (52.9)	1(33.3)	52(51.0)	162(60.7)	59(52.2)	274 (56.5)
5-10	2(100.0)	23(45.1)	57(35.8)	13(41.9)	95(39.1)	0(0.0)	25(49.0)	42(38.9)	37(45.1)	104(43.0)	2(66.7)	48(47.1)	100(37.5)	50(44.2)	200(41.2)
>10	0(0.0)	0(0.0)	2(1.3)	0(0.0)	2(0.8)	0(0.0)	2(3.9)	4(3.7)	4(4.9)	10(4.1)	0(0.0)	2(2.0)	5(1.9)	4(3.5)	11 (2.3)
Marital status															
Single	0 (0.0)	2(3.9)	12(7.5)	1(3.2)	15(6.2)	1(100.0)	21(41.2)	46(42.6)	23(28.7)	92(38.8)	1 (33.3)	23(22.5)	58(21.7)	27(21.7)	107 (21.5)
Married	2(100.0)	49(96.1)	147(92.5)	30(96.8)	228(93.8)	0(0.0)	30(58.8)	62(57.4)	53(66.3)	143 (59.2)	2(66.7)	76(75.5)	204(72.3)	86(76.1)	370(73.5)
Divorce	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)
Widow	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	6(4.0)	5(2.0)	0(0.0)	3(2.0)	4(6.0)	0(0.0)	5(3.0)
Total	2	187		55	243 (100)	2	150		91	243(100)	2	337		146	485(100)