



Relationship between women demographic characteristics, household structure and socio-economic status in Morogoro district, Tanzania

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ABSTRACT

Factors responsible for poor household socio-economic status (hSES) vary in different social groups. Little information exists to explain how demographic and household characteristics are related to hSES in rural societies of Tanzania. This cross-sectional study assessed associations between selected women's demographic characteristics, household structure and hSES in a rural area in Morogoro District, Tanzania. The study involved 542 women aged 15 to 49 years. Data were collected by face to face interviews using a structured questionnaire and Focus Group Discussions. Principal Component Analysis was used to construct hSES index. Women older than 35 years had higher likelihood of being in the higher SES category compared to their younger counterparts [OR1.26 (95%CI:1.82-2.94), $p < 0.05$]. Living in road accessible ward was associated with being in the medium to high hSES [OR4.08 (95%CI: 2.40-6.94), $p < 0.01$]. Households with at least one child aged less than 5 years were more likely to be in the low hSES [OR 0.34 (95%CI: 1.033-2.502), $p < 0.05$]. While road accessibility and age determined a better hSES, most factors were not related to hSES. Our findings underscore the urgency for transportation infrastructural improvement as a reliable means for improvement of rural hSES.

Key words: Demographic characteristics, household, poverty, socio-economic status, Tanzania, women

RÉSUMÉ

Les facteurs responsables du mauvais statut socio-économique des ménages (SSEM) varient selon les différents groupes sociaux. Il existe peu d'informations pour expliquer comment les caractéristiques démographiques et des ménages sont liées au SSEM dans les sociétés rurales de Tanzanie. Cette étude transversale a évalué les associations entre certaines caractéristiques démographiques des femmes, la structure des ménages et les SSEM dans une zone rurale du district de Morogoro, en Tanzanie. L'étude a porté sur 542 femmes âgées de 15 à 49 ans. Les données ont été recueillies par des entretiens tête à tête à l'aide d'un questionnaire structuré et de discussions de groupe. L'analyse en

composantes principales a été utilisée pour construire l'indice SSEM. Les femmes de plus de 35 ans avaient une probabilité plus élevée d'être dans la catégorie de SSE supérieure par rapport aux jeunes [OR1,26 (IC 95%: 1,82-2,94), $p < 0,05$]. Le fait de vivre dans un quartier accessible par route était associé au fait d'être dans un SSE moyen ou élevé [OR4.08 (IC à 95%: 2.40-6.94), $p < 0,01$]. Les ménages avec au moins un enfant âgé de moins de 5 ans étaient plus susceptibles d'être dans le bas SSE [OR 0,34 (95% C: 1,033-2,502), $p < 0,05$]. Bien que l'accessibilité routière et l'âge aient déterminé un meilleur SSE, la plupart des facteurs n'étaient pas liés au SSEM. Nos résultats soulignent l'urgence d'une amélioration des infrastructures de transport en tant que moyen fiable pour l'amélioration des SSEM ruraux.

Mots-clés: ménage, statut socio-économique, caractéristiques démographiques, femmes, pauvreté

INTRODUCTION

Worldwide women are associated with poor household socio economic status (hSES) (Chant and Sweetman, 2012; Dutt *et al.*, 2016; Kapunda, 2018; Semali, 2016; Tillmar, 2016). Literature shows that in comparison to men, women as well as households headed by females are poorer (Cawthorne 2008; Kabeer, 2015; Magombeyi and Odhiambo, 2017; Lesetedi, 2018; Magombeyi and Odhiambo, 2019). Previous investigator showed that women constitute 75% of the global poor (Chant and Sweetman, 2012). It is worth noting that even the more recent studies which assessed hSES of women and their households have not disapproved the former concept relating women and poor hSES. In Sub Saharan Africa, including Tanzania, women SES takes a similar trend that poverty is higher among women than their male counterparts (Macro 2011; Kehler, 2013). Poor hSES can be reflected by poor standard of living which is characterized by squalid surroundings, high maternal and child/infant mortality, low life expectancy, low per capita income, poor quality housing, inadequate clothing, low utilization of technology, environmental degradation, unemployment, rural-urban migration and poor means of communication, to mention a few (Ryan *et al.*, 2006).

Poor hSES of women and their households

has been associated with numerous factors, including involvement of women in multiple roles categorized as productive (economic), reproductive and community engagement roles (Moser, 2012). Other factors throwing women in poor hSES are gender wage gap, segregation in economic activities as well as poor participation in productive work (Cawthorne, 2008). Previous scholars have reported that in occupations, women are paid less than men even when they have the same qualifications and work same hours. Demographic characteristics refer to variables or attributes that are used to describe a person or a population. Individual demographic characteristics include gender, race, age, income, marital status, educational achievement, occupation, geographic location of respondent's religion, as well as numerous other variables of interest (Purdie *et al.*, 2002; Huff and Tingley, 2015). Previous investigators have provided different opinions regarding the relationship between individual demographic factors and hSES. Some have demonstrated that demographic factors do not relate with hSES (Pressman, 2003). Some of the available literature proposes different demographic factors to affect hSES differently and through different mechanisms Topouzis 1990; Udry, 1996; URT, 1998; (Awan *et al.*, 2011; URT, 2018a; URT, 2018b). Reports are available that report the relationship between women specific

demographic attributes with poverty (UNESCO, 2000; Kabeer 2003; Awan *et al.*, 2011; Leavens, 2011; Chant, 2012; URT, 2018; URT, 2019a), but not with household hSES.

Literature shows that changing population and individual demographics shape the trajectories of economic development in households, societies and countries, through the emergence of new opportunities and challenges (Birdsall *et al.*, 2001; Williamson, 2001; Lee, 2003; Bloom and Finlay, 2009; Sinding, 2009; Dao, 2012). It is therefore notable that the factors that link women and poor hSES are multiple and complex. Knowledge on the complex interrelationships between demographics in relation to economic development in society is important for designing development strategies. This is because demographics as well as economic processes and outcomes not only vary from one society to another, but also, change with time (Breuer and Wicker, 2008). In addition to this, majority of previous studies have primarily reported on women's time use, particularly their duties outside home, comparing the labor participation rate of women in different communities and countries, or the number of hours they work (Gornick, 1994; Blossfeld and Hakim, 1997; Stier *et al.*, 2001; Van der Lippe, 2001; Van Dijk and Van der Lippe, 2001; Tijdens, 2002; Gornick and Meyers, 2003). The variation in opinions regarding demographic factors in relations to hSES suggests the importance to establish the relationship that exists between women's demographic factors and hSES with specific socio-economic groups. In this line of thought, it is critically important to understand the demographic transitions of the population so as to timely devise appropriate strategies for improving rural household SES.

Efforts to improve the living standards of its people and through improved livelihoods (hSES) of individuals, families and communities are mostly reflected in the contexts of socio-

economic development, poverty reduction and economic growth as documented in different national policies and strategies. In Tanzania these strategies include the National Five Year Development Plan (FYDP) I and II, the National Strategy for Growth and Reduction of Poverty (NSGRP)/ MKUKUTA I and II and the National Poverty Eradication Rural Development Strategy (2001), the National Poverty Reduction Strategy (1998)(URT, 1998; SURT, 2016).

In Tanzania, more than half of the poorest are rural dwellers (World Bank Group, 2016). With reference to the 2017-18 National Household Survey in Tanzania (URT, 2019), wealth distribution is categorized into five (5) wealth quintiles in which 80% of the rural population is in the three lowest wealth quintiles. In contrast, 88% of the urban population belongs to the two highest wealth quintiles. This implies that only 20% of rural Tanzanian households are in the two higher quintiles whereas only 12% of the urban households are found in the 3 lowest wealth quintiles (URT, 2019). In Morogoro District of Tanzania where this study was conducted, more than a half (55%) of households are poor (Lusambo, 2016b). This study, therefore, sought to investigate whether women's demographic characteristics (age, education level, marital status, area of residence (in terms of road accessibility) and household structure (sex of household head, number of household members and age composition of households) are related to household SES. Understanding the demographic and household factors that constrain women's economic contribution is important because women constitute more than half (54%) of the productive force in agricultural sector in Tanzania, which is the main contributor to the national GDP (Leavens, 2011a; Palacios-Lopez and Lopez, 2014). It is envisaged that findings from this study will complement government's efforts of improving the living standards of Tanzanians as outlined in

the Second Five Year Development Plan (FYDP II) of 2016/17-2020/21 (URT, 2016). The global Sustainable Development Goals (SDGs 1 and 8) and national development strategy (FYDP II) targets to ensure that women's production potential is fully utilized and all men and women have equal rights to economic resources, access to basic services and promotion of decent work and economic growth.

This study is based on the Gender Poverty Gap theory (Pressman, 2002), which is part of the feminization of poverty theories that analyzed, among other things, the demographic, household and human capital factors in relation to hSES. According to the Gender Poverty Gap theory, the theorist argue that demographic factors that include education level of household members; occupation where adults in the family are employed, age distribution of family members, household size, ethnicity and race, and the marital status of the family or household head had no empirical relationship with poor hSES among women (Pressman, 2002). Based on the theory, the current study explored the relationship between women demographic characteristics, household structure and socio-economic status in a rural site in Morogoro district in Tanzania.

METHODOLOGY

Description of study area. The study was conducted from June 2015 to December 2016 in Morogoro District in Tanzania. The area was chosen purposively because of the high prevalence of poverty in the area. According to the Tanzania Demographic and Health Survey 2010, out of five wealth levels (quintiles), more than half (56.2%) of households in Morogoro region fall between the lowest and the middle quintiles (Macro, 2011). Furthermore, more than a half (55%) of households in Morogoro District were regarded as poor based on multitude of approaches (Lusambo, 2016; Lusambo *et al.*, 2016). The study was conducted in six

villages which were randomly selected from three wards of Morogoro District. The villages were Kinonko and Maseyu from Gwata ward, Madamu and Kibwaya village from Mkuyuni ward as well as Tandai and Ludewa villages from Kinole ward. The prevalence of poverty was important because the study variables were related with SES hence representation of both welfare categories of well-off and poor households was important.

Morogoro District is one of the six districts of Morogoro Region in Tanzania. Other districts are Gairo, Kilombero, Kilosa, Morogoro Urban, Mvomero and Ulanga. The main economic activity for people residing in Morogoro District is agriculture and some livestock keeping. Different from other wards, Gwata ward is located along the Dar es Salaam – Morogoro highway and thus readily accessible through the tarmac road. The study included two villages from each of the selected wards. Residents of the study area belong to the matrilineal (matriliney) society, adhering to a kinship system in which ancestral descent is traced through maternal lines.

Study design. This was a community-based cross-sectional study. The cross-sectional study design was preferred over others because of its convenience of collecting data once, and therefore allows for estimation of the study variables in the study population at one point in time (Kothari, 2004).

Sample size estimation . Out of the 627 women who were interviewed in the present study, 542 women from 542 households qualified for analysis. The sample size was estimated using the formula and assumptions below:

$$n = (Z^2 * P (1 - P)) / e^2,$$

where 'Z' = value from standard normal distribution corresponding to desired confidence

level ($Z=1.96$ for 95% CI), 'P' is the prevalence of poverty in the study area (55%) and 'e' is the desired precision (0.05), a minimum of 380 participants were required.

Inclusion criteria. This study focused on women of reproductive age who were between 15 and 49 years old (TDHS, 2016). Reproductive age was important to capture information about composition of under five children in households. The participating women were from either female or male-headed households, who were residents in the study area. The ultimate units of analysis were individual participating women. Three characteristics; gender, age, area of residence were used for selection of participants.

Sampling procedure. Purposive sampling was used to generate a list of women from the study villages. Village registers were used to generate the sampling frame in order to avoid selection bias. Listed women were those who had the required characteristics for participating in the study. From the lists, all women who were household heads representing Female-headed Household (FHH) were purposively included in the study while women from male-headed households were randomly sampled. All female-headed households were included in the study because they are generally fewer in communities (Macro, 2011). In total 323 and 219 women from male and female-headed households, respectively, were included in the study.

Tools for data collection and their pretesting. Data collection involved the use of structured questionnaire in collecting primary data through interviews. The questionnaire was pre-tested with 10 women to find out whether respondents could understand the questions in the same way thus give valid and reliable results (Collins, 2003). This method was previously used by other scholars (Collins, 2003; Azzarri *et al.*,

2006). Revision of questions was done where necessary. Focus Group Discussions (FGDs) were guided by a pre-determined check list.

Data collection methods. Data collection methods included face-to-face interviews, FGDs and observations. While the structured questionnaire was used to guide interviews for participating women for collection of quantitative data, a check list guided FGDs for qualitative data collection. Observation was useful for assessing households' assets which were used for determination of household wealth hence SES. Data were collected to capture information about respondents' demographic and household characteristics.

Study variables

Explanatory variables. The independent variables emanated from two study objectives. Based on the first objective, i.e., to analyze the relationship between women demographic characteristics with household SES in rural settings, the variables were: respondent's age, education level, marital status and the woman's place (ward) residence. Based on the second objective, i.e., to examine the relationship between household structure and household SES, explanatory variables were: sex of household head, household size and age of household members. The age refers to a number of years the respondent had lived. The age of a participant was recorded as continuous variable, and then categorized as 15 – 24 years (youth), 25 – 34 years (middle age) and 35-49 as an adult. The age (years) range was adopted from the TDHS (Macro, 2011). Education level referred to the maximum education that a participant had attained according to the education system of Tanzania and it was predefined in the Tanzania Demographic and Health Survey. The categories were namely, no formal education, primary school education and secondary school education or higher (URT, 2016). A household is defined as a unit composed of one or more

persons living together under the same roof and eating from the same pot and or making common provision for food and other living arrangements (Lesetedi, 2018)). Household characteristics included sex of household head, household size and age of household members.

Outcome variable. The outcome variable of this study was the household socio-economic status (hSES), measured by wealth index which was defined by asset possession and housing characteristics as described in the Tanzania Demographic and Health Survey 2010 (Macro, 2011; Jeckoniah *et al.*, 2014). Polychoric principal component analysis (PCA) was used to construct hSES. This method was appropriate due to the categorical nature of outcome variables (Kolenikov and Angeles, 2009). Possession of assets that included a motorbike, radio, bicycle, generator and solar power facility was used as another indicator as recommended by other researchers (Sahn and Stifel, 2003; Rutstein and Johnson, 2004; Azzarri *et al.*, 2006a). Variables with very low counts (i.e., television and car) were excluded from the index and all cases with missing values in any of the variable were removed from analysis. The missing values accounted for 3.7% of the sample. The first component of polychoric PCA was used to generate wealth scores and the scores were then divided into 5 quintiles. These quintiles were further classified into two categories of household SES as Low (1st and 2nd quintiles) and Middle-High (3rd- 5th quintile) so as to have two categories of approximately similar size.

Statistical analysis. Data analysis was performed using SPSS 22 software (IBM SPSS Armonk, NY, USA). The measures of central tendency (means and/or medians) were used to summarize continuous data while frequencies and percentages were used for categorical variables. Linear logistic regression

analysis was used to measure the relationship between the categorical dependent variable and input variables. The relationship was estimated between independent variables with the dependent variable (household SES). The independent variables were individual demographic factors, household characteristics and area (ward) of residence. Univariate and multivariate models were used to test for associations between independent variables and hSES after accounting for the effect of other explanatory variables. Odds ratio (ORs) with 95% confidence interval was estimated for the study variables. A p value of <0.05 was considered to be the cut off for statistical significance. Content analysis procedure was used to analyze qualitative data as previously recommended (Krueger *et al.*, 2014).

RESULTS

Demographic characteristics of respondents.

Demographic characteristics of study respondents are presented in Table 1. A total of 542 questionnaires were analyzed. The age of respondents ranged from 18-49 years with a mean age of 33.6 (SD±7.9). More than a half of the respondents (56.4%) had attained primary school education and about forty percent (40.6%) of participants had no formal education. Based on FGDs, reasons for high illiteracy among women were gender discrimination, poverty and cultural beliefs. About a third of the participants (29.2%) were previously married but they were widowed, separated or divorced at the time of the survey. FGDs results revealed that instability of marriage was attributed with gender-based violence, early marriage, and poverty. More than a half of the interviewed participants (56.5%) came from Kinole ward and the rest came from Mkuyuni and Gwata wards. Majority of the interviewed participants (65.9%) came from households consisting of 4-6 persons. The median household size was 5 (IQR = 4 – 6).

Table 1. Demographic characteristics of respondents (N=542)

Characteristics	Frequency	(%)
Age category (years)		
18 – 24		11.4
25 – 34	62	50.7
35 – 49	275	37.9
*Mean (SD); Range	205	
Education level	33.6 (7.9); 18-49	
No formal education		40.6
Primary	220	56.4
Secondary or higher	306	3.0
Marital status	16	
Never married (Single)		10.3
Married/cohabiting	56	60.5
Divorced, widow, separated	328	29.2
Ward of residence	158	
Gwata		19.4
Kinole	105	56.5
Mkuyuni	306	24.2
	131	

*SD=Standard deviation

Table 2. Household characteristics of respondents (N=542)

Characteristics	Frequency	(%)
Sex of household head		
Male	323	59.6
Female	219	40.4
Age of household head (years)		
< 25	24	4.4
25-34	223	41.1
35-49	256	47.2
50	39	7.2
Mean (SD*, Range)	37.5 (8.7, 18-49)	37.5 (8.7, 18-49)
Household (HH) size**		
< 4	75	13.8
4 – 6	257	65.9
> 6	110	20.3
Median (IQR)*** number of HH Members	5 (4 – 6)	5 (4 – 6)
Household Head (HH) composition by age (years)		
Under five (n=314) #	229	72.9
1 Child	85	27.1
2 or more children		
5 – 14 years (n=480) #	343	71.5
1 – 2 children	137	28.5
3 or more children		
15 years and above (n=452) #	425	78.4
1 – 3 persons	117	21.6
4 or more persons		

Key: *SD=standard deviation; ***IQR=Interquartile range; # numbers of responses for each age category

Household characteristics. Data on household composition by age are shown in Table 2. Almost sixty percent (59.6%) of the participants came from male-headed households. Of the 542 participants, 314 or 57.9% were from households with under-fives (<5 years), whereas 72.9% of those households had only one under five child.

Characteristics of household composition by age and number of children are shown in Table 2. Four hundred and eighty respondents came from households consisting of children aged between 5 and 14 years whereby nearly three quarters (71.5%) of the households consisted of 1-2 children and the rest of the households had 3 children or more (Table 2).

Socio-economic and housing characteristics of respondents' houses. Socio-economic characteristics of respondents are summarized in Table 3. Majority of respondents (99.3%) depend on agriculture as the main economic activity while only 2.2% depend on livestock keeping. The remaining participants (0.9%) depend on business/trading. Proportions of activities reported in Table 3 overlap in a way that, some respondents are engaged in more than one economic activity. Most of the participants (85.4%) live in their own houses, the rest live in either rented or relatives' homes. Very few participants owned assets such as car (0.4%), generator (0.9%) and solar panel (0.9%).

About eighty eight percent (88.3%) of the houses had earthen floors whereas those constructed with cement or concrete floors were only 11.7%. Regarding materials used to make house walls, 80.1% were constructed with mud while 19.3% were constructed using bricks. More than half (54.4%) of respondents' houses were roofed with iron sheets. More than sixty percent (61.7%) had their toilet buildings made of mud walls and 46.8% thatched roofs while 38.4% were not roofed. Most respondents (61.5%) reported to possess none of the assessed assets (Table 3).

Except for radio, other durable goods such as bicycle, solar electricity and motorcycles were possessed by small proportions of participants.

Association between demographic and household characteristics with hSES. The demographic factors included in the analyses were age of respondent, marital status, education level and ward of residence (Table 4). Women older than 35 years had higher likelihood of being in the medium to high household SES category compared to women who were younger than 35 years [OR1.26(95%CI:1.82-2.94), $p<0.05$]. Living in Gwata ward which was more accessible by road compared to the other study wards was associated with being in the medium to high SES category [OR4.08(95%CI: 2.40-6.94), $p<0.01$]. Households with at least one child aged below 5 years had a higher likelihood of being in the low hSES [OR 0.34 (95%CI:1.033-2.202), $p<0.05$]

DISCUSSION

It was observed that there was relatively high proportion (40.6%) of respondents who had not attained basic/primary education. This is in agreement with previous studies conducted elsewhere that show a high level of illiteracy in sub Saharan Africa (Lauglo, 2001; Tabutin *et al.*, 2004; Jogwu, 2010; Mtega, 2012; Krueger *et al.*, 2014). The proportion of respondents who had not received formal education was above the national illiteracy rate of 22% in 2010 and 18.0% for 2012 in Tanzania. In the case of Tanzania, in 2012 the highest proportion of the population who had never been to school was found in Tabora (42% for females and 34% for males). The lowest proportions of household members who had never attended school were in Kilimanjaro (10% for females and 4% for males) and Dar es Salaam (11% for females and 4% for males (Macro, 2011). Through FGD, it was observed that the main reason for non-attainment of basic education for women in the study area was gender discrimination,

Table 3. Socio-economic and housing characteristics of respondents' houses (N=542)

Characteristics	Frequency	(%)
Economic activity* (n=538)		
Crop cultivation	534	99.3
Livestock keeping	12	2.2
Business	5	0.9
Asset ownership (n=534)		
House ownership		
Own	456	85.4
Don't own	78	14.6
HH possessions (n=538)		
Car	2	0.4
Motor cycle	12	2.2
Radio	118	21.9
Bicycle	53	9.8
Generator	5	0.9
Solar panel	12	2.2
TV	5	0.9
Possess none of the above	331	61.5
Housing characteristics (n=538)		
Type of the house floor (n=539)		
Cement	63	11.7
Earth floor	476	88.3
Type of the house walls (n=538)		
Concrete/burnt bricks	104	19.3
Mud bricks	434	80.1
Type of the house roof (n=540)		
Iron sheet	294	54.4
Thatch roofing	246	45.6
Type of the toilet wall (n=538)		
Burnt bricks	35	6.5
Mud	332	61.7
Grass	149	27.5
No toilet	22	4.1
Type of the toilet roof (n=537)		
Iron sheet	47	8.8
Thatch/plastic sheets	262	48.8
Unroofed	206	38.4
Not applicable	22	4.1

*Variable with multiple responses

Table 4. Association between demographic and household characteristics with household SES (N=542)

Variable	Low		Medium-High		Adjusted OR	P-Value	95% C.I.	
	n	%	n	%			Lower	Upper
All Participants	242	44.7	300	55.4	-	-	-	-
Age of respondent (years)								
≤35	162	48.1	175	51.9	1	-	-	-
>35	80	39.0	125	61.0	1.26	0.028*	1.82	2.94
Marital status								
Never married	21.0	37.5	35.0	62.5	1	-	-	-
Ever married	221	45.5	265	54.5	1.01	0.981	0.52	1.96
Education level								
Up to primary	238	45.3	288	54.8	1	-	-	-
Secondary school or higher	4	25.0	12	75.0	2.33	0.167	0.70	7.69
Ward of residence								
Kinole or Mkuyuni	221	50.6	216	49.4	1	-	-	-
Gwata	21	20.0	84	80.0	4.08	0.000**	2.40	6.94
HH with children aged <5 years*								
No	74	39.2	115	60.8	1	-	-	-
Yes	168	47.6	185	52.4	0.34	0.035*	1.033	2.502
HH with children aged ≥5 years and above								
No	34	40.5	50	59.5	1	-	-	-
Yes	208	45.4	250	54.6	1.105	0.737	0.618	1.974
Sex of household head								
Male	147	45.5	176	54.5	1	-	-	-
Female	95	43.4	124	56.6	0.97	0.876	0.64	1.47
Number of household members								
5 or less	143	43.5	186	56.5	1	-	-	-
More than 5	99	46.5	114	53.5	0.75	0.188	0.49	1.15

* Significant at $p < 0.05$; ** Significant at $p < 0.01$; OR = Odds Ratio; C.I. = Confidence Interval; SES= Socio-Economic Status; HH= Household

patriarch system, poverty and cultural beliefs whereby there is little priority for enrolling and supporting girls to attend school compared to boys. Moreover, due to poor economic status, in previous years, some families were withdrawing girls from schools to reduce family costs. However, FGDs revealed that such practice is declining due to the government waiver of school fees from primary to secondary schools and regulations which insist education for all. In addition, the matrilineal system to which the study population belongs contributed to the challenge of education to girls in the sense that it was preference for girls to get marriage early so as to get children thus extend the clan (reported by FGDs participants). Illiteracy constrains women from accessing different economic opportunities and hence their low SES (Godoy, 2004).

The level of education was not related to hSES in the current study. This was contrary to some scholars who had previously shown that attaining education is important in attaining better household SES (UNESCO, 2000a; Awan *et al.*, 2011). In the current study, explanation for the absence of relationship between education and hSES status was also sought through FGDs. It was noted that education had no influence on accumulation of wealth in the area because almost all (99.3%) of the respondents in the study area were engaged in subsistence farming, that utilize primitive tools such as hand hoes while only a few of them were engaged in other economic activities such as casual labor in farming, trading and traditional domestic livestock keeping. Under this scenario, both the educated and uneducated have the same economic opportunities and undertake such activities the same way. The result of this is that, women in the study site are likely to have similar hSES regardless of their levels of education since education levels could not create additional economic opportunities for improving their hSES. Consequently, the

community felt that going to school was a waste of time and resources. A woman in Kibwaya village had the following to say: *“If you go to school you waste your time because when you come back there is nothing to do with your education, rather, you will find your friends have already established their families and farming plots”*. Undersized diversity in economic and income generation activities in the area were observed in this study.

Education has been mentioned as an important aspect of social and economic development (Hofferth *et al.*, 2001; Javed *et al.*, 2008; World Bank, 2010; World Bank, 2014). Nevertheless, there is ample literature that reports on the ‘non-return’ gap of education attainment on improved SES through agriculture. Studies in Africa and Asia report an absence of effect of basic education on the improvements in household SES, but the presence of an association between attainment of tertiary (vocational) education of household bread earners and better household SES (Glewwe, 1991; Javed *et al.*, 2008; Kurosaki, 2009; Awan *et al.*, 2011; Himaz and Aturupane, 2011; Ogundari and Aromolaran, 2014).

Women older than 35 years had more chances to belong to a better hSES. In a rural community, where formal employment is not the primary source of income, wealth and asset accumulation is a process and takes time. It is therefore appropriate to argue from our finding that older women had the opportunity to accumulate assets compared to their younger counterparts. Similar trend was reported by previous scholars (Schmidt and Sevak, 2006). In addition, the relatively higher age around 40's is also associated with forming and maintaining social networks which is important for accessing production resources (Ajrouh *et al.*, 2005). It is also established that wealth (asset) accumulation is largely due to savings (Ajrouh *et al.*, 2005; Pawasutipaisit and Townsend, 2011). A study

done before in the same district (Morogoro-Tanzania) showed that women diversification and involvement in non-farm economic activities enhances productivity (Lyimo-Macha and Mdoe, 2002). Therefore, enhancing women productivity is likely to contribute to hSES since it will enable saving. In connection to this, we found in this study that majority of participants owned houses constructed by cheap and locally available materials, with a notable low rate of asset possession. Low rate of asset possession observed in this study is by far below the reported possession rate by the Tanzania Demographic and Health Survey 2010 (Macro, 2011). One reason for this could be that the study group (women aged 15-49 years) was associated with relatively young household members (family members) and thus parents were more entangled in child care and subsistence than asset accumulation.

The ward of residence showed strong associations with hSES whereby, participants residing in Gwata ward were slightly more than four times likely to attain higher (medium-high) SES compared to Kinole or Mkuyuni. One important factor noted during the study was the difference in the levels of road accessibility. Gwata ward is located along the Dar es Salaam-Morogoro high-way whereby most of its residents can be accessed easily compared to Kinole and Mkuyuni wards. Easy access to the main road made easy engagement of residents in income generating activities since they were able to exploit market opportunities for their products in surrounding towns. Transport is an important factor of economic growth as it allows interactions in economic activities. Many rural areas have limited or no connection to public transport; and traditionally transport in rural areas has been based predominantly on road vehicles (Dingen, 2000; Gray *et al.*, 2001; Macro, 2011)

A very strong impetus has recently been

directed to infrastructure investments in Sub-Saharan Africa. For the period 2008-2010, the Chinese EXIM bank committed billions of US dollars in infrastructure development in Africa such as railways, roads and dams. The African Development Bank has spent over \$5 bn in the last three years, of which over 60% in infrastructure development (mainly roads, energy and water). The World Bank committed in 2009 more than \$7 bn in Sub-Saharan Africa (with almost \$1.5 bn in roads) (Gachassin *et al.*, 2010). Among the types of infrastructure, roads are considered the highest priority for reducing poverty due to the widely accepted consensus that transport infrastructure has a significantly positive impact on economic growth and poverty reduction as it enhances the connectivity of isolated and remote areas (Pomfret, 2006). Available literature on poverty defines three indirect mechanisms through which road access contributes to poverty reduction: access to inputs and output markets, access to education and health services and access to labor opportunities.

There is a general consensus, well documented, on the idea that transport infrastructure reduce poverty by creating employment and new job opportunities (Jacobs and Greaves, 2003). First the construction and maintenance of a road is labor-intensive operation and can provide job opportunities to people living around. Second the provision of roads entails a greater and/or cheaper availability of labor markets. For example, a study conducted in Vietnam showed that road projects in Vietnam increased employment opportunities by 11% for unskilled labor (Mu and Van de Walle, 2007). Literature also provides critical arguments on the relationship between road access and the diversification of income sources (Barrett, Reardon *et al.*, 2001). It is reported that road rehabilitation projects in Uganda extended job opportunities in the service sector (Smith *et al.*, 2001). In Tanzania, reports show that road construction projects have created job

opportunities for non-agricultural employment (Lanjouw *et al.*, 2001). Households accessible by road projects are less likely to rely on agriculture or forestry as their main source of revenues and switch to the service sector (Mu and Van de Walle, 2007). Trading and diversity of income generating activities is more likely to provide opportunities for women particularly in rural areas where formal employments are rare, and also where women rarely own land which is a major means of production in rural areas (Tsikata, 2003; Yngstrom, 2002). Consequently, improved road accessibility is likely to enhance participation of women in economic activities. Other studies have reported road accessibility to improve communities through increased awareness, recognition and access to poverty reduction opportunities (Kwigizile *et al.*, 2011).

Marital status and household headship were not related to hSES although women who had been married at sometimes in their lives showed a low likelihood to attain low SES. However, household headship did not show any difference between male and female household headship. The unclear relationship between marital status and hSES was not in congruence with what other studies reported (Gallagher and Waite, 2000) that marriage is viewed as a source of financial security, particularly for women. Study findings also contradict with findings by Chant and Cawthorne that FHHs are poorer (Cawthorne 2008). Possible reason for the findings is that results on marital status showed that 90% of respondents had entered marital union although during the study there were many participants who were divorced, widowed or separated. It is only 10.3% of them who were never married. Since SES was measured by asset accumulation, there might be an illusion of household characteristics, as far as wealth accumulation is concerned, since there is a possibility to have included some assets that were purchased during existence of marriage. It is therefore suggested that in order to establish

the real economic situation of FHHs or MHHs, selection of respondents should be such that the study involves those who had never entered marital union so as to have a clear distinction between household categories. In the study area, the main economic activity is agriculture, with very limited if any, alternative economic opportunities. Women provide the largest proportion of the workforce in the study area. Under these circumstances, female headship of households could not be an important factor that predisposes FHHs to lower hSES.

Number of household members and the age composition had no association with SES. A number of studies have reported ambiguities when relating household size and SES since trends vary depending on the methodology used to test the relationship (Kamuzora and Mkanta, 2000; Mwisomba and Kiilu, 2002). For example, when SES is measured at per capita basis, larger households are more prone to lower hSES than smaller households (Kamuzora and Mkanta, 2000). However, on the other hand, a positive correlation between hSES and household size has been reported in Kilimanjaro region of Tanzania such that larger-sized households tended to be less poor than others (Macro, 2011). It is argued that contrary relations between household size and household SES are possible especially when there are many children dependents and elderly people in the family (URT, 1998). In this study, majority of participants (57.7% and 88.6%) of the study participants came from households consisting of under-fives and schooling children respectively. Therefore, it is likely that the composition of children in participants' households of residence may have interfered with the relationship of the variables studied.

CONCLUSION AND RECOMMENDATIONS

This study provides information on the relationship that exists between women demographic factors, household structure and

household SES. Linear logistic regression analyses revealed that there is no relationship between education as well as marital status and household SES. Women's age was related to a better hSES while school education level had no relationship with hSES. This study reports that education and marital status were not important determinant of hSES in the study area. Although the level of education in this study was not associated with better hSES, efforts should be reinforced towards provision of vocational education to women to enable them access in addition to agricultural activities, non-agricultural economic opportunities. Our findings indicate that living in Gwata where most of its villages are more accessible by roads relates with higher likelihood to attain a better hSES, perhaps indirectly through diverse ways that promote both agricultural markets and non-agricultural economic activities. Our findings underscore the importance of improved transportation infrastructure as a reliable means of accelerating economic growth and poverty reduction in rural communities.

STATEMENT OF NO-CONFLICT OF INTEREST

The authors declare that there is no conflict of interest in this paper.

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