



Socio-economic determinants of men and women's participation in fisheries value chain in Nairobi City County, Kenya

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Abstract The government of Kenya has put in place an integrated package of service to reduce gender disparities through credit facilitation, which includes business skills, enhanced and increased access to the viable markets among others. It is in this respect that this paper sought to establish the status of men and women in the entrepreneurial fisheries activities in Kenya; with an objective to establish the social-economic determinants of men and women's participation in fisheries value chain in Nairobi City County. The social structural theory developed by Connell (1987) based on patriarchal system was used to explain the subordination of women in the fisheries value chain in Nairobi City County. The study findings showed that men were prominent in economically high end City market and South C market while women were more in the marginal Kariobangi market. The findings revealed that Gender, age, formal education, marital status and income per month were the socio-economic determinants affecting the participation of men and women in the fisheries value chain in Nairobi City County. Consequently the chi-square test result showed a significant association between gender and large scale (p-value=0.001); age and aquaculture/fish harvesting (p-value=0.001); marital status and aquaculture/fish harvesting (p-value 0.036); education and transport (0.036); and income per month and distributor (p-value=0.006); and large scale (p-value=0.004).

Keywords Gender, participation, value chain, gender division of labour, sex division of labour Cathexis

Introduction

According to the World Bank (2015) and OECD (2013), women as compared to men are a leading portion of the population in many parts of the world including Kenya where they constitute 51% of the entire population [1-3]. It is, therefore, important to recognize their contribution to development through competitive fortitude for resources. Apparently, there is increasing awareness in the society on the important roles that women play especially in the value chains and economic activities. World Bank (2013) [4] has observed that various development policies, programmes and donor agencies have commended support for women economic activities and value chains. Fisheries value chains have become viable economic activities for livelihoods, poverty alleviation and economic growth. However, participation by men and women in the sector's diverse roles is based on socio-economic characteristics, traditions and norms concerning fisheries resource access and control. The fisheries value chain refers to the economic activities, which are essential to bringing fish from harvesting and production through different phases of processing, delivery and finally to the consumer. The activities involved in the physical transformation of fisheries commodities and value chain are determined by the level of participation, autonomy, capacity and decisions of the actors. The fisheries value chain framework entails the following economic utilities as form, place, time and possession. These economic utilities have attracted various actors and stakeholders due to the economic potentials in the value chain [5]. In the fisheries value chain, women are over represented in the post-harvest activities; while men control, production and high end value



chain [6]. In this regard fisheries sector has a potential to contribute to socio-economic development, economic revitalization and reduction of poverty [7].

According to FAO [8], this restriction of women to form utility determines their level of access and control of fisheries resource, which subsequently depends on socio-economic factors, gender roles, culture, values, attitudes and norms. Consequently, determines gender differential participation in fisheries value chain; where, men are predisposed to control fisheries resources while women only access as this study intended to ascertain. Men compared to women have strategically placed themselves at viable levels of the economic utilities within the value chains, [8-9]. The viable levels earn men higher commercial and economic potentials while women at lower levels operate with restricted economic margins. Women in fisheries value chain in Nairobi County comprise a significant majority yet least in ranking as far as access and control of economic utilities are concerned. The rationale for this circumstance is based on the systemic prejudice and discriminatory policies, financial constraints, socio-cultural and educational factors that limit women's access to entrepreneurial resources [10]. The implications of this are the evidence of the discrepancies between men and women at the level of performance in the fisheries value chain based on control of productive resources by men; hence, women continue to operate under difficult socio-cultural and economic environment [10-11]. Amidst this scenario, the government of Kenya in collaboration with the fisheries stakeholders has incorporated gender issues into the national instruments, policies and legislations. Support has focused on the improvement of women's access to credit facility; strengthening administrative action by ensuring that male and female fisheries extension officers are recruited and given gender awareness training. In addition, capacity building for men and women in entrepreneurial value chain on appropriate ways of fish processing [12]. In this regard, the government of Kenya and stakeholders in the fisheries value chain has provided an integrated package of service to reduce gender inequalities with a synergistic effect through technical assistance, improvement of credit facilitation, capacity building and skills development. The government has further provided both men and women in the sector a gender sensitive training in business skills, enterprise development, with focus on correcting gender disparities in economic activities and fosters innovation in modern information and communications technology (ICT) for gender equitable fisheries value chain development and improved women's access to market through increased sales and income. Amidst these efforts in place, Kamau and Ngigi (2013) [13] found that women's involvement has been limited to lower nodes of the chain; hence, have been under-represented in harvesting and distribution as 0.16%, 0.8% compared to men's 32% and 28% respectively. This indicates that despite the efforts in place, there are factors that affect men and women, though differently in the fisheries value chain.

Theoretical Framework

Studies on ventures within fisheries value chain have focused mostly on fish harvesting, gender roles in fisheries sector and post-harvesting processing[5,8]. There are limited studies on specific ventures in fisheries value chain that men and women participate. This paper intends to fill this gap.

Studies have shown that men and women participate in complementary activities in fish harvesting. Although women are involved in the fisheries related economic activities, their representation in the control of resources related to the sector and high end value chain is negligible. For this reason, socio-economic and cultural factors, which determine participation of men and women in fish harvesting are rooted in gender stereotypes. According to Ajagbe (2012), women are involved in fish harvesting for subsistence while men for commercial purposes. Thus, men are culturally associated with commercial and large-scale activities as women remain in small scale, subsistence and non-commercial fish harvesting. In Kenya, status of women in fisheries sector has not been adequately studied, an inspection on representation by men and women in fish harvesting revealed a disparity; where harvesting and control of fisheries resources were known as a predominant occupation of men as this paper attempts to explore. In fishing communities, women mainly participate in post-harvest and processing activities. Medard et al., (2000) [6] argued that such activities include smoking; drying and marketing earn women a narrow profit margin in the value chain compared to that earned by men. As Nwabeza, (2013) [14] in a study on gender roles in the aquaculture production reported that in Nigeria, women form the core of the industrial fisheries labour force through their involvement in the post-harvesting and processing. Hence; some



socio-cultural factors and taboos have reinforced involvement of women in the lower end value chain as processors within the context ascribed to the traditional division of labour.

Fresh fish distribution is largely a male domain. Women are generally excluded from involvement in transportation due to the belief that women have difficulties in adapting to the night-time hours worked in fish distribution. The women are considered to lack physical strength needed for the work and would not be able to work as hard as men. Distribution and transportation are usually done at night, which makes women involvement difficult. The culture and customs did not allow women to work at night due to their household duties [9] further reports that women combine fish trade with other trading activities, which affirm the magnitude of their small-scale operations and the demand for diversification in addition to their prescribed traditional roles. Although 80% of traders in the fish marketing are women, their scale of operation is lower; hence, are compelled to trade the left-over, less profitable, juvenile fish and factory rejects [11]. The top decision-making bodies, which control and determine the market operations, have no representation of women, despite their significant time input and energy into the fish markets.

Connell, (1987) [15] provides social structural theory based on the concepts of sexual inequality, which explains subordination, gender and power imbalances. The theory outlines the following three major structures that describe subordinate relationship between men and women in the worldview as: sexual division of labour, which examines economic inequalities that favour men; second; sexual division of power that examines inequality and abuse of authority and control that favour men and Cathexis, which examines socio-cultural norms and effective attachments based on the informal institutions. These three structures are rooted in the society through numerous historical, economic, cultural and socio-political forces, which define power and ascribe social norms on the basis of gender and culturally determined roles [15].

Study Methodology

For the purpose of this study various ventures in fisheries value chain within market areas that men and women participate in Nairobi City County (which comprises City market; South C-Mugoya and Kariobangi markets). Nairobi City County was purposively selected due to the fact that within this area there are high number of value-chain based livelihoods; with a high concentration of infrastructures and credit institutions that focus on improving small scale trade and entrepreneurship. Data was collected from three market areas of Nairobi City County; (City, South C-Mugoya and Kariobangi markets). These were selected on the basis of the principle of distributive justice for samples selected to exhibit a proportional representation of different economic carders, the study focused on three (3) zones within Nairobi City County based on the socio-economic characteristics as: **affluent class, middle class and lower class** [4]. One market was selected from the city and two other markets from its environs as a representative of the class distinctiveness and to capture opinions from diverse socio-economic characteristics within Nairobi City County. The respondents included men and women within fisheries value chain in Nairobi City County; personnel from the Ministry of Agriculture, Livestock and Fisheries; and the City Council of Nairobi assigned to the market areas purposively sampled for study within Nairobi city totaling to the sample of 390. The data was collected using guided questionnaire and Focus Group Discussions. In addition interviews were conducted particularly to key informants (personnel from the ministry and those in Nairobi City County). The secondary sources have been used.

Results and Discussions

This paper establishes that the socio-economic factors influence participation of men and women in the fisheries value chain. The findings revealed the following as important socio-economic variables that influence the participation of men and women, namely; gender, marital status, level of education, age and income per month as discussed below:

Gender

The study findings showed high representation of men in the high end value chains, namely; aquaculture/fish harvesting, transportation, middlemen and large scale compared to women who featured mostly in the lower end value chains especially grading/sorting/gleaning and market sales. Earlier, the findings showed that while men were leading in higher economic market areas notably; City market and South C-Mugoya market women



concentrated in Kariobangi being a lower end economic market area. The Chi-square test results showed a significant association between sex and ventures in value chain.

Table 1: Cross-tabulation of gender and ventures in value chains

Ventures	Gender				Level of Significance
	Men		Women		
	No	%	No	%	
Fish harvesting	31	88.6	04	11.4	Chi Square (8.354)
Transport	27	81.8	06	18.2	
Distribution	63	78.8	17	21.3	DF (1)
Large Scale	26	86.7	04	13.3	P-Value (0.004)
Grading	14	18.2	63	81.8	
Market Sellers	51	45.1	62	54.9	

Connell (1987) earlier argued that women were limited to roles and responsibilities that checked their economic potentials and limited their trajectories due to the men's hegemony. In this regard, the theorist observes that inequalities resulting from the sexual division of labour were manifested as structural factors that inhibit their optimal performance in the value chains. These findings implied that allocation of roles to men and women in the fisheries value chain was dependent on the traditional institutions, which were structurally and culturally designed to reinforce and perpetrate gender division of labour.

Marital Status

The marital status of entrepreneurs was a socio-economic variable that determined the participation of men and women in value chains. Table 4.3 showed that more men 142(69.9%) than women 96(55.2%) were married; 38(18.6%) men and 22(55.2%) women were single as 11(5.4) men and 40(23%) women were widowed. The study sought to establish the association between marriage status and participation in high end value chain. The chi-square test was carried out and result showed a significant association between married actors in the fisheries sector within the value chains.

Table 2: Cross-tabulations of marital status and value chains

Ventures	Marital Status					Significance
	Married	Single	Divorced	Separated	Widowed	
Fish harvesting	41	03	08	12	03	Chi Square (8.904)
Transport	33	00	07	08	03	
Distribution	20	05	05	10	03	DF (3)
Large Scale	19	06	09	10	06	P-Value (0.031)
Grading	13	25	08	11	12	
Market Sellers	31	19	13	12	21	
TOTAL	157	58	50	63	48	376

These results implied that entrepreneurial fisheries value chain was popular for married men and women who control high end value chains. Hence, the married entrepreneurs are assumed to earn support from the family to sustain the fisheries value chains based on stability. This was in conflict to the widespread belief that women who are divorced, widowed or single dominated in the fish trade due to their limited options to support their livelihoods and have independence compared to women who were married [13]. The findings were similar to those of Buttner (2001) [16] who examined female entrepreneurial management styles, and established that married men and women worked harder in managing an enterprise because of social, financial and psychological support compared to the singles, divorced and widowed. In this regard, majority men were likely to experience more advantages compared to their women counterparts.



Formal education

The study findings indicated that there was association between formal education and potentials of growth in entrepreneurship. Table 3 showed that more men had acquired high school and above; while women had no formal education and had done mostly primary education. The markets within the affluent zones routinely dominated by men had more entrepreneurs with formal education compared to the lower zone market areas with higher numbers of women. These findings implied that education impacted on competitive entrepreneurship. The reasons given were that education provided social capital and exposure to adequate and strategic information in entrepreneurship. To establish the relationship between education and high end value chain the chi-square test was carried out and showed a significant association between the formal education and high end value chain as table 3 illustrates.

Table 3: Cross-tabulation of formal education and ventures

Ventures	Education				Significance
	No Formal	Primary	Secondary	Tertiary/University	
Fish harvesting	07	17	55	12	Chi Square (9.841)
Transport	00	15	28	08	
Distribution	03	17	32	10	
Large Scale	04	25	20	08	P-Value (0.020)
Grading	11	21	18	04	
Market Sellers	10	37	12	02	
TOTAL	35	144	153	44	376

The study findings demonstrated that persistent inequality, poor representation in decisions, social cultural and structural barriers effective on women participation within fisheries value chain were based on inadequate education amongst women entrepreneurs. These factors have confined women to lower end value chain and lower productivity within the value chain. These findings were similar to those of Kimenyi (2001) [17] in understanding low rates of technology adoption by women farmers, that formal education was positively correlated to the probability of technology adoption, thus, an entrepreneur with formal education was likely to attend trainings, seminars, read, comprehend and apply the information in packaged documents to transfer the entrepreneurial and value chain techniques. The study further concurred with McCormick (2001) [12] that difference in the education levels accounts to the differences in performance of men and women's enterprises.

Age

The study findings indicated that age of entrepreneurs as a demographic factor influenced their nature of participation in the fisheries value chain; where the mid-adulthood (30-40) years were found to be ideal. The reasons given were that within this age limit, entrepreneurs in value chains have earned adequate experience based on entrepreneurial maturity and may attract confidence from their clientele, potential credit facilitators and stakeholders within the sector. They also have ability to access regular and important information to identify entrepreneurial opportunities; acquired adequate management skills essential for entrepreneurship. The study findings revealed that the upper age limit may not be ideal for effective entrepreneurship. The reasons given were that high age limits (54-59) years were characterized by unwillingness to try out new ideas or take risks that characterize entrepreneurial value chain and that it entails regular travels, out of the homestead during riskier hours of the night and participation in social networks was a requirement in entrepreneurial fisheries value chain, age became an important variable.

Table 4 showed that age brackets 30-34 years comprised the majority 42(20.6%) men and 52(29.9%) women; 35-39 years comprised 43(21.1) men and 27(15.5%) women. The 55 years and above were the least. The chi-square test results showed a significant association between age and ventures within value chain. These findings were similar to Nwabaze et al., (2013) [14] who observed that men and women within 30 to 40 age bracket are the majority in entrepreneurial fisheries sector and are more favourably disposed to be innovative. The study further concurred with Amotoso and Daramola (2005) [18] in socio-economic factors influencing entrepreneurship among women in fishing communities in Nigeria, who observed that risk aversion is said to



increase with age. The most productive ages were between (30-34) years characterized by high mental alertness and physical stability to cope with the vigor of fishing and its related activities. To establish the relationship between age and participation in the fisheries high end value chain; the chi-square test result showed a significant association as illustrated in table 4.

Table 4: Cross tabulation of age and ventures in value chain

Ventures	Age							Significance
	20-24	25-29	30-34	35-39	40-44	44-49	50 above	
Fish harvesting	03	11	23	19	17	08	01	Chi Square (11.800)
Transport	01	02	18	20	10	05	02	
Distribution	00	00	03	11	08	05	04	DF (1)
Large Scale	00	01	02	05	06	06	03	P-Value (0.001)
Grading	23	08	01	00	03	00	03	
Market Sellers	17	22	03	8	02	10	15	
TOTAL	43	44	50	63	48	34	28	376

These findings implied that age limits are bound to determine access to strategic entrepreneurial management, access to strategic markets, patterns of entrepreneurial investments and management challenges. Further, it implies that activities related to the value chain within fisheries sector are exclusively reserved for people in their active age, which affects their mental attitude to take risks and invent new entrepreneurial ideas. The study noted that while; the numbers of men within the age bracket (35-39) years increased while those of their women counterparts declined drastically.

Monthly Income

The study found that enterprises receive income from internal as well as external sources for expansion of their operations in order to mobilize more investments for higher profit margins. The internal sources are savings accrued to the entrepreneurial fisheries value chain, while external sources are those originating from lending agencies like micro-finance institutions, government, varied stakeholders and organizations. Table 5 shows that more men received high scale income per month while women received lower scale income per month accrued to the fisheries value chain. It also indicated that men were in more progressive value chain compared to their women counterparts. To demonstrate the impact of monthly income on the level of participation within the value chain, the chi-square test was carried out and the results revealed a significant association between the income per month accrued to the fisheries value chain and high end value chain as bellow shown in table 5.

Table 5: Cross-tabulation of level of income per month and ventures

Ventures	Level of Income Per Month					Significance
	0-10,000	10,000 to 20,000	20,000 to 30,000	30,000 to 40,000	40,000 and above	
Fish harvesting	4	07	10	32	32	Chi Square (41.497)
Transport	15	05	08	03	21	
Distribution	12	09	17	21	18	DF (3)
Large scale	22	12	11	04	03	P-Value (0.000)
Grading	08	07	10	18	04	
Market sellers	26	22	10	10	10	
TOTAL	87	62	66	75	88	378

Participation in high end value chain was based on the level of income, which translates to capital and credit as determinants. This finding implied that income exerts a positive impact on economic output of an enterprise. Availability of sufficient income is important for entrepreneurs as it lays the foundation for enterprises. The study findings showed that while men encounter entrepreneurial growth due to their higher income per month,



women continue to face obstacles that limit their entrepreneurial growth based on their lower monthly income. The study was informed by two women entrepreneurs that avenues of income for capital and credit were awkward for women due to lack of sufficient savings and absence of lending institutions willing to take responsibility over women's enterprises. The study showed that although acquisition of additional income for the growth of enterprises and pursuits to viable value chain has often been a challenge to the entrepreneurs; women encountered more challenges than men in securing additional income and financial support through regular channels because their enterprise profile is often less favourable compared to that of their men counterparts, which affects their potentials. These findings demonstrated that lack of external credit facility leaves the entrepreneurs with insufficient economic resource base, which limits the prospects of growth. The study findings also revealed that based on the monthly income, more men compared to women owned the opportunity of entrepreneurial growth. In conclusion, the conceptual framework complements this study that socio-economic variables were critical in enhancing economic activities in fisheries value chain.

Recommendation

This study finding established that the socio-economic factors were seen to affect the ventures of participation within the value chain, which affected equal and effective participation by men and women. The study recommended that the county government to support men and women in value chains to acquire formal education and register in cooperatives and small micro-enterprises as members. The study further recommended that it would be fundamental for the men and women actors in the value chains to shift focus from the market-oriented entrepreneurship to client mobilization. This will help their entrepreneurial value chain to grow in scale. This would be a strategy for diversification of markets for sustainable entrepreneurial participation.

Conclusion

The conclusions revealed that economic activities related to fisheries value chain were determined by the traditional gender division of labour, power and patriarchal system of male dominance. These institutions have influenced access and control of men and women to resources associated to the fisheries value chain, which in turn influenced growth in enterprises. The findings therefore reveal that high end value chain required control of productive resources that involved ownership of property, assets and resources in relation to the fisheries value chain. These resources included access to the financial services and credit facility, access to education and adequate skills in relation to value chain. These findings were similar to those of FAO (2011) [8] on women in agriculture: closing the gender gap for development in Asia, that women tend to have lower access to productive resources than men due to gender specific factors concerning access and control of the factors of production. These findings implied that the formal education influenced the nature and economic potentials in entrepreneurial value chains; men exhibited higher levels of formal education, their participation was economically higher as compared to that of women. The findings further showed that formal education was critical for social capital, which was a strategy for improving participation in the value chain. This paper established that the socio-economic factors were seen to affect equal and effective participation of men and women within the value chain. The study recommended that the county government to support men and women in value chains to acquire formal education and register in cooperatives and small micro-enterprises as members. The study further recommended that it would be fundamental for the men and women actors in the value chains to diversify markets for sustainable economic activities.

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