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Activity Locus and Geographical Mobility: A Gender Perspective Case of Dar es Salaam, Tanzania

Harriet K Eliufoo[1], Huba Nguluma[2]

[1]School of Construction Economics and Management, Ardhi University, P. O. Box 35176, Dar es Salaam, Tanzania

[2]Institute of Human Settlements Studies, Ardhi University, P.O box 33713, Dar es Salaam, Tanzania

Correspondence: Harriet K Eliufoo Ardhi University, Dar es Salaam P.O.Box 35176, Dar es Salaam, Tanzania.

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Abstract

The paper has explored the geographical mobility of men and women employed in construction sites. A total of 130 female and male construction workers were interviewed from fifteen construction sites in the City of Dar es Salaam.

The paper has established spatial mobility is gender specific; observing a majority of women average travel distance to work sites is 3.4 kilometres while that for men site workers is 11.8 kilometres. The study has also established the geographical mobility variation for men and women working in construction sites in Dar es Salaam City are of statistical significant. The empirical research study done conforms to theory that mobility is a resource and access to it is influenced by a society's social construct, cultural values and beliefs, and social economic factors.

Keywords: women, geographical mobility, construction industry, Tanzania

1. Introduction

Mobility of women in developing countries is guided by a set of complex hierarchies; where factors influencing the gendering of mobility are diverse (Uteng, 2011) and inhibiting (Loukaitou-Siders, 2014). These factors amongst others include: social/cultural norms, transport infrastructure, physical/ area planning and women and men participation in informal sector and micro-credit schemes. Historically and in most societies, women's mobility in cities has been more hindered than men's (Loukaitou-Siders, 2014).

Increasing women's work outside the home would give women greater control over income within the household though at the expense of even greater pressure on their home (Mbughuni, 1994; Tanzania Gender Networking Programme, 1993). A study of women sand miners in Dar es Salaam established that women prefer to work near their home surroundings to keep pace with domestic responsibilities (Eliufoo and Marobhe, 2001) .The study revealed mobility as a factor why the women opted for sand digging activity. The close vicinity to a sand-mining site made it easy for them to undertake the activity. The women's predicament was also expressed in a UNDP Poverty Report (1998) that discussed the poverty situation among the poor; stating that poor people face many trade – off between different dimensions of poverty, but women face more than men, and experience poverty differently and often more acutely

This paper specifically investigates whether gender has influence on mobility for economic earnings. Mobility of men and women employed in construction sites in Dar es Salaam are henceforth being explored. The paper explores whether there is a statistical significance in variation of travel distance to work at construction sites for men and women.

To achieve the said objective the following hypotheses are posited:

"The mean travel distances to work for men and women employed at construction sites are similar"

$$\text{Null hypothesis Ho: } \mu 1 = \mu 2 \quad (1)$$

H1= "The mean travel distances to work for men and women employed at construction sites are not similar"

$$\text{Alternative hypothesis Ha: } \mu 1 \neq \mu 2 \quad (2)$$

2. Method

The city of Dar es Salaam was considered as it is the largest city in Tanzania and the most active for construction activities. Because of the underlying socio-economic and historical factors, it attracts a substantial inflow of people and is constantly under pressure for demand of new public and private developments; Dar es Salaam therefore presents an interesting case with challenging exposition of the study phenomena.

Personal interviews were conducted using structured questions for women and men working in Dar es Salaam construction sites. A total of 15 construction sites in Dar es Salaam City were visited and 65 men and 65 women respondents were interviewed. Judgemental sampling was adopted selecting construction sites that were active and had women and men employed as site workers. As typically few women are employed in construction sites, all women found at the sites were interviewed; and this number determined the minimum number of men to be interviewed for each site. Information was collected from respondents to identify their education, age, family sizes, earnings and their geographical mobility. The latter, was collected with respect to employment seeking and is the focus of this paper. Respondents had to give their place of residence and this information was used to establish the distance travelled by male and female site workers from their homes to the work-sites. The data collected is as shown in Table 1 (See appendix)

Respondents are identified by site number denoted by a chronological numbering from 1-15 reflecting the 15 construction sites used in the sample. The number in brackets denotes the respondents' identification for each site according to gender. Hence for example 8(3) mean site number eight and the third respondent on the site. The travel distance was established based on the route taken by the commercial commuting buses within the city of respondents place of residence and location of construction site where employed.

3. Results

It is observed the average distance travelled to work (non- return trip) for women is 3.4 kilometres and 11.9 kilometres. Implying women travel only a third of the distance travelled by men in seeking employment at construction sites. One may state women's mobility is limited to a certain geographical region or distance. If this is true, the notion shall be supporting what has been stated that mobility is a "restricted good"; that access to mobility entails processes which are essentially highly differentiated along the lines of structural differences in society, related to gender, class, race, caste etc. (Uteng, 2011)

However prior to asserting to this notion it is important to rule out whether the result have occurred by chance or are a result of a sampling error. Of more importance is to whether the variation in mobility of men and women employed in construction sites has any statistical significance. An F-test and t-test were done to establish whether the variance in the population means and the sample means are of any significance statistically. The results are as shown in Table 2 and 3.

For the F-test the following null hypothesis was posited that the population variance of women and men site workers is the same.

$$\text{Null hypothesis } H0: \alpha 1^2 = \alpha_2{}^2 \tag{3}$$

Alternative hypothesis stating the population variance between women and men site workers is not the same.

$$H1: \alpha 1^2 \neq \alpha_2{}^2 \tag{4}$$

Table 2. F-Test Two-Sample for Variances

	Variable 1(male)	Variable 2
Mean	11.88615385	3.386153846
Variance	49.26277404	7.546836538
Observations	65	65
df	64	64
F	6.52760581	
P(F<=f) one-tail	1.1397E-12	
F Critical one-tail	1.513287171	

The means of the two populations are far apart; female site workers mean travel distance is almost a third of the male site workers. A wider variation is observed in the population variance for male site workers where male workers noted travelling long distances from its average majority. A high deviation from the mean distance of travel is noted for female

site workers though of less magnitude. The results further show that F> F critical hence the null hypothesis is rejected in favour of the alternative hypothesis; that the variances of the two populations are unequal.

A further analysis made on the sample characteristics establishing the statistical significance of the sample means using the t-test.

The null hypothesis hence stated "The mean travel distance to work sites for men and women employed in construction sites is the same" That is:

$$H_{o:}\ \mu^1=\mu^2 \quad (5)$$

And the alternative hypothesis being "The mean travel distance to work sites for men and women employed in construction sites is not the same"

$$H_{a:}\ \mu^1\neq\mu^2 \quad (6)$$

The results are shown on Table 3.

Table 3. t-Test: Two-Sample Assuming Unequal Variances

	Variable 1	Variable 2
Mean	11.88615385	3.386153846
Variance	49.26277404	7.546836538
Observations	65	65
Hypothesized Mean Difference	0	
df	83	
t Stat	9.092110347	
P(T<=t) one-tail	2.13565E-14	
t Critical one-tail	1.663420175	
P(T<=t) two-tail	4.27129E-14	
t Critical two-tail	1.98895978	

It is noted that t Stat is higher than t Critical (one- tail) hence the null hypothesis is rejected and adopt that the mean travel distance for men and women to construction work sites is not the same; and this difference is of statistical significance.

3.1 Respondents' Profile Data (Education, Age, Marital Status and Family Size)

Data was likewise collected on social economic data of respondents. This included: educational background; marital status; family size work experience and place of residence. Observatory data such as working conditions, specifically health and safety situations at each site, was also collected. From Table 4 it is observed that 52 out of 65 female site workers have primary education, which is a majority. 7 female site workers have secondary education and all of them are machine operators. For male site workers 58 out of the 65 male site workers have vocational training, and 7 have secondary education.

Table 4. Male and Female Educational Data

S/N	Educational level	Female		Male			
		Nr.	%	Nr.	%	Total	%
1	Primary School	52	80	20	31	72	55
2	Secondary School	7	11	7	11	14	11
3	No Formal education	4	6	0	0	4	3
4	Vocational training	2	3	38	58	40	31
Total		65	100	65	100	130	100

3.2 Marital Status and Family Size

30 out of the 65 female site workers employed in the construction site are single, while 80% that is 52 out of 65 have children. This indicates a majority of female workers are single parents, with the number of children ranging from one to six. For male site workers, likewise 50% are married and all have children. Unlike for female respondents, there is no single parenting in male respondents.

Prior to conclusion on data collected, the author acknowledges the limitation that may be inherent resulting from the fact that the construction sites were not randomly selected that existence of both male and female construction workers were the guiding factors; and that the established travel distance is based on an assumption that workers are using local commuter buses to travel from home to construction sites hence route length is based on this assumption.

4. Discussion and Conclusion

The study has established structural construct in society influences mobility of women and men towards seeking employment in construction sites. The differences in travel distances between men and women are also significant and real.

The results of the study have also conformed to works of others (Hyun-Mi Kim, 2005; Hanson, 2010) that time spent in domestic responsibilities limit women's spatial mobility. The study has observed a significant number of women are single parents with the number of children ranging from one to six. This asserts Chappel's (2001) connotation that low –income women with childcare obligations have a propensity to seek employment closer to home than men; confirming Kwan's (1999) statement that women have a restricted space-time accessibility compared to men confirming the assertion of an existence of a gender gap in access to urban opportunities (Hyun-Mi Kim, 2005 and Kwan, 1999).

A different interpretation of the study could be reflecting on Odufuwa's (2008) work that women are more vulnerable to mobility stress; hence the established womens' limited mobility illustrates a risk averse behavior. The relatively low education status for women as compared to the male co-workers in the study further emphasizes the notion that education is among the factors influencing gender mobility (Uteng 2011).

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Appendix I

Table 1. Geographical travel distance from home to places of employment by male and female site workers in Dar es Salaam

FEMALE SITE WORKERS					MALE SITE WORKERS				
	ID	Site location	Residence	Distance (Km)	S/N.	ID	Site location	Residence	Distance (Km)
1	1(1)	Tabata	Mabibo	10.1	1	1(2)	Tabata	Mabibo	10.1
2	2(1)	Mwenge	Sinza	3.1	2	2(1)	Mwenge	Mbezi Luis	16.5
3	2(2)	Mwenge	Makumbusho	3.1	3	2(2)	Mwenge	Kimara stopover	10
4	2(3)	Mwenge	Ubungo	4.7	4	2(3)	Mwenge	Mbezi Luis	16.5
5	2(4)	Mwenge	Magomeni	8.5	5	2(4)	Mwenge	Magomeni	8.5
6	2(5)	Mwenge	Mwenge	1	6	3(1)	Mabibo	Mabibo	2.5
7	2(6)	Mwenge	Mwenge	1	7	3(2)	Mabibo	Tabata	10.1
8	3(1)	Mabibo	Mabibo	1	8	3(3)	Mabibo	Tabata	10.1
9	3(2)	Mabibo	Mburahati	3.5	9	3(4)	Mabibo	Tabata	10.1
10	3(3)	Mabibo	Mburahati	3.5	10	3(5)	Mabibo	Mburahati	3.5
11	3(4)	Mabibo	Segerea	8.8	11	3(6)	Mabibo	Tabata	10.1
12	4(1)	Changanyikeni	Goba	0	12	3(7)	Mabibo	Mabibo	2.5
13	4(2)	Changanyikeni	Goba	0	13	3(8)	Mabibo	Tabata	10.1
14	4(3)	Changanyikeni	Goba	0	14	3(9)	Mabibo	Ubungo	7.8
15	4(4)	Changanyikeni	Manzese	0	15	3(10)	Mabibo	Segerea	8.8
16	4(5)	Changanyikeni	Manzese	9.2	16	4(1)	Changanyikeni	Tabata	15.4
17	4(6)	Changanyikeni	Manzese	9.2	17	4(2)	Changanyikeni	Manzese	9.2
18	5(1)	Mabibo	Mburahati	3.5	18	4(3)	Changanyikeni	Manzese	9.2
19	5(2)	Mabibo	Kigogo	2.9	19	5(5)	Mabibo	Tabata	10.1
20	5(3)	Mabibo	Mburahati	3.5	20	5(6)	Mabibo	Tabata	10.1
21	5(4)	Mabibo	Mburahati	3.5	21	5(7)	Mabibo	Segerea	8.8
22	5(5)	Mabibo	Mburahati	3.5	22	5(8)	Mabibo	Gongo/mboto	17.3
23	5(6)	Mabibo	Mburahati	3.5	23	6(1)	Mabibo	Kibangu-Ubungo	8.7
24	6(1)	Mabibo	Keko	3.1	24	6(2)	Mabibo	Manzese	4.2
25	6(2)	Mabibo	Manzese	6.1	25	6(3)	Mabibo	Gongo/mboto	17.3
26	6(3)	Mabibo	Kibangu-Ubungo	7.8	26	6(4)	Mabibo	Pugu	19.4
27	6(5)	Mabibo	Manzese	3.3	27	7(1)	Mbagala	Keko	9.6
28	6(6)	Mabibo	Manzese	3.3	28	7(2)	Mbagala	Tabata	11.9
29	7(1)	Mbagala	Keko	9.6	29	7(3)	Mbagala	Keko	9.6
30	7(2)	Mbagala	Keko	9.6	30	7(4)	Mbagala	Keko	9.6
31	7(3)	Mbagala	Keko	9.6	31	8(5)	Kariakoo	Gongo/mbot	19
32	7(4)	Mbagala	Mbagala	1	32	8(6)	Kariakoo	Gongo/mboto	19
33	7(5)	Mbagala - Kilwa Rd	Mbagala	1	33	8(7)	Kariakoo	Keko	3.1
34	8(1)	Kariakoo	Changombe	3.9	34	8(8)	Kariakoo	Manzese	6.1
35	8(2)	Kariakoo	Changombe	3.9	35	9 (4)	Magomeni	Mbagala	11.4
36	8(3)	Kariakoo	Changombe	3.9	36	9 (5)	Magomeni	Mbagala	11.4
37	8(4)	Kariakoo	Manzese	6.5	37	9 (6)	Magomeni	Gongo/mboto	21
38	9 (1)	Magomeni	Manzese	4.4	38	10(1)	Upanga East	Mbagala	12.1
39	9 (2)	Magomeni	Manzese	4.4	39	10(2)	Upanga East	Bunju	43.2
40	9 (3)	Magomeni	Manzese	4.4	40	10(3)	Upanga East	Goba	28,5
41	10	Upanga East	0	0	41	10(4)	Upanga East	Goba	27

42	11(1)	Kawe	Kawe	1	42	10(5)	Upanga East	Keko	6
43	11(2)	Kawe	Kawe	1	43	11(1)	Kawe	Goba	13.3
44	11(3)	Kawe	Kawe	1	44	11(2)	Kawe	Tegeta	11.2
45	11(4)	Kawe	Kawe	1	45	11(3)	Kawe	Tegeta	11.2
46	11(5)	Kawe	Kawe	1	46	11(4)	Kawe	Goba	13.3
47	11(6)	Kawe	Kawe	1	47	11(5)	Kawe	Mbweni	14.6
48	12 (1)	Mbezi	Mbezi	1	48	11(6)	Kawe	Mbweni	14.6
49	12(2)	Mbezi	Mbezi	2	49	12(6)	Mbezi	Tabata	11.6
50	12(3)	Mbezi	Mbezi	1	50	12(7)	Mbezi	Tabata	11.6
51	12(4)	Mbezi	Mbezi	1	51	12(8)	Mbezi	Segerea	11.9
52	12(5)	Mbezi	Mbezi	2.5	52	12(9)	Mbezi	Segerea	11.9
53	13(1)	Mtongani	Mtongani	2.5	53	12(10)	Mbezi	Makongo	10.5
54	13(2)	Mtongani	Kunduchi	4	54	12(11)	Mbezi	Makongo	10.5
55	14(1)	Temeke Municipal	Changombe	2.2	55	12(12)	Mbezi	Mtongani	27.5
56	14(2)	Temeke Municipal	Kurasini	3.5	56	13(1)	Mtongani	Kawe	8.7
57	14(3)	Temeke Municipal	Changombe	2.2	57	13(2)	Mtongani	Tabata	23.5
58	15(1)	Kurasini	Kurasini	1.8	58	13(3)	Mtongani	Goba	12
59	15(2)	Kurasini	Kurasini	2.5	59	13(4)	Mtongani	Msasani	21
60	15(3)	Kurasini	Kurasini	2.5	60	14(1)	Temeke	Mbagala	3.7
					61	14(2)	Temeke	Changombe	2.2
					62	14(3)	Temeke	Kurasini	3.7
					63	14(4)	Temeke	Changombe	2.2
					64	15(1)	Kurasini	Gongo/mboto	17.5
					65	15(2)	Kurasini	Gongo/mboto	17.5
	Average distance (km)		3.4		Average distance (km)		11.9		