



Linking crime incidences with demographic and socio-economic factors in Kinondoni police region, Dar es Salaam

William Amos Pallangyo ^{1*}, John Makuri Imori ²

¹ Law school of Tanzania, Dara es Salaam, Tanzania

² Tanzania Police Force, Dara es Salaam, Tanzania

Abstract

Despite several studies on demographic, socio-economic factors and crime incidences, the need for further analysis remains contested. Multinomial Logistic Regression Model was applied to establish the association of these three variables. Primary data was collected from police stations with detention facilities by using structured questionnaire. The findings pointed out significant relationships between demographic and socio-economic factors and crime incidences. However, the main economic activity of the respondent was not a significant factor influencing crime incidences. These results are imperative for policy formulation targeting the reduction of crimes.

Keywords: Age, Crime incidences, Education Level, Income, Sex, Place of domicile and Socio-Economic activity

Published by ISDS LLC, Japan | Copyright © 2017 by the Author(s) | This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



Cite this article as: Pallangyo, W.A. and Imori, J.M. (2017), "Linking crime incidences with demographic and socio-economic factors in Kinondoni police region, Dar es Salaam", *International Journal of Development and Sustainability*, Vol. 6 No. 6, pp. 239-259.

1. Introduction

The article assesses the link between demographic and socio-economic factors and crime incidences in Kinondoni police region. Following crime situation, demand for security and Dar es salaam city population the government of Tanzania declared Kinondoni as a police region in 2006. Strategically, government was also cascading the police services to the grassroots. The Tanzania Police Force Reform strategies included increasing number of personnel and working gears, establishment of crime squads, construction and rehabilitation of existing police stations. The reform initiatives also aimed at increasing community policing awareness and patrol programmes. The programme was expected to translate into increased police visibility in every neighborhood.

However, the Tanzania Crime Statistics Reports (2011-2015) indicates that since 2011 there was major incidences in Kinondoni police region. Specifically, Kinondoni police region had 8092 major crime incidents in 2011, 8410 in 2012, 7924 in 2013, 8095 in 2014 and 8804 in 2015. The UN world Crime Index ranked Tanzania's crime index as 57.11(2014) and 61.80 (2015) (URT, 2016). There was an increase in the crime index by the value 4.69 which is about 8.2 percent. However, the Crime Index by country (2017) ranked Tanzania as number as 20 worldwide with crime index of 60.54 and safety index of 36.46 which is relatively low as compared to other countries.

Winslow (2006) argued that low rate of crime in some countries was contributed by availability of preventive and combative initiatives. Such initiatives may include use of forensic science, streamlining Information and Communication Technology (ICT) as well as community involvement in the policing functions. Despite low crime index in Tanzania, the incidents are mostly experienced in the urban areas and regions bordering countries with political instability. According to Tanzania Police Force Crime Report 2015, the criminal activities included homicide, theft, assaults, armed robberies, petty street crimes, burglary, house breaking, illicit drug trafficking, small arms and light weapons proliferation, human trafficking as well as highways car hijacking.

2. Theoretical background

There are several perceptions that link crime incidences with demographic and socio-economic factors. Durkheim (1950) argued that, there is no society which is not confronted with criminality problems. Everywhere and always, there have been men who have behaved in such a way as to draw upon themselves penal repression. Qadri and Siddique (2009) further explained the arguments of Durkheim on criminality that, even a society composed of persons possessing angelic qualities would not be free from violations of the norms.

The study of crime is not limited to only one field. The links between crime and various socio economic variables have been studied from many different points of view. As a result, several theories have been developed to explain these relationships. The strain theory, social disorganization theory, economic theory of crime, functionalist's theory of crime and conflict theory of crime are influential ecological theories. The

theories used incentives, deterrents and other influences found in individuals' environment to give possible explanations for varying crime rates.

2.1. Strain theory of crime

Merton (1938) on the strain theory of crime suggested that individuals feel more frustrated when placed near others who are more successful. As inequality increases, those on the lower end of the income distribution are likely to channel their anger and resentment into crime.

2.2. Social disorganization theory of crime

Paranjape (2014) defined social disorganization as the inability of a group to engage in self-regulation in a social control formulation. More often than not, delinquency results from weak social bonds due to lack of institutional controls. Sutherland (1947) argued that as the communities become less able to regulate its members, crime increases. Factors that contribute to community weakening include poverty, racial heterogeneity, less residential stability and family instability.

2.3. The economic theory of crime

Becker (1968) economic theory of crime stipulated that rather than considering criminal behaviors as the result of mental or moral deficiencies, they are now considered as a possible result of a utility maximization problem. The individual considers crime by comparing his possible returns from criminal activity against the returns he would receive from participating in legal activity. Thus economics based theories portray criminals as rational decision makers who base their decisions to commit crimes on an analysis of the risks of the venture compared with the expected profits. The theory implies that individuals do a cost-benefit analysis before engaging into criminalities.

2.4. The functionalist's theory of crime

Erickson (1968) functionalist's theory of crime describes as something that helps to maintain boundaries of acceptable and unacceptable behaviour. He argued that crime bolsters cohesion and solidarity of a community, promotes the stability of social life and employment. He defined a deviant as someone whose actions have moved outside the margins of the group when society holds him accountable for it, it reinforces boundaries. Every time society reacts to deviance it sharpens its authority and power.

2.5. The conflict theory of crime

Sellin (1938) conflict theory of crime asserted that deviance is caused by economic and political forces in society. Criminal law and the criminal justice system are viewed as vehicles for controlling the poor members of society. The criminal justice system serves the rich and powerful. Deviance and Crime are defined in ways that meet the needs of those who control society. Crime is a function of the extent of conflict generated by

stratification, hierarchical relationships, power differentials, or the ability of some groups to dominate other groups in that society.

The five mentioned theories consider both economic and social variables, as key factors determining crime in a given society. They also explain the relationship between social structures and crime. This article links crime incidences with demographic and socio economic factors. The tested variables include place of domicile, sex, education level, marital status, main economic activity, age and income of respondents.

3. Empirical studies

Several studies corroborate the claim that demographic and socio economic factors are important determinants of crime. Kovandzic et al. (2006) conducted a study on the structural covariates of urban homicide he assessed the impact of income inequality and poverty for the post-Reagan era. They used 1990 data for the 190 largest cities in the United States. Three separate measures of inequality and three categories of disaggregated homicide rates were analyzed. The results of the study suggest that both inequality and poverty have significant and independent positive effects on rates of homicide in the cities following the largest increase in the economic gap between rich and poor in the United State of America's history.

Levitt (2004) conducted a research in U.S on understanding why crime fell sharply in the 1990s Homicide rates plunged 43 percent from the peak in 1991 to 2001 reaching the lowest levels in 35 years. This the single most frequent explanation given on the falloff crime rate was the innovative policing strategies put in place. The findings further showed that the crime decline is also frequently attributed to increased imprisonment, changes in the market for crack cocaine, the aging of the population, tougher gun control laws, the strong economy and increases in the number of police.

Nilsson (2004) examined the relationship of inequality, as one of the socio economic factors and crime in Sweden, using individual-level data across 27 years (1973 - 2000). She used an Ordinary Least Square (OLS) regression and accounts for county and year fixed effects. When investigating property crimes, she found that poverty had a significant impact, along with the proportion of divorcees. The results showed a 1% increase in the proportion of divorcees leads to a 20% increase in property crime. The proportion of the population that is made up of foreign citizens also had positive relationship with crime levels. Youth and inequality were not significant. When considering violent crime, the only significant variable was the proportion of the population that is male, aged 15–24 years.

Buonanno and Montolio (2008) conducted a study on identifying the socio-economic and demographic determinants of crime across Spanish provinces. They estimated a crime equation using a panel dataset of provinces from 1993 to 1999. The results indicated lagged crime rate, clearance rate, urbanization rate and fraction of foreigners were positively correlated to crime rates. Property crimes were better explained by socio-economic variables such as youth, unemployment and education level. Kimenju (2015) examined the determinants of reporting or failing to report a crime to police Githuri Nairobi. The study used economic, sociological and psychological perspectives to establish why people report or fail to report crime in the police

Stations. It was found out that most individual do not report crimes to the police. The major reasons found included lack of faith in the police, lack of evidence and reporting being viewed as a long and tiring procedure. The few who reported were motivated by the need for justice and property recovery. The study also found that more males reported crime to the police as compared to females, and older people reported crime as compared to younger people. Robbery with violence, assault and theft were the most reported victims.

Mateja (2014) found that about 94% of the respondents indicated that community policing was the strongest method in combating crime in Dodoma Tanzania. Community policing is the functional partnership between police forces and the Community members in the prevention of crime. The programme involves the introduction of Ward Police Officers who educates the community on how to protect themselves against criminals. Community policing also the incidences are establishes and strengthens police–public relationship, settle various social disputes and collect crime information timely.

3.1. Conceptual framework

Theories indicated that crime determined by demographic variables, place of domicile and other socio-economic Variables. Figure 1 illustrates the conceptual framework applied in this article.

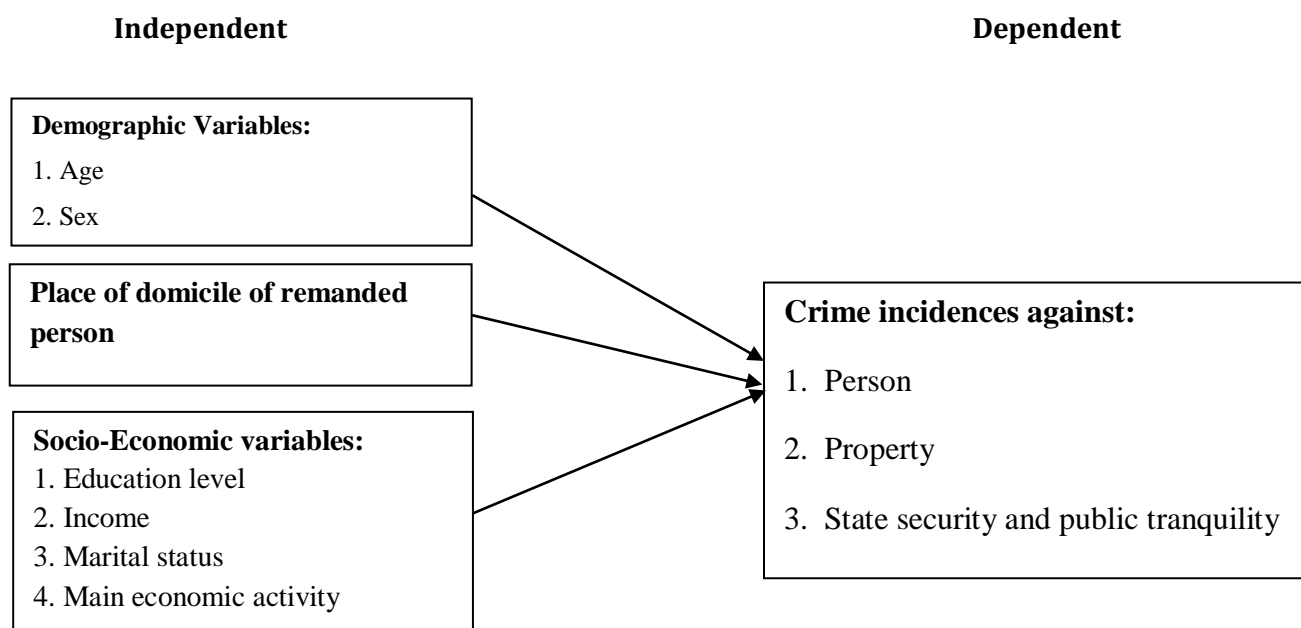


Figure 1. Independent Variables and Dependent Variable

4. Data and methods

A multi-stage sampling design was used for this study. In the first stage one police region namely Kinondoni was selected purposively. In second stage, police stations with detention facilities were also purposively

selected. In the third stage the systematic sampling was used to select the required number of respondents in each police station.

4.1. Sample size determination

The total number of respondents (remanded persons) to be sampled was obtained by using the following formula:

$$n = \frac{NpqZ_{\alpha/2}^2}{(N-1)e^2 + Z_{\alpha/2}^2 pq}$$

Where

n = sample size (number of remanded persons)

N = total number of remanded persons in Kinondoni police region.

P = proportion in the target population

$q = 1 - p$

e = predetermined margin of error

$Z_{\alpha/2}$ = area under standard normal curve

α = level of significance

Now, since N is not known, then the formula used for calculating sample size was

$$n = \frac{pqZ_{\alpha/2}^2}{e^2}$$

Where $\alpha = 0.05$, $p = 0.5$ (for optimum sample size), $q = 1 - p = 0.5$, $e = 0.05$ (Since the estimate should be

within 5%) and 'n' is the sample size needed for the study, $\frac{Z_{\alpha}}{2} = 1.96$ is a constant coefficient (i.e. multiplier) associated with the confidence level that is being used (from a table of areas under the standard normal curve).

$$n = \frac{0.5 \times 0.5 \times 1.96^2}{0.05^2} = 384.16$$

The above formula gave the optimum number of remanded persons to be selected for the sample in the study area as 385.

4.2. Data collection methods

Primary data were collected from police stations by using structured questionnaire. Structured questionnaire with both closed and open-ended questions was used for the purpose of investigating information on remanded persons' socio-economic, demographic characteristics and location. The use of questionnaire had advantages over the other methods as well as its efficiency to capture information from the source that requires anonymity (Kothari, 2004).

4.3. Variables

The study was designed to analyse data which are basically quantitative. The dependent variable for the study was categorized according to the main groups of crimes against person, property and state security and public tranquility. Independent variables included main economic activity, education level, marital status, age, sex and income.

4.4. Methods of analysis

Data were analyzed using Statistical Package for Social Sciences (SPSS). The Statistical analysis included descriptive and inferential analysis. On the part of descriptive analysis, frequency tables were produced for selected variables such as sex, maximum education, marital status, main economic activity, age and income of remanded persons. The inference analysis used chi-square test as a test for independence or relatedness in contingency tables (Agresti, 1992). The Chi-square test was useful in testing the compatibility of observed frequencies in two way tables for the purpose of studying the relationship between the two variables of classification (Hoel, 1983). It makes possible to test the statement of independence of two variables.

The Chi - square (χ^2) is given below as

$$\chi^2 = \sum_i^r \sum_j^c \frac{(f_{ij} - e_{ij})^2}{e_{ij}}$$

where

f_{ij} = observed frequency for contingency table category in row i and column j

e_{ij} = expected frequency for contingency category in i row and column j based on the assumption of independence.

With r rows and c columns in the contingency table, the test statistics has a Chi-square distribution with $(r-1)(c-1)$ degrees of freedom provided that the expected frequencies are five or more for all categories.

In this article therefore, the Chi Square test at 5% level of significance was used to examine the relationship between the dependent and independent variables. After identifying significant relationships between the variables, a multinomial logistic regression analysis was deployed to examine the influence of the independent variables on the dependent variables. Only those independent variables that showed

significant relationships at 5% level with the dependent variables were considered in the regression analysis. The effect of each independent variable is indicated by the odds ratio.

4.5. The multinomial logistic regression model

Multinomial Logistic Regression Model or was used to analyze crime incidents by grouping remanded persons into three categories according to the crime committed. These groups include those who commit crimes against person, crimes against property and crimes against state security and public tranquility.

The Multinomial Logistic Regression Model is given below as

$$P(Y = j) = \frac{e^{\beta_j' x_i}}{1 + \sum_{k=1}^J e^{\beta_k' x_i}} \quad \text{for } j = 1, 2, \dots, J$$

$$P(Y = 0) = \frac{1}{1 + \sum_{k=1}^J e^{\beta_k' x_i}}$$

Where there are J outcomes, x is a vector of explanatory variables, β_j is a vector of parameters associated with outcome j.

Estimated parameters were presented as odd ratios (e^{β_j}). Parameters greater than one indicate the regression is associated with a probability of the outcome that is greater than the probability of the base case. Parameters below one indicate that the variable is causing the outcome to have a smaller probability than the base case.

5. Findings and discussion

5.1. Characteristics of respondents

Considering the category of crime committed, out of 385 respondents covered in the study, 94 respondents (24.4%) committed crimes against person, 162 respondents (42.1%) committed crimes against property and 129 respondents (33.3%) committed crimes against public tranquility. In terms of dealing with sex, findings in Table 1 showed that majority of the remandees interviewed, 237 (61.6%) for this study were males and females were 148 (38.4%). The age distributions of the respondents, depicted that the 67.3% of youths were involving in crime activities. Also results showed that 25.7% of adults, 4.7 of juveniles and 2.4 of elderly people engaged into crime activities. Data on education indicate that remanded persons with primary education were the majority (35.1%) engaging in criminal activities. This group was followed by those with secondary education (19.4%), training after primary education (15.7%), tertiary education (9.7%), university (7.3%), not attended to school (6.5%) and nursery school (6.3%).

Table 1. Characteristics of Respondents

		Frequency	Valid Percent
Type of Crime	Crime against person	94	24.4
	Crime against property	162	42.1
	Crime against State Security and Public Tranquillity	129	33.5
	Total	385	100
Sex	Male	237	61.6
	Female	148	38.4
	Total	385	100
Age	Juvenile	18	4.7
	Youth	257	67.3
	Adult	98	25.7
	Elderly	9	2.4
	Total	382	100
Education	Primary	134	35.1
	Training after Primary education	60	15.7
	Secondary	74	19.4
	Tertiary	37	9.7
	University	28	7.3
	Not attended	25	6.5
	Total	382	100

Source: Field Data (2016)

Table 2 revealed that, majority (53.7%) of never married remanded persons were engaging in criminality. It was followed by married couples 39.5%, living together 3.1%, widowed 2.1% and separated 1.6%. Again,

results show that the highest proportion (42.7%) of the respondents were self employees followed by respondents who were employed by the government (30.0%). Also, 10.4% of the respondents were paid family workers and 9.5% of respondents were farmers. Regarding the income of respondents, as indicated in Table 2, 8.9% were earning an amount less than 60,000 Tshs per month, 28 % were earning 60,000–199,999 Tanzania shillings (Tshs) monthly. Also the results show that 14.3% were earning an amount 120,000 – 199,999 Tshs per month, 22.2% were earning 200,000–299,999 Tshs per month, 16.5% were earning 300,000– 499,999 Tshs per month, 8.3 were earning 500,000-999,999 Tshs per month and 1.0% were earning an amount 2,000,000-2,999,999 Tshs per month.

Table 2. Characteristics of Respondents

Characteristics of Respondents		Frequency	Valid Percent
Marital Status	Married	151	39.5
	Never married	205	53.7
	Living together	12	3.1
	Widowed	8	2.1
	Separated	6	1.6
	Total	382	100
Main economic activity	Government employees	104	30
	Self-employees	148	42.7
	Unpaid family works	26	7.5
	Paid family works	36	10.4
	Farmer	33	9.5
	Total	347	100
Average monthly income	<60,000	28	8.9
	60,000-119,999	91	28.9
	120,000-199,999	45	14.3
	200,000-299,999	70	22.2

300,000-499,999	52	16.5
500,000-999,999	26	8.3
2,000,000-2,999,999	3	1
Total	315	100

Source: Field Data (2016)

5.2. Demographic and socio-economic variables and crime in Kinondoni police region.

The discussion is based on the results of the test of association or relationship between independent and dependent variables. The sex, age, marital status, education level, main economic activity, place of domicile, income. The dependent variables were crime against persons, property and crime state security and public tranquility. The association between any independent variable and the dependent variable having a p-value less than 0.05 ($p < 0.05$) was statistically significant.

5.3. Relationship between main category of crimes committed and location of respondents

The findings in Table 3 show that majority (40.9%) of respondents in Kinondoni police district committed crimes against property, 44% of respondents in Kimara police district committed crimes against state security and public tranquility, 51% of respondents from Magomeni Police districts committed crimes against property and 52% respondents from Kawe police district committed crimes against property. According to P-Value (0.034) the relationship between main type of crimes and location is statistically significant at 5% level.

5.4. Category of crimes committed and sex of respondents

The results in Table 3 show that 47% of male respondents committed offences against property compared to 34% of female respondents. This shows that male respondents are more likely to commit offences against property compared to females.

5.5. Category of crimes committed and level of education of respondents

According to the results in Table 4, 54% of respondents with nursery education committed crimes against property, 41% of respondents with primary education committed crimes against public tranquility, 48% of respondents with training after primary school committed crimes against property, 36% of respondents with secondary education committed crimes against public tranquility, 51% of respondents with tertiary education committed crimes against property, 61% with university education committed crimes against property and 48% of respondents who did not attend school committed crimes against public

tranquility. This shows that most of the respondents regardless of their education level are more likely to commit crimes against property compared to other crimes.

Table 3. Test of Associations between Dependent Variable and Independent Variables

Variables		Main Category of Crime			P-Value	Chi-Square
		Crime against person (percent)	Crime against property (percent)	Crime against State Security and Public Tranquillity (percent)		
Police district	Kinondoni	60, (30) 30.30%	81 40.90%	57 28.80%	0.034	13.59
	Kimara	20 20%	36 36%	44 44%		
	Magomeni	6 16%	19 51%	12 32%		
	Kawe	8 16%	26 52%	16 32%		
Sex of Respondent	Male	45 19%	111 47%	81 34%	0.004	10.84
	Female	49 33%	51 34%	48 32%		

Source: Field Data (2016)

5.6. Category of crimes committed and marital status of respondents

As per the results in Table 4, 40.4% of married respondents committed crimes against property, 40.5% of never married respondents committed crimes against property, 50.0% of respondents living together committed crimes against property, 75.0% of widowed respondents committed crimes against property and 50.0% of separated respondents committed crimes against property. This indicates that most of the respondents are more likely to commit crimes against property compared to other crimes.

5.7. Category of crimes committed and main economic activity of respondents

The results in Table 5 show that 48.0% of employed respondents committed crimes against property, 39.0% of self employed respondents committed crimes against property, 42.0% of unpaid family work respondents committed crimes against persons, 50.0% of paid family work respondents committed crimes against property and 61.0% of farming respondents committed crimes against property. This indicates that most of the respondents are more likely to commit crimes against property compared to other types crime.

Table 4. Test of Associations between Dependent Variable and Independent Variables

Variables		Main Category of Crime			P-Value	Chi-Square
		Crime against person (percent)	Crime against property (percent)	Crime against State Security and Public Tranquillity (percent)		
Education Level of Respondent	Nursery	6	20	23	0	40.754
		24	82%	94%		
	Primary	28	51	55		
		21%	38%	41%		
	Training after Primary education	19	29	12		
		32%	48%	20%		
	Secondary	24	23	27		
	32%	31%	36%			
Tertiary	15	19	3			
	41%	51%	8%			
University	2	17	9			
	7%	61%	32%			

Marital Status of Respondent	Married	30	61	60	0.087	13.813
		20%	40%	40%		
	Never married	62	83	60		
		30%	40%	29%		
	Living together	2	6	4		
		17%	50%	33%		
	Widowed	0	6	2		
		0%	75%	25%		
	Separated	0	3	3		
		0%	50%	50%		

Source: Field Data (2016)

5.8. Category of crime and income of respondents

The findings in Table 5 indicate that 42.8% of respondents who had an income less than 60,000 Tshs per month committed crimes against property compared to 29.0% of those who committed crimes against persons and 29.0% who committed crimes against public tranquility. This means that respondents who had less income per month are more likely to commit crimes against property compared to other types of crime.

It was also observed that 56.0% of respondents who had a monthly income ranging between 300,000 – 499,999 Tshs committed crimes against state security and public tranquility compared to 13.0% of those who committed crimes against person and 31.0% of those who committed crimes against property. Also from table 4.11, the results show that respondents with income ranging from 500,000 – 3,000,000 Tshs per month are more likely to commit crimes against property compared to other crimes.

5.9. Demographic and socio-economic variables on crime in Kinondoni police region.

Multinomial Logistic Regression Model (MLRM) estimates to examine the influence of demographic and socio-economic variables on crime occurrence in Kinondoni police region. The MLRM estimates of the determinants of the main category of crime against person, property and state security and public tranquillity to occur are presented in Table 6. The independent variables used to explain the dependent variable (main type of crimes) and place of domicile (police districts namely Kinondoni, Kimara, Magomeni

and Kawe), sex, age , education level, main economic activity, marital status and monthly income of the respondents.

Table 5. Test of Associations between Dependent Variable and Independent Variables

Variables		Main Category of Crime			P-Value	Chi-Square
		Crime against person (percent)	Crime against property (percent)	Crime against State and Public Tranquillity (percent)		
Main economic activity of respondent	Employed	26 25%	50 48%	28 27%	0.007	21.128
	Self employed	34 23%	58 39%	56 38%		
	Unpaid family worker	11 42%	10 38%	5 19%		
	Paid family worker	10 28%	18 50%	8 22%		
	Farming	0 0%	20 61%	13 39%		
	Average monthly income of respondent	<60,000	8 29%	12 42.86%			8 29%	0	40.477
	60,000-119,999	25 27%	35 38%	31 34%		
	120,000-199,999	6 13%	25 56%	14 31%		
	200,000-	28	28	14		

299,999	40%	40%	20%
300,000- 499,999	3	20	29
	6%	38%	56%
500,000- 999,999	3	16	7
	12%	62%	27%
2,000,000- 2,999,999	0	3	0
	0%	100%	0%

Source: Field Data (2016)

The findings indicate that Kinondoni police district is (0.11-1)/1 or 89 percent less likely to have crime against property than persons compared to Kawe police district. These comparisons are statistically significant at 5 percent significance level, OR = 0.11 ((95% CI 0.021 to 0.583), $p = 0.009$). Also the findings indicate that Kimara police district is (0.237-1)/1 or 76 percent is less likely to have crimes against property than against persons compared to Kawe police district. However, these comparisons are not statistically significant, Odds Ratio (OR) = 0.237 (95% CI 0.042 to 1.335), $p = 0.103$.

Furthermore, the findings indicate that Magomeni police district is (0.914-1)/1 or almost 8 percent was less likely to obtain reports on crimes against property than obtaining reports on crimes against persons compared to Kawe police district. However, these comparisons are also not statistically significant; Odds Ratio (OR) = 0.914 (95% CI 0.099 to 8.402), $p = 0.937$. Regarding to sex of respondents, the findings indicate that males (7.669-1)/1 or almost 667 percent were more likely to commit crime against property than crimes against persons compared to females. These comparisons are statistically significant at 5 percent significance level, OR = 7.669 (95% CI 2.675 to 21.989), $p = 0.000$.

Further, the findings in Table 6 indicate that respondents with below secondary education (1.058-1)/1 or almost 6 percent were more likely to commit crimes against property than crimes against persons as compared to respondents who had post secondary education, (OR) = 1.058 (95% CI 0.445 to 2.514), $p = 0.899$. A comparison of the respondents with secondary education and post-secondary education shows that respondents that had secondary education were more likely to commit crimes against property than crimes against persons than those with post secondary education, OR = 1.304 (95% CI 0.529 to 3.212), $p = 0.564$.

Also the findings reveal that respondents who are married couples (1.528-1)/1 or almost 53 percent were more likely to commit crime against property than crimes against persons compared to respondents who are single (separated, widowed). However, these comparisons are not statistically significant at 5 percent significance level, OR = 1.528 (95% CI 0.767 to 3.044), $p = 0.22800$. Likewise, the findings show that respondents who are employed (paid employment, self employed, family paid work, farming) (1.565-1)/1 or almost 57 percent were more likely to commit crime against property than crimes against persons compared

to respondents who are not employed. However, these comparisons are not statistically significant at 5 percent significance level, OR = 1.565 (95% CI 0.278 to 8.810), $p = 0.612$.

The results in Table 6 further indicate that respondents with a monthly income less than 100,000 Tshs (0.267 - 1)/1 or 73 percents were less likely to commit crime against property than crimes against person compared to respondents with monthly income above 500,000 Tshs per month. However, the comparison is not statistically significant at 5 percent significance level, OR = 0.267 (95% CI 0.054 to 1.319), $p = 0.105$. Also the results show that respondents with a monthly income ranging from 100,000 – 500,000 Tshs per month (0.230 - 1)/1 or 77 percents were less likely to commit crimes against property than crimes against person compared to respondents with monthly income above 500,000 Tshs per month. The comparison is statistically significant at 5 percent significance level, OR = 0.230 (95% CI 0.059 to 0.901), $p = 0.035$.

The results also indicate that respondents who are youths (2.088 - 1)/1 or almost 109 percent were more likely to commit crimes against property than crimes against person compared to respondents who are adults, OR = 2.088 (95% CI 0.969 to 4.500), $p = 0.060$. However the comparison is not statistically significant at 5 percent significance level.

Table 6. Parameter Estimates where Crimes against Property is a Dependent Variable

Type of Crime		B	Std. Error	Wald	Df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Crime against property	Intercept	.683	1.117	.373	1	.541			
	[education2=1.00]	.056	.442	.016	1	.899	1.058	.445	2.514
	[education2=2.00]	.265	.460	.332	1	.564	1.304	.529	3.212
	[education2=3.00]	0	.	.	0	.	.	.	.
	[marital2=1.00]	.424	.352	1.451	1	.228	1.528	.767	3.044
	[marital2=2.00]	0	.	.	0	.	.	.	.
	[economic2=1.00]	.448	.882	.258	1	.612	1.565	.278	8.810
	[economic2=2.00]	0	.	.	0	.	.	.	.
	[Income2=1.00]	-1.322	.816	2.627	1	.105	.267	.054	1.319

[Income2=2.00]	-1.469	.696	4.453	1	.035	.230	.059	.901
[Income2=3.00]	0	.	.	0	.	.	.	.
[age2=1.00]	.736	.392	3.530	1	.060	2.088	.969	4.500
[age2=2.00]	0	.	.	0	.	.	.	.

Source: Field Data (2016)

Table 7. Parameter Estimates where Crimes against State Security is a Dependent Variable

Type of Crime		B	Std Error	Wald	Df	Sig.	95% Confidence Interval for Exp(B)		
							Exp(B)	Lower Bound	Upper Bound
Crime against State Security and Public Tranquillity	Intercept	-16.03	0.851	354.5	1	0			
	[education2=1.00]	1.516	0.541	7.847	1	0.005	4.555	1.577	13.157
	[education2=2.00]	0.709	0.57	1.55	1	0.213	2.033	0.665	6.21
	[education2=3.00]	0	.	.	0	.	.	.	.
	[marital2=1.00]	1.023	0.373	7.506	1	0.006	2.781	1.338	5.78
	[marital2=2.00]	0	.	.	0	.	.	.	.
	[economic2=1.00]	15.34	0	.	1	.	0.615	0.615	2.615
	[economic2=2.00]	0	.	.	0	.	.	.	.
	[Income2=1.00]	-1.232	0.925	1.773	1	0.183	0.292	0.048	1.789
	[Income2=2.00]	-0.959	0.778	1.519	1	0.218	0.383	0.083	1.762
	[Income2=3.00]	0	.	.	0	.	.	.	.
	[age2=1.00]	0.584	0.398	2.156	1	0.142	1.793	0.822	3.908
[age2=2.00]	0	.	.	0	.	.	.	.

Source: Field Data (2016)

The findings in Table 7 indicate that respondents with education below secondary level (4.555-1)/1 or almost 356 percent were more likely to commit crimes against state security and public tranquillity than crimes against person as compared to respondents who had post secondary education, (OR) = 4.555 (95% CI 1.557 to 13.157), $p = 0.005$ which implies that it is statistically significant. A comparison of the respondents with secondary education and post-secondary education shows that respondents who had secondary education were more likely to commit crimes against state security and public tranquillity than crimes against persons than those with post secondary education, OR = 2.033 (95% CI 0.665 to 6.210), $p = 0.213$ which means it is not statistically significant.

The findings show that respondents who are married couples (2.788-1)/1 or almost 179 percent were more likely to commit crimes against state security and public tranquillity than crimes against persons compared to respondents who are single (separated, widowed). These comparisons are statistically significant at 5 percent significance level, OR = 2.788 (95% CI 1.338 to 5.780), $p = 0.006$.

Also the results further reveals that respondents with a monthly income less than 100,000 Tshs (0.292 - 1)/1 or almost 71 percent were less likely to commit crime against state security and public tranquillity than crimes against person compared to respondents with monthly income above 500,000 Tshs per month. However, the comparison is not statistically significant at 5 percent significance level, OR = 0.292 (95% CI 0.048 to 1.789), $p = 0.183$. Also the results indicate that respondents with a monthly income ranging from 100,000 – 5000,000 Tshs per month (0.383 - 1)/1 or almost 62 percent were less likely to commit crimes against state security and public tranquillity than crimes against person compared to respondents with monthly income above 500,000 Tshs per month. The comparison is not statistically significant at 5 percent significance level, OR = 0.383 (95% CI 0.083 to 1.762), $p = 0.218$.

Likewise, respondents who are youths (1.793 - 1)/1 or 79 percent were more likely to commit crimes against state security and public tranquillity than crimes against person compared to respondents who are adults, OR = 1.793 (95% CI 0.822 to 3.908), $p = 0.142$. However the comparison is not statistically significant at 5 percent significance level.

6. Conclusion

Our findings indicate that the highest proportion (42.1%) of the respondents was committing offences against property. Seven determinants of crime were observed. These were location (of a police district), education level of respondents, marital status of respondents, monthly income of respondents, age as well as sex of respondents. Main economic activity of respondents was statistically insignificant in explaining the main category of crimes for this particular study.

While analyzing the relationships of dependent and independent variables, the Chi-square test showed that, there were significant associations between location (of police districts), age of respondent, sex of respondent, main economic activity of respondent, monthly income of respondent, education level of respondent and marital status of respondent and the main type of crime, that is, crimes against person, crimes against property and crimes against state security and public tranquillity.

On the other hand, while analyzing the influence of independent variables on the dependent variable, MLRM found that location (of police districts), age of respondent, sex of respondent, monthly income of respondent, education level of respondent and marital status of respondent were significant factors determining the main type of crime. However the main economic activity of respondent was not a significant factor influencing the main type of crime. Also results showed that, respondents with the following characteristics (youths, males, unemployed, with less earning, having low level of education and never married), were less likely to commit offences against person. The results also explained that, respondents with the following characteristics (youths, males, unemployed, with less earning, having low level of education and never married) were more likely to commit crimes against property.

References

- Agresti, I. (1992), "A Survey of Exact Inference for Contingency Tables", *Statistical Science*, Vol. 7 No. 1, pp. 131-153.
- Becker, S. (1968), "Crime and Punishment: An Economic Approach", *Journal of Political Economy*, Vol. 78, pp. 189 -217
- Buonanno, P. and Montolio, D. (2008), "Identifying the Socio-economic and Demographic Determinants of Crime across Spanish provinces", *International Review of Law and Economics*, Vol. 28 No. 2, pp. 89-97.
- Crime Index by Country (2017), Crime Index for Country 2017 Mid-Year, Available at: https://www.numbeo.com/crime/rankings_by_country.jsp (accessed 7 August, 2017).
- Durkheim, E. (1950), *Rules of Sociological Methods*, The Standard Press, New York, USA.
- Erikson, E. (1968), *Identity, Youth and Crisis*, Norton, New York, USA.
- Kimenu, G.N. (2015), *Determinants of reporting or failing to report a crime to Police: A case study of Githuraj 45, Nairobi*, A project submitted in partial fulfillment of the requirement for the award of the degree of Master of Arts in Sociology (criminology) at the university of Nairobi.
- Kovandzic, T.V., Vieraitis, L.M. and Yeisley, M.R, (2006), "The Structural Covariates of Urban Homicide': Reassessing the impact of income inequality and poverty in the post-Reagan era", Available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1745-9125.1998.tb01259.x/abstract> (Accessed 9 June 2017).
- Mateja, M. (2014), *Assessing Crime Prevention by Tanzania Police Force: A Case of Chamwino – Dodoma*, Unpublished Dissertation, The Open University of Tanzania, Available at: <http://repository.out.ac.tz/494/> (accessed 9 June 2017).
- Merton, R. (1938), "Social Structure and Anomie", *American Sociological Review*, Vol. 3 No. 5, pp. 672-682.
- Nilsson, A. (2004), "Income Inequality and Crime: The case of Sweden", Working Paper 2004:6, Institute for labour Market Policy Evaluation, Available at: <http://www.ifau.se/globalassets/pdf/se/2004/wp04-06.pdf> (accessed 9 June 2017).

Paranjape, N.V. (2014), *Criminology and Penology with Victimology*, 16th edition, Central Law Publications, 107, Darbhanga Castle, Allahabad-2, India.

Qadri, S.M. and Siddique, A. (2009), *Criminology & Penology*, 6th Edition, Eastern Book Company, Ahmedabad, India.

Sellini, T. (1938), *Culture Conflict & Crime*, New York, USA.

Sutherland, E. (1947), *Principles of Criminology*, 4th edition, Lippincott, Philadelphia, USA.

Tanzania Crime Statistics Report (2016), "Report on Major Crime Incidents for the Period of (2011 – 2015)", Available at: http://www.nbs.go.tz/nbs/takwimu/trade/Crime_and_Traffic_Incidents_Statistics_Report_Jan-Dec_2015.pdf (accessed 9 June 2017).

URT (2016), "Crime and Traffic Incidents statistics report", Tanzania Police Force Ministry of Home Affairs Dar es Salaam and National Bureau of Statistics Ministry of Finance and Planning Dar es Salaam, available on line at: http://www.nbs.go.tz/nbs/takwimu/trade/Crime_and_Traffic_Incidents_Statistics_Report (accessed 9 June 2017).

Winslow, R. (2006), *Crime and Society: A Comparative Criminology Tour of the World*, San Diego State University, California, USA.