

SPATIAL VARIATION OF MURDER IN JORDAN

2015-2020

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ABSTRACT

The study aims to identify the Spatial Variation of Murder in Jordan during the years 2015-2020, and to identify the reasons and factors that led to the commission of the murder from the point of view of reform prisoners and rehabilitation centres in Jordan. This study followed the qualitative and quantitative methodology, relied on general statistics of number of population density, and the number and type of crimes in the Province of the Kingdom of Jordan during the period (2015-2020)”, the study also depends on questionnaire applied to (112) samples of prisoners in rehabilitation and reform centres in the Jordanian governorates to measure the study questions related to the murder crimes causes. The study reached results the most important of which that the highest rate of crime was in Amman province, followed by Irbid province, then Zaria province. There is a relationship between the population and the crime in the Jordanian Provinces but is no relationship between population density and crime in the Jordanian provinces. There is a relationship between Personal factors (Feeling of injustice, Poverty, and Personal factors) and the murder crime in Jordan.

INTRODUCTION

Geography seeks to explain the spatial variance of phenomena by studying the relationship between natural and human variables affecting them. Social geography is one of the branches of human geography that is based on the study of the activity and social behavior of people, and their interaction with the elements of the surrounding environment, by focusing on identifying the social, economic and environmental characteristics of the place and the individuals living in it, with the aim of revealing the extent to which these characteristics contribute to spatial variance for the studied phenomena (Chen et al, 2017).

Social geography showed the developments that appeared in criminology and the concepts and theoretical foundations were launched in the geographical studies concerned the crime. The geography of crime works to reveal the criminal pattern within the spatial space, and then analyse the spatial processes and go deep to show the extent of their impact on social, political and economic forces (Herbert, 2001).

On the other hand, the crime in general, and murder in particular is a negative social phenomena that exists in all human societies of different cultures and social foundations, despite the degree of their development and economic progress. Murder is one of the most hazard crimes committed against humans as it doesn't only affect negatively the victim but also the criminal as well as its large community (Hajer & David, 2019).

Alsaeeda (2020) showed that the crime of murder, being a human phenomenon, cannot occur in every place and time with the same size and frequency, as it may be concentrated and endemic to a large extent in certain places and decrease at the same time in other places, and its size may increase and rise in specific times and years and its numbers may decrease at other times. Crime in general, and murder in particular, is seen as a social

phenomenon that hardly any human society is devoid of, as its circumstances and conditions varied, but this phenomena differs from one society to another in terms of its distribution and methods, you may find it spread widely in certain societies while in other societies, it is a rare and uncommon phenomenon.

In general, the increase in murder rates in the Jordanian society is an indication of the crises and bad conditions that this society suffers from, whether these are the result of conditions related to the individual such as poverty, unemployment, poor socialization and others. Its perpetration is no longer confined to a particular group, but rather includes all age groups, and this in itself constitutes a danger that is not limited to the criminal and the victim, but rather the harm goes beyond the criminal's family, as well as the victim, and even the large community that also has a role in the occurrence of such type of crimes. Therefore, the current study aimed to identify the spatial variation of murder in Jordan society between "2015-2020".

Problem statement

The criminal patterns varies according to societies differences and their diversity, and this difference is associated with the system of the prevailing economic, social, political and cultural elements, and for this reason the study of the spatial dimension of crime is important, especially with the increase in the volume of crimes, where the spatial dimension is considered to be a basic variable as it holds an indicative significance of the places where crime is endemic and thus the possibility of its spread to other neighbouring sites and regions, but the relationship between the crime rate and the extent to which it differs from one region to another in Jordan still needs study and research.

The study statement lies in the fact that homicides spread in the geography of Jordan without clear determinants of that spread. Despite the similarity of murder in the governorates and regions of Jordan, there is a disparity and variation in the size of murders and their spatial distribution, which requires identifying the size of that variation and the type number of murders and their causes in various regions in the Kingdom, which raises the problem of the study, which centres on identifying the Spatial Variation of Murder in Jordan.

The study statement is determined in answering the following questions:

- What is the deference in number of murders during the period 2015-2020 according Province?
- Is there a difference in the types of murders committed in Jordan in different Provinces?
- Is there a relationship between population density and crime in the Jordanian Provinces?
- Is there a relationship between the population and the crime in the Jordanian Provinces?
- What are the reasons and factors that led to the commission of the murder from the point of view of reform prisoners and rehabilitation centers in Jordan?

The study significance:

The current study has two significances, the first is scientific, and the second is practical and applied, as follows:

First - Scientific significance:

There is a lack in the studies that dealt with the subject of the current study and its variables. The current study benefits students with an important scientific material about Spatial Variation of Murder in Jordan, which constitutes a scientific material that benefits researchers in conducting studies on the subject of the study or related studies, which enriches the local Arab scientific library with important scientific content in the field of crime and spatial variation in it.

Second - the practical applicable importance:

The importance of the study lies in the multiplicity of criminal threats and their emergence as a problem that must be dealt with, by all available possibilities, as crime is considered to be a source of concern for the Jordanian society.

The significance of the study is determined by the negative effects of the murder crime that represents a threat to social security. The importance of the study also stems from the government's special interest in crime and its fight against crime, in addition to the individuals' interest in the level of security and safety in Jordan. As a result of the negative effects resulting from murder crimes that affect the lives of Jordanians and their types, the current study benefits the security officials from different agencies in determining the geographical elements And the environment that produces the murder, which can be avoided through studies that determine the geographical and environmental factors associated with murder.

STUDY OBJECTS

The study aims at achieving the following objectives:

Main objective:

To identify the Spatial Variation of Murder in Jordan during the years 2015-2020

Sub-objectives:

- Identify the provinces in which the most murders are committed.
- Explanation of the extent to which there are differences in the types of murders in different Jordanian governorates
- To identify the extent to which there is a relationship between (population density, population number, and income level) and the volume of crime in the Jordanian governorates?

Terms and Concepts

Spatial Variation: It means that the phenomena that make up the surface of the earth are distributed irregularly, and this is what is known as spatial variance. This fact is true of human phenomena as it is true of natural phenomena. The spatial aspect of any phenomenon is an essential element in drawing the map (Al Dulaimi, 2020).

Crime: An illegal act committed by one or several persons that leads to personal or material harm or against society or the state and does not conform to social norms, and its perpetrator is subject to punishment according to the penalties stipulated in the law, as there is no punishment or crime without a text (Friedrichs, 2019).

Murder: Murder is a legal term for any killing of a human being by another human being. Murder itself is not necessarily a crime for instance, a justifiable killing of a suspect by

the police or a killing in self-defence. Murder and manslaughter fall under the category of unlawful homicides (Berman, 2021).

Spatial Variation of Crime (Crime Geography)

The spatial variability of geographic phenomena considered as a classical issue in spatial data analysis and could supply insight into fundamental processes. Conventional exploratory processes are generally relied on the assumption of planar distance, while much spatial phenomena are constrained by a subset of Euclidean space (Wang et al, 2017).

Knowing the spatial characteristics of crime is important for containing and combating crime and thus improving public security. Crime attracts the interest of many researchers and scholars in academic disciplines, including urban geography, urban sociology, social ecology, and criminology (Sypion-Dutkowska & Leitner, 2017).

Mulok, et al (2016) showed that the spatial variance of crime is one of the branches of modern geography, and it refers to the geography of crime, which clarifies the spatial dimension in an attempt to define it. Crime is the unexpected behavior of the individual that may conflict with the law, and there is no society without crimes, developed or developing countries, but it varies from one society to another in terms of type and quantity, and it also varies in one society depending on the different elements and social economic political components. The spatial and geographical perspective of the study of crime is the basis for the studies that dealt with and analyzed crime, as geography cannot in any way abandon societal issues.

Modern geography has developed in a way that it contains many human and societal phenomena and the location of crime by answering where the phenomenon is? And why? The geographical method in analyzing and interpreting crime is limited to the study of physical geographic phenomena, the degree of their impact on crime and criminal behavior, and the extent to which these phenomena are linked with crime (Toukan, 2012).

In addition, the spatial variance of crime has also become part of social geography that is concerned with the study of the social organism and its social activities in the surrounding environment, that is, the study of spatial behavior in the social environment, as it reflects a reality through which a number of indicators in society can be predicted, such as social inequality, unemployment, housing deterioration and inequality that contributes in some way to the crime (Rentfrow, 2018).

In general, crime is a human phenomenon that varies spatially and temporally, so geography has an essential role in its study and analysis of its fields by shedding light on its spatial dimensions and the impact of the geographic environment on that behavior.

The Concept of Crime Geography

Crime geography is a concept that shows the link between crime and place, that is, it indicates an important correlation between crime on the one hand, and geographic location on the other, and it also indicates the correlation between crime and the seasons, and the concept of crime graphology draws the researchers' attention to the role of natural conditions In the field of interpretation of the criminal phenomenon (Boessen&Hipp, 2015).

According to Klewi& Al-Barki (2016), Crime geography has been defined as a sub-topic of geography that explains and links the geographical space of criminals and various criminal acts, linking the variance of crime and its rates, the characteristics of criminals and victims through the concept of the spatial dimension.

In addition, the geography of crime is a concept centered on the difference in location and its role in the production of crime, where scientists discovered that there is a difference in crimes according to geography and demographic characteristics (Weisburd et al, 2009).

Cahill (2004) indicated that the goal of crime geography is to understand the factors of the criminal event, among other factors, such as the legal, social, psychological and physical background that the crime differs accordingly.

Aksoy (2017) showed that there might be various reasons for the high number of crimes in some urban places. Crime is directly related to the urban environment, as crime rates are higher in large cities than in small cities because densely populated cities are difficult to control. Therefore, the causes of crime are available in crowded cities, where the act of crime does not require extra effort.

It appears from the foregoing mentioned that crime geography studies the spatial variation of the crime phenomena in terms of its spatial forms, its system, and the regional changes in the forms of crimes.

The Crime of Murder

The crime of murder is one of the most hazard crimes committed against humanity, and it is still increasing continuously as a result of the social, economic, political and cultural changes that human societies are undergoing. Therefore, it has become a threat to the security and stability of society, and has been further complicated by the rapid technological developments that the entire world is going through, as the world has become a scene of crime (Nolte, 2017).

From the social point of view, the crime of murder is defined as the crime committed in an intentional or unintended manner for the slightest reason and without justification as a result of poverty and unemployment among people as a result of the lack of firm political authority, in addition to the presence of tribal fanaticism in the hearts of people (Al-Darwish & Al-Mawajdeh, 2017).

Whereas from a psychological point of view, the crime of murder is defined as the infringement by an individual or several individuals in a particular society of the values peculiar to that society and the violation of the rights of its members (Hajer & David, 2019).

Haq (2016) defined the crime of murder, from a legal point of view, as any act that leads to the loss of the soul of a living person, with intent or error.

Types of Murder

Murder is divided into three types, namely: deliberate Murder, Semi-Deliberate Murder, and manslaughter. A distinction is made between each type of Murder depending on the intention of the killer and the type of tool used to kill. Each type of Murder entails its own legal provisions and the following Statement of each type and the consequences thereof (Saduk, 2021).

Deliberate Murder: Deliberate murder is the crime of wrongfully and intentionally causing the death of another human being after rationally considering the timing or method of doing so, in order to either increase the likelihood of success, or to evade detection or apprehension. Deliberate murder is one of the most hazard forms of homicide, and is punished more severely than manslaughter or other types of murder - often with the death penalty or a life sentence without the possibility of parole (STANDS4 LLC., 2021).

Semi-Deliberate Murder: This occurs when the offender attacks his victim with something which does not normally cause death, but then the victim dies. This is a case similar to deliberate Murder, in the sense that there is an assault, yet on the other hand it is similar to accidental killing, because of using something that does not normally cause death. Therefore the ruling here falls in between. The ruling applies even in cases where the attacker merely wanted to punish the person being attacked (Osoul Global Center, 2021).

Manslaughter: Manslaughter is an unlawful killing that doesn't involve malice aforethought—intent to seriously harm or kill, or extreme, reckless disregard for life. The absence of malice aforethought means that manslaughter involves less moral blame than either first- or second-degree murder. (But plenty argue that some instances of felony murder, a form of first-degree murder, involve less blameworthiness than some instances of manslaughter.) Thus, while manslaughter is a serious crime, the punishment for it is generally less than that for murder (Hebert et al, 2019).

Murder crimes in Jordan

The criminal statistical report (2020) issued by the Criminal Information Department, at the Public Security Directorate, indicates a decrease in murders in the Hashemite Kingdom of Jordan during the period (2015-2020), as the number of crimes committed against a person for the year 2015 amounted to about (1644) murders of all kinds, While the number of felonies that fall on humans for the year 2020 has become about (1129) murders of all kinds, and the following table shows the number of murders for each year:

Table 1 MURDERS COMMITTED IN THE KINGDOM DURING THE PERIOD 2015-2020	
The Year	No. of Crimes against the Person
2015	1644
2016	1458
2017	1420
2018	1148
2019	1177
2020	1129

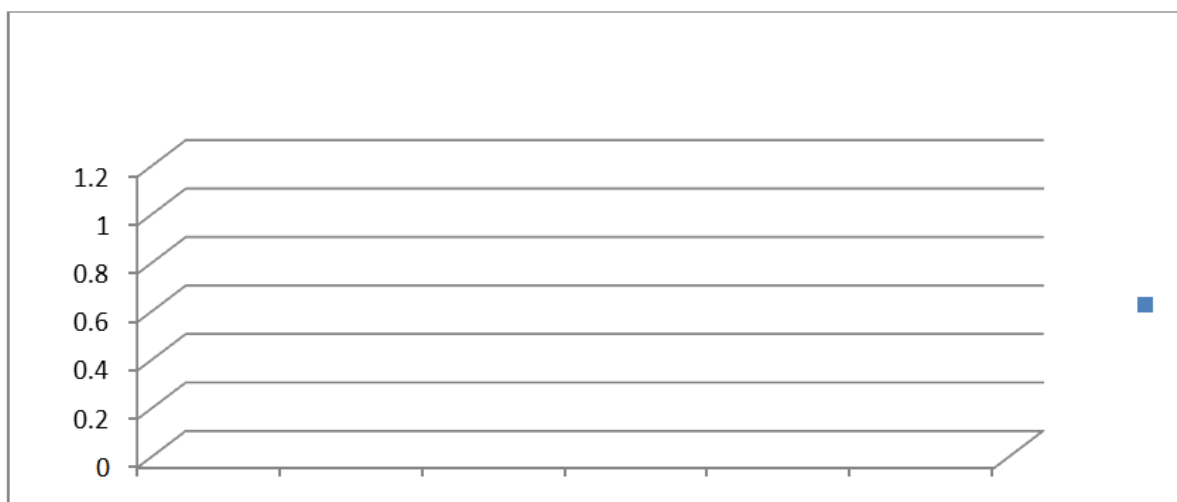


Figure 1

Figure 1 shows the graph of Murders committed in the Kingdom during the period 2015-2020:

There were many types of murders that occurred during that period, and Table (2) indicates the murders during the period 2015-2020 according to their type:

Table 2 THE MURDERS DURING THE PERIOD 2015-2020 ACCORDING TO THEIR TYPE						
Type of Murders	The murders during the period 2015-2020					
	2015	2016	2017	2018	2019	2020
Attempted Murder	464	427	358	285	294	346
Premeditated Murder	75	73	56	31	58	39
Murder	76	58	68	53	52	51
Beating Leading to Death	8	3	3	5	8	9
Manslaughter	33	17	38	32	34	26
Aggravated Assault	988	880	897	742	731	658
Total	1644	1458	1420	1149	1177	1129

Figure 2

THE MURDERS DURING THE PERIOD 2015-2020 ACCORDING TO THEIR TYPE

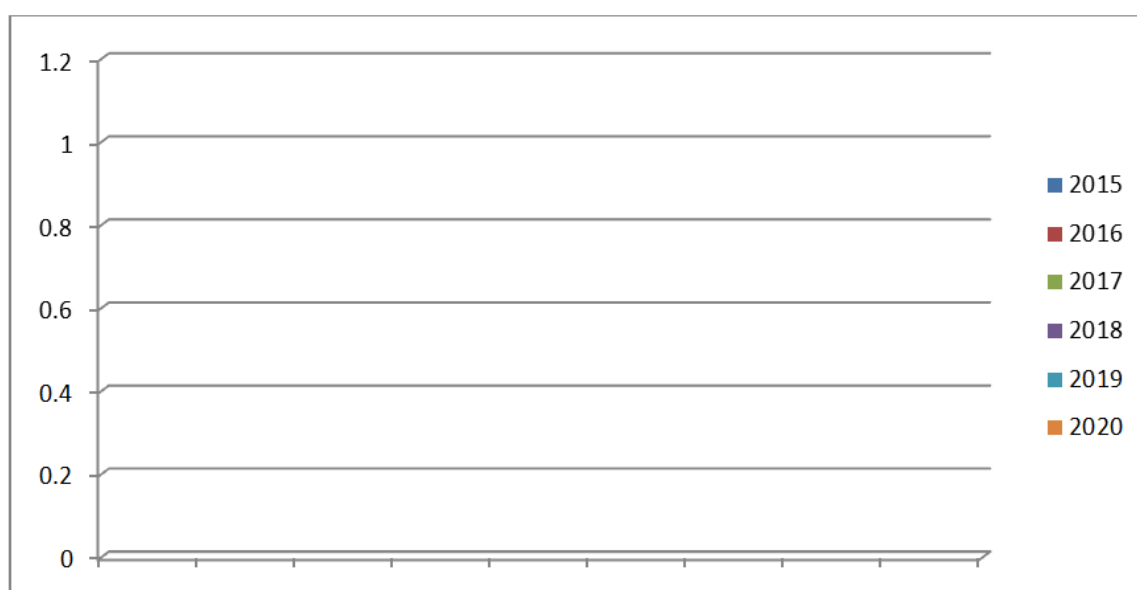


Table (2) indicates that it was found in 2015 that the number of crimes of attempted murder amounted to (464) crimes, while the crime of premeditated murder amounted to (75) crimes, while the crime of murder reached (76) crimes, while The number of beatings leading to death was (8), and as for Manslaughter crime, its number was (33), and as for the crime of Aggravated Assault, its number was (988).

In 2016, the table showed that the number of crimes of attempted murder amounted to (427) crimes, while the crime of premeditated murder amounted to (73) crimes, while the crime of murder reached (58) crimes, while The number of beatings leading to death was (3), and as for Manslaughter crime, its number was (17), and as for the crime of Aggravated Assault, its number was (880).

In 2017, the table showed that the number of crimes of attempted murder amounted to (358) crimes, while the crime of premeditated murder amounted to (56) crimes, while the crime of murder reached (68) crimes, while The number of beatings leading to death was (3), and as for Manslaughter crime, its number was (38), and as for the crime of Aggravated Assault, its number was (897).

In 2018, the table showed that the number of crimes of attempted murder amounted to (285) crimes, while the crime of premeditated murder amounted to (31) crimes, while the crime of murder reached (53) crimes, while The number of beatings leading to death was (5), and as for Manslaughter crime, its number was (32), and as for the crime of Aggravated Assault, its number was (742).

In 2019, the table showed that the number of crimes of attempted murder amounted to (294) crimes, while the crime of premeditated murder amounted to (58) crimes, while the crime of murder reached (52) crimes, while The number of beatings leading to death was (8), and as for Manslaughter crime, its number was (34), and as for the crime of Aggravated Assault, its number was (731).

In 2020, the table showed that the number of crimes of attempted murder amounted to (346) crimes, while the crime of premeditated murder amounted to (39) crimes, while the crime of murder reached (51) crimes, while The number of beatings leading to death was (9), and as for Manslaughter crime, its number was (26), and as for the crime of Aggravated Assault, its number was (658).

RELATED LITERATURE

The study of Adeyemi et al (2021) aimed to explore the spatial distribution of crime incidences in Nigeria and evaluates the association between the geographical variations and the socio-demographic determinants of crimes. The analyses were based on 2017 reported crime Statistics obtained from the Nigeria's National Bureau of Statistics. The study analysed the spatial patterns of four types of crimes (armed robbery, theft, rape and kidnapping) in relation to their geographical distributions across states in Nigeria. In contrast to the traditional regression analysis, a Poisson mixed model was formulated to incorporate the spatial dependence effects (clustering) and the specific state-level heterogeneity effects of crimes. The study modelled six explanatory variables (unemployment rate, population density, education index, Gross National Income (GNI), percentage male's population (PMP), age 18–35 years and policing structure) as the determinants of crimes in Nigeria. A full Bayesian approach via Markov Chain Monte Carlo simulation was used to estimate the model parameters. The results show that the unemployment rate was positively associated with rape, kidnapping and armed robbery, but negatively associated with theft. The results further reveal that GNI and PMP show positive correlation with all the crimes. In addition to

the risk factors of the crimes, the proportion variation attributed to clustering effect of the total variation was explained by 29.27 % in armed robbery incidents, 31.30% for theft (stealing), 27.07% for kidnapping and 41.40% in rape cases occurrence. Our approach also produces spatial predictive maps that identified areas of high crime concentration, which can assist the relevant agencies in crimes prevention, effective policing and areas needed urgent attention.

The study of Alsaeeda (2020) aimed to identify the quantitative and qualitative distribution of the crimes in the Amman Governorate for 2015 according to the security divisions and to indicate the factors affecting this distribution, as well as classify the police directorates in the Governorate by the levels of the crime, and construct of a geographical database which shows the spatial variation in the size and the type of the crime in the Governorate. The study used a descriptive research method to achieve its objectives. The Sum of Rank Index was used in the classification of police departments in the governorate by the level of crime concentration; the method of the cartographic analysis was also used through using of the Geographic Information System (GIS) technology in preparing maps which show the spatial variation of the crime between the regions of the governorate. The study results showed that there is a quantitative and qualitative spatial difference in the distribution and spread of the crime between the police departments in the Capital governorate (Amman), the results also show that the most important factors affecting the spatial variation of the crime in the governorate are: population density, population, the area of the region, and the distance from the centre of the city. The study recommended taking a package of formal procedures which aimed to reduce the high crime rates, especially in the central areas of the governorate, as well as focusing on the spatial dimensions and the geographical variables in the developing of the solutions and the proposals that aimed to reduce the crime in the governorate and combat its causes.

The study of Wang et al (2019) aimed to explore the broad patterning of property and violent crime among different socio-economic strata and across space by examining the neighborhood socioeconomic conditions and individual characteristics of offenders associated with crime in the city of Toronto, which consists of 140 neighbourhoods. Both property and violent crime data sets from the years 2014 to 2016 and census-based Ontario-Marginalisation index were analysed using spatial and quantitative methods. Spatial techniques such as Local Moran's I were applied to analyse the spatial distribution of criminal activity while accounting for spatial autocorrelation. Distance-to-crime was measured to explore the spatial behaviour of criminal activity. Ordinary Least Squares (OLS) linear regression was conducted to explore the ways in which individual and neighbourhood demographic characteristics relate to crime rates at the neighbourhood level. Geographically Weighted Regression (GWR) was used to further the understanding of the spatially varying relationships between crime and the independent variables included in the OLS model. The study results showed that property and violent crime across the three years of the study showed a similar distribution of significant crime hot spots in the core, northwest, and east end of the city. The OLS model indicated offender-related demographics (i.e., age, marital status) to be a significant predictor of both types of crime, but in different ways.

The study of de Melo et al (2018) aimed to analyse temporal and spatial patterns of crime in Campinas, Brazil, considering the relevance of routine activity theory in a Latin American context. The study used geo-referenced criminal event data, 2010-2013, analysing spatial patterns using census tracts and temporal patterns considering seasons, months, days, and hours. The study analyses included difference in means tests, count-based regression models, and Kulldorff's scan test. The study result showed that crime in Campinas, Brazil,

exhibited both temporal and spatial-temporal patterns. However, the presence of these patterns at the different temporal scales varies by crime type. Specifically, not all crime types have statistically significant temporal patterns at all scales of analysis. As such, routine activity theory works well to explain temporal and spatial-temporal patterns of crime in Campinas, Brazil. However, local knowledge of Brazilian culture is necessary for understanding a portion of these crime patterns.

The study of Chen et al (2017) aimed to investigate the impact of a floating population on residential burglary on a fine spatial scale in China. The floating population was divided into the floating population from other provinces (FPFOP) and the floating population from the same province as ZG city (FPFSP), because of the high heterogeneity. Univariate spatial patterns in residential burglary and the floating population in ZG were explored using Moran's I and LISA (local indicators of spatial association) models. Furthermore, a geographically weighted Poisson regression model, which addressed the spatial effects in the data, was employed to explore the relationship between the floating population and residential burglary. The results revealed that the impact of the floating population on residential burglary is complex. The floating population from the same province did not have a significant impact on residential burglary in most parts of the city, while the floating population from other provinces had a significantly positive impact on residential burglary in most of the study areas and the magnitude of this impact varied across the study area.

STUDY METHOD

This study based on qualitative and quantitative method. The study adopted an inductive approach to conduct a theory from data that are collected. To determine this, the study will use descriptive and analytical approach to describe Spatial Variation of Murder in Jordan during the years 2015-2020.

Data collection:

The study relied on two types of data: primary and secondary data, whereas secondary data included general statistics of the number of population, population density, and the number and type of crimes in the Province of the Kingdom of Jordan during the period (2015-2020)".

The primary data were represented by the development of a questionnaire to measure the study questions related to the murder crimes causes.

Population and Sample:

The study population includes Perpetrators of crimes in prisoners in Jordanian reform and rehabilitation centres. An intentional random sample was selected that includes only the perpetrators of murder in the various governorates.

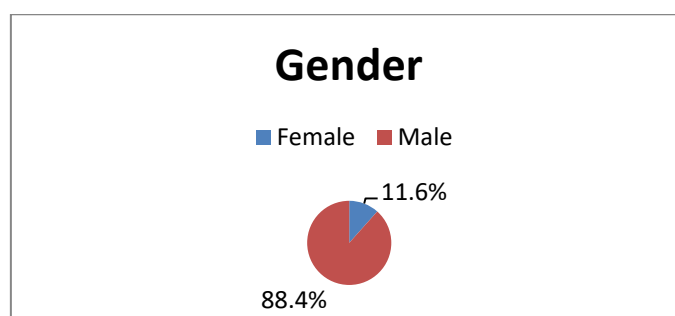
A total of 120 questionnaires were distributed 115 were collected 3 questionnaires have been neglected due to uncompleted answers, 112 questionnaires data were suitable to be tested.

The characteristics of study subjects were described using means, and frequency distribution. Categorical variables were described by frequencies and frequency distribution. Categorical variables were described by frequencies and percentages.

Table 2 CHARACTERISTICS OF THE STUDY SAMPLE INDIVIDUALS			
Variable		Frequency	Percent
Gender	Male	99	88.4
	Female	13	11.6
Social Status	Married	68	60.7
	single	24	21.4
	Divorced	14	12.5
	widowed	6	5.4
Children Number	Non	38	33.9
	1 child	14	12.5
	2 Child	20	17.9
	3 or more child	40	35.7
Age	30 years or less	37	33.0
	31-40 years	32	28.6
	41-50 years	36	32.1
	51 years or more	6	5.4
Monthly income before prison	400 JD or less	70	62.5
	400-800 JD	16	14.3
	801-1200 JD	10	8.9
	1201 JD or more	16	14.3

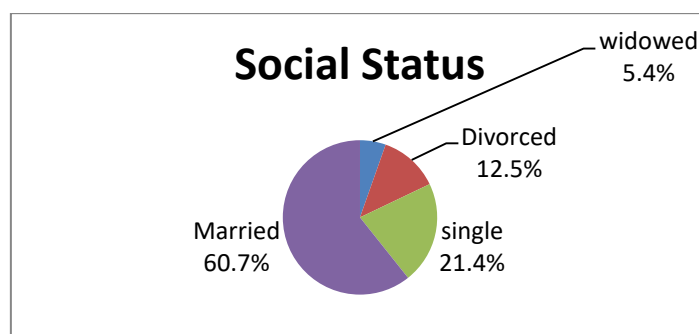
The above table showed the following:

a) Gender:



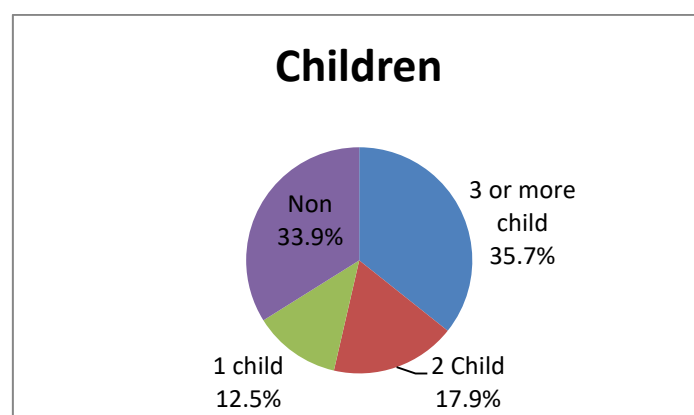
The results show that 88.4% of the samples were male and 11.6% were female.

a. Social Status:



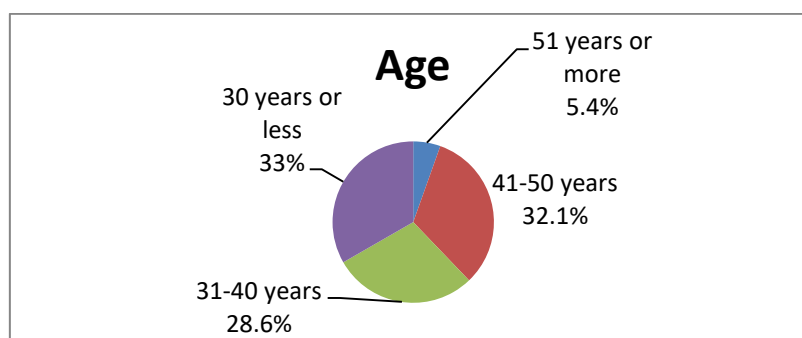
The results show that 60.7% of the samples were married, 21.4% were single, 12.5% were divorced, while the lowest percentage in favour of widowed among the study sample with 5.4%.

b. Children:



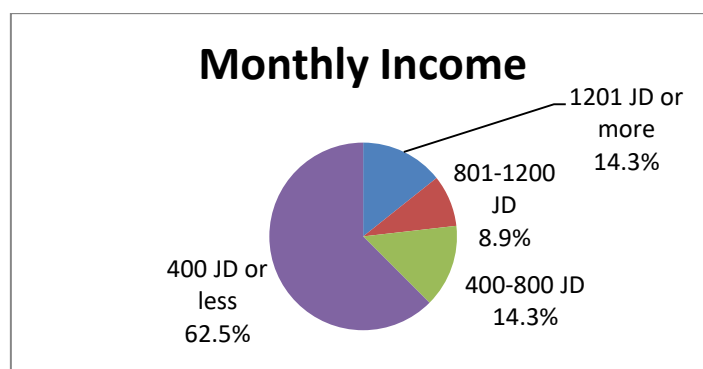
The results show that 35.7% of the samples have (3 or more children), 35.7% did not have any children, 17.9% have (2 children), while 12.5% of the samples have (1 child).

c. Age:



The results show that 33% of the samples with (30 years and less), 32.1% with (41-50 years), 28.6% with (31-40 years), and 5.4% of the samples with (51 years and more).

d. Monthly income before prison:



The results show that the monthly income of 62.5% of the samples before prison was (400 JD or less), the monthly income of 14.3% of the samples before prison was (400-800 JD) and (1201 JD or more), while the monthly income of 8.9% of the samples before prison was (801-1200 JD).

Population density, Population and Total murders during the period (2015-2020):

Table (4) indicated to the means average of Population density, Population and Total murders in Jordanian provinces during the period (2015-2020):

Table 4 THE MEANS AVERAGE OF POPULATION DENSITY, POPULATION AND TOTAL MURDERS DURING THE PERIOD (2015-2020)				
	Province	Population density	Population	Total murders
4	Amman Province	333.600	4007526.00	165.00
5	Irbid Province	739.500	1770158.00	91.00
1	Zarqa Province	204.300	1364878.00	81.00
11	Mafrq province	11.600	549948.00	11.00
6	Balqah Province	390.500	491709.00	77.00
10	Karak province	72.900	316629.00	20.00
2	Jerash Province	478.00	237059.00	17.00
12	Madabah province	173.800	189192.00	10.00
9	Aqaba province	20.600	188160.00	5.00
3	Ajloun Province	357.900	176080.00	6.00
7	Maan Province	3.800	144082.00	7.00
8	Tafilah province	41.400	96291.00	8.00

The above table showed that the highest population rate was in Amman province, which had a population of (4007526), while the population density was (333.600). The total murders in Amman province has reached (165) crimes, which is the highest rate of total murders in the provinces of Jordan.

The table also showed that Irbid Province ranked second in terms of population rate, which had a population of (1770158), while the population density was (739.500). The total murders in Irbid province has reached (91) crimes, which is the second rate of total murders in the provinces of Jordan.

In addition, the table showed that Zarqa Province ranked third in terms of population rate, which had a population of (1364878), while the population density was (204.300). The

total murders in Zarqa province has reached (81) crimes, which is the third rate of total murders in the provinces of Jordan.

The table (4) also showed that Mafraq Province ranked fourth in terms of population rate, which had a population of (549948), while the population density was (11.600). The total murders in Mafraq province has reached (11) crimes, which is the seventh rate of total murders in the provinces of Jordan.

The above table showed that Balqah Province ranked fifth in terms of population rate, which had a population of (491709), while the population density was (390.500). The total murders in Balqah province has reached (77) crimes, which is the fourth rate of total murders in the provinces of Jordan.

However, the table showed that Karak Province ranked sixth in terms of population rate, which had a population of (316629), while the population density was (72.900). The total murders in Karak province has reached (20) crimes, which is the fifth rate of total murders in the provinces of Jordan.

The table (4) showed that Jerash Province ranked seventh in terms of population rate, which had a population of (237059), while the population density was (478.00). The total murders in Jerash province has reached (17) crimes, which is the sixth rate of total murders in the provinces of Jordan.

In addition, the table showed that Madabah Province ranked eighth in terms of population rate, which had a population of (189192), while the population density was (173.800). The total murders in Madabah province has reached (10) crimes, which is the eighth rate of total murders in the provinces of Jordan.

The above table also showed that Aqaba Province ranked ninth in terms of population rate, which had a population of (188160), while the population density was (20.600). The total murders in Aqaba province has reached (5) crimes, which is the last rate of total murders in the provinces of Jordan.

The table also showed that Ajloun Province ranked tenth in terms of population rate, which had a population of (176080), while the population density was (357.900). The total murders in Ajloun province has reached (6) crimes, which is the eleventh rate of total murders in the provinces of Jordan.

Moreover, the table showed that Maan Province ranked eleventh in terms of population rate, which had a population of (144082), while the population density was (3.800). The total murders in Maan province has reached (7) crimes, which is the tenth rate of total murders in the provinces of Jordan.

Finally, the table showed that Tafilah Province ranked last in terms of population rate, which had a population of (96291), while the population density was (41.400). The total murders in Tafilah province has reached (8) crimes, which is the ninth rate of total murders in the provinces of Jordan.

RESULTS

The study results were presented in accordance to study questions as following:

What is the deference in number of murders during the period 2015-2020 according Province?

Table (3) THE AVERAGE NUMBER OF MURDERS DURING THE PERIOD 2015-2020 ACCORDING PROVINCE						
Province	Premeditated murder	Intended killing	Attempted murderer	Beating to death	Accidental killing	Total
Zarqa Province	8	15	52	0	6	81
Jerash Province	1	1	12	0	3	17
Ajloun Province	1	1	4	0	0	6
Amman Province	19	23	106	1	16	165
Irbid Province	7	10	65	1	8	91
Balqah Province	3	2	71	0	1	77
Maan Province	2	0	5	0	0	7
Al-Tafilah province	3	1	4	0	0	8
Aqaba province	0	1	3	0	1	5
Al-Karak province	3	1	15	0	1	20
Al-Mafraq province	2	1	7	0	1	11
Madabah province	4	4	2	0	0	10
Total summation	53	56	346	2	37	498

In table 3 , the crime total reached up to 498 cases with its highest rates in Amman province " 165" including 19 premeditated murder, 23 intended killing ,106 attempted murderer , 1 beating to death , and 16 accidental killing. Then , Irbid province , in total of "91" of which were 7 premeditated murder, 10 intended killing ,65 attempted murderer , 1 beating to death , and 8 accidental killing . After that Zarqa province in total of "81" in which 8 of them were premeditated murder, 15 intended killing,52 attempted murderer , 0 beating to death , and 6 accidental killing. But the lowest total of crimes is founded in Aqaba province of "5" only ; 0 premeditated murder, 1 intended killing ,3 attempted murderer ,0beating to death , and 1 accidental killing.

Is there a difference in the types of murders committed in Jordan in different Provinces?

Table (3) indicated to the average number and types of murders committed in Jordan in different provinces during the period (2015-2020) according to police departments:

Table (3) THE AVERAGE NUMBER AND TYPES OF MURDERS DURING THE PERIOD 2015-2020 ACCORDING TOPOLICE DEPARTMENTS							
	Province	Premeditated murder	Intended killing	Attempted murderer	Beating to death	Accidental killing	Total
1	Zarqa Province	8	15	52	0	6	81
2	Jerash Province	1	1	12	0	3	17
3	Ajloun Province	1	1	4	0	0	6
4	Amman Province	19	23	106	1	16	165
5	Irbid Province	7	10	65	1	8	91
6	Balqah Province	3	2	71	0	1	77
7	Maan Province	2	0	5	0	0	7
8	Tafilah province	3	1	4	0	0	8
9	Aqaba province	0	1	3	0	1	5
10	Karak province	3	1	15	0	1	20

11	Mafrag province	2	1	7	0	1	11
12	Madabah province	4	4	2	0	0	10
	Total summation	53	56	346	2	37	498

The above table showed that the Province with the highest average number of murders during the period (2015-2020) is the Amman Province, with total average of (165) crimes. The table showed that most of the murders that occurred in Amman Province were in the category of (Attempted murder), amounting to (106) crimes, while the least murders were in the category (Beating to death), which amounted to (1) crime.

The table showed that Irbid Province ranked second in terms of murders during the period (2015-2020), with a total average of (91) crimes. The table showed that most of the murders that occurred in Irbid Province were in the category of (Attempted murder), amounting to (65) crimes, while the least murders were in the category (Beating to death), which amounted to (1) crime.

In addition, the table showed that Zarqa Province ranked third in terms of murders during the period (2015-2020), with total average of (81) crimes. The table showed that most of the murders that occurred in Zarqa Province were in the category of (Attempted murder), amounting to (65) crimes, while the least murders were in the category (Accidental killing), which amounted to (6) crimes. No murder of category (Beating to death) occurred in Zarqa Governorate.

The table showed that Balqa Province ranked fourth in terms of murders during the period (2015-2020), with total average of (77) crimes. The table showed that most of the murders that occurred in Balqa Province were in the category of (Attempted murder), amounting to (71) crimes, while the least murders were in the category (Accidental killing), which amounted to (1) crime. No murder of category (Beating to death) occurred in Balqa Governorate.

The table also showed that Karak Province ranked fifth in terms of murders during the period (2015-2020), with total average of (20) crimes. The table showed that most of the murders that occurred in Karak Province were in the category of (Attempted murder), amounting to (15) crimes, while the least murders were in the category (Accidental killing), which amounted to (1) crime. No murder of category (Beating to death) occurred in Karak Governorate.

The table showed that Jerash Province ranked sixth in terms of murders during the period (2015-2020), with total average of (17) crimes. The table showed that most of the murders that occurred in Jerash Province were in the category of (Attempted murder), amounting to (12) crimes, while the least murders were in the category (Accidental killing), which amounted to (3) crimes. No murder of category (Beating to death) occurred in Jerash Governorate.

In addition, the table showed that Mafrag Province ranked seventh in terms of murders during the period (2015-2020), with total average of (11) crimes. The table showed that most of the murders that occurred in Mafrag Province were in the category of (Attempted murder), amounting to (7) crimes, while the least murders were in the category (Accidental killing), which amounted to (1) crime. No murder of category (Beating to death) occurred in Mafrag Governorate.

The table also showed that Madabah Province ranked eighth in terms of murders during the period (2015-2020), with total average of (10) crimes. The table showed that most

of the murders that occurred in Madabah Province were in the category of (Premeditated murder and Intended killing), amounting to (4) crimes, while the least murders were in the category (Attempted murder), which amounted to (2) crimes. No murder of category (Beating to death and Accidental killing) occurred in Madabah Governorate.

The table showed that Tafilah Province ranked ninth in terms of murders during the period (2015-2020), with total average of (8) crimes. The table showed that most of the murders that occurred in Tafilah Province were in the category of (Attempted murder), amounting to (4) crimes, while the least murders were in the category (Intended killing), which amounted to (1) crime. No murder of category (Beating to death and Accidental killing) occurred in Tafilah Governorate.

The table also showed that Maan Province ranked tenth in terms of murders during the period (2015-2020), with total average of (7) crimes. The table showed that most of the murders that occurred in Maan Province were in the category of (Attempted murder), amounting to (5) crimes, while the least murders were in the category (Premeditated murder), which amounted to (2) crimes. No murder of category (Intended killing, Beating to death and Accidental killing) occurred in Maan Governorate.

Moreover, the table showed that Ajloun Province ranked eleventh in terms of murders during the period (2015-2020), with total average of (6) crimes. The table showed that most of the murders that occurred in Ajloun Province were in the category of (Attempted murder), amounting to (4) crimes, while the least murders were in the category (Premeditated murder and Intended killing), which amounted to (1) crime. No murder of category (Beating to death and Accidental killing) occurred in Ajloun Governorate.

Finally, the table showed that Aqaba Province ranked last in terms of murders during the period (2015-2020), with total average of (5) crimes. The table showed that most of the murders that occurred in Aqaba Province were in the category of (Intended killing and Accidental killing), amounting to (3) crimes, while the least murders were in the category (Intended killing and Accidental killing), which amounted to (1) crime. No murder of category (Premeditated murder and Beating to death) occurred in Aqaba Governorate.

Is there a relationship between population density and crime in the Jordanian Provinces?

To test this question, multi regression used to find out if there is a relationship between population density and crime in the Jordanian provinces.

MODEL SUMMARY:

Table (5)				
MODEL SUMMARY				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.819 ^a	0.67	0.396	178.551

Table (5) showed the value of the Regression coefficient between the population density and crime in the Jordanian provinces, reaching its value (0.819) as shown, the value

of the coefficient of determination (R^2) reaches value of (0.670). That's indicates that %67 of changes in dependent variable caused by independent variables.

Table (6) represents the results of analysis between the population density and crime in the Jordanian provinces, test the significance of regression model:

Table (6) ANOVA^ATHE POPULATION DENSITY AND CRIME IN THE JORDANIAN PROVINCE					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	389061.131	5	77812.226	2.441	.154 ^b
Residual	191283.199	6	31880.533		
Total	580344.329	11			

Table (6) analysis of variance, which aims to identify the independent variable the population density and dependent variable crime in the Jordanian provinces through examined (F).

The Examined (F) value was equal to (2.441) with possibility value (0.154) which is more than the specific value (0.05), and that shows that there is no relationship exists at significance level ($\alpha \leq 0.05$).

Therefore, we reject the alternative hypothesis and accept the null:

There is no relationship between population density and crime in the Jordanian provinces.

Thus, it can be said that at least one type of murders (Premeditated murder, Intended killing, Attempted murder, Beating to death and Accidental killing) could have relationship with population density, and this is determined by a significant multiple regression test equation coefficients.

Multiple Regressions:

Table (7) shows the values of the regression coefficients for the capabilities and the statistical tests.

Table 7 COEFFICIENTS MULTIVARIATE REGRESSION SUB VARIABLES						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	228.722	79.117		2.891	.028
	Premeditated murder	-71.757	38.957	-1.612	-1.842	.115

	Intended killing	19.889	30.606	.629	.650	.540
	Attempted murder	4.468	2.995	.687	1.492	.186
	Beating to death	451.005	308.026	.764	1.464	.193
	Accidental killing	6.623	49.531	.139	.134	.898

Table (7) shows that there is no significant relationship between all types of murders (Premeditated murder, Intended killing, Attempted murder, beating to death and Accidental killing) and population density, where calculated t value was lower than its tabular value (1.984) at significance level is higher than the specific value ($\alpha \leq 0.05$).

Is there a relationship between the population and the crime in the Jordanian Provinces?

To test this question, multi regression used to find out if there is a relationship between the population and the crime in the Jordanian provinces.

MODEL SUMMARY

Table 8 MODEL SUMMARY			
Model	R	R Square	Adjusted R Square
1	.993 ^a	0.986	0.975

Table (8) showed the value of the Regression coefficient between the population and the crime in the Jordanian provinces, reaching its value (0.993) as shown, the value of the coefficient of determination (R^2) reaches value of (0.986). That's indicates that %98.6 of changes in dependent variable caused by independent variables.

Table (9) represents the results of analysis between the population and the crime in

The Jordanian provinces test the significance of regression model:

Table 9 ANOVA ^A THE POPULATION AND THE CRIME IN THE JORDANIAN PROVINCES					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.41228E+13	5	2.82456E+12	86.647	.000 ^b
Residual	1.9559E+11	6	32598379252		
Total	1.43184E+13	11			

Table (9) analysis of variance, which aims to identify the independent variable the population and dependent variable the crime in the Jordanian provinces through examined (F).

The Examined (F) value was equal to (86.647) with possibility value (0.00) which is lower than the specific value (0.05), and that shows that there is a relationship exists at significance level ($\alpha \leq 0.05$).

Therefore, we reject the null hypothesis and accept the alternative:

There is a relationship between the population and the crime in the Jordanian Provinces.

Thus, it can be said that at least one type of murders (Premeditated murder, Intended killing, Attempted murder, Beating to death and Accidental killing) could have relationship with the population, and this is determined by a significant multiple regression test equation coefficients.

Multiple Regressions

Table (10) shows the values of the regression coefficients for the capabilities and the statistical tests.

Table 10					
COEFFICIENTS MULTIVARIATE REGRESSION SUB VARIABLES					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-52494.567	80002.313		-.656	.536
Premeditated murder	95557.964	39393.424	.432	2.426	.051
Intended killing	-12447.317	30948.473	-.079	-.402	.701
Attempted murder	1986.675	3028.776	.061	.656	.536
Beating to death	177078.702	311474.254	.060	.569	.590
Accidental killing	129793.693	50085.980	.548	2.591	.041

Dependent Variable: Population

Table (10) shows that there is no significant relationship between the types of murders (Premeditated murder, Intended killing, Attempted murder and Beating to death) and the population, where calculated t value was lower than its tabular value (1.984) at significance level is higher than the specific value ($\alpha \leq 0.05$).

However, Table (10) shows that there is significant relationship between Accidental killing and the population, where calculated t value was (2.591) higher than its tabular value (1.984) at significance level (0.041) which is lower than the specific value ($\alpha \leq 0.05$).

What are the reasons and factors that led to the commission of the murder from the point of view of prisoners of reform and rehabilitation centres in Jordan?

Table (4) THE MEANS AVERAGE OF THE REASONS AND FACTORS THAT LED TO THE COMMISSION OF THE MURDER FROM THE POINT OF VIEW OF PRISONERS OF REFORM AND REHABILITATION CENTERS IN JORDAN			
	Mean	Std. Deviation	Rank
The factors and methods of family upbringing	2.9911	1.13499	Moderate
The school environment	3.1875	1.43025	Moderate
The community environment	2.7946	1.34993	Moderate
Poverty	3.7143	1.01723	High
Feeling of injustice	4.0357	.86918	High
Unemployment	2.9464	1.49377	Moderate
Personal factors (psychological nature, way of thinking, etc.)	3.8839	.80254	High

Table () indicates that the most common reasons and factors for committing the crime of murder are Feeling of injustice arithmetic mean(4.0357), followed by Personal factors (psychological nature, way of thinking, etc.) with an arithmetic mean (3.8839) at high level of estimation, followed by Poverty with an arithmetic mean (3.7143) at high level of estimation.

In order to show whether these results were significant, a (One Sample T-test) was performed. The following is an explanation of the results:

The relationship between poverty and the murder crime at a level of statistical significance ($\alpha \leq 0.05$)

T-test used to find out if there is relationship between poverty and the murder crime at a level of statistical significance ($\alpha \leq 0.05$).

Table 14 ONE-SAMPLE T TEST				
Mean	T	T tabled	Df	Sig. (2-tailed)
3.7143	7.431	1.98	111	0.00

Table (14) shows that mean was (3.7143) t-test between poverty and the murder crime, t value was (7.431) as shown, with possibility value (0.00) which is lower than the specific value (0.05), and that shows that there is a relationship between poverty and the murder crime.

Therefore, we reject the nil hypotheses and accept the alternative:

There is a relationship between poverty and the murder crime at a level of statistical significance ($\alpha \leq 0.05$).

The relationship between the sense of injustice and the murder crime at a level of statistical significance ($\alpha \leq 0.05$)

T-test used to find out if there is relationship between sense of injustice and the murder crime at a level of statistical significance ($\alpha \leq 0.05$).

Table 15				
ONE-SAMPLE T TEST				
Mean	T	T tabled	Df	Sig. (2-tailed)
4.0357	12.611	1.98	111	0.00

Table (15) shows that mean was (4.0357) t-test between sense of injustice and the murder crime, t value was (12.611) as shown, with possibility value (0.00) which is lower than the specific value (0.05), and that shows that there is a relationship between sense of injustice and the murder crime.

Therefore, we reject the nil hypotheses and accept the alternative:

There is a relationship between sense of injustice and the murder crime at a level of statistical significance ($\alpha \leq 0.05$).

The relationship between the Personal factors (psychological nature, way of thinking, etc.) and the murder crime at a level of statistical significance ($\alpha \leq 0.05$)

T-test used to find out if there is relationship between Personal factors (psychological nature, way of thinking, etc.) and the murder crime at a level of statistical significance ($\alpha \leq 0.05$).

Table 17				
ONE-SAMPLE T TEST				
Mean	T	T tabled	Df	Sig. (2-tailed)
3.8839	11.656	1.98	111	0.00

Table (17) shows that mean was (3.8839) t-test between Personal factors (psychological nature, way of thinking, etc.) and the murder crime, t value was (11.656) as shown, with possibility value (0.00) which is lower than the specific value (0.05), and that shows that there is a relationship between Personal factors (psychological nature, way of thinking, etc.) and the murder crime.

Therefore, we reject the nil hypotheses and accept the alternative:

There is a relationship between Personal factors (psychological nature, way of thinking, etc.) and the murder crime at a level of statistical significance ($\alpha \leq 0.05$).

DISCUSSION

The study reached the following:

The highest rate of crime was in Amman province " 165" followed by Irbid province, in total of "91" then Zaraqa province, the lowest total of crimes is founded in Aqapa province of "5" only ; 0 premeditated murder, 1 intended killing ,3 attempted murderer, beating to death , and 1 accidental killing that's concludes that the large cities have that highest rate of crime.

The study reaches that there is a relationship between the population and the crime in the Jordanian Provinces. There is no relationship between population density and crime in the Jordanian provinces. These results consistent with the Study of Alsaeeda (2020), which showed that there is a relationship between the population and the crime in the Jordanian Provinces, but it differs with it in the relationship between population density and crime in the Jordanian provinces. Whereas, the study of Alsaeeda (2020) concluded that there is a relationship between population density and crime in the Jordanian provinces. The study believes that this difference is due to the fact that the study of Alsaeeda (2020) was applied to areas within the capital, Amman, while the current study deals with the Jordanian governorates.

The study reached that there is a relationship between Personal factors (Feeling of injustice, Poverty, Personal factors (psychological nature, way of thinking, etc.)) and the murder crime at a level of statistical significance ($\alpha \leq 0.05$).

RECOMMENDATIONS

In light of the results, the study recommends the following:

1. Creating awareness by making brochures that would contribute to improving opportunities for community justice.
2. The need for the Public Security Directorate to study the distribution of security centres and police directorates and choose places for them that in a manner that guarantees their control.
3. The concerned authorities in the country should maintain databases related to population characteristics so that they can be referred to in the event of planning to establish or establish any security facility.
4. Determining the hot spots areas in which the crime rates are high, for the purposes of studying them and developing security solutions that guarantee the reduction of these rates.

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