

# Socio-Economic Determinants of Crime: A Case Study of District Prison of Vehari

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## Abstract

*This study is crucial for understanding the intricate relationship between socio-economic factors and criminal behavior. This research shows how various socioeconomic conditions, such as employment status, education attainment, and social inequality, influence crime rates in Vehari. Gaining insights into these determinants is essential for developing targeted and effective strategies to reduce crime and improve social stability in the district. This study investigates the determinants of crime in district Vehari by testing 15 hypotheses related to crime-related and socioeconomic factors using cross-tabulation analysis and chi-square tests. Data was collected from 169 prisoners at district jail Vehari through simple random sampling. The study reveals that property crimes are more prevalent than violent crimes, with offenders serving shorter sentences for property crimes. Social factors significantly influence both types of crime, with property crime offenders showing higher levels of regret and being less influenced by inmate interactions compared to their violent crime counterparts. In contrast, violent crime offenders tend to come from nuclear families, live in urban areas, and have somewhat better educational backgrounds. Chi-square tests confirm that crime type is significantly associated with offence frequency, sentence duration, crime motivations, education level, distrust, social deprivation, and family relationships. However, crime type is not significantly related to prisoner remorse or interactions with other inmates, family type, area of residence, or relationship with the household head.*

**Keywords:** Property Crime, Violent Crime, Cross-tabulation, Chi-Square, Prisoners

## Introduction

Individuals engage in criminal activity for social, economic, or psychological reasons, keeping in mind the axiomatic statement that “people respond to incentives.” This study focuses on violent crime and intentional and purposeful offences resulting in property loss. Burglary, dacoity, robbery, cattle theft, motor vehicle theft and snatching are among the property crimes. Violent crime typically involves the use of force or threat of force against another person, including

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offences such as assault, rape and murder. A higher prevalence of property and violent crime discourages commercial activity, eventually hindering economic progress. The planners are more concerned with identifying the causes of property and violent crime to bring about peace and stability. Criminals and law enforcement organizations were recognized by Becker's (1968) study as cohesive entities in the field of crime and economics.

The economics of crime has received little attention in Pakistan despite growing concern over the high crime rate in the nation; most studies have used country-level data to determine socioeconomic factors of the crime rate. Economists contribute to this discipline by identifying potential determinants that impact the magnitude of crime rates in different societies (Omotor, 2010; Khan et al., 2015; Shah & Kanwal, 2021). However, the crime rate is more sensitive to the geographic boundaries of nations. Studies that employ state, provincial, and district data to examine this specific issue are also available (e.g., Jabbar & Mohsin, 2013). Due to the significant regional variations in these characteristics, it is necessary to determine the various socioeconomic aspects related to property and violent crime at the district level in Punjab. Punjab has been the subject of this study due to its greater percentage of violent and property-related crimes. Property crime is more likely to be reactive to a society's state of law and order due to social, economic, and demographic reasons (Becsi, 1999).

People in Punjab are experiencing mental distress, frustration, and insecurity as a result of the rising rate of property and violent crime, necessitating immediate attention. This study aims to identify the variables that lead to property and violent crime in the Vehari district of Punjab. Punjab is Pakistan's largest province with the most criminal cases filed. From 408283 in 2016 to 544288 in 2020—all reported crimes in Punjab—there has been a sharp increase. Approximately 562328 criminal cases have been registered in Punjab during the first nine months of 2022 (Gull et al., 2021).

When examining crime as an explanation, it is important to note that it is not solely an individual-based phenomenon. While unique characteristics are significant, most of them are learned from the surroundings in which people live. Positive and negative behavior is influenced by the people one interacts with and the living conditions in a specific location. The observation is made in opposition to academics who emphasize that human behavior is a biological phenomenon and links criminal behavior to the personal biology of the perpetrator. Upon reviewing the scenario with documented facts in mind, our research indicates that Pakistani citizens who reside in rural areas are more likely than those who do so to become involved in criminal activities. It is known that interactions between the socio-ecological system and criminal behavior are related. People do not have the necessary resources to succeed due to the quickly advancing "IT" technology, and this inequity breeds disobedience, malfunctions, and, ultimately, criminal behavior (Mooney, 2011).

Many contemporary academics contend that undesirable, avoidable behaviors committed by those who unjustly get into problems and stay there by not taking the initiative and blaming others for their failures are the root causes of poverty. Furthermore, there are instances where powerful people create laws and policies that benefit their group, discriminating against Pakistan's lower class and so-called middle class and preventing them from rising higher in society. They deal with issues including homelessness, low income, inadequate housing, inadequate education, and subpar clinical treatments, among others. They become frustrated as a result, and this frequently leads to criminal and delinquent behavior. Unfavorable conditions exist in Pakistan's major cities (Eglin, 2006).

Inflation, poverty, and unemployment are the three primary economic crime indicators. These three factors account for the majority of Pakistan's high crime rate. An indicator of earning

potential in the labor market is the unemployment rate. As in Pakistan, there are fewer options to generate money when the unemployment rate is high. Numerous studies show a connection between crime and unemployment in the community (Fielding & Fielding, 2000).

Pakistan is experiencing a population boom, which has made it quite challenging for job seekers to find work. However, the nation's rapidly deteriorating law and order situation is the main cause of the unemployment problem. Foreign Direct Investment (FDI) has significantly decreased in recent years, owing mostly to the nation's fragile political and economic systems and weak law and order situations, and has historically been the main source of employment possibilities. Due to their mistrust of the nation's political and financial systems, foreign investors are hesitant to make new corporate investments. Therefore, new job openings have yet to be created, but the number of people looking for work is always growing. In addition to FDI, agriculture faces challenges such as water scarcity, climate change unpredictability, and technical lag, which exacerbates unemployment (Siegel, 1998, 1999).

The primary reason for unemployment is the agricultural deficit, as most people who live in rural areas are the most affected. As a result, some turn to crime to support their families and themselves. Industrial employment is another field that has historically been good for those with education and talent and those with only a high school education. However, this, too, is unable to adequately meet the needs of job seekers due to a decline in demand and a severe energy constraint that leads to a production shortfall. Furthermore, the global economic downturn and the US war on terror have had a detrimental impact on our economy. This leads to significant financial resources being allocated to the army and other military-related endeavors. Foreign investments have been further discouraged by the international defamation of Pakistan.

Citizens now have much fewer employment opportunities. In addition to what has already been mentioned, the government must invest more money in research and education to fill the necessary positions. This reflects the bad economic policies that hurt the impoverished and other poverty-related problems, such as criminality. Growing numbers also contribute to society's extreme unease, brought on by low-quality education, feudalism, and corruption. As a result, society's low income leads to poor savings and a low living level. People who have low incomes and high costs due to inflation are more likely to become criminals to meet their necessities.

This study is divided into five sections. The first section provides an overview of crime in Pakistan. The section focuses on the literature review of the existing studies related to the determinants of crime. The third section highlights the data and methodology used in this study. The fourth section presents the results and discussions, and the last section provides the conclusions of the study and policy recommendations.

## Literature Review

This section reviews the literature on previous studies. Sheikh et al. (2022) investigated the socioeconomic determinants of crime in District Multan using cross-sectional data from 172 male prisoners selected through simple random sampling. The study employed cross-tabulation analysis and chi-square tests to evaluate the hypotheses. Their findings highlighted the influence of various factors on crime, including the nature of the crime, social, political, and psychological aspects, criminal associations, family dynamics, rural residence, low education, lack of support, social deprivation, and employment in the private sector. Sheikh et al. (2021) utilized cross-tabulation analysis to identify the socioeconomic determinants of crime in Women Jail Multan. The study analyzed cross-sectional data from 70 female prisoners, selected using a simple random sampling

technique. Chi-square tests were employed to evaluate the hypotheses. The results revealed that crime-related and socioeconomic factors significantly influence the type of crime.

Umair (2019) investigated crime factors in Pakistan using annual time series data from 2006 to 2016. The study employed correlation and regression analyses to explore potential relationships between variables. The findings indicated that net income, inflation, and GDP had a negative effect on crime, while population growth had a positive effect. Amin and Ahmad (2018) examined the impact of ethnic diversity, social exclusion, and economic factors on crime in Pakistan, using time series data from 1970 to 2015. The study applied the autoregressive distributed lag (ARDL) approach to determine the long-run relationships between variables. The results showed that GDP per capita and population density negatively impacted total, property, and violent crime. In contrast, ethnic diversity, social exclusion, and deterrence positively influenced these crime categories.

Cerulli et al. (2018) explored economic factors affecting crime using panel data from 50 US states between 2000 and 2012. The study applied the Random-Coefficient Regression (REC) model. Findings indicated that education positively impacts crime, while wages have a negative effect. Brosnan (2018) analyzed socioeconomic factors influencing property and violent crime in Ireland using time series data from 2003 to 2012. The Generalized Method of Moments (GMM) technique was employed for estimation. The study found that when property crime was the dependent variable, factors such as detection rate, relative income, unemployment ratio, and the male population had a negative impact, while income had a positive effect. Conversely, detection rate and income had a positive impact on violent crime, whereas relative income, unemployment ratio, and the male population had a negative effect.

Kizilgol and Selim (2017) investigated the social, economic, and demographic factors of crime in the EU28 and Turkey, using panel data from 2001 to 2010. The study employed a count data model (Poisson model). The analysis showed that GDP per capita, inflation, unemployment rate, and urban overpopulation positively impacted crime, while enrollment rate and the number of police negatively affected crime. Hassan et al. (2016) analyzed the relationship between poverty, urbanization, and crime in Pakistan using annual time series data from 1978 to 2011. The study applied the autoregressive distributed lag (ARDL) model. Findings indicated that poverty, inflation, economic growth, and urbanization positively impacted crime.

Tarling and Dennis (2016) examined the relationship between crime and socioeconomic conditions in 322 local authorities in England. The study used a multi-level model and considered variables such as unemployment, the Index of Multiple Deprivations (IMD), average house prices, young people, resident population, and transient population. The study found that the resident population negatively impacted property and violent crime, while unemployment, IMD, young people, and transient population had a positive impact. Average house prices had a positive impact on property crime and a negative effect on violent crime. Janko and Popli (2015) explored the relationship between unemployment and crime in Canada using time series data from 1979 to 2006. An error correction model was used to analyze the relationship between variables. The study found a significant relationship between unemployment and crime at regional and national levels.

Han et al. (2013) investigated factors influencing property and violent crime in England and Wales using time series data from 1992 to 2008. The study employed the Generalized Method of Moments. It included three types of property crime (burglary, theft, and handling fraud) and three types of violent crime (violence against the person, robbery, and sexual offences). Results showed that detection rate, prison population, unemployment, and young people negatively impacted property crime, while real earnings, lagged crime, and the Gini coefficient positively impacted it.

For violent crime, detection rate, unemployment, and Gini coefficient negatively impacted it, while lagged crime, prison population, real earnings, and young people had a positive impact. Baharom et al. (2012) analyzed the relationship between crime and economic variables using panel data from 21 countries from 1960-2001. The study employed panel-error-correction-based cointegration methods. Results indicated that GDP per capita, political violence, and domestic political violence hurt crime, while interest rates, inflation, and unemployment positively impacted crime. The study suggested that policymakers should focus on reducing these factors to decrease crime rates.

The reviewed literature comprehensively explains crime factors across different regions and periods. Economic variables such as income, GDP, and unemployment consistently emerge as significant predictors of crime, showing varied impacts across studies. Social factors like ethnic diversity and urbanization also play crucial roles. Methodologically, diverse approaches, including regression analysis, ARDL models, and panel data techniques, contribute to nuanced insights into crime dynamics.

## Data and Methodology

We have utilized cross-sectional data to analyze socioeconomic factors that influence crime in the Vehari, Punjab province, Pakistan district. The data was gathered from district jail Vehari. A random sample technique was used to choose a sample of 169 inmates from the district jail of Vehari. Information was collected through personal interviews, with all questions being close-ended. The study employed the cross-sectional tabulation to represent the frequency and the chi-square method to test the following hypotheses:

### Crime Related Factors

H1: There is a relationship between the type of crime and the frequency of offences committed by prisoners.

H2: The type of crime correlates with the average duration of sentences.

H3: The type of crime is linked to the motivation behind it.

H4: There is an association between the type of crime and the level of remorse prisoners express.

H5: Interaction with other inmates, influenced by the type of crime, encourages further criminal behavior.

### Socioeconomic Determinants

The prisoners' family type correlates with the kind of crime committed.

H7: The type of crime is linked to the area of residence.

H8: The type of crime relates to prisoners' relationships with the head of their household.

H9: There is a relationship between the type of crime and the prisoners' educational background.

H10: There is a correlation between a lack of trust and the type of crime.

H11: The non-observance of religious practices is connected to the type of crime.

H12: A lack of support is related to the type of crime.

H13: Social deprivation is linked to the type of crime.

H14: Job status correlates with the type of crime.

H15: Poor family relationships are related to the type of crime.

Cross tabulation, also known as contingency table analysis, is a method to analyze the relationship between two or more categorical variables. It involves creating a matrix (contingency table) that

displays the frequency distribution of the variables. The table allows researchers to observe the variables' interactions and identify patterns, trends, and possible associations.

The Pearson chi-square test is applied to categorical data sets to evaluate the likelihood of any observed differences between the sets being due to chance. The test compares the observed frequencies in each category of a contingency table with the frequencies expected under the assumption of no association between the variables. The Pearson chi-square test statistic is calculated using the formula:

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i} \quad (1)$$

Where,  $\chi^2$  is the chi-square test statistic,  $O_i$  represents the observed frequency for the  $i$ -th cell in the contingency table and  $E_i$  is the expected frequency for the  $i$ -th cell under the null hypothesis of no association between the variables.

## Results and Discussions

This section provides the results and discussion of the study.

### Crime-Related Factors

This subsection examines the relationships between various crime-related factors and the type of crime inmates commit. Table 1 and figure 1 illustrate the distribution of offenders based on the frequency of offences committed, categorized by type of crime: property crime and violent crime.

**Table 1: Type of Crime and Frequency of Offenses Committed by Prisoners**

		Frequency of Offenses Committed by Prisoners			Total
		1 to 5	5 to 10	11 and above	
Type of Crime	Property Crime	90	11	7	108
	Violent Crime	58	2	1	61
	Total	148	13	8	169

Property crimes account for a larger proportion of offenders compared to violent crimes across all frequency categories, indicating varying patterns in criminal behavior among the studied inmates.

**Figure 1: Type of Crime and Frequency of Offenses Committed by Prisoners**

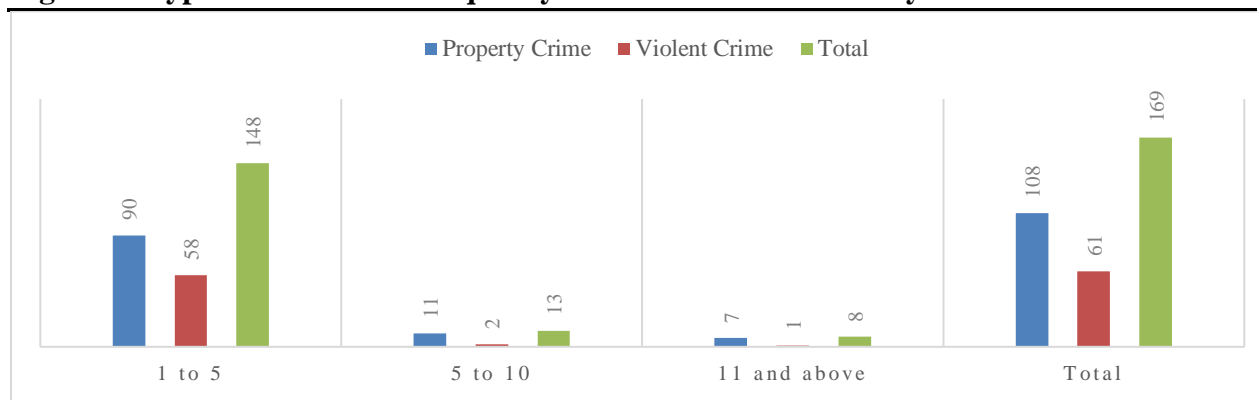


Table 2 shows the result of Pearson chi square test to determine the interdependence between type of crime and frequency of offenses committed by prisoners. The linear-by-linear association test indicates a significant relationship between the frequency of offenses and the variables and type of crime. The Pearson chi-square and likelihood ratio tests also suggest some evidence of a relationship, with p-values of 0.084 and 0.059, respectively. The frequency of offenses committed by prisoners and the type of crime (property crime and violent crime) are correlated because a higher frequency of offenses may indicate a greater propensity for individuals to reoffend, leading to repeated engagement in both violent and property crimes.

**Table 2: Chi Square Test**

	Value	Df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	4.962	2	0.084
<b>Likelihood Ratio</b>	5.65	2	0.059
<b>Linear-by-Linear Association</b>	4.504	1	0.034
<b>N of Valid Cases</b>	169	---	---

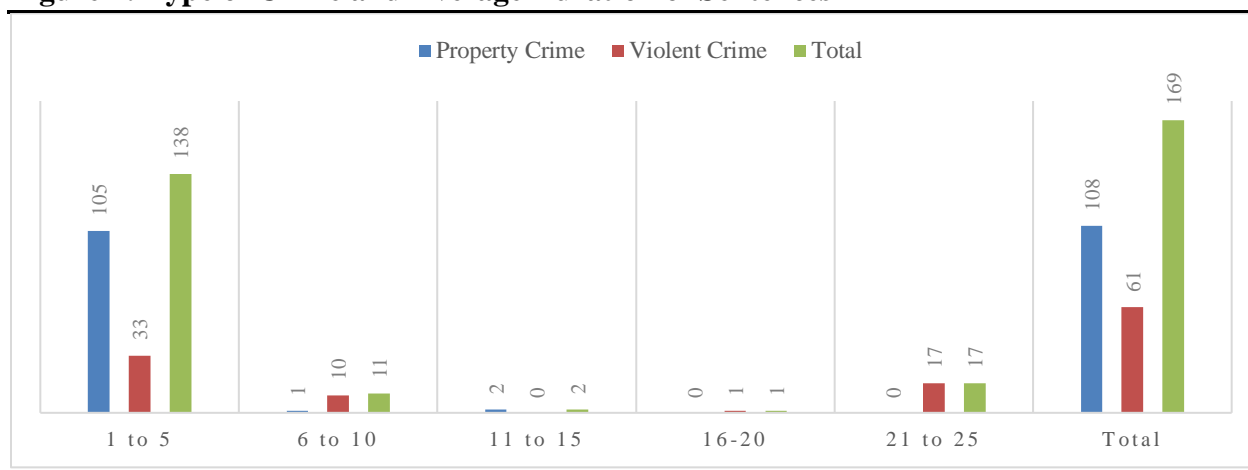
Table 3 and Figure 2 illustrate the distribution of sentence durations across different types of crimes. Property crimes predominantly result in shorter sentences, whereas violent crimes have a wider range of sentence lengths, including some of the longest durations.

**Table 3: Type of Crime and Average Duration of Sentences**

Type of Crime		Average Duration of Sentences					Total
		1 to 5	6 to 10	11 to 15	16-20	21 to 25	
Property Crime	Property Crime	105	1	2	0	0	108
	Violent Crime	33	10	0	1	17	61
<b>Total</b>		138	11	2	1	17	169

The overall trend indicates that most sentences fall within the shorter duration categories, with a notable concentration in the lowest range.

**Figure 2: Type of Crime and Average Duration of Sentences**



In table 4, chi-Square test indicate a highly significant relationship regarding the average duration of sentences and type of crime. The Pearson chi-square and likelihood ratio tests both show p-values of 0.000, and the linear-by-linear association test also reports a p-value of 0.000. This consistent result across tests confirms a significant association between type of crime and average duration of sentences. The duration of the sentence is related to crime because longer sentences can act as a stronger deterrent, reducing the likelihood of individuals committing crimes, thereby leading to a lower crime rate.

**Table 4: Chi Square Test**

	Value	Df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	56.205	4	0.000
<b>Likelihood Ratio</b>	62.516	4	0.000
<b>Linear-by-Linear Association</b>	41.978	1	0.000
<b>N of Valid Cases</b>	169	---	---

Table 5 and figure 3 provide an overview of the motivations behind different types of crimes. Property crimes are primarily motivated by social factors, followed by economic factors, with no instances of political motivation.

**Table 5: Type of Crime and Motivation of Crime**

		Motivation of Crime			Total
		Economic Factors	Social Factors	Political Factors	
Type of Crime	Property Crime	39	69	0	108
	Violent Crime	18	41	2	61
	Total	57	110	2	169

Violent crimes also mainly stem from social factors, though economic factors play a significant role, with a minimal presence of political motivations. Overall, social factors are the predominant motivation across all crimes, followed by economic factors and a very small influence from political factors.

**Figure 3: Type of Crime and Motivation of Crime**

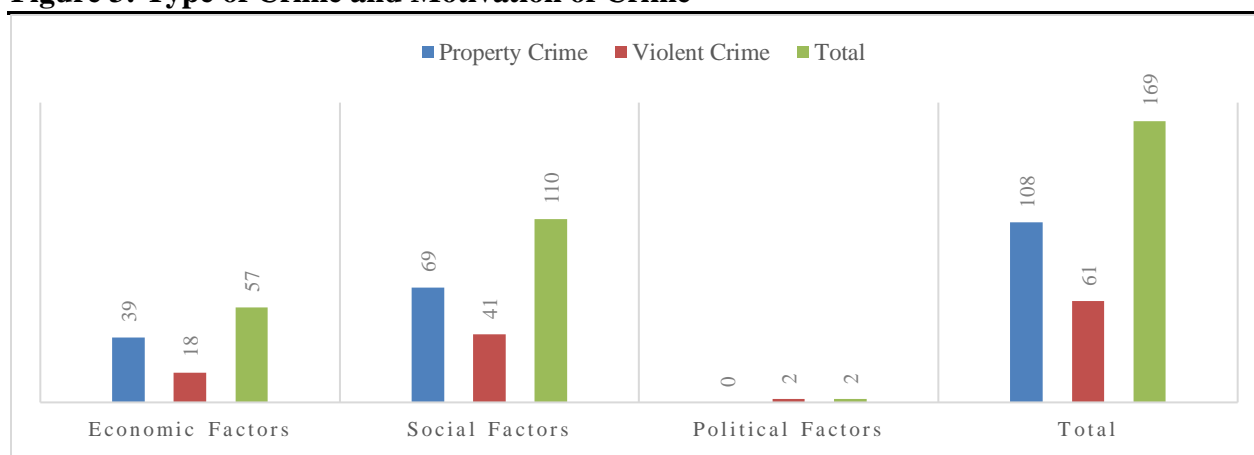




Table 6 indicates a significant association between the type of crime and its motivation. All tests confirm this significant relationship. The motivation for crime, such as social, economic, and political factors, is related to crime because higher motivation increases the pressure or incentive for individuals to engage in both violent and property crimes to achieve their goals or address grievances.

**Table 6: Chi Square Test**

	Value	Df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	6.766	2	0.034
<b>Likelihood Ratio</b>	6.996	2	0.03
<b>Linear-by-Linear Association</b>	5.556	1	0.018
<b>N of Valid Cases</b>	169	---	---

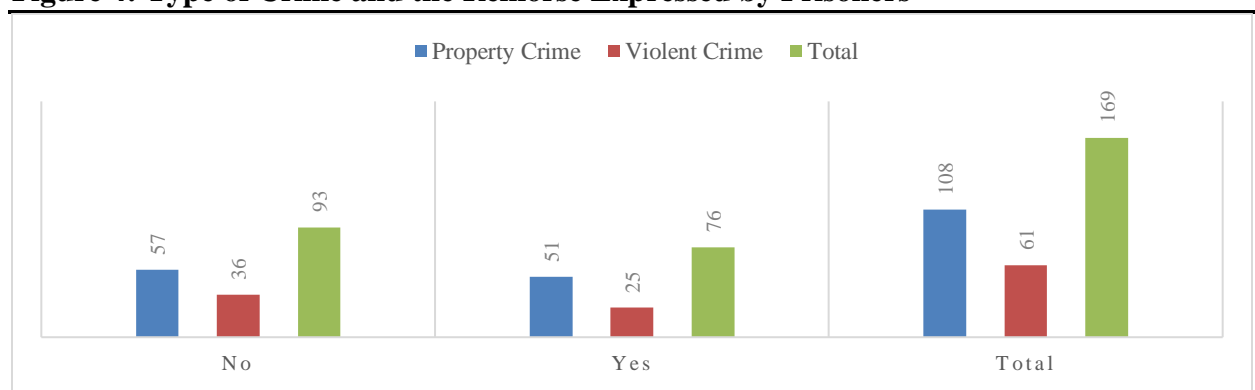
Table 7 and figure 4 show the expression of remorse among prisoners for different types of crimes. In cases of property crime, the prisoners are almost evenly split between those who feel regret and those who do not.

**Table 7: Type of Crime and Feel Regret Expressed by Prisoners**

Type of Crime	Remorse Expressed by Prisoners		
	No	Yes	Total
<b>Property Crime</b>	57	51	108
<b>Violent Crime</b>	36	25	61
<b>Total</b>	93	76	169

For violent crimes, a larger proportion of prisoners express no remorse compared to those who do. Overall, across all crimes, a greater number of prisoners do not express regret for their actions.

**Figure 4: Type of Crime and the Remorse Expressed by Prisoners**



The chi-Square test in table 8 reveals no significant relationship between repentance and the type of crime. The results from Pearson chi-Square, likelihood ratio, and linear-by-linear association tests all suggest that there is no statistically significant association between these variables.

**Table 8: Chi-Square Test of Repent and Type of crime**

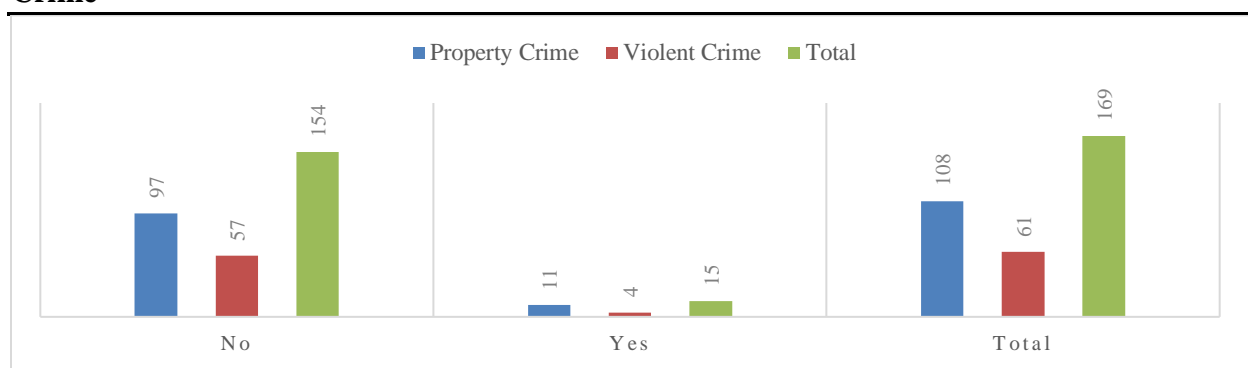
	Value	df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	.613	1	0.434
<b>Likelihood Ratio</b>	0.615	1	0.433
<b>Linear-by-Linear Association</b>	.609	1	0.435
<b>N of Valid Cases</b>	169	--	--

Table 9 and figure 5 examine whether interactions with other inmates encourage prisoners to commit crimes again. For both property and violent crimes, the majority of inmates report that their interactions do not encourage further criminal behavior.

**Table 9: Type of Crime and Interaction with Other Inmates Encourage them to Commit Crime**

		Interaction with other Inmates Encourages them to Commit Crime		
		No	Yes	Total
Type of Crime	Property Crime	97	11	108
	Violent Crime	57	4	61
	Total	154	15	169

Specifically, very few inmates who committed property or violent crimes feel encouraged to reoffend. Overall, the data suggest that inmate interactions generally do not foster a tendency to commit additional crimes.

**Figure 5: Type of Crime and Interaction with Other Inmates Encourage them to Commit Crime**

The chi-square test in table 10 shows no significant association between interactions with other people in jail encouraging criminal behavior and the type of crime. All tests indicate that this relationship is not statistically significant.

**Table 10: Chi Square Test**

	Value	Df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	0.634	1	0.426
<b>Likelihood Ratio</b>	0.662	1	0.416
<b>Linear-by-Linear Association</b>	.631	1	0.427
<b>N of Valid Cases</b>	169		

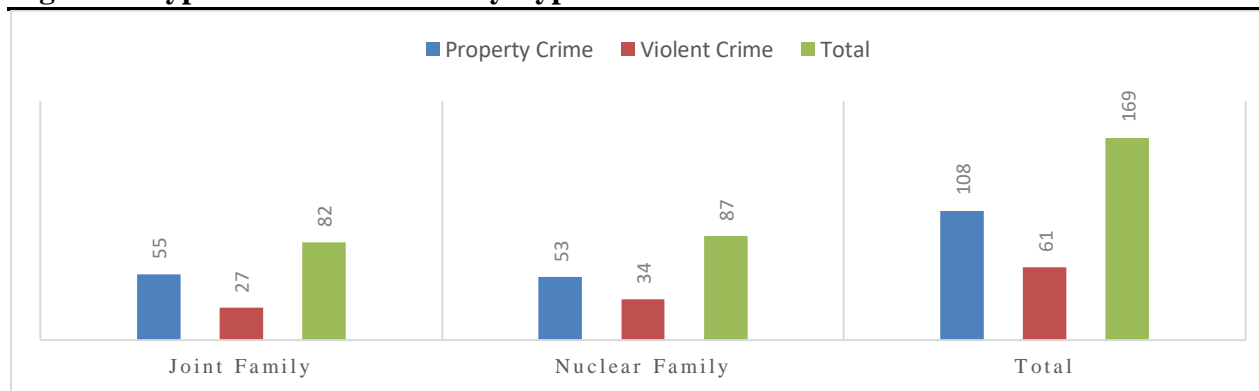
### Socio-Economic Determinants

Table 11 and figure 6 detail the family backgrounds of prisoners based on the type of crime committed. For property crimes, there is a nearly even split between inmates from joint families and those from nuclear families.

**Table 11: Type of Crime and Family Type of Prisoners**

	Joint Family	Nuclear Family	Total
<b>Type of Crime</b>			
<b>Property Crime</b>	55	53	108
<b>Violent Crime</b>	27	34	61
<b>Total</b>	82	87	169

In the context of violent crimes, a slightly higher number of inmates come from nuclear families compared to joint families. Overall, the total number of prisoners from nuclear families slightly exceeds those from joint families.

**Figure 6: Type of Crime and Family Type of Prisoners**

The chi-square test in table 12 indicates no significant relationship between the type of family and the type of crime committed. All tests show that this association is not statistically significant.

**Table 12: Chi Square Tests**

	Value	Df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	.923	1	0.337
<b>Likelihood Ratio</b>	0.937	1	0.333
<b>Linear-by-Linear Association</b>	.918	1	0.338
<b>N of Valid Cases</b>	169		

Table 13 and figure 7 illustrate the area of residence of prisoners in relation to the type of crime committed. For property crimes, a significant majority of inmates come from rural areas compared to urban areas.

**Table 13: Type of Crime and Area of Residence**

Type of Crime	Area of Residence		
	Rural	Urban	Total
Property Crime	72	36	108
Violent Crime	33	28	61
<b>Total</b>	<b>105</b>	<b>64</b>	<b>169</b>

In the case of violent crimes, there is a smaller but still notable rural majority among inmates. Overall, the data shows that most prisoners, regardless of the crime type, predominantly come from rural areas.

**Figure 7: Type of Crime and Area of Residence**

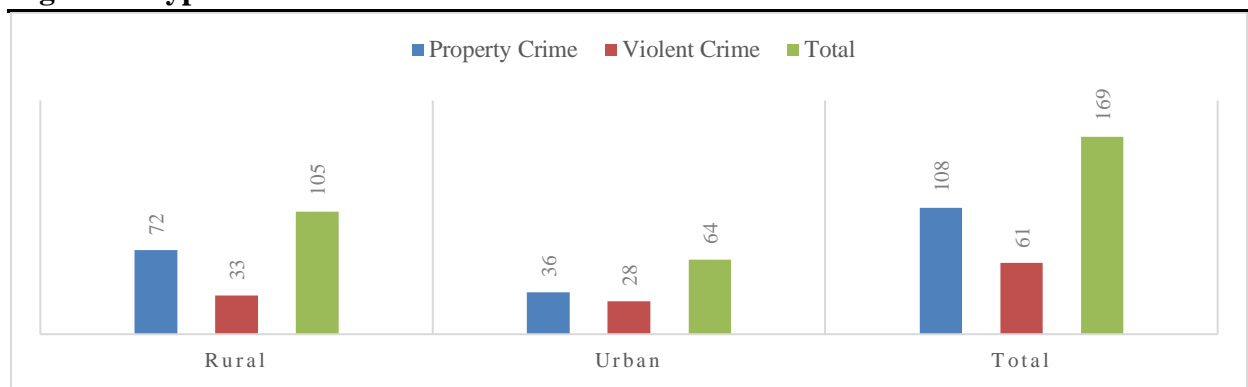


Table 14 presents the chi-square tests used to examine the relationship between the type of crime and area of residence. The tests indicate that there is significant association between these variables, confirming that they are independent of each other. The type of crime and area of residence (rural vs. urban) are correlated because different environments present varying opportunities and social dynamics. Urban areas, with higher population density and economic disparity, often have more opportunities for property and violent crimes, while rural areas might have different crime patterns due to lower population density and less economic activity.

**Table 14: Chi Square Test**

	Value	df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	2.617	1	0.106
<b>Likelihood Ratio</b>	2.596	1	0.107
<b>Linear-by-Linear Association</b>	2.602	1	0.107
<b>N of Valid Cases</b>	169	---	---

Table 15 and figure 8 explore the relationship between prisoners and the head of their household based on the type of crime committed. Among those who committed property crimes, a large

majority are the head of their household, with a smaller proportion being other household members.

**Table 15: Type of Crime and Prisoners' Relation with the Head of their Household**

		Relation with Head of Household		
		Head of Household	Other Member of Household	Total
Type of Crime	Property Crime	89	19	108
	Violent Crime	51	10	61
Total		140	29	169

Similarly, for violent crimes, most inmates are the head of their household, with a minority being other members. Overall, the data indicates that the majority of prisoners, regardless of crime type, hold the position of head of household.

**Figure 8: Type of Crime and Prisoners' Relation with the Head of their Household**

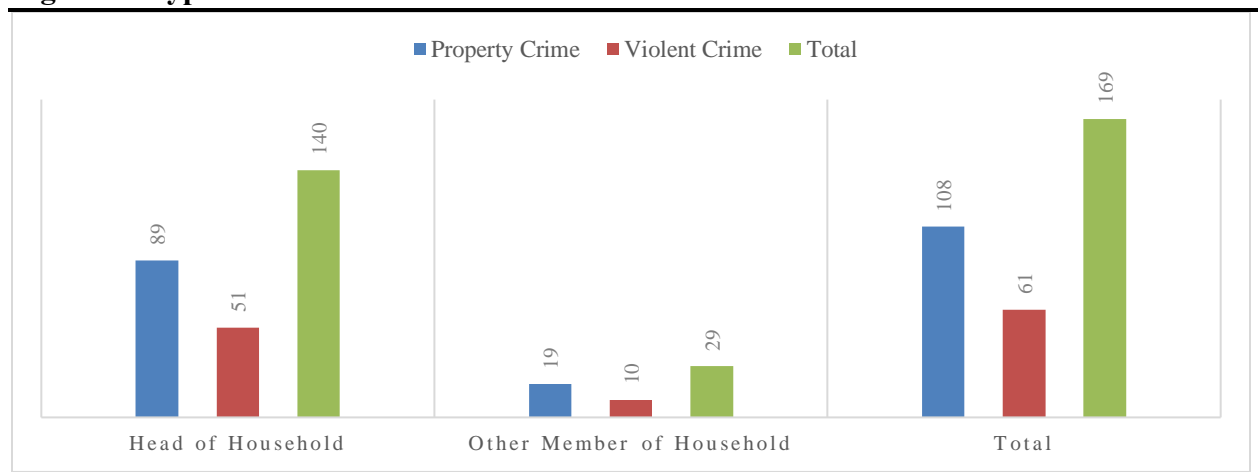


Table 16 presents the Chi-Square tests used to determine the relationship between the type of crime and the relationship with the head of household. The tests indicate that there is no significant association between these variables, suggesting that the type of crime and the relationship with the head of household are not related. This finding is consistent across all tests conducted.

**Table 16: Chi Square Tests**

	Value	df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	.039	1	0.843
<b>Likelihood Ratio</b>	0.04	1	0.842
<b>Linear-by-Linear Association</b>	.039	1	0.843
<b>N of Valid Cases</b>	169	---	---

Table 17 and figure 9 provide an overview of the educational background of prisoners categorized by the type of crime committed. For property crimes, the majority of inmates are illiterate, with decreasing numbers as the education level increases.

**Table 17: Type of Crime and Educational Background**

		Education							Total
		Illiterate	Primary	Middle	Matric	Intermediate	Graduation	Master and Above	
Type of Crime	Property Crime	47	20	9	18	9	5	0	108
	Violent Crime	9	13	13	17	6	2	1	61
	<b>Total</b>	<b>56</b>	<b>33</b>	<b>22</b>	<b>35</b>	<b>15</b>	<b>7</b>	<b>1</b>	<b>169</b>

A notable portion has only reached primary or middle school education, and very few have higher education qualifications. In the case of violent crimes, the distribution is more balanced across different education levels, though illiteracy is still significant. Overall, illiteracy and low educational attainment are prevalent among prisoners, with very few having advanced degrees.

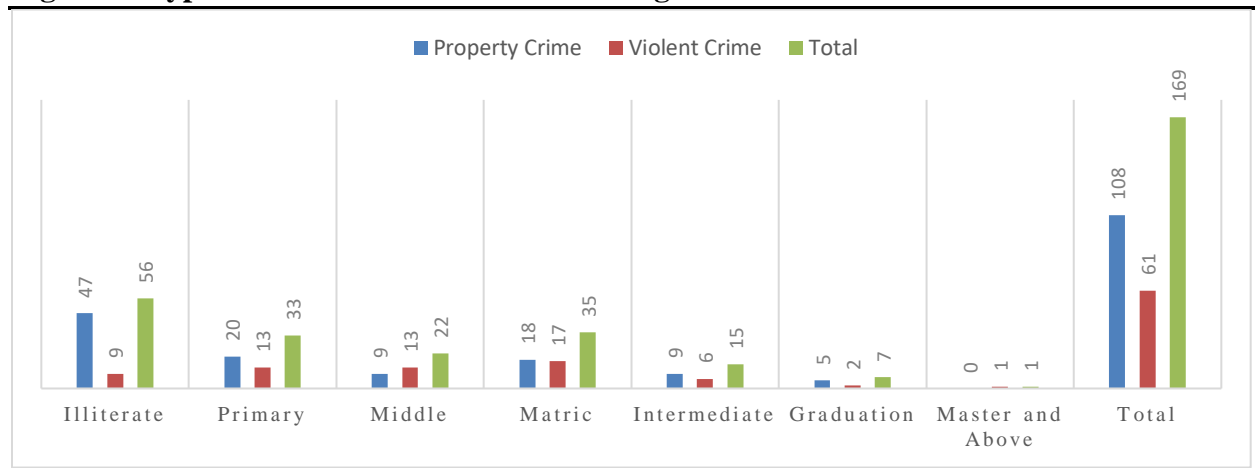
**Figure 9: Type of Crime and Educational Background**

Table 18 employs chi-square test to assess the relationship between the type of crime and educational background. The results show a significant association, indicating that the type of crime and education level are related. This finding is corroborated by the results of the other tests conducted. The type of crime and educational background are correlated because individuals with lower educational attainment may have fewer economic opportunities and weaker social networks, potentially leading to a higher likelihood of committing property or violent crimes. Conversely, those with higher education levels might have access to better opportunities and support, reducing the likelihood of engaging in such crimes.

**Table 18: Chi Square Test**

	Value	df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	19.337	6	0.004
<b>Likelihood Ratio</b>	20.587	6	0.002
<b>Linear-by-Linear Association</b>	8.093	1	0.004
<b>N of Valid Cases</b>	169	---	---

Table 19 and Figure 10 explore the relationship between the type of crime and the presence of a lack of trust among prisoners. In cases of property crime, a majority of inmates report experiencing a lack of trust, while a smaller portion does not.

**Table 19: Type of Crime and Lack of Trust**

Type of Crime		Lack of Trust		Total
		Yes	No	
Property Crime	Property Crime	75	33	108
	Violent Crime	38	23	61
Total		113	56	169

Similarly, among violent crime offenders, more prisoners express a lack of trust compared to those who do not. Overall, the data indicates that a significant number of prisoners, regardless of the type of crime, experience a lack of trust.

**Figure 10: Type of Crime and Lack of Trust**

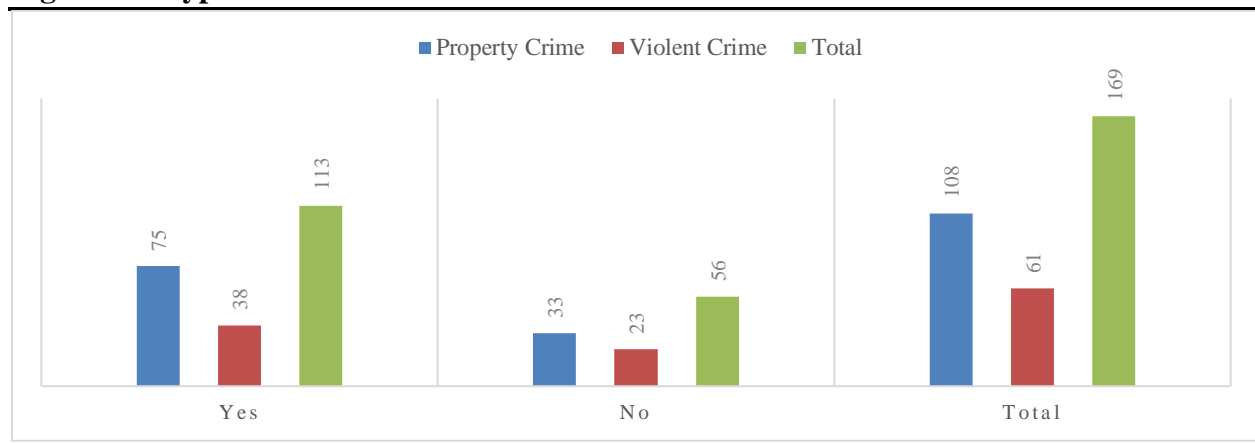


Table 20 uses the chi-square test to examine the relationship between the type of crime and lack of trust. The results are statistically significant, indicating a relationship between these two variables. The type of crime and lack of trust are correlated because individuals who experience significant mistrust or betrayal from social institutions, such as family, community, or law enforcement, may be more inclined to engage in criminal behavior. For example, those who feel alienated or distrustful of societal structures may commit property or violent crimes as a form of retaliation or survival.

**Table 20: Chi Square Test**

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.456	1	0.000
Likelihood Ratio	22.108	1	0.000
Linear-by-Linear Association	20.789	1	0.000
N of Valid Cases	169	---	---

Table 21 and Figure 11 examine whether non-observance of religious practices is considered a factor in committing crimes. Among property crime offenders, a majority attribute their actions to non-observance of religion, while a smaller number do not.

**Table 21: Type of Crime and Non-Observance of Religious Practices**

		Non-observance of Religion is a Factor of Crime		
		Yes	No	Total
Type of Crime	Property Crime	73	35	108
	Violent Crime	42	19	61
Total		115	54	169

Similarly, for violent crimes, more inmates see non-observance of religion as a factor compared to those who do not. Overall, the data indicates that a significant number of prisoners across both crime types believe that non-observance of religious practices plays a role in their criminal behavior.

**Figure 11: Type of Crime and Non-Observance of Religious Practices**

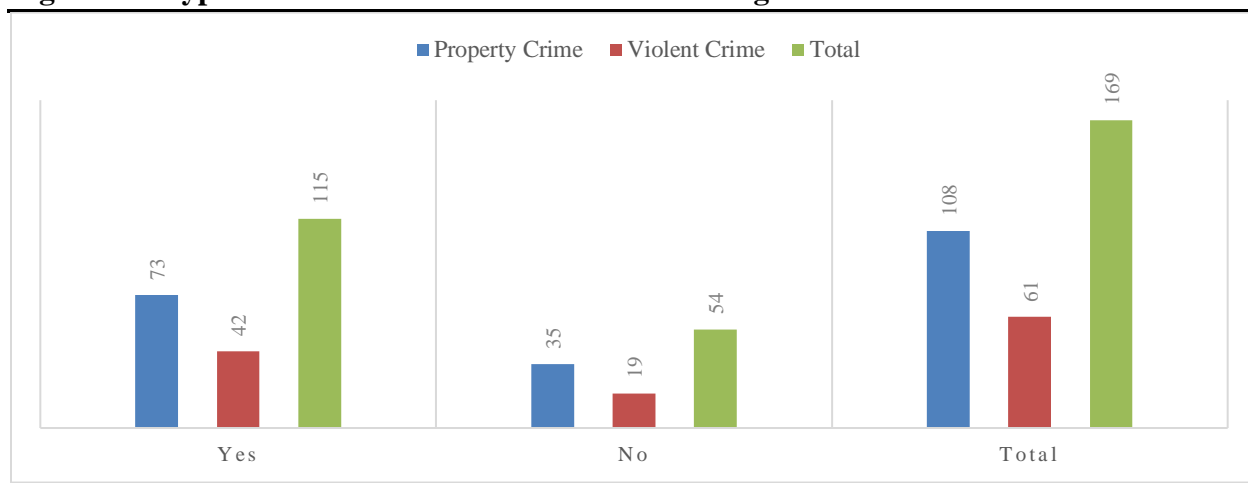


Table 22 presents the chi-square test used to assess the relationship between the type of crime and non-observance of religion. The results indicate a significant association, as the Pearson Chi-Square and all other tests show statistical significance, suggesting that type of crime and non-observance of religion are related. The type of crime and non-observance of religion are correlated because individuals who do not adhere to religious practices or beliefs might have fewer moral or ethical constraints, potentially increasing their likelihood of committing crimes. Non-observance may reduce the influence of religious teachings that often promote lawful and ethical behavior.

**Table 22: Chi Square Test**

	Value	Df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	3.841	1	0.043
<b>Likelihood Ratio</b>	3.850	1	0.035
<b>Linear-by-Linear Association</b>	3.840	1	0.041
<b>N of Valid Cases</b>	169	---	---



Table 23 and figure 12 examine the impact of lack of support on different types of crimes. For property crimes, a majority of inmates report experiencing a lack of support, whereas a smaller proportion do not.

**Table 23: Type of Crime and Lack of Support**

Type of Crime	Lack of Support		
	Yes	No	Total
Property Crime	74	34	108
Violent Crime	35	26	61
<b>Total</b>	<b>109</b>	<b>60</b>	<b>169</b>

Among violent crime offenders, there is a notable group that also experiences a lack of support, though it is less prevalent compared to property crimes. Overall, a significant number of prisoners, regardless of the type of crime, feel they have lacked support.

**Figure 12: Type of Crime and Lack of Support**

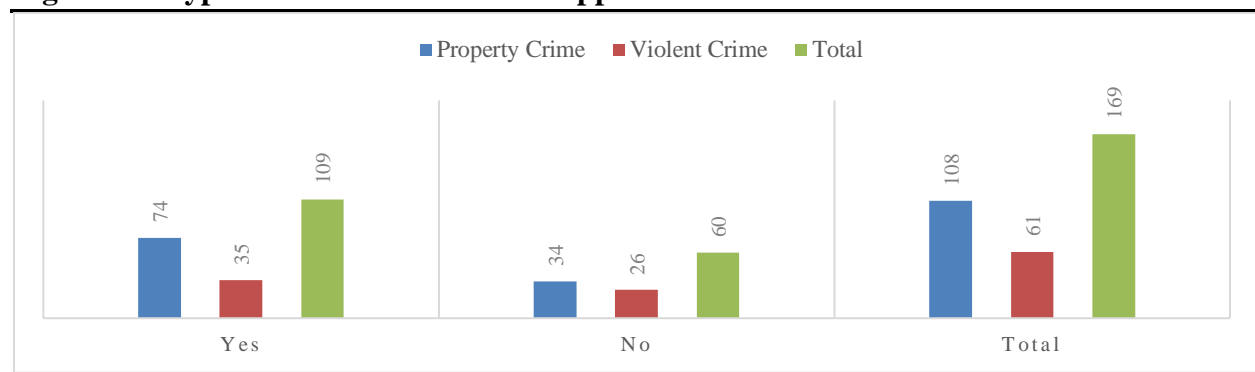


Table 24 employs the chi-square test to determine the relationship between the type of crime and lack of support. The results are statistically significant, indicating that lack of support and the type of crime are related. This finding is corroborated by all other tests conducted. The type of crime and lack of support are correlated because individuals who lack emotional, social, or economic support may be more likely to commit crimes. Those with inadequate support systems might turn to property or violent crimes as a way to address unmet needs or cope with adversity.

**Table 24: Chi Square Test**

	Value	df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	3.113	1	0.046
<b>Likelihood Ratio</b>	3.093	1	0.048
<b>Linear-by-Linear Association</b>	3.101	1	0.047
<b>N of Valid Cases</b>	169		

Table 25 and figure 13 explore the relationship between the type of crime and feelings of social deprivation among prisoners. A majority of those convicted of property crimes report feeling socially deprived, compared to those who do not.

**Table 25: Type of Crime and Social Deprivation**

Type of Crime	Feel Social Deprive		
	Yes	No	Total
Property Crime	68	41	109
Violent Crime	35	25	60
<b>Total</b>	<b>102</b>	<b>66</b>	<b>169</b>

Similarly, a significant proportion of violent crime offenders also experience feelings of social deprivation, though to a lesser extent than property crime offenders. Overall, many prisoners across both crime types report experiencing social deprivation.

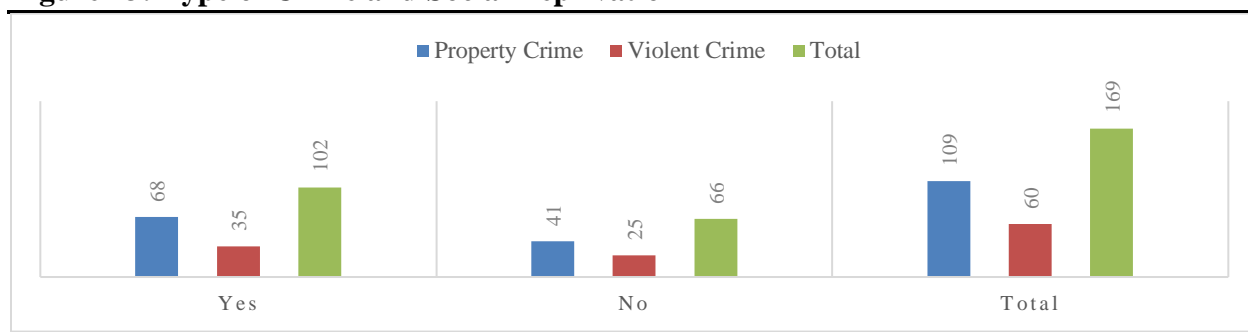
**Figure 13: Type of Crime and Social Deprivation**

Table 26 uses the Chi-Square test to evaluate whether there is a dependency between the type of crime and social deprivation. The results are statistically significant, suggesting that social deprivation and the type of crime are related. This conclusion is supported by the results of the other tests conducted. The type of crime and social deprivation are correlated because individuals experiencing social deprivation, such as poverty, lack of education, and limited access to resources, may be more likely to commit property or violent crimes as a means to address their needs or frustrations. Social deprivation often exacerbates feelings of desperation and marginalization, which can drive criminal behavior.

**Table 26: Chi Square Test**

	Value	df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	3.742	1	0.038
<b>Likelihood Ratio</b>	3.471	1	0.038
<b>Linear-by-Linear Association</b>	3.981	1	0.039
<b>N of Valid Cases</b>	169	---	---

Table 27 and figure 14 examine the job status of prisoners based on the type of crime they committed. For property crimes, the majority of inmates are unemployed, with a smaller proportion employed in private service or self-employed.

**Table 27: Type of Crime and Job Status**

		Job Status					Total
		Unemployed	Govt. service	Semi-Govt. service	Private service	Self-Employed	
Type of Crime	Property Crime	56	4	2	27	19	108
	Violent Crime	32	2	2	14	11	61
	Total	88	6	4	41	30	169

Government and semi-government positions are notably rare among property crime offenders. In contrast, violent crime offenders also show a high rate of unemployment, but there are slightly more represented in government and semi-government services compared to those committing property crimes. Overall, unemployment is a common factor across both crime types.

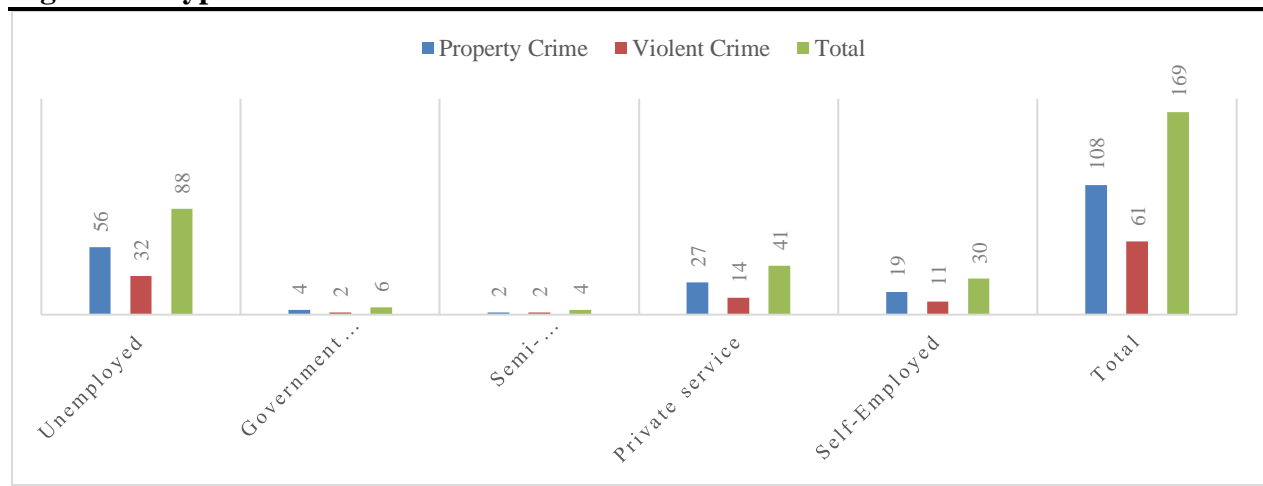
**Figure 14: Type of Crime and Job Status**

Table 28 uses the chi-square test to assess the dependency between the type of crime and job status. The results are statistically significant, indicating that job status and the type of crime are related. This finding is further supported by the results of the additional tests conducted. The type of family and job status are correlated because family dynamics can influence employment opportunities and stability. For example, individuals from stable, supportive families may have better access to job resources and stability, while those from dysfunctional or less supportive families might face challenges that impact their job status, potentially leading to higher unemployment or underemployment, which can affect their likelihood of engaging in criminal behavior.

**Table 28: Chi Square Test**

	Value	df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	20.430	4	0.000
<b>Likelihood Ratio</b>	20.417	4	0.000
<b>Linear-by-Linear Association</b>	19.006	1	0.000
<b>N of Valid Cases</b>	169	---	---

Table 29 and figure 15 explore the correlation between the type of crime and the quality of family relationships among prisoners. A majority of inmates convicted of property crimes report having poor family relationships, while fewer do not.

**Table 29: Type of Crime and Poor Family Relationship**

		Poor Family Relationship		
		Yes	No	Total
Type of Crime	Property Crime	80	28	108
	Violent Crime	37	24	61
	Total	116	52	169

Similarly, a substantial portion of those convicted of violent crimes also experience poor family relationships, though the percentage is lower than for property crimes. Overall, a significant number of prisoners across both crime types indicate having strained family relationships.

**Figure 15: Type of Crime and Poor Family Relationship**

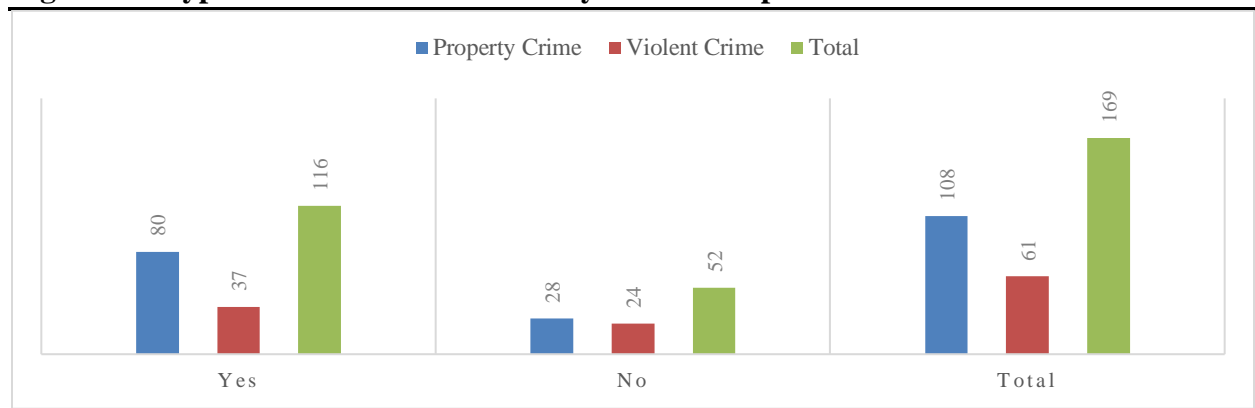


Table 30 presents the chi-square tests to examine whether the type of crime and poor family relationships are independent. The Pearson chi-square test is statistically significant, indicating an association between the type of crime and poor family relationships. This finding is corroborated by the significant results of the other tests conducted. The type of crime and poor family relationships are correlated because individuals with strained or dysfunctional family relationships may experience emotional distress or lack of support, which can increase the likelihood of engaging in both property and violent crimes as a coping mechanism or means of addressing unmet needs.

**Table 30: Chi Square Test**

	Value	df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	3.156	1	0.076
<b>Likelihood Ratio</b>	3.108	1	0.078
<b>Linear-by-Linear Association</b>	3.137	1	0.077
<b>N of Valid Cases</b>	169	---	---

## Conclusions and Policy Recommendations

The study aims to test 15 hypotheses, with 5 focusing on factors that are purely crime-related and 10 on socio-economic determinants, using cross-tabulation analysis and chi-square tests in district Vehari. Data was collected from 169 prisoners at the district jail Vehari using a simple random sampling technique. In purely crime-related factors, the cross-tabulation analysis reveals that property crimes are committed more frequently than violent crimes, with offenders typically serving shorter sentences for property crimes. Motivations behind crimes are largely driven by social factors, affecting both property and violent crimes. Although many prisoners express remorse, property crime offenders show higher levels of regret. Additionally, property crime prisoners are less influenced by interactions with other inmates to commit further offenses compared to their violent crime counterparts. In socio-economic determinants property crime offenders are more likely to come from both joint and rural families, have a weaker relationship with the head of their household, and face more social deprivation compared to violent crime offenders. They also tend to have lower educational backgrounds, higher levels of distrust, and experience more lack of support and poor family relationships. Conversely, violent crime offenders are somewhat more likely to come from nuclear families, live in urban areas, and have slightly better educational backgrounds.

Based on the chi-square test, the study's findings indicate that the type of crime is significantly associated with various factors, including the frequency of offenses committed by prisoners, the average duration of sentences, motivations behind the crime, education level, lack of trust, non-observance of religion, lack of support, social deprivation, job status, and poor family relationships. While the type of crime shows no significant relationship with remorse expressed by prisoners, it does have an insignificant association with interactions with other inmates that encourage further criminal activity, type of family, area of residence, and relationship with the head of household.

- Policymakers should consider extending the average duration of sentences to help reduce both property and violent crime rates.
- The government should promote educational initiatives in the Vehari district to lower crime rates.
- Increasing mutual trust and support among individuals can help deter criminal behavior.
- Encouraging religious observance may contribute to reducing crime rates.
- The government should provide support to socially deprived individuals to prevent them from turning to crime.
- Policymakers should develop policies that create job opportunities for unemployed individuals to reduce the likelihood of criminal activity.

## References

- Amin, S., & Ahmad, N. (2018). Ethnic diversity, social exclusion and economic determinants of crimes: A case study of Pakistan. *Social Indicators Research*, 140(1), 267-286.
- Baharom, A. H., Habibullah, M. S., & Noor, S. Z. M. (2012). International Evidence on Understanding the Determinants of Crime. *Prosiding Persidangan Kebangsaan Ekonomi Malaysia Ke VII*, 1446.
- Becker, G. S. (1968). Crime and punishment: An economic approach. *Journal of political economy*, 76(2), 169-217.
- Becsi, Z. (1999). Economics and Crime in the States. *Economic Review-Federal Reserve Bank of Atlanta*, 84(1), 38.

- Brosnan, S. (2018). The socioeconomic determinants of crime in Ireland from 2003-2012. *The Economic and Social Review*, 49(2, Summer), 127-143.
- Cerulli, G., Ventura, M., & Baum, C. F. (2018). The economic determinants of crime: an approach through responsiveness scores. *Report, Department of Economics, Boston College*.
- Fielding, N. G., & Fielding, J. L. (2000). Resistance and adaptation to criminal identity: Using secondary analysis to evaluate classic studies of crime and deviance. *Sociology*, 34(4), 671-689.
- Gull, R. H., Perveen, K., & Basit, A. B. (2021). Macroeconomic Determinants of Crime in South Asian Countries: A Panel Data Approach. *South Asian Studies*, 2(35).
- Han, L., Bandyopadhyay, S., & Bhattacharya, S. (2013). Determinants of violent and property crimes in England and Wales: A panel data analysis. *Applied Economics*, 45(34), 4820-4830.
- Hassan, M. S., Akbar, M. S., Wajid, A., & Arshed, N. (2016). Poverty, urbanization and crime: Are they related in Pakistan. *International Journal of Economics and Empirical Research*, 4(9), 483-492.
- Jabbar, S. M., & Mohsin, H. M. (2013). Economics of property crime rate in Punjab. *The Pakistan Development Review*, 221-233.
- Janko, Z., & Popli, G. (2015). Examining the link between crime and unemployment: A time-series analysis for Canada. *Applied Economics*, 47(37), 4007-4019.
- Khan, N., Ahmed, J., Nawaz, M., & Zaman, K. (2015). The socio-economic determinants of crime in Pakistan: New evidence on an old debate. *Arab Economic and Business Journal*, 10(2), 73-81.
- Kizilgol, O., & Selim, S. (2017). Socio-economic and demographic determinants of crime by panel count data analysis: The case of EU 28 and Turkey. *Journal of Business Economics and Finance*, 6(1), 31-41.
- Mooney, J. (2011). Finding a political voice: The emergence of critical criminology in Britain. In *Routledge handbook of critical criminology* (pp. 30-48). Routledge.
- Omotor, D. G. (2010). Demographic and Socio-economic determinants of crimes in Nigeria (A panel data analysis). *The Journal of Applied Business and Economics*, 11(1), 181.
- Shah, S., & Kanwal, R. (2021). Understanding Crime Dynamics: Social and Demographic Influences in Punjab, Pakistan. *Journal of Business and Economic Options*, 4(3).
- Sheikh, M. R., Ahmad, R., Bashir, F., & Sultan, S. (2022). Identifying crime and socio-economic factors related to crime in Multan district prison, Pakistan. *Pakistan Journal of Humanities and Social Sciences*, 10(2), 626-633.
- Sheikh, M. R., Tariq, M., & Sultan, S. (2021). *A Cross-Tabulation Analysis of Socio-Economic Determinants*. Global social science review.
- Siegel, J. T. (1998). Early Thoughts on the Violence of May 13 and 14, 1998 in Jakarta. *Indonesia*, (66), 75-108.
- Siegel, J. T. (1999). A new criminal type in Jakarta: the nationalization of death. *Figures of Criminality in Indonesia, the Philippines, and Colonial Vietnam*, 210-230.
- Tarling, R., & Dennis, R. (2016). Socio-Economic Determinants of Crime Rates: Modelling Local Area Police-Recorded Crime. *The Howard Journal of Crime and Justice*, 55(1-2), 207-225.
- Umair, M. (2019). The socioeconomic determinants of crime in Pakistan. *Budapest International Research and Critics Institute-Journal*, 2(3), 1-6.