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The Impact of Unemployment on Theft: A Case Study of the Punjab Prisons

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Abstract

The present study explores the relationship between unemployment and theft through a comprehensive survey of 30 prisons of Punjab, the most populated province of Pakistan. A sample of 481 respondents was selected including both juveniles and adults with stratified random sampling technique. Logistic regression is used to find out the impact of unemployment on theft. The effect of other socio-economic demographic variables has ‘ been examined. The main findings of the research reveal the existence of a significant positive relationship between unemployment and theft and indicate the impact of unemployment on theft in Punjab.

Keywords: Theft, crime, prisoner, unemployment, poverty

Introduction

Every society in the world faces numerous economic, social, and political problems and it is virtually impossible for any nation to achieve the goal of economic development in the presence of such constraints. The presence of both crime and unemployment in society pose a serious threat to economic development. The genesis of criminal behavior is quite old as it is linked to the evolution of humankind. Similarly, the evil of unemployment is another important factor hindering the path to economic development. The nexus between crime and unemployment has always been an area of investigation for researchers but producing different results.

Crime is a disease affecting the overall economic, social and political health of a country. It is a leading cause of uncertainty and distress in almost every society. It levies colossal pecuniary and emotional damage to the individuals of the society. Crime is as an act of human demeaning or injurious to others that the state is vaulted to stop. It provides the unusual person accountable for a penalty as a result of proceedings commenced by the state organs allocate to determine the environment, the degree and the legal penalty of that person’s unfairness.

Participation in criminal activities results in both cost and benefit. The gain in involvement in crime is apparent which is in the form of net benefit whereas both

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the offenders and non-offenders experience the cost of committing a crime. The net outcome of the cost associated with delinquent behavior is the decline in a social, psychological, economic and spiritual condition. Besides individuals, the society itself also becomes a victim of criminal activities resultantly there is a considerable increase in financial expenditures on both criminal justice system and prisons. In brief, *"crime affects large segments of society and creates a climate of fear and insecurity that impairs the quality of human life, impedes harmonious development and disrupts public peace and tranquility*" (Mahmood & Cheema, 2004).

The pioneering work in the field of economics of crime was done by Becker (1968) and Ehrlich (1973). Becker (1968) has altered the way of thinking about delinquent behavior. His model states "some individuals become criminals because of the financial and other rewards from crime compared to legal work, taking account of the likelihood of apprehension and conviction, and the severity of punishment."Becker's publication has discovered a new way of thinking about criminal behavior. The emergence of new offshoot "economics of crime" has become a separate discipline for research.

The evil of unemployment is extremely injurious to macroeconomic stability. The unemployment situation in an economy instigates unemployed individuals to involve in crime for financial benefits. The worsening conditions in the legal labor market influence are increasing criminal activities. Various studies have confirmed this.

In other words, the country's crime rate is affected by fluctuations in the labor market. If the proportion of unemployed people increases in the labor force, the legal earning opportunities go down leading to accelerating the criminal activities of the jobless individuals. The involvement in criminal activities has become a major activity for unemployed youth in many countries. The social scientists firmly believe that unemployment is the most significant reason for committing crime besides other factors. It is assumed that keeping the other factors constant, participation in criminal activities would be attractive for unemployed individuals if they have to live in poverty**.** Moreover, unemployment may also generate psychological effects thereby promotes more criminal participations (Eide, 2000).

There are two main types of crime; one is a crime against person and second is a crime against property. In Pakistan, the total reported crime includes almost 39 different types of crime. A lot of research work has been done to trace out the relationship between crime and unemployment. But the credibility of such

studies is questionable because unemployed would commit only one type of crime instead of 39 different crimes. Therefore, this research is an attempt to find out the relationship between crime and unemployment through focusing on only one type of crime, i.e. Moreover, the previous work done is based on time series data and covering the national level statistics, but this work is limited to the provincial level. Punjabis selected for research purpose being the most populated province and having a maximum number of prisoners and prisons.

The available crime statistics are not reliable and analyzing the relationship between crime and unemployment on this type of date would lead to spurious results. The alternate way is to explore the relationship by interviewing the prison population. The increasing prison population is another alarming sign for society. It's another way to judge the increasing crime in the society. Theft has been used in the study to represent a crime. A survey questionnaire is designed to investigate the relationship between unemployment and theft. The research work is of great significance because no extensive work has so far been done at gross root level covering 30 prisons of Punjab to explore the theft-unemployment nexus.

The major objective of the research work is to find out the nature of the relationship between theft and unemployment through a survey of the inmate of 30 different jails of Punjab. The study has selected only prisoners of theft, for the analysis. Another objective is to look at the impact of theft on unemployment in Punjab. The recidivism of unemployed prisoner would also be examined in the research.

Literature Review

Becker (1968) in his work developed a model which was based on costs and benefits. He made the utility analysis as the basis of his study. According to this mode, an individual would commit an offense only when he expects a greater utility in it. He explained that every criminal has to estimate the cost –benefit associated with his participation in the offense. The benefits are immediate monetary gain and costs are the probability of being arrested and punished. The focus of his study was related to the determination of the polices pertained to the costs of delinquent behavior.

Ehrlich (1973) concluded that unemployment affected crime rates. He observed unemployment rate in a country to be a complementary indicator of earning opportunities available in the legitimate labor market. The increase in the unemployment rate would result in the shrinkage in income earning opportunities

in the legal employment sector resultantly seducing the individuals to participate in the delinquent activities.

Myers (1983) in his study had presented an economic model of crime. He estimated the deterrence effect along with enhancement in employment opportunities for curbing crime. He interviewed jail inmates and concluded that improving legal earning opportunities is quite effective in decreasing crime along with increasing punishment. He recommended that to reduce the crime rate; there should be the provision of better employment opportunities in the legal labor market.

Crutchfield and Pitchford (1997) in their study found that two types of young adults involved more in crimes. One type was of those who were out of labor force since a long period and the second type of those youth individuals who were apprehensive that they would lose the job. The findings of the research introduced "Criminogenic effect" in those individuals who were either out of work or underemployed. Finally, the model explained a significant relation of crime with both unemployment and poverty.

Gould and Weinberg (1999) investigated the relationship between crime and the labor market. They said that the increase in crime adversely affect economic development and thereby bring a decline the wages. They found an inverse association between wages and crime.

Papps and Winklemann (1999) attempted to find out the nature of the relationship between unemployment and different crime types in New Zealand covering 12 years of sixteen regions. They employed econometric panel techniques. The main results of the study revealed that change in overall crime rate could not be explained by unemployment. However, unemployment had a significant impact on some subcategories of crime.

Raphael and Ebmer (2001) in their work explored that unemployment constantly increases the likelihood of property crimes, but researchers also narrate that "studies of aggregate crime rates generally find small and statistically weak unemployment effects, with stronger effects for property crime than for violent crime. Several studies find significant negative effects of unemployment".

Lee (2006) investigated the association of unemployment with different crime categories for Australia, Japan, and South Korea. The researchers employed time series econometrics analysis techniques and found the valid long-run relationship between unemployment and different crime types for these countries.

Gillani*et al.* (2009) undertaken a study covering a period from 1975-2007 on the relationship between crime and major macroeconomic variables including poverty. They employed conventional time series econometrical techniques were used. The study found that unemployment, inflation, and poverty had a long-run relationship with the total crime rate in Pakistan. The research findings revealed the existence of causality from crime to unemployment, poverty, and inflation.
Shamim *et al.* (2009) researched juvenile crimes with the belief that its prevalence would affect development. They interviewed 90 juvenile offenders of Borstal Jail Faisalabad. The results indicate that lack of education; poverty and adherence to the low-income group are the prime factors instigating them to commit a crime.

In another study for Pakistan, an attempt was made to trace out the nature of the relationship between unemployment and property crimes. The data for the period covering 1975-2008 was used. Being time series nature of data, Johansen Cointegration and Granger causality tests were employed to find out the nature of relationship and causality among unemployment and theft, dacoity, robbery, and cattle theft. The findings revealed that there existed a long-run relationship between unemployment and a series of property crimes as confirmed by Johansen Cointegration approach. The results of causality revealed that unemployment Granger caused theft, dacoity, robbery and cattle theft while it did not cause burglary (Gillani*et al.*, 2011).

Maddah (2013) has highlighted the importance of delinquency and its linkage with research in the field of economics of crime. The key objective of the research was to trace out the link between unemployment and theft by using provincial data covering 1997-2007. The researcher had used different types of thefts such as auto theft, cattle theft, and theft from the house, etc. On the other hand, the unemployment rate, poverty, and population density had also been incorporated into the economic model. The Gaussian Mixture Model was employed to test the relationship. The results of the study supported Becker's (1968) theoretical interpretations that adopting illegal careers depend upon the attractive economic gains as compared to legal means of getting income. There had been found a strong and significant relationship between unemployment and theft of different types in the case of Iran.

Janko and Popli (2015) designed this study to trace out the link between unemployment and crime rates for Canada. The sacred reference of Becker's (1968) study was mentioned to establish the theoretical link between variables under investigation. The imperfections in the labor market were made crime more

attractive in terms of expected gain associated with it. The researchers had used the theoretical framework proposed by Cantor and Land (1985). The proposed framework identified two types of hypotheses to support their research. One is "Motivation Hypothesis" and the second one is "Opportunity Hypothesis." The statistical data was obtained from a database of Canada for 27 years from 1979-2006 covering seven different crime series including total crime, property crime, and violent crime. The data was also covering ten provinces of Canada. The estimation showed that no long-run relationship was found between crime and unemployment. The analysis at the state level on disaggregated data showed a significant connection between unemployment and both fraud and robbery, but at regional level breaking and motor vehicle theft showed substantial association with unemployment.

A Snapshot of Crime-Unemployment Situation in Pakistan

Table 1 explains the overall crime situation in Pakistan. The statistics tell that in 1951 the total population of Pakistan was 33.58 million and the total number of reported crimes was 76519. The crime per 100 thousand populations was 228. But in 1956, the population increased to 38.12 million and reported crime statistics increased to 81124. The crime per 100 thousand populations reduced to 213 from 228 when compared it with statistics of 1951.

In 1971, the population statistics jumped to 62.88 million, and a similar increasing trend was observed in recorded crimes which reached to 129679. In 1981, the total population increased to 84.25 million with reported crime statistics of 152782 and crime per 100 thousand populations showed a downward trend and reached to181.

The era between 1981 and 1991 showed an increase of 10.19 percent in overall crimes and population growth rate was 2.94 percent. During this period, growth in crime rate had exceeded the population growth rate of 2.94 percent. This was an era of martial law, the Afghan war, Afghan flow of refugees in the country, narcotics trafficking, gun running, and kidnapping for ransom (Nadeem, 2002).

In 2010, the population growth rate reached to 2.15 percent whereas crime growth rate was 7.55 percent. The overall population growth rate for the period between 1951 and 2012 was 2.80 percent, and crime growth rate was 3.56 percent. The overall growth rate analysis showed that crime growth rate is greater than population growth in Pakistan.

Figure 1 illustrates the crime trend per 100 hundred thousand population of Pakistan covering a period between 1951 and 2012. The graph indicates an increasing trend in crime per 100 thousand population.

Table 2 explains the total estimated population of Punjab along with the total numbers of all reported crimes for the period between 1998 and 2014. It also tells about the number of crimes per one hundred populations. In 1998, the total population of Punjab was 75.091 million, and total reported crimes were 286466. The number of crimes per one hundred thousand populations was 3815. The crime per hundred thousand populations reached to 4135 in 2008. The total number of reported crimes for 1998 was 374400 and population was 90.550 million. The crime per one hundred thousand populations had increased to 4407 in 2011 with a population of 95.153 million and several crimes reported 419365. The overall population growth rate for the period between 1998 and 2014 was 1.793 percent whereas crime growth rate for the reference period came out to be 1.94 percent. The overall growth percentage shows that crime is increasing more as compared to growth in the population.

Pakistan Economic Survey defines unemployment as all persons 10(ten) years of age and above who during the period under reference were without work, i.e. were not in paid employment or self-employment, currently available for work i.e., were available for paid employment or self-employment and seeking work i.e., had taken specific steps in a specified period to seek paid employment or self-employment.

According to the definition above, about 3.53 million people were estimated to be unemployed in 2012-2013 as compared with 3.16 million in 1999-2000. Table 3also tells that the overall unemployment rate had declined from 7.82 percent in 1999-2000 to 5.95 percent in 2012-2013.

More the number of people are unemployed; more of them are likely to go for criminal activities. The advantage of crime to the unemployed is greater than that of an employed. As the unemployment rate increases, it is expected that the benefit from criminal activity would also increase. In Ehrlich's model, individuals divide their time between legal and risky illegal activities. If legal income opportunities become scarce in comparison to lucrative gains from crime, the model predicts that crime will be increased. Increased unemployment could be one such factor (Papps & Winkelmann 1999).

Table 4states the total number of recorded thefts in Punjab from 1990 to 2014.According to the data, in 1990 total numbers of reported thefts were 22244

which jumped to 40686 in 2012. The overall increase in thefts is 2.44 percent during this period

Data Collection and Methodology

There are 99 prisons in the country with the sanctioned accommodating capacity of 42670 prisoners. But in actual due to the rapid increase in crimes the prisons population reached 78328 showing an increase of 84 percent. The overpopulation of prisoners is alarming for policymakers, economists, and sociologists and think tanks. There is a dire need to either construct new jails or enhance the existing capacity of the prisons or reduce the crime rate in the country.

From the 99 jails, 32 are in Punjab. These 32 prisons in Punjab have the authorized accommodation capacity of 21527 prisoners. But there had been a substantial increase in the crime rate. Therefore, the number of prisoners, both under trials and convicted, had also increased leaving the authorized capacity completely redundant. There were 143 percent more prisoners in Punjab than the accommodating capacity in Punjab.

In Punjab, there are nine central jails in different cities of the Punjab namely, Lahore, Gujranwala, Sahiwal, Rawalpindi, Faisalabad, Mianwali, Bahawalpur, Dera Ghazi Khan, and Multan. The total number of District jails in Punjab is 19. These jails are in Lahore, Kasur, Sheikupura, Sialkot, Attock, Gujrat, Jhelum, Mandi Bahu Din, Faisalabad, Jhang, Sargodha, Shahpur, Toba Tek Singh, Bahawalnagar, Multan, Muzaffargarh, Rahim Yar Khan, Rajanpur, and Vehari. There are 2 Juvenile jails in Punjab; one in Faisalabad and other is inBahawalpur. One women jail is in Multan. Faisalabad is the only city of the Punjab where there are three jails, central, district, and juvenile. The total number of jails visited for the survey is 30.

Permission from Inspector General of Prisons, Punjab was obtained to visit the prisons. Inspector General of Prisons, Punjab permitted to visit the prisons. The study was carried out in 30 prisons of Punjab to examine the relationship and impact of unemployment on crime with particular focus on theft.

A sample of 967 inmates was drawn through a stratified random sampling technique out of a total prison population of 47815 prisoners. The target was to interview thieves, robbers, dacoits, and respondents committed white collar crime. The following formula is used for sample size.

$$n = \frac{N}{1 + N^{e2}}$$

Where n is the sample size drawn from the total number of selected population N and is acceptance error, the total sample of 967 is derived from the above formula by assuming the response distribution of 50%, 95 % confidence interval and 5 % margin of error.

A well-structured survey questionnaire was developed for this purpose. A total number of 441 respondents out of the total of 967 respondents were interviewed from 30 different jails. The social, economic, and demographic background of these 481 respondents was also investigated. A binary logistic regression model was used to find out the relationship and impact between theft and unemployment. Why individuals theft? This question leads us to build the statistical model (yes and no). Such option of individuals could be described in dummy variables that choose the value one if an individual theft and choose 0 if the individual did not commit theft. The dummy variables present options independent and independent variables. To calculate the probabilities of individuals who theft we choose a binary logit model. In the model, the dependent variable choice is described as:

$$y = \begin{cases} 1 \quad If\ individual\ who\ theft \\ 0 \quad If\ individual\ did\ not\ theft \end{cases}$$

The logistic model is determined as:

$$\log\left[P_{theft} / \left(1 - P_{theft}\right)\right] = \propto + \beta Unemployment$$

In the above equation P_{theft} is the probability of those individuals who theft, $1 - P_{theft}$ is the probability of those who did not theft whilikele $P_{theft} / \left(1 - P_{theft}\right)$ shows the odds ratio. In behaviour above equation $\log the\ the\ the\ the\ the\ the \left[P_{theft} / \left(1 - P_{theft}\right)\right]$ indicate log odd or logit. The parameter $\propto$ is constant and β shows the logistic coefficients. The parameters β give the log odds of those individuals who theft when they are unemployed. Maximum likelihood is used to get coefficient of explanatory variables.

Results and Discussion

The effect of different explanatory variables is explained with the help of Table5, Table 6& Table 7. The survey of the respondents revealed that 13 percent

of the individuals were between the age group of 12-17 years, 26 percent were in the age range of 18-23 years, and 31 percent of the respondents belonged to the age group of 24-29 years. In brief, 70 percent of the respondents were in the age group between 12 years and 29 years. The remaining 30 percent fall in the group 30-53 years. The residential background of the respondents explained that 64 percent of them were belonging to the rural area followed by 36 percent of inmates having urban belongings.

The marital status of the respondents shows that 46 percent of them married and the majority of them, i.e. 53 percent were unmarried. When the status of the family of the respondents was explored, it was found that 51 percent were heads of their respective families, 36 percent participants, 7 percent independent and 6 percent dependents. The descriptive analysis showed that out of 481 respondents, 338 were illiterate constituting 70 percent of inmates whereas there were 143 respondents were found literate. According to the respondent's data, 55 thieves were primary pass, 51 middle passes, 31 matriculates, four intermediate and three above intermediate.

Out of 481 respondents, 428 were employed and 52 unemployed at the time of their detention. The nature of employment varied from prisoner to prisoner. In case of theft, 37 percent of respondents were laborers. The 26 percent of the inmates were earning income through self-employment. They were rickshaw drivers, vendors, shop keepers, etc. The 22 percent of the respondents were private sector employees followed by 1 percent of those respondents doing public sector employment. Three percent of the respondents were businessmen.

Table 6 showed 287 inmates out of 481 were daily wage earners followed by 117 prisoners earning income through salary. Twenty-two respondents were getting financial help either from family or from friends. There were 16 prisoners stated that they had an illegal source of income. Only one respondent was getting social security benefits while 38 respondents did not disclose their sources of income. The income profile of the respondents explained that 46 percent of them were earning daily income between Rs 20 and Rs 300. The 22 percent of the respondents were earning between above Rs 300 but not exceeding Rs 400. The remaining 33 percent of the respondents were earning an income greater than equal to Rs 500.

The 25 percent of the respondents admitted that they had committed crime more than once while 75 percent of them claimed to be in prison for the first time. The majority of the respondents, i.e. 65 percent were addicted to smoking, liquor,

and drugs and 35 percent of them claimed no addiction. The 81 percent of the inmates told that they save nothing out their earned income and live hand to mouth and only 19 percent of them stated to having saving out of their income. The respondents were also asked to tell about the problems they would face after their release. The majority of them, i.e. 87 percent stated they would face problems in terms of getting employment after their release, and only 7 percent of them claimed to face no problem after their release. Six percent of the respondents were uncertain about this issue.

Table 8explains the relationship and impact of different independent variables on theft along with marginal effects. The age has a significant relationship with theft and according to marginal effects increase in age will bring a decrease in thefts. But it has no impact on theft. The rural background is positively linked with theft. It has a significant relationship along with the impact on theft.

There exist a significant relationship between unemployment and theft. The unemployment has an impact on theft which is confirmed by the value of odd ratio also significant. According to marginal effects, increase in unemployment will lead to an increase in theft by 10.4 percent. On the other hand, increase in literacy will decrease theft by 11.0 percent.

Conclusions

The main objective of the research is to identify and examine the relationship along with the impact of unemployment on crime with particular focus on theft. A comprehensive survey of the 30 prisons of Punjab is carried out for this purpose. The empirical analysis of the study tells about the relationship as well as the impact of unemployment with theft. The following conclusions have been drawn from this research study.

1. The findings of the binary logistic regression explain that the age of the respondent is an important variable instigating the individual to commit a crime. It has an inverse relationship with theft showing that with an increase in age the likelihood of committing theft declines. It is widely acknowledged that older people involve less in thefts than their young counterparts.
2. The results indicate that respondents belonging to rural areas commit more thefts when compare it with those having urban background. There exists a significant positive relationship between rural background and theft. It also has an impact on crime.

3. The analysis reveals the existence of the inverse relationship between literacy and theft. An increase in the education level of individual would enhance the chances of getting employment in the legal sector and resultantly decreasing the likelihood of committing theft.
4. The main results of the survey analysis tell that unemployment has not only a significant positive relationship with theft but also has an impact on it. The results of the study confirm the findings of the work already done in this regard. But the previous research work was carried out by using the time series data whereas this research work is done on primary data.
5. The nature of employment does have an impact on theft. The chance of committing theft for a laborer is more as compare to others. This has been confirmed by the findings of the study. Similarly, an individual earning fixed in the form salary would also involve in the theft. Last but not least, there exists a significant relationship between income and theft.

Table 1: Population and Crime Growth in Pakistan

Year	Total Population in Million	Population Growth Rate (%)	Total Reported Crime (Nos)	Crime Growth Rate (%)	Crime per Hundred Thousand Population
1951	33.58	-	76519	-	228
1956	38.12	2.57	81124	1.18	213
1961	42.97	2.42	79990	-0.28	186
1966	51.98	3.88	93633	3.20	180
1971	62.88	3.88	129679	6.73	206
1976	72.12	2.78	167032	5.19	232
1981	84.25	3.16	152782	-1.77	181
1991	112.61	2.94	403078	10.19	358
1996	127.51	2.52	330493	-3.89	259
1998	132.35	1.88	431854	14.31	326
2000	139.55	2.68	388909	-5.10	279
2005	156.04	2.26	453264	3.11	290
2010	173.51	2.15	652383	7.55	376
2012	180.71	2.05	646900	-0.42	358
Total		**2.80**		**3.56**	

***Source**: Pakistan Economic Survey (Various issues), Economic Adviser's Wing, Finance Division, Government of Pakistan and Bureau of Police Research & Development, Islamabad*

Table 2: Punjab Crime Statistics and Population

Year	Population in Million	Population Growth Rate (%)	Total Crime Recorded (Nos.)	Crime Growth Rate (%)	Crime per Hundred Thousand Population
1998	75.091		286466		3815
1999	76.893	2.40	263490	-8.02	3427
2000	78.738	2.40	241169	-8.47	3063
2001	80.155	1.80	227107	-5.83	2833
2002	81.598	1.80	247888	9.15	3038
2003	83.067	1.80	248979	0.44	2997
2004	84.562	1.80	273519	9.86	3235
2005	86.085	1.80	276411	1.06	3211
2006	87.548	1.70	342561	23.93	3913
2007	89.036	1.70	344925	0.69	3874
2008	90.550	1.70	374400	8.55	4135
2009	92.089	1.70	383379	2.40	4163
2010	93.682	1.73	386437	0.80	4125
2011	95.153	1.57	419365	8.52	4407
2012	96.676	1.60	395006	-5.81	4086
2013	98.223	1.60	389932	-1.28	3970
2014	99.794	1.60	389554	-0.10	3904
Overall Growth Rate		**1.793**		**1.94**	

***Source**: Punjab Development Statistics (Various issues)*

Table 3: Unemployed Labor Force and Unemployment Rate

Year	Unemployed Labor Force (In million) Total	Unemployment Rate (%)	Year	Unemployed Labor Force (In million) Total	Un-employment Rate (%)
1999-2000	3.16	7.82	2007-2008	2.73	5.20
2000-2001	3.22	7.82	2008-2009	2.77	5.20
2001-2002	3.55	8.27	2009-2010	3.05	5.46
2002-2003	3.62	8.27	2010-2011	3.16	5.55
2003-2004	3.52	7.69	2011-2012	3.44	5.95
2004-2005	3.52	7.69	2012-2013	3.53	5.95
2005-2006	3.32	6.50			

2006-2007	3.13	6.20

Source: *Pakistan Economic Survey 2015-16*

Table 4: Total Number of Recorded Theft in Punjab from 1990-2012

Sr. No.	Years	Theft	Sr. No.	Years	Theft
1	1990	22244	**14**	2003	22608
2	1991	22113	**15**	2004	25207
3	1992	21147	**16**	2005	31415
4	1993	22622	**17**	2006	38358
5	1994	28798	**18**	2007	31909
6	1995	26829	**19**	2008	37751
7	1996	25134	**20**	2009	38526
8	1997	29433	**21**	2010	39590
9	1998	22066	**22**	2011	42500
10	1999	22799	**23**	2012	40686
11	2000	22231			
12	2001	19603			
13	2002	18708			

Source: *Bureau of Police Research & Development, Islamabad*

Table 5: Distribution of the Respondents According to their Age, Residential background, Marital Status, Position in Family, and Educational Profile

Age	Frequency	Percentage
12-17	62	13
18-23	124	26
24-29	149	31
30-35	69	14
36-41	35	7
42-47	19	4
48-53	10	2
Above 53	13	3
Total	**481**	
Residential Background		
Rural	306	64
Urban	175	36
Total	**481**	
Marital Status		
Married	221	46
Unmarried	255	53
Any Other	5	1
Total	**481**	
Status in the Family		

Head of the family	244	51
Participant	172	36
Dependent	31	6
Independent	34	7
Total	**481**	
Educational Profile		
Literate	143	30
Illiterate	338	70
Total	**481**	
Educational Qualification		
Primary	55	11
Middle	51	11
Matriculate	31	6
Intermediate	4	1
Above Intermediate	3	1
Total	**481**	

Table 6: Distribution of the Respondents in terms of Employment and Income

	Frequency	**Percentage**
Employment Status		
Employed	428	89
Unemployed	52	11
Total	**481**	
Nature of Employment		
Laborer	178	37
Self Employed	126	26
Private Sector	106	22
Public Sector	3	1
Business	15	3
Total	**481**	
Source of Income		
Daily Wage	287	60
Monthly Salary	117	24
Friends and Family	22	5
Social Safety Nets	1	1
Illegal	16	3
Not Disclosed	38	7
Total	**481**	
Income(Rs.)		
20-100	34	7
101-200	56	12
201-300	129	27
301-400	104	22

401-500	57	12
Above 500	101	21
Total	**481**	

Table 7: Distribution of the Respondents for Recidivism, Addiction, Savings and Post Release Problems

Is the first crime?	**Frequency**	**Percentage**
Yes	362	75
No	119	25
Total	**481**	
Addiction		
Yes	315	65
No	166	35
Total	**481**	
Savings out of Income		
Yes	92	19
No	389	81
Total	**481**	
Problems after release		
Yes	418	87
No	35	7
Don't Know	28	6
Total	**481**	

Table 8: Binary Logit Model

		THEFT			
Sr. No.	**Independent Variable**	**Coefficients**	**Probability**	**Odd Ratios**	**Marginal Effect**
1	Age	-0.027	0.003	0.973	-0.006
2	Rural background	0.388	0.014	1.474	0.082
3	Married	0.216	0.262	1.241	0.046
4	Head of Family	-0.022	0.910	0.978	-0.005
5	Literate	-0.519	0.021	0.595	-0.110
6	Unemployment	0.490	0.000	1.632	0.104
7	Labourer	0.028	0.870	1.028	0.006
8	Salary	0.265	0.153	1.304	0.056
9	Income	-0.001	0.030	0.999	0.000
Log Likelihood					-517.47621
LR Chi					124.71 (0.0000)
Pseudo R-Squared					0.1075
No. of Observation					481

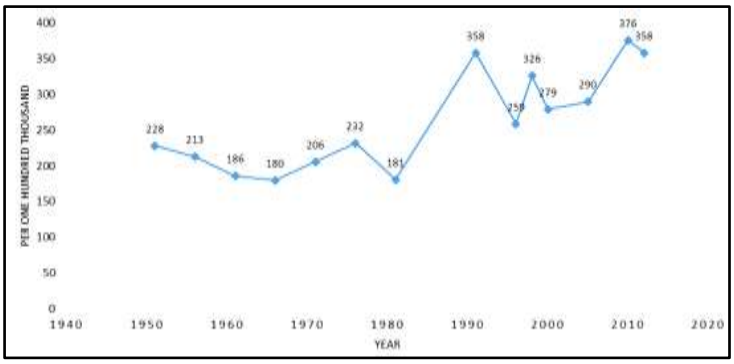

Figure 1: Crime per hundred thousand population

References

Becker, G. S. (1968). Crime and punishment: An economic approach. In *The Economic Dimensions of Crime* (pp. 13-68). Palgrave Macmillan UK.

Crutchfield, R. D., & Pitchford, S. R. (1997). Work and crime: The effects of labor stratification. *Social Forces*, *76*(1), 93-118.

Eide, E. (2000): Economics of Criminal Behavior. In: Bouckaert, B., De Geests, G. (Eds.):Encyclopedia of Law and Economics, Vol. V. Cheltenham, Edward Elgar, 345-389

Ehrlich, I. (1973). Participation in illegitimate activities: A theoretical and empirical investigation. *The Journal of Political Economy*, 521-565.

Entorf, H. (2009). Crime and the labour market: Evidence from a survey of inmates. JahrbücherfürNationalökonomie und Statistik, 229(2-3), 254-269.

Janko, Z., & Popli, G. (2015). Examining the link between crime and unemployment: a time-series analysis for Canada. *Applied Economics*, *47*(37), 4007-4019.

Maddah, M. (2013). An empirical analysis of the relationship between unemployment and theft crimes. *International Journal of Economics and Financial Issues*, *3*(1), 50.

Myers, S. L. (1983). Estimating the economic model of crime: Employment versus punishment effects. *The Quarterly Journal of Economics*, *98*(1), 157-166.

Papps, K., & Winkelmann, R. (1999). *Unemployment and crime: New answers to an old question*. Department of Economics, University of Canterbury.

Raphael, S., & Winter- Ebmer, R. (2001). Identifying the effect of unemployment on crime. *Journal of Law and Economics*, *44*(1), 259-283

Nadeem, H A (2002). "Pakistan: The Political Economy of Lawlessness" Karachi: Oxford University Press.

Gould, E. D., Weinberg, B. A., & Mustard, D. B. (2002). Crime rates and local labor market opportunities in the United States: 1979–1997. *Review of Economics and statistics*, *84*(1), 45-61.

Mahmood, K., & Cheema, M. A. (2004). Empirical Analysis of Juvenile Crime in Punjab, Pakistan. *Associates*, 24, 10-9.

Lee, D. Y., & Holoviak, S. J. (2006). Unemployment and crime: an empirical investigation. *Applied Economics Letters*, *13*(12), 805-810.

Gillani, S. Y. M., Rehman, H. U., & Gill, A. R. (2009). Unemployment, poverty, inflation and crime nexus: cointegration and causality analysis of Pakistan. *Pakistan Economic and Social Review*, 79-98.

Shamim, A., Batool, Z., Zafar, M. I., & Hashmi, N. (2009). A study of juvenile crimes in Borstal jail, Faisalabad Pakistan. *The Journal of Animal and Plant Sciences*, *19*(2), 101-103

SBP (2010) The Handbook of Statistics on Pakistan Economy 2010. State Bank of Pakistan (SBP), Islamabad.

Gillani, S. Y. M., Khan, R. E. A., & Rashid Gill, A. (2011). Unemployment and property crimes in Pakistan. *Asian Economic and Financial Review*,*1*(3), 124-133.

Government of Pakistan (various years) Pakistan Economic Survey. Finance Division, Government of Pakistan, Islamabad.