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THE EFFICACY OF SOCIO-ECONOMIC INCENTIVES IN THE SUPPLY OF CRIMES: A CROSS DISTRICT ANALYSIS OF KHYBER PAKHTUNKHWA, PAKISTAN

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Abstract- This study has purely designed to determine the impact of socio-economic incentives on the supply of crimes across the districts of Khyber Pakhtunkhwa, Pakistan. Statistical tools have been used in the extraction and estimation of various socio-economic variables from the micro-data of PSLM and MICS of Bureau of Statistics, Government of Pakistan. Applying ordinary least square (OLS), the result shows that poverty, population density, and income inequality have a positive and significant association with the rate of total crimes across districts of Khyber Pakhtunkhwa. The unemployment rate has negative and adult literacy positive association with the rate of total crime. Police strength is negative and significant with the rate of total crimes in the districts of Khyber Pakhtunkhwa. The results show that economic incentives and criminal justice system disincentives impact criminal behaviour and can be used as an effective tool to prevail general deterrence across districts of Khyber Pakhtunkhwa.

Keywords: Economic incentives; Crime rate; Rationality; Pakistan.

I. INTRODUCTION

Biological and Psychological views seek some human intrinsic and personal characteristics of illegal behaviour. According to this view irrespective of prosperity or lack of prosperity, good or bad economic conditions, or training, a man with abnormal psycho-physical or hereditary deficiency will not only commit a crime but will also defend it. Lombroso-Ferrero's (1911) argued that some people are criminals because they are "Born Criminal" (Lombroso-Ferrero, 1911; Wright, 1993). However, the economists 'view is that some external factors, specifically those of economic nature may best explain criminal behaviour and it is so because the motivation of offenders is not too much different from those of law-abiding residents. Like law-abiding individuals, an offender on average also aims to maximize their utility, make preferences, and expectation for the future. Most offenders despite being apprehended and punished, often recidivist, some take crime as a lifetime activity and some as part-time (Backer, 1968; Ehrlich, 1973, 1975 & 2007; Chalfin and Raphael, 2011; Machin et al., 2012). It means that the offender as a group makes an explicit calculation of the incentives at their disposal. If offenders make an explicit calculation of available incentives' then the answer to how to combat criminals may also be found in the availability, efficiency, and equality of these incentives to them. For example, a person who has no means of legal earnings would ultimately divert to illegal activity to supplement his income or smooth consumption, etc. (Motivation effect). Similarly, when the legal employment opportunity increases, the opportunity cost of crime increases which decreases the expected benefit of the criminal activity, and as a result, the rate of crime declines. Education, skills, and sufficient job training also increase the expected benefit of legal work which ultimately increases the participation of majority members of the society in legal sectors. Similarly wage rate, income inequality, level of education, and a large number of other factors that directly or indirectly impact the cost and benefit of crime will impact the supply of crimes (Erhlich, 1973; Lochner, 2004; Machin et al., 2012; Jalil & Iqbal, 2010).

This paper is the first attempt in Pakistan specifically in Khyber Pakhtunkhwa province to examine criminal activity within an economic context. Applying a comprehensive strategy, this study attempts to include all relevant components of the criminal model.

Khyber Pakhtunkhwa (KP) provides an interesting case for the study of crimes and criminal behaviour in an economic framework. The majority of the population of KP lives in rural areas. KP farms the second-most populous province with a population density of 352 Per Sq. Km (Pakistan Bureau of Statistics, 2016). The majority of its population falls at a young age.

Due to poor educational facilities, mostly young population work in fields. Unfortunately, since 9/11, KP had become a war terror zone. The insurgency has shifted the intention of the law enforcement agencies in maintaining the role of law towards terrorism. Along with the huge finance that was to be spent otherwise on developmental projects, has been allocated to halt the menace of terrorism. Khyber Pakhtunkhwa is in the transition phase as per government claim; this study will help the ruling government to divert its funds in the right direction regarding crime control.

2. Literature Review

According to the neoclassical model of crime, criminals are rational; they compare the cost and benefit of crimes. When the expected benefit of criminal activity increases, the criminal participation rate also increases. This foundation was for the first time put forward by Becker in 1968. After Becker his student Ehrlich in 1973, empirically tested the idea of his mentor while incorporating various income related variables in his study. Till date huge work has been done in this area. A brief overview of the literature in this relevance is as under.

Fajnzylber et al. (2002) conducted panel data analyses for 37 different countries during 1965-1995 and 1970-1994, for robberies and homicides respectively. The results showed that different measures of income inequality were important drivers of robberies and homicides between countries and within the countries. Mahmood and Cheema (2004), found that land disputes, honour killings, inferiority complexes, big families, and income disparities were the key correlates of juvenile delinquency in Punjab. Abadinsky (2013) conducted a time series analysis of income inequality and crimes, for several countries. The study found a significant positive impact of income inequality on different types of crimes in different countries**.** Jalil and Iqbal (2010) found a significant positive relationship of urbanization with crime in Pakistan. They found a significant and positive relationship of house hold consumption, wage rate, and population density on the rate of crime for Pakistan. However, the impact of the GDP and literacy was negative and significant.

Gould et al. (2002) investigated the impact of wage rate and unemployment on the rate of both property and violent crimes of less-educated males for a panel of US counties for a period of 1979 to 1993. The result revealed positive and significant relationship of wage rate with both types of crime with. Fougère et al. (2009) explored the relationship of two measures of unemployment; general unemployment and youth unemployment on the rate of both property and violent crimes for France. Over ten years from 1990-2000 and for 95 metropolitan areas, they found a significant positive impact of various measures of unemployment with both types of crimes. Gillani et al. (2011) examined the relationship between unemployment and property crime by taking time-series data from 1975 to 2008 for Pakistan. The results of the co-integration and causality showed that unemployment in Pakistan granger causes different types of property crimes. Machin and Meghir (2004) used regional level panel data for England and Wales for twenty years. They regress the 25th percentile of the wage distribution as a wage measure of the retail trade sector on the rate of crimes. The empirical result shows a 0.7 percent fall in crime rate for a 10 percent increase in the 25th percentage wage distribution measure. Spengler (2000) has also found a significant association between the crime rate and the wage rate for the economy of Germany

Georgiou (2006) unveiled the relationship between education and crimes, by using panel data from 1999-2006 for the European Union Countries. The panel data estimates showed a significant negative impact of education on the rate of crimes in these countries. Tekeli and Gunsoy (2013) surveyed convicted criminals in the prisons of Turkey. The methods used were simple descriptive statistics frequencies, percentages, and statistical tabulation. They found that 61percent of a convict sentenced for economic crimes were with six grade, 12 percent, were with ten years of schooling

It may be concluded that the supply of crime have strong bearing with economic incentives and criminal justice system disincentives. According to the standard criminometic studies, for complete specification, the economic model of crime must include variables from criminal justice system, socio-economic and demographic composition of the locality. The literature in this relevance is numerous; however, majority of the previous research had taken variable either from criminal justice system and no variable from social justice system and vice versa. Similarly, there is no previous single comprehensive study of crime and criminal behaviour conducted specific to the district of Khyber Pakhtunkhwa, Pakistan. This study is an attempt to improve the existence literature by incorporating all the components that are the prerequisite of criminal behaviour model and to provide a comprehensive study for the first time in Khyber Pakhtunkhwa, Pakistan.

3. Methodology

i. Theoretical framework and econometrics Model

The supply of crimes is determined by the probability of apprehension punishment and a large number of other factors that directly or indirectly affect the cost and benefit of crimes. In the literature, factors that increase the direct cost of crime are known as negative incentives (criminal justice system disincentives) and those factors that increase reward or benefit of the criminals in legal activities are known as positive incentives or economic incentives. Criminal justice system disincentives are the probability of apprehension, punishment, conviction, and judicial efficiency, etc., where socio-economic incentives are

legal work, wage rate, poverty alleviation, decreased income inequality and decreased population density, etc. The simple econometric criminal model is given below.

$$Cr_i = \beta_0 + \beta_1 Pa_i + \beta_2 Lr_i + +\beta_3 Pd_i + \beta_4 Gini + \beta_5 Pl_i + \beta_6 Uemri + U$$

Where Cr_i is the total crime rate, the sum of both property and violent crimes of the *ith* district in Khyber Pakhtunkhwa, Total crime rate is the ratio of total crime per one lac district population. Pa_i is the respective district probability of apprehension; Lr_i is the literary rate; Pd_i population density; *Gini* is the income inequality; Pl_i is the poverty level and *Uemri* is the unemployment rate in each district respectively. The specification of these variables in the above model is discussed as under. Multiple regression analysis has been used to estimate the above econometric model.

ii. Data and Variables

In this study, cross-sectional data for the year 2016 has been used. All the districts of KP, except few districts for which data was unavailable, are taken. All property and violent crimes have been sum up as one major head i.e. crime rate per one lac district population. Crime data has been taken from Khyber Pakhtunkhwa Home Department's Rule of Law Road Map documents. Home Department while preparing the KP Rule of Law Road Map, collected data from all respective sister departments such as Prosecution, Police, Prions, and Judiciary, that contain sufficient statistics on these variables. Police strength (PST) per one lac population represents the probability of apperception, which is the ratio of the total number of police in a district per one lack district population.

Literacy rate, Population Density, Wage rate, Unemployment rate, and Income Inequality has been estimated from Pakistan Social and Living Standard Measurement (PSLM) survey, and House Hold Integrated Socio-Economic Survey (HISE) microdata of the Bureau of Statistics Government of Pakistan. Population density has been estimated from District wise census data of the Bureau of Statistics that has been projected for the respective years. Poverty headcount data is taken from the Pakistan Poverty Alleviation Fund.

4. Results

In this section, three models are estimated to test the hypotheses of the study. All the three models are similar but different in the specification. These different specifications are done because the observation is small in numbers and the criminometrics model needs to include variables from the criminal justice system (police, prison, judiciary, and prosecution), from demographic composition and socioeconomic condition for best fitting.

4.1 Estimation of the Model without Taking Gini Coefficient and Adult Literacy

Table 1 shows the results of the regression analysis of various socioeconomic and criminal justice system variables and the total crime rate per district. Respective district police strength is a proxy for the probability of apprehension. As shown in table 1, the coefficient of this variable is negative and significant. This means that police strength significantly reduces the respective district crimes rate. The rationale behind this result is that police strength is directly associated with the probability of apprehension, caught, or arrest. The result of this variable is quite consistent with both, theory and empirical studies (Becker, 1968; Ehrlich, 1973; Gould et al. 1997; Rafique et al., 2019; Levitt, 2002; Crownwell & Trumbull, 1994; Jabbar and Mohsin, 2014).

Table 1 Estimated Results of Socioeconomic, Demographic and Criminal Justice System Variables on the Rate of Total Crimes across Districts of KP, without Taking Gini and Adult Literacy Rate

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-93.42	25.82	-3.62	0.00
PST	-0.05	0.02	-2.55	0.02
POVERTY	0.64	0.17	3.80	0.00
PD	0.01	0.00	3.75	0.00
LMALE	1.27	0.27	4.68	0.00
R-squared	0.73	Mean dependent var		21.71
Adjusted R-squared	0.65	S.D. dependent var		12.92
F-statistic	8.81	Durbin-Watson stat		1.49

Cr is the dependent Variable Source: Author's estimated result, where Prob. is the probability value

Similarly, population density (PD) that is the number of individuals per square kilometre is positive and significant, 1 percent; increase in population density is associated with 1.759 percent increase in total crimes. Jabbar and Mohsin, (2014) found positive and significant relations between population density and rate of crimes for the district of Punjab. Jalil and Iqbal (2010) also found a positive and significant relationship between crime rate and urbanization for Pakistan. An increased human population in some specific region or community without proper planning and management induces tough

competition among individuals, for gaining opportunities, resources, and business. In such a scenario if the supply of resources and opportunities are fixed, the individuals lagging in the race will divert to the illegal sector. These individuals will substitute criminal activities for legal activities and as a result rate of crimes will be increased.

Poverty is another variable that is thought to be the sole driver of crimes in a society. The table above shows that poverty as measured by the headcount ratio of the respective district is positive and significant with the rate of crimes in the district of Khyber Pakhtunkhwa. A 1 percent increase in poverty is associated with a .064 percent increase in total crime rate. There are many theatrical reasons that poor people may be more involved in criminal activities. For a poor person, the opportunity cost of crime is very low. To sustain day to day transactions, an individual needs to have a substantial minimum amount. If poor person is failed to find that minimum substantial amount, he will divert to the illegal sector. Flesher (1966) the very first research on crimes and economics found that criminals were among the least wage earner in the United States. Freeman (1999) in his book *A Handbook of Labor Economics* stated that criminal behaviour is closely related to poverty.

In table 1 instead of total literacy, male literacy (LMALE) is taken. When the overall literacy was regressed on the respective district crimes rate, it was both insignificant and positive. However, with male literacy, the sign of the coefficient of education remains the same (positive) and the p-value becomes significant. The sign of this variable is contrary with the theory. Theory revealed that education helps in acquiring job training and skills which in turn increases the reward of legal work, hence increases the opportunity cost of crimes (Lochner, 2004; Lochner and Moretti, 2004; Hjalmarsson, 2008). The negative sign of the coefficient of education is possibly due to the definitional deficiency of literacy. Literacy taken here is just the individual capability to read and write with understanding. This does not represent any specialized human capital endowment, skills, or job training which is specifically meant for criminometric model. Similarly, as found by Jalil and Iqbal (2010) in Pakistan graduates often after completion of education remain unemployed for a long time. Once they were in colleges and universities they cannot participate in both legitimate and illegitimate activity, but after completion when they come to the job market and can't find a job, they divert to illegal activities.

4.2 Estimation of the Model Incorporating Income Inequality (Gini) and Unemployment

The following table shows the estimates of the regression model incorporating income inequality, unemployment (UEMR) along with the rest of the variable of the model 1. The variables Police Strength (PST), Poverty, Male Literacy (LMale), and population density resume the same sign and significant as in model 1. The interpretation of the rest of the two variables that is income inequality represented by the Gini Coefficient (Gini) and unemployment rate (UEMR) is discussed as under.

Table 2 Estimated Results of Socioeconomic, Demographic and Criminal Justice System Variables on the Rate of Total Crimes, with Gini and Unemployment

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-108.48	23.2	-4.67	0.00
PST	-0.06	0.02	-3.28	0.01
GINI	1.11	0.47	2.54	0.03
POVERTY	0.53	0.16	3.22	0.01
LMALE	0.93	0.29	3.19	0.01
UEMR	-1.10	0.60	-1.82	0.01
PD	0.02	0.00	3.68	0.00
R-squared	0.83	Mean dependent var		21.71
Adjusted R-squared	0.74	S.D. dependent var		12.92
F-statistic	9.12	Durbin-Watson stat		2.17

Cr is the dependent Variable Source: Author's Estimates of the Result, where Prob. is the Probability values

The coefficient of unemployment is negative and significant, which means that when unemployment increases, the crime rate decreases. The sign of unemployment is against what is generally perceived of the crime and unemployment interaction. The general perception is that higher and persistent cycles of unemployment are associated with high crime rates. There are three main reasons that unemployment will generate criminals in society, either for consumption smoothing or as a means of income supplementation or due to the effect of Psychological strain (Chalfin and Raphael 2011). Having no jobs means less opportunity cost if caught and punished. That's why it is expected that the crime rate will increase with a high unemployment rate (Backer, 1986; Erlihch, 1973; Machin and Meghir, 2004 and Andresen, 2013; Rafique et al., 2020). However, a large number of empirical researches has shown evidence of either very weak, insignificant, or even negative relationship rather than positive, and have forwarded different reasonable justification (Long & Witte, 1981; Levitt, 1996; Entorf and Spengler, 2000; Rafael and Ember, 2001; Gould et al., 2002; Asif et al., 2017). According to Cantor and Land (1995), the ambiguous relationship of crimes and unemployment is due to the presence of the two offsetting effects that offset one another at the same time; the motivation effect and opportunity effect. Under the motivation effect crime rate increases

and under the opportunity effect crime rate decreases due to decreased potential targets. Therefore, the net effect will be either positive or negative depending on which type of effect exceeding the other (Cantor and Land, 1985). In the present case, the sign of the coefficient is negative and significant. The result shows that a 1 percent increase in unemployment is associated with a 0.93 percent decrease in crime rate in the districts of Khyber Pakhtunkhwa (KP). This result is more alarming because large unemployment has decreased the potential targets which show a more deteriorated economic situation in each district. Similarly, some researchers think that in the situation of unemployment more people remain at home which increases the probability of being caught and that additional probability of being watched and caught increases their expected cost of committing crimes, and as a result crime rate decreases in societies of high unemployment. (Lin, 2008, and Duha, 2011).At the national level, the result of unemployment and crime is mixed, however, most of the studies have found a positive impact of unemployment on the rate of crimes (Jalil and Iqbal, 2010; Khan et al., 2015; Haider and Ali, 2015). Jabar and Muhsin, (2014) have found a negative relationship between unemployment and the rate of crimes for Punjab Pakistan.

The result of the table shows that the Gini Coefficient of the respective district is positive and significant with the rate of crimes in Khyber Pakhtunkhwa. A 1 percent increase in income inequality is associated with 1.19 a percent increase in crime rate. The national-level time-series studies of Raja and Kafaitullah (2013) and Jalil and Iqbal (2010) have also found a positive and significant relationship between income inequality and crimes for Pakistan. On purely economic grounds, the individuals with high income provide potential targets for the rest of the lower income group. If the expected potential gain from criminal activities versus legal work becomes more, the criminal participation rate will increase (Becker, 1968, and Ehrlich, 1973).

4.3 Estimation of the Model with Adult Literacy Rate

In the previous two models, the sign of unemployment and level of education with the rate of crimes was against the theory. There are valid theoretical arguments as shown above that unemployment may have positive or negative impacts on the rate of crimes (Cantor and Lands, 1995). However, there is a strong consensus on the negative impact of the level of education on criminal behaviour both nationally and internationally. Therefore, the model with the following specifications is also estimated. This time the study takes an adult literacy rate instead of male literacy. In the context of crimes and criminal behaviour, the most appropriate proxy with respect to education would be the one that represents some age bracket. For example the age of majority has been used by researcher while studying the interaction of the level of education and crimes (Lochner, 2007). The age of majority is the age at which the criminals are punishable by law. Taking into consideration this fact, it is more appropriate to take Adult Literacy Rate (ALIR) instead of literacy rate (LR) or Male literacy rate (MaleL) to analyse the interaction of education and crimes. Adult literacy represents the percentage of the population ages 15 and older who can read and write with understanding (UNDP Pakistan). With the adult literacy rate as a proxy for the level of education both the signs of education and unemployment become negative (Table 2).

Table 3 Estimated Results of Socioeconomic, Demographic and Criminal Justice System Variables on the Rate of Total Crimes, with Adult Literacy Rate

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(PST)	-14.49	3.50	-4.14	0.00
GINI	1.94	0.48	4.02	0.00
ALIR	-0.23	0.17	-1.37	0.19
UEMR	-0.77	0.37	-2.07	0.06
LOG(PD)	4.47803	1.75	2.55	0.02
R-squared	0.67	Mean dependent var		21.71
Adjusted R-squared	0.57	S.D. dependent var		12.92
Durbin-Watson stat	2.101855			

Cr is the dependent Variable Source: Author's Estimates, where Prob. is the Probability values.

This estimate is compatible with the theoretical expectation of crimes and criminal behaviour model. However, the value of the adult literacy rate is negative and insignificant. This means that education level is not too much an important driver of crime rate in KP. Instead of valid and strong theoretical beliefs, some researchers have found such type of ambiguous relationship in their studies. Anwar et al. (2015) have found mixed evidence of education on crimes while studying crimes and the education interaction for the districts of Punjab. Jalil and Iqbal (2010) have found a positive and significant relationship of higher education (Ratio of Secondary education to higher secondary education enrolment) with the rate of crime for time series data.

5. Conclusion

This study has investigated the impact of various socio-economic, demographic and deterrence variables on rate of total crimes in Khyber Pakhtunkhwa. All the four component of the economic model of crime that is criminal justice system, economic, social and demographic variables has been used. All the district of KP, except few districts for which sufficient data

was unavailable has been taken. The cross sectional data for the year, 2016 has been analysed, using Ordinary Least Square techniques. The result revealed that socio economic, demographic and criminal justice system variables have important impact on the rate of total crime in Khyber Pakhtunkhwa. The results showed that poverty, population density and income inequality was important driver of total crime in Khyber Pakhtunkhwa Unemployment, adult literacy and police strength gives negative sign with rate of total crimes.

Findings of the study also suggests that the gap between the rich and the have and have not, should be reduced through progressive taxation of the affluent, small businesses should be generated for the poor class of the society. Similarly, government first identify the drivers of poverty and subsequently lunch programme to alleviate poverty. Steps should be taken to provide jobs to the young graduates. Similarly, this study recommends that polices should be adopted to enhance the existing strength of Police. Efficiency of police force should also be strengthening through investments in capacity building.

References

1. Becker, G. (1968). Crime and Punishment: An Economic Approach. *The Journal of Political Economy,* 76(2), 169-217.
2. Ehrlich. I. (2007). Crime and Punishment and the Market for Offences. *"The journal of Economic Perfective"* 10(1), 43-67.
3. Asif, M. F., Mirza, U. K., Khan, A. H., Asif, M. Z., Riaz, S., & Ahmed, S. (2017). Job Satisfaction: Antecedent and Consequences. *Bulletin of Business and Economics (BBE)*, *6*(4), 185-194.
4. Freeman, R. B. (1999). The economics of crime. *Handbook of labor economics*, *3*, 3529-3571.
5. Government of Khyber Pakhtunkhwa. (2016). Development Statistics, Bureau of Statistics, Peshawar. Retrieved from https://kpbos.gov.pk/
6. Government of Pakistan (2014). Pakistan Social and Living Standard Measurement Survey. Federal Bureau of Statistics, Islamabad Retrieved from http://www.pbs.gov.pk/
7. Machin, S; Marie. O, & Sunčica V. (2012). Youth Crime and Education Expansion. Meteor, RM/12/036.
8. Mahmood , K & Cheema, A.M. (2004). Empirical Analysis of Juvenile Crime in Punjab, Pakistan. Pakistan Journal of Life and Social Sciences, 2(2), 136-138.
9. Wright, C. D. (1893). The Relation Of Economic Conditions to the Causes of Crime. The Annals of the American Academy of Political and Social Science, 96-116.
10. Ehrlich, I. (1975). On the Relation between Education and Crime. In Education, Income, and Human Behaviour (pp. 313-338). NBER.
11. Ehrlich, I. (1973). Participation in Illegitimate Activities: A Theoretical and Empirical Investigation. Journal of political Economy, 81(3), 521-565.
12. Levitt, S. D. (2002). Using Electoral Cycles in Police Hiring to Estimate the Effects of Police on Crime: Reply. American Economic Review, 92(4), 1244-1250.
13. Cox, R. J. A. (2009). An economic analysis of prison labor.
14. Rafique, T., Asif, M. F., Afridi, J. R., Rehman, N. U., & Mahmood, K. (2020). Credibility of social networking sites: Impact on organizational attraction in recruitment filed. *Sarhad Journal of Management Sciences*, *6*(2), 279-294.
15. Levitt, S. D. (2001). Alternative Strategies for Identifying the Link between Unemployment and Crime. Journal of quantitative criminology, 17(4), 377-390.
16. Jalil, H. H., & Iqbal, M. M. (2010). Urbanization and Crime: A Case Study of Pakistan. The Pakistan Development Review, 741-755.
17. Haider, A., & Ali, A. (2015). Socio Economic Determinants of Crimes: A Cross Sectional Study of Punjab Districts. International Journal of Economics and Empirical Research, 3(11), 550-560.
18. Jabbar, S. M., & Mohsin, H. M. (2014). Does Police Strength and Conviction Help to Deter Violent Behaviour?[An Empirical Investigation in Punjab]. International Journal of Economics and Empirical Research (IJEER), 2(2), 52-62.
19. 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.
20. Machin, S., & Meghir, C. (2004). Crime and Economic Incentives. Journal of Human resources, 39(4), 958-979.
21. 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.
22. Gillani, S. Y. M., Rehman, H. U., & Gill, A. R. (2009). Unemployment, Poverty, Inflation and Crime Nexus: Integration and Causality Analysis of Pakistan. Pakistan Economic and Social Review, 79-98.
23. Lochner, L. (2004). Education, Work, and Crime: A Human Capital Approach. International Economic Review, 45(3), 811-843.
24. Hjalmarsson, R. (2008). Criminal Justice Involvement and High School Completion. Journal of Urban Economics, 63(2), 613-630.
25. Lin, M. J. (2008). Does Unemployment Increase Crime? Evidence from US data 1974–2000. Journal of Human Resources, 43(2), 413-436.
26. Lochner, L., & Moretti, E. (2004). The Effect of Education on Crime: Evidence from Prison Inmates, Arrests, and Self-reports. American Economic Review, 94(1), 155-189.

27. Chalfin, A., & Raphael, S. (2011). Work and Crime. The Oxford Handbook of Crime and Criminal Justice, 444-476.
28. Long, S. K., & Witte, A. D. (1981). Current Economic Trends: Implications for Crime and Criminal Justice. Crime and Criminal Justice in a Declining Economy, 69-143.
29. Entorf, H., & Spengler, H. (2000). Socioeconomic and Demographic Factors of Crime in Germany: Evidence from Panel Data of the German states. International Review of Law and Economics, 20(1), 75-106.
30. Lombroso-Ferrero, G. (1911). Criminal man: According to the Classification of Cesare Lombroso. New York/London: GP Putnam.
31. Lin, M. J. (2009). More police, less crime: Evidence from US State Data. International Review of Law and Economics, 29(2), 73-80.
32. Andenaes, J. (2013). Punishment and Deterrence. Ann Arbor: Univ. of Michigan Press.
33. Di Tella, R., & Schargrodsky, E. (2004). Do Police Reduce Crime? Estimates using the Allocation of Police Forces after a Terrorist Attack. American Economic Review, 94(1), 115-133.
34. Fougère, D., Kramarz, F., & Pouget, J. (2009). Youth Unemployment and Crime in France. Journal of the European Economic Association, 7(5), 909-938.
35. Mustard, D. B. (2010). How do Labor Markets Affect Crime? New evidence on an old puzzle.
36. Raphael, S., & Winter-Ebmer, R. (2001). Identifying the effect of unemployment on crime. The Journal of Law and Economics, 44(1), 259-283.
37. Rafique, T., ur Rehman, N., & Afridi, J. R. (2019). Job Performance Dependence on Family Motivation for Energizing Efforts and Reducing Stress. *The Journal of Humanities and Social Sciences*, *27*(2), 181.
38. Edmark, K. (2005). Unemployment and Crime: Is there a Connection?. Scandinavian Journal of Economics, 107(2), 353-373.
39. Arvanites, T. M., & Defina, R. H. (2006). Business Cycles and Street Crime. Criminology, 44(1), 139-164.
40. Ihlanfeldt, K. R. (2007). Neighborhood Drug Crime and Young Males' Job Accessibility. The Review of Economics and Statistics, 89(1), 151-164.
41. Fajnzylber, P., Lederman, D., & Loayza, N. (2002). Inequality and violent crime. *The journal of Law and Economics*, *45*(1), 1-39.
42. Abadinsky, H. (2013). *Drug use and abuse: A comprehensive introduction*. Cengage Learning.
43. Tekeli, S., & Günsoy, G. (2013). The relation between education and economic crime: an assessment for turkey. *Procedia-Social and Behavioral Sciences*, *106*, 3012-3025.