

Crime and Relationship between Homicide Rate and Some Socio Economic Factors: specially combination of education and unemployment In the Context of some European Countries

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Abstract - This paper focused on to find the impact of some randomly selected socio economic factors on homicide rate in some developed countries in Europe. In our study we consider 22 European Countries during 2004-15 which lies higher Human development index. Here we are using panel data with fixed effect model. We try to relate percentage of crime or homicide rate and six socio economic factors likes of urbanization, inflation, income inequality (gini index), unemployment rate with basic education and advance education and GDP per capita. But main objective of this paper is to find combine effect of unemployment and education on homicide rate ,which is used as a proxy unemployment rate with basic education and advance education in statistical analysis part

keywords - Crime, GDP, Homicide Rate, Unemployment, Gini index, Education

1: Introduction

Words crime came from Latin word and meaning 'to accuse' and a Sanskrit word 'Kri' (to do). Combining to forms of word and meaning is "most validly accusable act". Crime is a social and economic phenomenon. Crime may define from six different perspectives.

(http://shodhganga.inflibnet.ac.in/bitstream/10603/37657/7/07_chapter%20.pdf)

- As a public Wrong
- As moral Wrong
- As conventional Wrong
- As social Wrong
- As procedural Wrong
- As A Legal Wrong

As a Public Wrong: Sir William Blackstone defines crime in two ways "An Act committed omitted in violation of a Public law". Public law concept is very wide it includes all legal wrongs but all legal wrongs are not crime. Public law includes only institutional and criminal law. In other words, crime defines as "A violation of public rights and duties due to whole community, considered as a community."

As moral Wrong: Raffaele Garofalo defines crime in sociological aspects "crime is a immoral and harmful act that is regarded as criminal by public opinion because it is an injury to so much of the moral sense as a possessed by a community a measure which is indispensable for the adaptation of individual society". Some immoral act does not considered as a crime likes ingratitude, misbehavior, callous disregard suffering of others though immoral but not crime. Some harmless crime likes vagrancy and loitering, consorting and possession of prohibited goods like drug weapons.

- As conventional Wrong: Edwin Sutherland defines crime in terms of criminal behavior "Criminal behavior is behavior in violation of criminal law. Criminal law defined conventionally as a body of specific rules regarding human conduct which have been promulgated by political authority which apply uniformly all members of class to which the rules refers which enforced by punishment administrative by state.". There is no crime without law.
- As Social Wrong :Jhonstuart Mills define " Human being owe to each other help to distinguish the better from worse and encouragement to choose the former and avoid later. They should be forever stimulating each other to increase the exercise of their higher faculties and increased direction of their feelings and aims. In the conduct of human beings towards one another, it is necessary that general rule should for the most part, be observed in order that people may know what they have to expect."Crime concept has been changed time to time.
- As procedural Wrong: Russel defined crime " Criminal offense are basically creation of the criminal policy adopted from time to time by those section of the community who are powerful or astute enough to safeguard their own security and comfort by causing the sovereign in the state to repress the conduct, which they feel may endanger position".
- As A Legal Wrong: Crime discuss at legal notes. Tappan define "Crime is an intentionally act or omission in violation of criminal law. Committed without defense and jurisdiction and sanctioned by state as a felony or misdemeanor.

Generally crime can be defined as a unlawful activities. Crime is the serious problem in society. Crime destroys the social balance. No criminals not doing criminal activities from the birth time. One proposed definition is that a crime or offence (or criminal offence) is an act harmful not only to some individual but also to a community, society or the state ("a public wrong"). Such acts are forbidden and punishable by law.

1.1. Category of crime and cost

Criminologist have divided crime in six different category likes violent, property, organized, consensual and white color crime. Violent crime includes in homicide, assault, rape and sexual assault, robbery. Property crimes includes in burglary, larceny, motor vehicle theft, Arson. Organized crime includes in Mafia type crime, when crime execute by an organization. Consensual crime includes in illegal prostitution, intakes illegal drugs. These types of crimes are mainly harmless. White color crime are includes in all types of fraud where crime related economic loss(https://saylordotorg.github.io/text_social-problems-continuity-and-change/s11-02-types-of-crime.html). In India, Crime divide into two form one is cognizable and other is non cognizable in India (Dutta and Hussain 2009). In case of cognizable Crime police has take action prompt action on receipt of complain and non cognizable crime left to be pursued by affected parties in court and police initiates investigated into such crimes except with magisterial permission (Dutta and Hussain 2009). In other words, Rahul chakroborty has categorized two type of crime mainly one is IPC, and SLL in India. IPC (Indian Penal Code) includes in property and violence crime likes illegal narcotics, gambling etc and SLL is special local laws (Chakroborty 2014). Psychologist may divided five types of criminals (i)Ordinary man who committed to crime by external circumstance (ii)Normal individual who have irresistible impulse(iii)Neurotic criminal who is driven by equally irresistible but unconscious force,(iv)Genuine Criminal who feels proud for their activity (v)Criminal who suffers mental illness.He/she acted crime from medical ground (Schmideberg 1947).Crime always carries some cost(Ignatius N Kathena, J. P S shefeni 2017).Crime carries mainly two types of cost, social and external cost (Cohen 2000). Now, we can try to distinction between social and external cost concept though two concepts are similar but not identical. Social cost arises from those types of crime which reduced social welfare. Social cost includes medical cost, lost wages. Psychological pain and suffering cannot be exchange in market place but it's related with the quality of life of victims. As victims is part of society then these included in social cost. Theft occurs social or external cost these debatable issue. Many economists consider theft raising the social cost as stolen property is a proxy of lost resources in society. Some groups suggest that it is include in external cost because offender can enjoy the use of property. Drug intakes includes in external cost. Drug addicted people may loss their productivity or they committed crime or their medical cost raises. So, such types of cost included in external cost if a drug intake is legal. Otherwise, that cost includes in social cost category(Cohen 2000). Crime carries some social cost like net social cost of damage, total cost of apprehension and conviction, and social cost of punishment (Velthoven et.al 2016). Objective is to minimize the social cost and maximize the social welfare. Becker said that welfare has been maximized when fine implement instead of imprisonment. If imprisonment is only one punishment then society bears huge loss when offenders cannot pay fine then he punished(Velthoven et.al 2016). Many literatures suggest that crime depends on many socio economic factors like education, unemployment, and poverty and income inequality. Crime also depends on some financial factors like FDI, Tax rate, inflation.

Effects of crime

But when a person engaged in criminal activities then society losses labor productivity (Chafin 2013) there are lot of effects for criminal activities as Experiencing a crime can affect people in many ways, and every person's reaction is different. At the start, you might feel shocked, fearful or angry. A common reaction is feeling numb, and not believing that this has happened to you.

You might suffer from:

- headaches
- nausea
- sleep problems or fatigue
- jumpiness
- repeated thoughts of the event.

Or you might have feelings that come and go, like:

- guilt
- fear
- anger
- sadness
- confusion
- helplessness.

Your day-to-day life might be affected by:

- trouble with your concentration or memory
- reduced performance at work or school
- withdrawing from others
- feeling like you've lost control.

2.Related Work

Economic growth is influenced by crime rate. Crime has a negative but insignificance impact on growth in short run but crime is significant in long run as an independent variable when economic growth as a dependent variable (Ahmed et al 2014, Ignatius N Kathena, J. P S shefeni 2017, Todd sandler, Gaibullove 2008). Relationship between GDP and crime varies different countries (Ragnasdottir 2014). In India liberalization leads to acceleration of growth, this need not reduce crime (Dutta and Hussain 2009). Youth long term unemployment positively associated between property crimes (Chapman et al) Property crime rate also depends on socio economic factor like poverty, Literacy rate, business cycle, demographics, criminal justice system, and family structure, unemployment etc (Ralph, C. Allen 1996). Property crime leads to unemployment rate, wage inequality and higher growth rate of their variability property (Clarke and Feilding 1999). Reduced robbery rate from 2.09% to 1.1 % increases growth by 3.72% points (Surandar Kumar 2013). Unemployment has a positive impact on crime (Melick 2003). There is no significant relationship between Unemployment and aggregate property crime in Croatia. Negative relationship between violent crime and unemployment (Recher 2016). Except robbery rate unemployment rate is not significant for other types of violent crime (Bandopadhyay et al 2011) Income inequality, unemployment rate, and poverty those socio economic factors are responsible for specific types of crime, property and violent crime (Berk Ozler 2005, George saridakis 2004). Poverty and income inequality has negative impact on property crime (Ralph, C. Allen 1996, Alexander Cotte Poveda 2012, Char Foon Tang 2008, George saridakis 2004). Income inequality is not directly associated with homicide crime, indirect effect through some indicator of social disorganization on homicide rate (Williams 1984). Income inequality or poverty are not raising crime rate in all time, when crime deterrence simultaneously strong (Bourguignon, <https://pdfs.semanticscholar.org/ad4e/3df680ae76e58e3b076d5ace203e559643ac.pdf>). According to concept of political economy, income inequality may crime deterrence. Crime deterrence measures may be a mechanism of inequality prevention (Bourguignon). Gini index which is the good proxy for income inequality, crime is not depends on income inequality in Latin America (Baire 2014). Author provided some logic for this result, she identified due to colonial history, a cultural masculinity as well as high inequality, LAC (Latin American Crime) might be special which provided a special case. She also said Gini might not be good proxy for expected net return from crime (Baire 2014). All poor people are not engaged in Homicide crime. Poor people who are received transfer payments through welfare programs, they are not engaged crime but racial economic inequality is responsible for homicide crime. Crime rate also depends on the nature of job. Reduction of manufacturing job with primary sector character and shift service sector job with secondary sector, can reduced crime and delinquency (Crutchfield et al 2006). Mining industry created informal job opportunity for youth group that leads to migration but when the mining activities is stopped then huge unemployment might be turns into criminality (Axbard et al 2015). Crime depends on some social factors population as an endogenous variable which causes crime while fertility rate leads to property and total crime as an exogenous variable in (Hamza et al 2013). Crime rate also depends on demographic factors like age and education. More educate people commit to less crime than less educated people (Hansen 2003). Education reduces violent crime (Gonzalez 2015, Lochner, Moretti 2003). Opportunity cost of crime rises by education. Education control patience and reducing the commit crimes (Lochner and Moretti 2004). Educated people are not involve in Crime, as they have spent their time looking for job (Gonzalez, Smith 2015). College graduation rate decreases the homicide rate (Gonzalez, 2015). High school completion negatively related with crime and unsuccessful high school completion positively related with crime (Chapman et al). Crime rate depends on wage rate (Char Foon Tang 2009). Wage rate of less educated labour falls 20% then property and violent crime both increased by 21% and 35% respectively (Gould et al 2000). Impact of real wage income on all category of violent crime is positive (Bandopadhyay et al 2011). Crime rate depends on how much change in market wage rate. Relationship between minimum wage rate and crime rate can be drawn by U shaped. Crime rate is minimizing when minimum wage rate is 0.91 but social welfare is not maximum. Social welfare is maximizing when minimum wage rate is 0.88. Wage rate increases from minimum level for well being of young and uneducated labor not only raising social welfare but also minimum crime rate (Braun 2017). Wage inequality and youth crime both are inversely related to each other (Jeff Grogger 1997). Market wage rate have no any significant impact on female criminal. Property crime increases by one percentage decreases weekly wage rate of unskilled labor. Violent crime does not influence by unskilled labour wage (Mocan and Unel 2011). Surprisingly per capita income is positive and significantly related with all forms of crime in Nigeria. Population density increases crime. There is no impact of social factor on crime (Omotor 2010). Violent crime also depends on amount of total police force. But in case of Property crime police force is not determined factor (Chakroborty 2014). Police force is inversely related with police force (Lin 2009). Size of police force can diminishes the violent crime like Murder, rape (Recher 2016). Self-protection measures can reduce total crime (Philips J. Cook 1986). Death penalty never decreases the property crime (Hashan Dezhbakhsh, joana M. Shepards 2003). Exclusion provide social benefit by deterring murder but it carry some cost in which include harm from death penalty's discriminatory application and risk of executing innocent people. (Hashan Dezhbakhsh, joana M. Shepards 2003). Increasing conviction rate leads to higher crime (Dutta and Hussain 2009). Crime detection rate can be measured by proportion of recorded offense which is cleared up. Cleared up means offender is detected and get punished (Bandopadhyay et al 2011). Detection rate and total prison population both are negative and significantly impact on violent and property crime (Bandopadhyay et al 2011). State level tax rate as an instrumental variable for police force in US (Lin 2009). Tax rate includes sales tax, lowest and highest income tax rate, state government revenue, state lowest and highest corporation income tax, local government revenue from state. Some literature investigate more crime in cities, and victimized by the poor criminals (Edward L. Glaeser and Bruce Sacerdote 1996). Crime also related with government fiscal and monetary policies like lump sum tax rate (Teles 2004). Increasing tax rate is motivated to people for underground activity (Lemieux et al 1994). Crime rate also depends on gender. There is some gender specific crime like rape. Murder rate also depends on sex ratio (Jean Dreze, Reetika Khera, 2000). Higher FMR reduce crime (Jean Druze, Reetika Khera, 2000). Population density, sex ratio has strong impact on per capita crime (Gupta, Sachdev 2017). Number and types of crime both depends on household size, residential mobility (Trance D Methe et al, 1991). When crime against women is high then less women wants to participate in job market

(Chakroborty *et.al* 2014). Crime influenced by financial factors like FDI, inflation. Inflation generates increasing homicide rate (Char Foon Tang 2009). Inflation generates the robbery and theft as inflation rate helps to reduce the purchasing power (Tamayo *et.al* 2013). FDI reduced crime rate in society (Vittorio Daniel and Ugo Marani 2011). Reason of crime rates is different for different area like metropolitan and non metropolitan. Primary and secondary sectors are not responsible for non-metropolitan crime, but tertiary sector should be responsible for raising crime. In metropolitan areas, lock out factories and boom towns may exacerbate social stress that is the result of higher crime. Migration is responsible for regional crime. (Rephann, Colledge https://www.researchgate.net/publication/226388018_Links_Between_Rural_Development_and_Crime). Urban out migration rises than immigration due to crime. Higher crime rate in suburban areas tends to keeps resident in city (Cullen, Levitt 1999).

Hypothesis:

Ho: Impact of income inequality = Inflation = Urbanization = unemployment with basic education = un employment with advanced education = advance education = 0.

H1: Impact of income inequality ≠ Inflation ≠ Urbanization ≠ unemployment with basic education ≠ un employment with advanced education ≠ advance education ≠ 0.

Homicide rate = $\beta_0 + \beta_1 * \text{income inequality} + \beta_2 * \text{Inflation} + \beta_3 * \text{Urbanization} + \beta_4 * \text{unemployment with basic education} + \beta_5 * \text{un employment with advanced education} + \text{Error}$.

3.Data Collection Methods

To analysis above equation we use World Bank data set. We consider six socio economic factors likes income inequality (gini index), Inflation, Urbanization, unemployment with basic and advance education. Basic education means primary education, Advance education means bachelor degree or above or short run tertiary education and Per capita GDP (current US\$). Homicide rate is dependent variable. Our study based on randomly selected 22 European countries likes Austria, Belgium, CEZ Republic, Cyprus, Denmark, Estonia, Finland, France, Greece, Hungary, Iceland, Ireland, Lithuania, Luxemburg, Netherland, Norway, Portugal, Slovenia, Sweden, U.K, Spain, Italy .

Here we estimate some descriptive statistics likes mean, standard division, Maxima and Minimum of all variables and other advanced statistics like multiple regression , ANOVA, adjusted R² and F test etc. using secondary panel data from World Bank data source.

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All estimations are done in STATA statistical software.

4. Result and Discussion

Table : 1

Descriptive statistics

Variable name	Observation	Mean	Std. Div	variance	skewness	Kurtosis
Homicide rate	263	1.63	1.76	3.10	3.08	12.55
Income inequality	264	30.82	3.57	12.74	0.056	1.89
Inflation	264	2.20	2.04	4.16	1.44	8.79
Urbanization	264	75.43	11.75	138.23	-0.065	2.19
Unemployment with basic education	264	13.73	6.82	46.56	1.09	4.05
Unemployment with adv education	264	5.37	3.76	14.16	2.43	10.32
GDP per capita	264	40517.33	22731.7	5.17e+08	1.21	4.74

Source: World Bank data

Table 2

Pair wise correlation matrix

	Homicide rate	Gini index	urbanization	inflation	Unemployment with basic	Unemployment with Advance education	Per capita GDP

Homicide rate	1	0.129	-0.16	0.19	-0.05	0.24	-0.39
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Source : World Bank

Table 3
Linear Regression Model in Panel data with Fixed Effect Model

Variables	coefficient	T value	P value
Income inequality	0.113	6.57	0.000
Inflation	0.091	1.89	0.05
urbanization	-0.011	-1.48	0.140
Unemployment with basic education	0.059	3.45	0.001
Unemployment with advanced education	-0.183	-5.74	0.000
per capita GDP	-0.00002	-4.60	0.000
Adj R ²	0.3034		
R ²	0.3167		
F statistics	F(5,257)=23.82		

Source : World Bank

Table 1 describes the summary statistics. Dispersion of homicide rate is very high than average mean value. Income inequality has lower dispersion than mean value. Per capita GDP, Inflation and unemployment with advance education has higher dispersion than there mean value. Unemployment with basic education has lower dispersion.

Table 2 represents pair wise correlation between all explanatory variables. Homicide rate positively correlated with Income inequality, inflation, unemployment with basic education and negative with urbanization, unemployment advance education and per capita GDP. The responsible factors for homicide rate are income inequality, inflation and unemployment with basic education and per capita GDP. Now we can see that this relationship is significant or not.

Table 3 describes the panel data in linear regression analysis. Income inequality and homicide rate both are positively correlated with highly significant. Homicide rate increases by income inequality (Fajnzylber, Ledrman, Loayz 2002). Homicide rate increases 11% extra due to 1 unit change in income inequality. Positively correlation between inflation and inflation are highly significant (Tang, 2009). Homicide rate increases 9 % extra due to 1 unit change in inflation. Per capita GDP reduced by homicide rate at negligible proportion but its highly significant (Poveda, 2012 *et al*) Unemployment with basic education and homicide rate both are significantly positive correlation. Homicide rate increases 5% due to 1 unit change in unemployment with basic education. In other words homicide rate decreases 18% due to 1 unit change in unemployment with advance education. Who are unemployed with basic education they are motivated by crime but who are unemployed with advance education holder they are not part of crime. Unemployment with advance education and homicide rate negative correlation with highly significant.

5. Conclusion

On the basis of data analysis we can conclude that 6 explanatory variables likes income inequality, inflation, urbanization, GDP per capita and introduce joint impact of unemployment and education which represents unemployment with basic and advance education have impact on homicide rate. Basic education comprises primary education and advance education comprises bachelor degree or above education or short run territory education. But interesting result unemployment with basic education has positive and significant impact on homicide rate is robust conclusion of this paper. Basic educated unemployed labor has small option in job market so, they participated in criminal activities. In other ward advance educated unemployment and homicide rate both are negatively and significant correlation with each other that means advanced educated unemployed people are in higher probability to be getting job in future. So, as a policy prescription we can say that basic education rate cannot mitigate crime. Advanced level of education mitigates crime. Job oriented education or higher education can be reducing unemployment rate. So, government must be looks into rising short run territory education which helps to getting job. Other crime responsible variables are income inequality, inflation. Income inequality helps to rising crime. Proper redistribution of income and control price level both are necessary for reducing crime. Per capita GDP has negligible significantly negative impact on homicide rate in Developed country.

Limitation

The limitation of study is that we cannot add unemployment with no education variable. This analysis is bias on developed country. In further research we analyze some underdeveloped country and we can compare both. As in under developed countries' crimes are different from other developed countries' likes cyber crime is mostly observed in Developed countries. And we do not analysis the impact of different types of crime which is more important. We also not consider the criminal profile in analysis part that is the main causality of crime. In this paper we also not consider the other types of crime such as Environmental crime.

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