

## Comparative Study on The Socioeconomic Determinants of Crime in Pakistan and India: An Econometric Analysis

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### ABSTRACT

#### Purpose:

This current study aims to identify the socioeconomic determinants of crime in Pakistan and India and compare the results of both the countries, which are unemployment, education, poverty, and economic growth.

#### Methodology:

The study is quantitative. Time series data for the period 1996 to 2020 has been taken and Autoregressive Distributed Lag (ARDL) bound testing approach to cointegration is applied for empirical verifications

#### Findings:

The results show that in Pakistan education and poverty are the important determinants of crime in the long run whereas in the short-run education is found to be the key cause of crime. On the other hand, in India poverty is an important determinant of crime.

#### Conclusion:

All over the world, the rate of crime has been increasing over time. The study is unique in the sense that causes of crime is studied in the two major south Asian countries India & Pakistan with a total population of over 1,500 million peoples. The outcome of the study will be helpful for the policymakers to overcome the shortfall in battling the crimes in the countries.

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## 1. Introduction

Throughout human history, crimes have been a persistent source of strain. The history of crime predates the history of masculinity itself. In any culture, crime is a major cause of unease and concern. As a society, we can't deny that crime has enormous psychological and financial implications. Uncertainty and dread rise in people even though they haven't been engaged in the law-breaking act. The fear of being persecuted has a negative impact on one's well-being. The fear of being persecuted has a negative impact on one's well-being. Each state sets forth the sequence of crimes, that is forbidden, and penalizes an illegal of these acts by a penalty or detention or sometimes together. The meaning of crime varies in different states in diverse times and there is no worldwide and everlasting meaning of crime (Doukhan, A. 2020).

A crime is an act or omission of human conduct harmful to others that the state is bound to prevent. It renders the deviant person liable to punishment as a result of proceedings initiated by the state organs assigned to ascertain the nature, the extent, and the legal consequences of that person's wrongness" (Auolak, 1999). The works on the Economics of crime were initiated from the significant input by Ehrlich (1973) and Becker (1968). Becker (1968), initiated a work that changed the method of rationale regarding illegal actions. He also formed a model of unlawful choice emphasizing that "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." The work of Beker (1968) unlocked the access to an innovative pitch of pragmatic investigation whose key motive was to authenticate learning the socioeconomic aspects that affect criminal activities. The economics of crime relates to diverse and varied arenas, like Criminology, Psychology, Sociology, Geography, and Demography are associated with deprivation, societal segregation, income disparity, and social and household circumstantial (Ashby, D. I. 2005).

Due to a rise in criminal behavior in many nations throughout the world, crime economics has evolved as a new subject of study. Crime and numerous qualities have been studied extensively in the US, Italy, Germany, and UK. Colombia and Argentina have also been studied in terms of the causes of crime (Buohanno, 2003).

Certain numbers of factors distinguish the highest crime rates in countries from the lowest ones, like political instability, poor economies, the poor performance of law enforcement agencies, corruption, lack of education, unemployment, abuse of drugs, the ineffective correctional system, and little chance of being caught and punished, etc.

### Distinguish the HCR Countries from the LCR Countries

Rankings	Ten Highest Crime Rates	Ten Lowest Crime Rates
01	Venezuela	Iceland
02	Papua New Guinea	New Zealand
03	South Africa	Portugal
04	Afghanistan	Austria
05	Honduras	Denmark
06	Trinidad and Tobago	Canada
07	Guyana	Singapore
08	El Salvador	Czech Republic
09	Brazil	Japan
10	Jamaica	Switzerland

It is the goal of this study to identify and investigate the socioeconomic factors that lead to criminal activity in Pakistan and India. The primary goals of the research include a better

understanding of crime and important socioeconomic determinants like unemployment, poverty, inflation, higher education, and GDP per capita. Based on these empirical findings the current study will recommend policy actions to reduce the crime rate in Pakistan and India and also compare the results of both countries.

The number of increasing crime rates seems to be severely associated with the economic and social background of an individual and education level. In the year 2021, the crime index ranking of Pakistan and India are 79 (CI 42.52) and 71 (CI 44.43) respectively. There is a need to inspect the different socioeconomic factors which can affect the crime rates in India and Pakistan, specifically in terms of education, unemployment, poverty, and economic growth.

### **1.1. Significance of the Study**

The current study compares the socioeconomic determinants of the two countries that is India and Pakistan which mostly have the same socioeconomic conditions in the same region of the World. As already discussed, that crime is associated with the economic conditions of the country. So, the focus of the study is to check the difference in the socioeconomic factors in the crime rate in two countries. The rest of the paper is organized as Section 2 reviews the empirical literature on the relationship between crime, economic growth, unemployment, and education. Section 3 converses the empirical framework; Section 4 displays estimates and results, and Section 5 evaluate and concludes the study and provides some policy implications.

## **2. Literature Review**

This section reviews some key pieces of literature relevant to the topic of this study. This review will give essential information from prior study descriptions, as well as a foundation and idea for the variable selection and the research's key contribution.

In the field of criminology Becker (1968) is considered an initiator, his study on punishment and crime indicates that criminal behavior can be adopted by some individuals after the comparison of financial rewards after crimes to the permitted work. Becker (1968) study was extended by Ehrlich (1973), they added income levels and impacts of distribution and concluded that crime rates determine unemployment. Corman, Joyce & Lovitch (1987) examine the associations between unemployment, police, arrest, property, and demographics-related crimes. The findings indicate that detentions offer a hard warning to crimes. Though joblessness and crimes have a feeble association nonetheless demographic factors have a moderately robust effect on city crime rates like New York.

Elliot & Ellingworth (1992) examined unemployment and crime in more than 11,000 households throughout England and Wales using data from the British Crime Survey (BCS). Regression research using rank connection coefficients shows that male crime rates are strongly linked to unemployment. To be more specific, the disparity between the permissible and banned sources of income is the primary reason for the higher crime rates in Eastern Germany than in Western Germany. However, demographics also have an important and noticeable role in determining the crime rate (Spengler and Entrof, 1998). Sinha, A (2021) intended to identify the causes and impact of crime rate in tourism development in 30 Asia-pacific countries for the period 1990 to 2017. In the study, PCA and GMM are applied for long-run elasticity estimation. It is found that an increase in the refugee population and unemployment are the main social causes of the crime rates. Harun, N. (2021) explored the association between crime rates and sustainable development in Malaysia. The study is based on annual data from 1982 to 2017 and ARDL is applied for

long-run relationships. It is revealed that in the long-run, education has a positive impact on crime whereas, unemployment has a negative effect.

Gull (2021) studied the socio-economic determinants of crime in Bangladesh, Sri Lanka, India, and Pakistan. To find the relationship among the variables, data was collected from 2003 to 2017. From the sources of WDI, NPS, and UNESCO. The REM and FEM models are constructed for the determination of the relationship. It is found that the factor of education has a significant and negative effect on crime, whereas unemployment, economic growth, and population have a significant and positive effect on the crime rates. Devika (2019) examined the elements of crime across 32 states and territories in India and utilized data from 2010 to 2016. The findings show that crime in India is caused by demographic variables such as population density and socioeconomic factors such as poverty, income disparity, and literacy rate. From the macroeconomic factors that were deemed to be important, the GDP per capita was calculated.

Atanu Manna et.al. (2018) scrutinize the cointegration between crime and socioeconomic factors in the case of India between 1990 to 2015. They used the variables of GDP, inflation rate, unemployment rate, and human development index (HDI) and applied the Johansen cointegration test and Granger Causality test to find the cointegration. The results indicate that there is a unidirectional causal relationship between unemployment, GDP, and HDI. Though, the most confusing result is that the crime rate has no unidirectional causal relations among the variables. It can be determined from their results that socioeconomic improvement at all times not guaranteed the crime. Osahon Igbinedion et.al. (2017) examines demographic and socioeconomic determinants of crime in Nigeria from 1981 to 2015 and applied error correction modeling for empirical verification. Their results indicate that unemployment and inflation are positively related to crime in Nigeria, an increase in education level will result in a reduction in the crime rate, which suggests individual decisions would be altered to opt for criminal activities when the level of education increases. The variable of GDP per capita is suggesting that an increase in per capita income reduces the encouragement to commit a crime.

Oana-Ramona Lobont et.al. (2017) studied the impact of socioeconomic aspects on crime rates in Romania from 1990 to 2014. The study empirically verified the association between the socioeconomic factors and crime rates and applied the ARDL approach to cointegration for finding the cointegration and after finding the cointegration they used the Vector Error Correction model to find the long-run adjustments. They used income, inflation, unemployment, inequality, development, population density, and education as socioeconomic factors and crime rate by type and region has been used. The important conclusions from their study are that a rise in income disparity has a robust effect on rising the crime rates and the second important conclusion is that the residential place is critical, with urban clusters being a contributing aspect to crime.

Nabeela Khan et.al. (2015) studied the impact of education, unemployment, poverty, and GDP on crime rates in the case of Pakistan for the period from 1972 to 2011. The study found a positive association between unemployment and crime rates while higher education significantly decreases the crime rates in the case of Pakistan. They further found that per capita GDP raises the rates of crime in a country in the long run while it reduces the crimes in the short run. Crime rate and poverty are also associated positively in the long run while in the short run they are negatively associated. Mousumi Dutta et.al. (2009) studied the causes of crime rate, dissuasion, and growth in post-liberalized India. They examine the impact of deterrence and socioeconomic variables on crime rates. They used data from 1999 to 2005 that is state level and applied Zellner's SURE model for the

estimation. The results of the study show that both deterrence and socioeconomic factors effect the crime rates in India.

Yasir Mahmood et.al. (2009) investigated the association between crime, inflation, poverty, and unemployment in Pakistan. They used time-series data on the said variables from 1975 to 2007 and applied Johansen cointegration (Maximum likelihood method) and Granger Causality to find the causality and cointegration. The results of the study indicate the presence of a cointegrating relationship among the variables and causality analysis predicts that crimes are triggered due to the presence of poverty, inflation, and unemployment in Pakistan. Ana Cerro et.al. (2005) studied the determinants of the crime rate in Argentina for the period from 1990 to 1999 and used the weighted least square method. The results of the study indicate significant deterrence and socioeconomic effects on crime rates. The variables of the unemployment rate and income inequality show that worsening socioeconomic conditions affects crime positively. Furthermore, GDP per capita is also positive and significant indicating rich areas attract criminal activities.

Edmark (2005) unemployment takes a substantial positive impact on assets crime rates and it is not expressively connected to the destruction of misconducts in the area. There are very few studies that are conducted in the case of India to find the factors of crime. Mavi (2014), studied the effect of macroeconomic influences like GDP per capita, unemployment rate, and percentage of urban population) on overall crimes in India from 2001 to 2009. The study initiated that all three aspects significantly influence crimes. Devika & Zhen (2018) studied the association between unemployment, real GDP per capita, inflation, and crime and found that inflation is an important cause of crime though they fail to find the association between unemployment, crime, and real GDP per capita. Fischer (2001) scrutinizes cross-sectional pooled data from 1986 to 1998 and including political organizations and determined that straight democracy has no substantial consequence on crimes in the Swiss Cantons generally. Loncher & Moretti (2003) used the United States survey data and inferred that schooling lessens the rate of crime significantly and education makes public hazards opposed. Lancher (2007) similarly revealed an adverse correlation between educational accomplishment and crime rates. Fajnzylber, Laderman & Loayza (2002) analytically scrutinize the causation among inequalities of income and crimes crosswise the 39 states covering the period from 1965 to 1995. The research found a correlation between the index of the Gini coefficient, rate of robbery, and homicides inside states. The results show that there is a conclusive association between the disparity of income the and rate of crimes among the states and inside the states. Economic adversity might encourage the people to pursue illegal conduct for meeting the requirements (Herzog, 2005).

The current study makes comparisons between Pakistan and India because they have some common characteristics like cultural values, language, and way of living. Both the countries have very close crime indexes Pakistan has 41.35 crime indexes while India has 44.6. They also have very close safety indexes as a country to live in.

## **2.1. Theoretical Background**

Two basic theories related to the study are Differential Association Theory (DAT) and Social Bond Theory (SBT). DAT is focusing why people commit crimes and SBT covers why people conform.

DAT explains how the criminals engage in deviant conduct and how an individual's behavior changes concerning his associated people (Sutherland, 1970, 1974). To understand more about this idea, four pillars explain criminal acts as learned habits. First,

criminal conduct is taught through interaction with others through a communication process (Sutherland, 1974), implying how people learn behavior changes related to social surroundings (Tonry et al., 1991).

Understanding why individuals do not commit crimes and instead respect society's set norms and standards is the goal of social control theory SBT (McLean, 2012, p. 6). SBT is likewise predicated on the idea that socioeconomic class has nothing to do with delinquent conduct, and that connection and commitment are more important (Hirschi, 1969). Attachment, commitment, participation, and belief are four connected constitutive characteristics or components of SBT that have existed from its conception (Hirschi, 1969, Lilly et al., 2007).

## 2.2. Hypothesis

The above review suggests that the crime rates are usually affected by education level, unemployment, poverty, and economic growth in a country. The following notion has emerged from the preceding discussion:

**H<sub>1</sub>: There is a significant association exists between crime and education level.**

**H<sub>2</sub>: There is a significant association exists between crime and unemployment.**

**H<sub>3</sub>: There is a significant association exists between crime and poverty.**

**H<sub>4</sub>: There is a significant association exists between crime and economic growth.**

## 3. Research Methodology

As discussed in the literature that four variables have been used as a determinant of crime rate which are unemployment, poverty, education level, and economic growth. Unemployment is captured by the unemployment rate which is the percentage of the total labor force being unemployed. The poverty rate is the headcount ratio in percentage, education is the sum of enrollment at the primary and secondary level, and economic growth is the GDP per capita in US dollars. Crime is rate measured as a homicide, which are the estimations of unlawful homicides deliberately visited as a result of local clashes, interpersonal fierceness, violent battles over the resources of land and predatory violence and killing by armed groups, so this is the best measure that can be used as a measure of crime. From 1996 to 2018, the World Development Indicators for both nations have been used to compile the statistics.

### 3.1. Model Specification

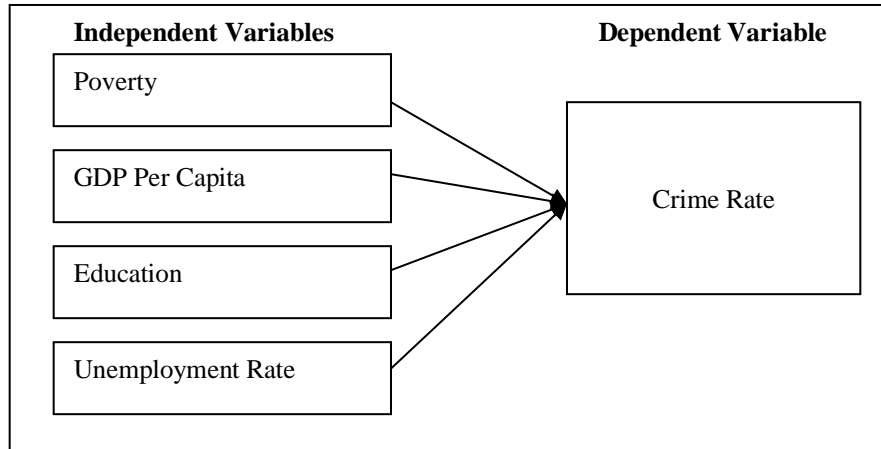
The conventional model includes all of the main socioeconomic factors are shown below. Which determines crime and has been used by many empirical works on crime in different countries. Nabeela et.al (2015) to gather empirical data, use the same model. Being employed is appraised as the courtesy feature of the prospects of income from the lawful labor mark. An excessive rate of unemployment in some states might decline the earning prospects and might influence the people to espouse the illegal conduct. Poverty is another socioeconomic indicator in the existing study, if deprived individuals have an inadequate income to accomplish the requirements, might be possible they are to be tangled in further unlawful actions to get the required income. Poverty is the key economic element of crimes in the state Iqbal & Jalil (2010); Gillaniet al., (2009). Education is the utmost vital element that can lessen the rate of crime since high school education permits the work prospects in the permissible segment of the economy. Together previous and current education has an opposing influence on rates of crime in a state (Buonanno, 2003). Crimes have a non-linear impact on per capita GDP since it encourages lower-middle-income countries and has a negative influence on wealthier ones. Here is a reciprocal U-shape relationship for all types of criminal offenses (Andrienko, 2003).

$$CR = f(UR, POV, EDU, GDPPC) \text{-----(1)}$$

$$CR = \beta_0 + \beta_1UR + \beta_2POV + \beta_3EDU + \beta_4GDPPC + \mu \text{-----(2)}$$

Where, CR is the crime measured by homicides in percentage, UR is the unemployment rate, POV is the poverty measured as a head count ratio in percentage, GDPPC is the gross domestic product in current US dollar EDI is the education enrollments both primary and secondary.

### 3.2. Conceptual Framework



Source: Author’s own elaboration

### 3.3. Log Transformation and ARDL Equation

The current study used the Autoregressive Distributed Lag Approach (ARDL) to predict the existence of short-run and long-run connections in forecast the robust outcomes. ARDL is highly valuable since it permits us to clarify the occurrence of equilibrium linkages in short- and long-run dynamics expressions while sustaining extended-run information. The ARDL path to co-integration is to measure the average ARDL equation for the model, as stated in the previous sections. The natural logarithm form is often used to estimate the elasticities of the variables.

$$\begin{aligned} \Delta \ln CR &= \beta_0 + \sum_{i=1}^n \beta_1 \Delta \ln(CR)_{t-i} + \sum_{i=1}^n \beta_2 \Delta \ln(UR)_{t-i} \\ &+ \sum_{i=1}^n \beta_3 \Delta \ln(POV)_{t-i} \\ &+ \sum_{i=1}^n \beta_4 \Delta \ln(EDU)_{t-i} + \sum_{i=1}^n \beta_5 \Delta \ln(GDPPC)_{t-i} + \lambda_1 \ln(CR)_{t-i} \\ &+ \lambda_2 \ln(UR)_{t-i} + \lambda_3 \ln(POV)_{t-i} \\ &+ \lambda_4 \ln(EDU)_{t-i} + \lambda_5 \ln(GDPPC)_{t-i} \end{aligned}$$

The model's short-run underlying forces are described by the parameters  $\beta_1, \beta_2, \beta_3, \beta_4$  &  $\beta_5$  while the long-run interactions between the variables are explained by the parameters  $\lambda_1, \lambda_2, \lambda_3, \lambda_4$  &  $\lambda_5$ . Using F statistics and Pesaran's key value table, the study will begin with a bound test to support the null hypothesis of no co-integration (2001). We will evaluate the error correction model (ECM) or vector error correction (VECM) to determine the

short-run dynamics and measure the responsiveness of correction to the long-run equilibrium after forming the long-run association. The following section digs into the prediction model in further depth.

### 3.4. Estimation Technique

To establish the line of causality between the variables, the current study used Pesaran's (2001) ARDL bound testing approach to co-integration. The ARDL technique provides trust worthy and strong conclusions for both short- and long-run linkages, and it has recently become the most preferred tool for determining co-integration across variables. This proposition does not need the variables to be given, implying that the evaluation to determine the relationship between the variables is true regardless of whether the fundamental variables are  $I(0)$ ,  $I(1)$ , or a combination of both. Another advantage of the ARDL approach is that it may be used with very small data sets. For example, the study involves annual data from 1996 through 2020, a small collection of twenty-five years. If you're looking for a unique

The current study employed a two-step procedure to determine the association between the variables. The first step is to examine if each data series is integrated and has a unit root using the Augmented Dickey-Fuller (ADF); the sequence of integration is one of the most crucial assumptions in evaluating cointegration between variables, especially when working with time-series data. Because the data in this study is time series, the integration order will be examined first, followed by the analysis. The second stage is conducting a cointegration research for long- and short-run correlations among the variables under consideration using an Autoregressive Distributed lag (ARDL) bound testing approach.

## 4. Empirical Results

In order to detect co-integration for long and short run correlations among the variables, the order of integration test has been complemented with a verification of the order of integration. Table 1 shows the findings of the Augmented Dickey-Fuller (ADF) evaluation for Pakistan. The logs of GDPPC (gross domestic product per capita), education, POV (poverty), and UR (unemployment rate) are non-stationary at the level but stationary at the first difference at the 5% level of significance, and probabilities are non-significant at the level but significant at the first difference at the 5% level of significance (0). The CR (crime rate) has reached a stalemate, and I am now in control (0). Table2 represents the results of ADF for India which indicates that the log of GDPPC, education, and unemployment rate are  $I(1)$  means integrated of order one, while crime rate and POV are  $I(0)$ . In this case, there is also a mixture of  $I(1)$  and  $I(0)$  so ARDL will be appropriate. Now after establishing the order of integration the study move towards the bound test which will indicate the long run association among the variables.

**Table.1. Stationary Test (ADF) (Pakistan)**

Variables	Level			First Difference		
	t- statistics	Critical value	Probability	t- statistics	Critical value	Probability



Log of GDPPC	-2.98	-3.63	0.16	-4.58	-3.66	0.008
Log of EDU	-2.55	-3.63	0.30	-5.29	-3.65	0.001
CR	-3.088	-3.02	0.04	-3.28	-3.65	0.097
POV	-0.52	-3.00	0.87	-3.98	-3.01	0.006
UR	-1.51	-3.63	0.78	-4.45	-3.65	0.010

**Source: Author's own elaboration**

**Table.2. Stationary Test (ADF) (India)**

Variables	Level			First Difference		
	t-statistics	Critical value	Probability	t-statistics	Critical value	Probability
Log of GDPPC	-1.80	-3.63	0.66	-3.77	-3.66	0.039
Log of EDU	-2.11	-3.63	0.52	-4.74	-3.65	0.005
CR	-4.02	-3.70	0.03	-5.59	-3.65	0.001
POV	-12.17	-3.00	0.00	-20.67	-3.02	0.000
UR	-2.78	-3.65	0.22	-2.88	-3.65	0.188

**Source: Author's own elaboration**

The bound test in the case of Pakistan indicates that F statistics lie in the inconclusive zone which means the long-run relationship may exist. In the case of India, the present study rejects the null hypothesis and concluded no long-run relationship.

**Table.3. Long-run Results using ARDL Approach (Pakistan)**

Variables	Coefficients	Std. Error	t-values	P-values
LEDU	-9.69	4.05	-2.39	0.04
LGDPPC	2.06	1.94	1.03	0.33
POV	0.18	0.06	3.17	0.01
UR	-0.53	0.09	-6.41	0.00
C	38.44	9.45	4.07	0.00

Note: Dependent Variable:CR (Crime Rate)

**Source: Author's own elaboration**

Table 3 shows that when the level of education increases it reduces the crime rate in the country, when education increase by 1% it reduces the crime rate by about 9%. The coefficient of the log of GDP per capita is insignificant but it is positive. The level of poverty shows the correct sign which is positive which means when poverty increases it will increase the crime rate in a country. The coefficient the of the unemployment rate is surprisingly negative and significant which is not consistent with any theoretical support.

**Table.4. Short-run Results using ARDL Approach (Pakistan)**

Variables	Coefficients	Std. Error	t-values	P-values
D(LEDU)	-10.90	3.68	-2.96	0.01
D(LEDU (-1))	-4.11	1.91	-2.15	0.05
D(LGDPPC)	-0.56	1.34	-0.42	0.69
D(POV)	0.15	0.06	2.46	0.03
D(UR)	-0.14	0.07	-1.93	0.08
D(UR (-1))	0.26	0.08	3.32	0.08
CointEq(-1)	-0.89	0.20	-4.40	0.01

Note: Dependent Variable:CR (Crime Rate)

**Source: Author's own elaboration**

The above table shows significance at a 5% level of significance which means that equilibrium is restored by about 89% among the variables. In the short run coefficient of education is significant and negative as in the long run which says that when level of education increases it will reduce the crime in the short run also, while GDP per capita is

insignificant in the short run also. Poverty is again positive and significant which indicates that increase in poverty will increase the crime rate.

**Table.5. Long-run Results using ARDL Approach (India)**

Variables	Coefficients	Std. Error	t-values	P-values
LEDU	0.03	0.88	1.59	0.55
LGDP	0.04	0.84	0.37	2.25
POV	-1.60	-0.35	0.06	-5.49
UR	-0.03	0.62	0.16	3.67
C	11.99	8.11	6.24	1.29

Note: Dependent Variable:CR (Crime Rate)

Source: Author's own elaboration

The above table 1.7 spectacles the long run (LR) outcomes of the ARDL model for the data of India. All the coefficients are insignificant which means that none of the variables shows the significant long run association with the crime rate in India. For short run adjustments we can now move to the error correction estimates.

**Table.6. Short-run Results using ARDL Approach (India)**

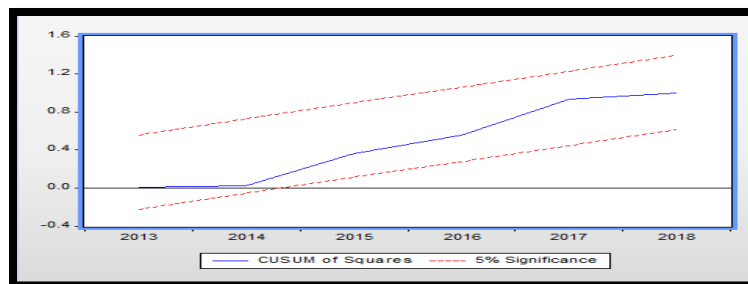
Variables	Coefficients	Std. Error	t-values	P-values
D (CR (-1))	-0.28	0.18	-1.50	0.16
D(LEDU)	-2.03	1.07	-1.90	0.08
D (LEDU (-1))	-1.74	1.21	-1.43	0.18
D(LGDP)	-0.15	0.32	-0.48	0.64
D(POV)	-0.34	0.06	-6.21	0.00
D(UR)	0.15	0.20	0.72	0.48
CointEq(-1)	-0.98	0.26	-3.80	0.01

Note: Dependent Variable:CR (Crime Rate)

Source: Author's own elaboration

The above table shows that the coefficient of education is negative and significant at 10% level of significance which indicates when education level increases it reduces the crime rate in India while coefficients of GDP per capita and unemployment are insignificant in the short run. But the coefficient of poverty is negative and shows very surprising results that when poverty increases it will reduce the crime in India and it is also significant in the short run. So, the important socioeconomic determinant of crime in India is education level in short run.

#### 4.1. Stability Test: CUSUM SQUARE



Source: Author's own elaboration

To check the stability of the model CUSUM square test has been applied to find out the model used in the current study is stable or not. The above graph shows the blue line which remains in the red band, for the model to be stable this blue line will remain in the red band,

here in the model it remains in the red band at a 5% level of significance. It means the models used in the current study are stable.

## 4.2. Discussion

In any culture, crime is a major cause of uncertainty and hardship. There is little doubt that crime has significant psychological and monetary consequences for society. The act of breaching the law increases the sensitivity of fear and anxiety among others who have not been targeted. This fear of being persecuted has negative consequences on one's well-being. The current study finds out that lack of education and poverty are the major source of crime in Pakistan, the results are consistent with Devika (2019) who concluded that poverty is the important factor that provokes crime in India. Our results are consistent with this study in both the countries for poverty because it is found that in Pakistan and India poverty is the key factor that provokes crime. Ashby, D. I. (2005) find out that the level of education can be the contributing variable to crime while Osahon Igbinedion et.al. (2017) also concluded that an increase in the level of education will reduce the crime rate in case of Nigeria. Nabeela Khan et.al. (2015) also points out that higher education level and a decrease in poverty will significantly reduce the crime rate in Pakistan. The current study concluded that education is an important factor in reducing the crime rate in Pakistan in the long run while in India it is found significant in the short run. Yasir Mahmood et.al. (2009) concluded that the presence of poverty triggers crime in Pakistan.

## 5. Conclusion

The current study empirically verified the socioeconomic determinants of crime in Pakistan and India which are the unemployment rate, GDP per capita, poverty, and education. The important objective of the current study is to compare the results of both the countries for this purpose the study used time series data from 1996 to 2020 and used the Autoregressive distributed lag approach (ARDL) for finding the cointegration. In the first step order of integration has been established which indicates that there is a mixture of I (0) and I (1) variables. The key findings of the study in the case of Pakistan education and poverty are the important determinants of crime in the long run, while in the short-run increase in education level can play an important role in decreasing crime. In the case of India poverty has been found a very important factor that provokes crime in the country. So, the policymakers should focus on poverty alleviation in both countries because poverty is the key factor that increases crime in the countries according to the empirical findings of the current study. The policy may be focused on increasing the level of education in case of Pakistan because education is the very important factors that can reduce the crime in country.

### 5.1. Policy Recommendation

Based on the findings of this study, policies should be implemented to help the benefits of economic growth trickle down to the poor and reduce income inequality and eliminate crime. Federal and provincial policy makers along with law enforcement agencies and peace keepers must incorporate the findings of the study while formulating their specific policies in eliminating the crimes from the society.

Based on the findings of this article, more research into how the aforementioned factors impact specific types of crimes – property crimes and violent crimes – is needed to determine what is causing the abnormality in the link between crime and the variables affecting crime.

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