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Article

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EMPIRICAL RELATIONSHIP BETWEEN SOCIAL COHESION AND ECONOMIC GROWTH IN PAKISTAN: A Time Series Analysis

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Abstract

Lack of social cohesion increases conflicts among different groups of society and decelerates the pace of economic growth. The present study aims to investigate the impact of social cohesion on economic growth in Pakistan. Time series data from 1980 to 2017 were analysed by employing Johansen's cointegration approach. Results revealed that education and gender inequality, poverty, and share of middle class income have a significant impact on economic growth in the long run, whereas education and gender inequality were insignificant in the short run. Findings suggested that effective poverty reduction programs should be launched to eradicate the discrimination between rich and poor. Gender-biased strategies should be designed to benefit the unprivileged society.

Keywords: Social Cohesion, Economic Growth, Poverty, Analysis, Inequality
JEL Classification: A13, B55, A19, I3, I24, I39, C01.

I. Introduction

The concept of social cohesion is multidimensional in nature. Social cohesion is sometimes referred to as social capital, which can be defined in terms of social connections and networks, such as membership of social organisations and civic participation [Pervaiz and Chaudhary (2015)]. It describes the factors that have been used to bring people together in a society. Social cohesion can also be defined as a socialising and binding force among people, which is strengthened due to an increase in income equity and a reduction in educational inequality, gender inequality and poverty. Social cohesion has been a subject of inquiry not only for economists but also for social scientists from different related disciplines such as sociology, political science and psychology [Mekoa and Busari (2018)].

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The social cohesion of a society is an intimidating problem of gigantic complexity and significance [Enderle (2018)]. Social cohesion can be the result of social progress and development, which makes people, feels that they are an imperative part of society. Such kinds of feelings help people to face challenges and disasters more calmly. Lack or absence of social interconnection can make people violent; as a result, they may have a poor ability to cope with disasters [Cilingir (2016), Pervaiz and Chaudhary (2015)]. The pace and pattern of factors of change and longevity are determined by the society [Pakistan Economic Survey (2009-10)]. Division of society has been a serious threat to the social cohesion of a country. Since independence, Pakistan has faced many problems, such as disparities and inequalities, which hindered the promotion and strength of social cohesion. Due to the absence of social cohesion, social polarisation and discrimination occurred, leading to the suboptimal distribution of resources [Cilingir (2016)].

Education wields substantial implications for the national integrity and social cohesion of the country; as a result, inequalities are minimised [Pakistan Economic Survey (2010-11)]. Education plays a dual role in the development process of a country. It is an important ingredient of human capital and the role of human capital is an important determinant of economic growth. It has great implications for individuals and society [Kayani (2017)] and contributes to creating an equitable, just and fair society [Camilleri and Camilleri (2016)]. Education reduces social conflict and rent-seeking activities in society. Public and centralised schooling can reduce social distance among the different groups and individuals in a society. It can construct national identities and increases social cohesion. As social cohesion is tied with human capital creation, the quality of institutions, conflict and political stability in the society, therefore, will affect the pace of economic growth [Gradstein and Justman (2002)].

Poverty is an important factor in shaping the social cohesion of society because it not only limits access to opportunities but also affects the status of a person in society. World Bank (2001) reported that poor regions and countries have higher risks of conflicts and civil unrest, which can harm economic growth. Poverty reduction is necessary because it can make society more cohesive by narrowing down the gap between haves and have-nots. Thus, poverty reduction will enhance economic growth by increasing the capacity of people to participate in productive economic activities. Public financing in social services can be a good tool to reduce poverty [World Bank (2014)].

Letki (2008) pointed out that poverty was an important factor that affected the cohesiveness of society. He found that economic and social inequalities were more harmful than cultural heterogeneity for the solidarity and cohesion of a society. He suggested that efforts should be made for the reduction of material deprivation. Klasen and Lamanna (2009) investigated the effect of the gender wage gap on economic growth for the time period 1960-2000. They found that across countries gender employment gap was one of the growth differentials. However, they concluded that low female participation may be the main reason for low economic growth in

some regions when compared with the regions of East Asia. They suggested that female employment can help to boost economic growth through positive externalities.

Camilleri and Camilleri (2016) studied education, social cohesion and economic growth. The main objective of their study was to explore how education promotes social cohesion. They found that better-educated leadership affect economic growth, competitiveness and job creation. Moreover, better child care, flexible working schemes and incentives to employers can help in better working of individuals. They concluded that educational improvement and social progress could make a great succession of productive outcomes as well as economic growth. They suggested that higher education and professional training can provide great opportunities for societal advancement and can influence the key indicators of social outcomes. Majeed (2017) analysed the effect of social cohesion on economic growth. They used panel data from forty-four countries over the period of 1986 to 2010 for analysis. They used different indicators such as inequality, social conflict and terrorism as a measure of social cohesion. They concluded that social cohesion has a significant positive impact on growth in Islamic states.

Social cohesion is the most difficult and important challenge faced by Pakistan's society. Generally, it is considered that social cohesion has a great influence on socio-economic development. The concept of social cohesion has been time-honoured and is subject to theory, research and analysis. However, it also attracts the attention of policymakers as well as international organisations. The reason is that a more cohesive society is linked with greater productivity, democratic stability, and better quality of life for citizens and economic growth [Burns, et al., (2018)].

The present study was planned to analyse the relationship between social cohesion and economic growth in Pakistan and to give policy recommendations. The organisation of the remaining paper is as follows; Section II covers the conceptual frame, Section III deals with materials and methods, and results are presented in Section IV and discussed in Section V, whereas the last Section VI covers the conclusion and policy recommendations.

II. Conceptual Framework

Earlier, Stanley (2001) expressed that social cohesion could be quantified in terms of social, political and economic involvement. They observed that countries having high incidences of poverty, and inequalities based on gender and in the provision of education could observe not only political salience but could also affect human capital creation in the society. Castello and Domenech (2002) analysed that human capital inequality measures had more robust results on economic growth than income inequality measures. They found that inequality of human capital was associated with low investment and low-income growth. They concluded that the division of society could create social conflict and have an adverse effect on the quality of institutions.

Gradstein and Justman (2002) described that education reduces social conflict and rent-seeking activities in society. They found that public and centralised schooling could reduce social distance among the different groups and individuals of a society. Easterly, et al., (2006), expressed that the concepts of social capital and social cohesion could be used distinctively to avoid any confusion. They postulated that the share of middle-class income and low ethnolinguistic fractionalisation had a positive impact on institutional quality. They used the share of income going to the middle 60 per cent population along with ethnolinguistic fractionalisation as a proxy for the social cohesion of a society. They concluded that lack of social cohesion occurs due to political forces, which undermines the institutions and, as a result, the growth rate remains poor. They suggested that education can play the role of potential policy level to improve social cohesion.

Therefore, Social cohesion is not directly linked with economic growth. However, it has an indirect relationship with economic growth and is directly affected by the institutional quality and inequalities present in society. If a country has better quality institutes, inequality will be reduced and vice versa. Resultantly, values, norms, attitudes and skills development go in a better way; consequently, better social values, positive externalities and opportunities will emerge that all result through an increase in socialisation. In more cohesive societies, inequalities, poverty and social conflicts are reduced. As a result, a better society comes into existence, and ultimately better livelihood will be the outcome that leads to the economic growth of a country. The conceptual frame of the following has been presented in Figure 1.

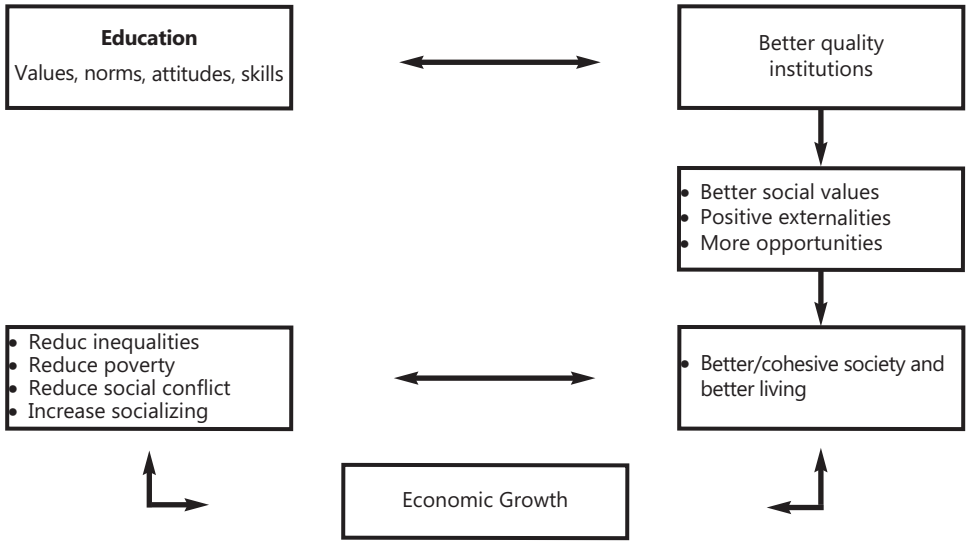

FIGURE 1

Conceptual Framework of social cohesion and economics growth

The present study is based upon the model of social cohesion developed by Easterly (2001) and Easterly, et al., (2006). The model describes that the economic growth of any economy is determined by human capital creation and the quality of its institutions. Nevertheless, in a divided society, both human capital creation and the quality of institutions remain low, which in turn affects economic growth negatively. In fact, in a divided society, elites feel a threat that they could be displaced from power by the masses. The quality of institutions remains low in a divided society because the division of society can lead to political instability and conflict. The model of social cohesion has taken into account inequality (or equality) on the basis of income, ethnicity and language. However, forms and salience of inequality in different countries can be different and all kinds of inequalities and divisions of society can be incorporated in the analysis of social cohesion.

III. Data Source and Methodology

The present study used the variables of gender inequality, educational inequality, middle-class share of income and poverty for the sake of empirical analysis by following Stanley (2003), McDaniel (2003), Easterly, et al., (2006), Ali (2007), Brummet (2008), Ashraf and Waqar (2012). The current study used these variables because all these variables refer to inclusion or exclusion and can increase or decrease the social cohesion of the society. However, per capita GDP was taken as representative of economic growth by following Cuadrado-Rouraet al., (2004), Adda (2007) and Iancu (2008).

For the analysis purpose, annual time series data were used for the period 1980 to 2017. GDP per capita (real GDP) data were taken in Pakistani rupees and from the World Bank site and used as a proxy for economic growth. Data for a the share of middle class income, middle-class share of income, poverty and income inequality have been taken from Pakistan Integrated Household Surveys (PIHS), Household Income and Expenditure Surveys (HIES) and World Bank sites. However, the middle-class share of income is the percentage share of income for the second, third and fourth quintiles collectively.

1. Empirical Model

The major objective of the present study was to explore the impact of social cohesion on economic growth in Pakistan. For this purpose, different variables, such as middle -class income share, gender inequality, education inequality and poverty, were taken as a proxy of social cohesion and treated as independent variables. However, GDP per capita was taken as representative of economic growth and used as a dependent variable for the analysis purpose.

By using the variables mentioned above, the model can be written in the form of Equation (1) as;

$$y_t = f(MC_t,\ GI_t,\ EduI_t, Pov_t) \quad (1)$$

Where:

Y = GDP Per capita (Rs.)
MC = Middle-Class share of Income (The percentage share of income received by the second, third and fourth quintile)
GI = Gender Inequality
EduI = Educational Inequality
Pov = Poverty
t = time

The Equation (1) can also be written in the following form as Equation (2):

$$y_t = A_t\, MC_t^{\beta 1}\ GI_t^{\beta 2}\ Edul_t^{\beta 3}\ Pov^{\beta 4}{}_t \quad (2)$$

In the form of an econometric model, the Equation (2) can be re-written as Equation (3):

$$lny_t = \alpha + \beta_1 lnMc_t + \beta_2 lnGI_t + \beta_3 lnEduI_t + \beta_4 lnPov_t + \varepsilon_t \quad (3)$$

After model specification and before the statistical analysis, the stationary status of the data was checked because most of the time series data trended over time. Applying regression on non-stationary data may produce specious outcomes (Granger and Newbold 1974). To check the stationarity of the data, different tests have been suggested in the literature. The present study used Augmented Dickey-Fuller (ADF) test to examine the unit root problem in the time series data. In general, it can be written in the form of following Equations (4), (5), (6) and (7):;

$$\Delta X_t = \alpha + \delta X_{t-1} + \textstyle\sum_{j=1}^{q} \gamma j \Delta X_{t-j} + \varepsilon_{1t} \quad (4)$$

$$\Delta X_t = \alpha + \beta_{t1} + \delta X_{t-1} + \textstyle\sum_{j=1}^{q} \gamma j \Delta X_{t-j} + \varepsilon_{1t} \quad (5)$$

$$\Delta\Delta X_t = \alpha + \delta \Delta X_{t-1} + \textstyle\sum_{j=1}^{q} \gamma j \Delta\Delta X_{t-j} + \varepsilon_{2t} \quad (6)$$

$$\Delta\Delta X_t = \alpha + \beta_{t1} + \delta \Delta X_{t-1} + \textstyle\sum_{j=1}^{q} \gamma j \Delta\Delta X_{t-j} + \varepsilon_{2t} \quad (7)$$

Where:

$$\Delta X_t = X_t - X_{t-1}$$

q = Number of lags in the dependent variable

The existence of a unit root problem or stationary is checked with the help of the following hypotheses:

$H_0 : \delta = 0$ (X_t is Non-Stationary)
$H_a : \delta < 0$ (X_t is Stationary)

After checking the stationary status of the data cointegration test was applied. A cointegration test was applied to find out the long run association between variables which are integrated in the same order. Firstly, the cointegration concept was presented by Engle and Granger in 1987; later on, it was elaborated further by Stock and Watson (1988), Johansen (1988, 1991, and 1995) and Johansen and Juselius (1990). The present study used the Johansen approach for cointegration to explore the long run association among variables. Later on, Vector Error Correction Mechanism (VECM) was used to check the short run relationship among variables.

The representation of VECM with respect to variables is as shown in Equation (8);

$$\Delta lny = \alpha^{\circ} + \sum_{j=0}^{n} \beta 1 \Delta lnMC + \sum_{j=0}^{n} \beta 2 \Delta lnGI + \sum_{j=0}^{n} \beta \Delta lnEduI + \sum_{j=0}^{n} \beta 4 \Delta lnPov + \acute{\eta} ECT_{t-1} + \varepsilon_t \quad (8)$$

The significance of the ECT_{t-1} coefficients tells about the presence of short run relationships among variables. However, its signs and value articulates the speediness, convergence, or divergence from the short to the long run.

IV. Results

To find the relationship among variables of interest researcher start from the investigation of the presence of unit root in the data. This is necessary because the stationarity of data is a prerequisite to check the cointegrating. If the variables become stationary, then we will be able to move towards cointegration and further analysis.

1. Result of Unit Root

To check the stationary status of the data, the present study used the Augmented Dickey-Fuller (ADF) test. The results of the unit root are presented in Table 1 and showed that t-statistics of ADF tests for all variables, i.e. GDP per capita, poverty, gender inequality, the middle-class share of income, and educational inequality, were statistically insignificant at the level form and caused the unit root problem. First, differences were taken to make the time series stationary, and all the variables became significant and revealed that data were stationary at the first difference.

TABLE 1

Unit root results

Augmented Dickey-Fuller (ADF) results at the level form				
Regressor	ADF statistic without trend	Prob. Value	ADF statistic with trend & intercept	Prob. value
lny_t	-0.311	0.9130	-1.402	0.8422
$lnMC_t$	-0.861	0.7884	-2.853	0.1890
$lnGI_t$	0.495	0.9842	-1.960	0.6020
$lnEduI_t$	-0.983	0.7485	-2.180	0.4849
$lnPOV_t$	-2.261	0.1897	-1.668	0.7437
Augmented Dickey Fuller (ADF) results at I[st] difference form				
Regressors	ADF statistics without trend	Prob. Value	ADF statistic without trend & intercept	Prob. Value
Δlny_t	-4.225	0.0022	-4.138	0.0132
$\Delta lnMC_t$	-5.113	0.0002	-4.938	0.0018
$\Delta lnGI_t$	-6.159	0.0000	-6.209	0.0001
$\Delta lnEduI_t$	-5.993	0.0000	-5.906	0.0001
$\Delta lnPOV_t$	-5.365	0.0001	-5.678	0.0003

Source: Author's estimation.

After checking the stationary status of the data, optimal lag length was found. For the optimal lag length, different criteria have been used, such as Akaike Information Criteria (AIK), Schwarz Information Criteria (SIC) and Hannan Quinn Information Criteria (HQ). These criteria's suggested the optimal lag length of 1, shown in Table 2.

TABLE 2

VAR lag order selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	258.0917	-	2.36e-13	-14.88775	-14.66328	-14.81120
1	445.2006	308.1793*	1.73e-17*	-24.42357*	-23.07678*	-23.96427*
2	458.7016	18.26599	3.77e-17	-23.74715	-21.27804	-22.90511

*indicates the selected lag order
LR: Sequential modified likelihood ratio
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criteria
HQ: Hannan Quinn information criteria

Source: Author's estimation.

2. Cointegration Technique

The present study used the Johansen cointegration technique to investigate the long run dynamics of economic growth, gender inequality, educational inequality, middle-class share of income and poverty. The Johansen cointegration test results have been presented in Table 3:

TABLE 3

Cointegration results based on a rank test (Trace)

H_o	H_1	Trace statistics	Critical value	P-value
R = 0*	R ≥ 1	75.84	69.82	0.015
R ≤ 1	R ≥ 2	46.17	47.86	0.070
R ≤ 2	R ≥ 3	25.51	29.79	0.140
R ≤ 3	R ≥ 4	09.87	15.49	0.290
R ≤ 4	R ≥ 5	01.28	03.84	0.260

Source: Author's estimation.

Trace test statistics λ_{trace} were used to check the number of cointegrating vectors. Trace test information checked the null hypothesis (H_o: no cointegration) against the alternative hypothesis (H_1: cointegration). The value of trace test statistics was 75.84, larger than the critical value at a 5per cent level of significance. So, it rejected the null hypothesis (H_o:r ≤0) in favour of the alternative hypothesis (H_1: r =1). However, after that, the null hypothesis (H_o: r ≤ 1) was accepted against the alternative hypothesis (H_1: r=2) because at r≤2, r ≤ 3, r ≤4, the trace statistics were less than critical values. Thus, the results of the trace test confirmed the presence of cointegrating vectors and concluded that all variables have a long run relationship, as shown in Table 4:

TABLE 4

Long run results

Dependent variable = lny_t variable= lny_t

Regressor	Coefficient	T-statistics	P-value
$Constan_t$	18.648970	7.101939	0.0000
$lnMC_t$	1.218538	2.612540	0.0141
$lnGI_t$	-2.560373	-7.704542	0.0000
$lnEduI_t$	-0.292290	-1.998971	0.0499
$lnPOV_t$	-0.268975	-4.953990	0.0000
AR(1)	0.394233	2.169923	0.0383
R-square = 0.892	Adj. R-square = 0.879		F-statistic = 333.76
Durbin Watson = 1.85	LM = 0.69		

Source: Author's estimation.

The long run coefficients can be written in the form of equations as;

$$y_t = 18.64897 + 1.218538*MC_t - 2.560373*GI_t - 0.292290*EduI - 0.268975*Pov_t \quad (9)$$

*indicates the significance at 0.05 level.

The results showed that all the variables have a significant effect on economic growth. In contrast, the middle class income share of income has a positive impact, while gender inequality, educational inequality and poverty have a negative impact on economic growth. The estimates represented that on average 1 per cent rise in middle-class share brings a 1.2 per cent increase in GDP per capita, whereas a 1 per cent reduction in gender inequality, educational inequality and poverty leads to 2.6 per cent, 0.3 per cent, 0.3 per cent and 0.3 per cent increase in economic growth as measured by GDP per capita respectively.

3. Short Run Dynamics

The results of cointegration revealed that a long run relationship exists among variables. Howerver, the presence of such a type of cointegration complied for the short run association. To analyse the short run dynamics present study used the VECM approach; the results have been reported in Table 5:

TABLE 5

Vector Error Correction Estimates

Dependent variable=Δlny_t

Regressors	Coefficients	T-statistics	Prob. value
Constant	0.02554	6.1850	0.0000
$\Delta lnMC_t$	0.6149	2.1725	0.0399
$\Delta lnMC_{t-1}$	0.1981	0.8683	0.3938
$\Delta lnGI_t$	0.1583	0.4666	0.4649
$\Delta lnGI_{t-1}$	0.5772	1.4805	0.1517
$\Delta lnEduI_t$	0.0027	0.0653	0.9676
$\Delta lnEduI_{t-1}$	0.0525	0.7635	0.4526
$\Delta lnPOV_t$	-0.1134	-3.0104	0.0061
$\Delta lnPOV_{t-1}$	-0.0511	-1.2530	0.2223
ECT_{t-1}	-0.3192	-2.7906	0.0101
R- square= 0.5526	Adj. R- square= 0.3848		F-statistic=3.29
Durbin Watson=1.98			

Source: Author's estimation.

According to VECM results, the middle-class share of income and poverty affect economic growth significantly in the short run; however, other variables, such as gender and educational inequality, have an insignificant effect on economic growth.

The short run coefficients of analysis can be reported in the form of an equation as;

$$y_t = 0.02554 + 0.6149*MC_t + 0.1583*GI_t + 0.0027*EduI - 0.1134*Pov_t \quad (10)$$

*indicates the significance at 0.05 level.

The error correction term was statistically significant and had a negative sign that confirmed the long run association among variables. Table 5 shows that, on average 1 per cent increase in the middle-class share of income leads towards a 0.6 per cent increase in per capita GDP in the short run. The coefficient of poverty was statistically significant and has a negative sign which implies that a 1 per cent reduction in poverty leads towards 0.1 per cent increase in economic growth as measured by GDP per capita. However, the variables of gender inequality and education inequality have an insignificant effect on economic growth in the short run. However, the model validity was evaluated by using diagnostic tests. LM results showed the absence of serial correlation in the model.

V. Discussion

It is evident from empirical results that all independent variables except the middle-class share of income had a negative impact on economic growth. These results are in line with the findings of Easterly (2001) and Brueckner, et al., (2018). The variable of middle-class share has a positive impact on economic growth because the consumption function of the middle class is different from the poor and the rich. Poor people have to spend a large portion of their income on necessities like food and shelter, and rich people are fond of spending on luxuries. In a society where the share of the middle class is higher, people's sense of belonging to a common society is strengthened, whereas, in a society where the share of the middle class is lower, a sense of deprivation is created among the masses. They feel that they are being exploited by the oligarchy of society. Such kind feelings among the masses can create distrust in society, which may result in a conflict and hence can reduce the pace of economic growth. Thus increased share of the middle class makes society more cohesive and more harmonised, and such a situation is more conducive for economic growth [Easterly (2001) and Adda (2007)].

The present study found that gender and education inequality has a negative impact on economic growth in Pakistan. These results are consistent with the findings of Castello and Domenech (2002), Ahmad and Bukhari (2007) and Klasen and Lamanna

(2009), as they also found that gender and education inequality declined economic growth. According to them, if education or gender inequality exists among the different population groups, then the social cohesion of the society would be weakened and economic growth will be depressed.

Furthermore, education and gender inequality have insignificant relations with economic growth. An insignificant coefficient could be due to the fact that the relationship between gender inequality and economic growth may not be linear, meaning that the number of women and men needs to be equalised and reach to some particular level that can influence economic growth. These results are in line with the findings of Seguino (2000), Klasen and Lamanna (2009), Kabir and Hussain (2019) and Altuzarra, et al., (2021); they also found such type of outcomes.

Results showed that the poverty variable was also negatively associated with economic growth. The incidence of poverty makes society less cohesive because, generally, it is considered that the costs of economic activities are born by the poor, whereas the fruits of these activities are reaped by the rich. As a result, the poor feel that they have been exploited by the elite of the society, and these feelings weaken the social cohesion of the society. Thus, the incidence of poverty retards economic growth through a reduction in the productivity of the poor and by making the society less cohesive [Afzal, et al., (2012) and Fosu (2017)].

VI. Conclusion and Recommendations

The present study aimed to determine the impact of social cohesion on economic growth in Pakistan. For this purpose, different variables, such as education inequality, gender inequality, and poverty, were used as representatives of social cohesion. Annual time series data were taken from 1980-2017. Results revealed that there is an inverse relationship between economic growth and explanatory variables such as gender inequality, poverty and education inequality. It showed that social disparities hinder social cohesion and negatively affect economic growth. However, the middle-class share of income showed a positive relationship with economic growth; thus, the even distribution can make the society more cohesive, which will further enhance economic growth. Some recommendations to make the society more cohesive and to raise the pace of economic growth in Pakistan as: Education plays an important role in pulling society together; therefore, educational inequalities should be minimised. In this regard, the government should guarantee uniform access to education and a homogeneous syllabus for all sections of society. Obliteration of gender discrimination should be focused not only on an ethical and moral basis but also on economic grounds. Poverty is a big constraint in the way of a cohesive society. Therefore, to uplift the economy of the country, effective poverty reduction programs should be launched for better socialisation. Resolving the issue of economic and social inequalities should be on the agenda of a public policy to achieve the desired economic growth.

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