Financial Development and Entrepreneurship: Pathways to Economic Growth and Poverty Reduction in Pakistan

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Abstract: Financial development by promoting entrepreneurial activities plays a vital role in efficiently minimizing poverty. Among others, a dominant factor that defines underdeveloped economies is poverty, as in the case of Pakistan. This raises questions about what causes poverty to increase and how entrepreneurial activities can help reduce poverty and increase economic growth. This research uses the time series data from 1990 to 2020 that spans over 31 years. Methodological techniques used are ARDL and unit root estimations. Findings of study illustrated that in the long run financial development and entrepreneurship both have negative and significant impact on the dependent variable poverty but in the short run financial development through entrepreneurship have positive and significantly impact poverty and economic growth. To tackle the poverty in this way there is needed such schemes and facilities which reached the poor and interact them and give them opportunities by facilitating. These strategies upgraded the economy gradually and accelerated the economic growth.

Introduction

Financial development is defined as improving and enhancing the size, efficiency, and stability of financial institutions and markets and providing easy access to finance (Dutta & Meierrieks, 2021). Poverty is defined as the condition in which people don't have enough income to fulfill their basic needs and face a lower standard of living and inferior quality of life (Hussain et al., 2014). A person or a state is said to be in poverty when it does have not enough money to fulfill its basic needs (Rauff & Adegboye, 2024). Poverty reduction is a measure of poverty relief which means that poor individual income increases and upgrades the poor people's standards which results in economic growth or at that time economy would be at its boom (Chikwira et al., 2022).Whereas Entrepreneurship is the process of starting new businesses to make a profit and create jobs that generate economic activities and boost economic development (Ajide & Ojeyinka, 2022). Generally, poverty is a worldwide issue most common in developing countries. The issue of poverty comes across due to weak, poor, and inconsistent policies and institutions (Fonseca et al., 2024). Poverty may also come from low productivity by lower income groups due to financial and other entrepreneurial benefits restrictions. Poverty is found more in rural places than in urban places. One of the reasons for Extreme poverty is health and low education especially for females in rural areas, and the agricultural women those paid less. (Chikwira et al., 2022).

Poverty has different root causes through which we can categorize poverty into three poverty measures. incidence index, the depth of the poverty index, and the severity of the poverty index. Poverty incidence when proportional to poverty living under the poverty line (poverty line indicates the percentage of poverty which indicates the those

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resources needed for uplifting the poor people from the poverty line), depth of poverty calculated quantity difference between per capita consumption and expenditure, and severity of poverty measure inequality of poor people (Fonseca et al., 2024). According to the World Bank, individuals who live under the poverty line set the figure for estimations that is $1.90 a day. To measure poverty, it has many dimensions. Poverty is a lack of basic needs which include poor excess to food, health, clean atmosphere and water, education, , family size, limited assets and lack of voice, and simply not enough approaches to improved basic living standards and social status.

When Poverty was at its extreme, the World Bank addressed it and made an institution to handle it in 1944. It aims to set rules in structural objectives and create institutions and financing for poor countries. For better achievements, country made FD department through commercial banks to provide loans to microfinance institutions and make loan and finance availability easy and possible access to poor and marginalized societies areas as well. The most effective solution to poverty reduction is to spur business activities by financing entrepreneurship, where entrepreneurship gives the basis for economic change and boosts the economy by adopting new skills and techniques (Hussain et al., 2014). Financial development is set as a tool to fight poverty, especially in marginalized communities. This financial development sector aims to be made in developing economies for uplifting marginalized communities and the growth of these institutions depends primarily on poverty relief as poverty decreases the performance of the financial sector improved (Chikwira et al., 2022). There are four markets at the macro level in the economy i.e. labor, capital, money and product market. Of four of them, two markets that are the capital market and the money market represent the financial sector whereas financial development represents the growth or flourish in the formal sector. The best performance of the financial development sector with efficiency, efficacy, competency, and well monitoring can help in achieving the highest economic growth of the economy (Rauff & Adegboye, 2024). So financial development is aggregations of depth, access, and efficiency of markets and institutions (de Haan et al., 2022).

Financial development is based on the following functions (1) Financial development guide in risk management; (2) Financial development provides information about beneficial investment and guides in allocating capital; (3) Financial development monitors the companies and controls them; (4) Financial development aids in mobilizing and assembling the savings; (5) Financial development provides financial infrastructure. These financial services are relevant to potential entrepreneurs and investments in entrepreneurial activity (Dutta & Meierrieks, 2021).

A powerful financial system also provides large-scale projects which possible to have trade and risk. The involvement of the financial development sector it made possible for the investor and saver at one point which off the transaction cost and created money expansion and credit availability in the economy (Rauff & Adegboye, 2024)

There is a strong association between economic growth, FD, and PV reduction (Rehman & Shahbaz, 2014). Financial development is multidimensional, and it reduces poverty by achieving sustainable development goals. UN addressed first SDGs goals was poverty, The UN reported that 10 percent of the total population around the world under the poverty line. Those are away from basic needs and basic requirements of living as food scarcity, low education, poor health and even no access to clean water (de Haan et al., 2022). SDGs some of them are mitigating poverty, reducing hunger, promoting trade, and reducing the inequality gap (according to the UNCDF report). These SDGs can be achieved by promoting entrepreneurship through financing. To achieve these SDGs, institutional quality is an important factor in the case of the effectiveness of financial development to promote entrepreneurial activities that increase economic growth. So financial development can only promote economic growth when the country's institutional quality is high as sound institutional quality have a dominant influence on entrepreneurship and FD (Law et al., 2013). FD is essential part of economic development that helps in the mitigation of poverty. Financial development contributes through entrepreneurial activities by financing new businesses and creating job opportunities that enhance the poor peoples' income and purchasing power which will result in poverty reduction (Dutta & Meierrieks, 2021).

Entrepreneurship is the main factor for job creation as self-employed or in a way to business setup. Job creation in the economy is a fasten way to tackle poverty and a destructive economy which will result in upgraded economic growth as well as a standard of poor living (Ajide & Dada, 2023). Entrepreneurship is an important factor in Economic

Growth and poverty reduction. Entrepreneurship portrays excellent function concerning productivity and progress of the economy. Entrepreneurship varies from country to country based on skills, resources, technologies, knowledge, and policies. Entrepreneurship can be defined as a new business setup or job creation. Entrepreneurship can contribute to different stages of economic growth in the economy through employment and income. Entrepreneurship promotes innovations, new ideas, resource allocation, and job creation. Here is a strong bond between FD, economic expansion and entrepreneurship like innovations, new ventures, and employment. (Valliere & Peterson, 2009). Financial developments vary from country to country depending on their economic position. A developing country like Pakistan is concerned with major poverty issue although it doesn't have strong financial development institutions. Due to weak financial development institutions, financial markets, and weak Government policies, Pakistan has serious poverty issues and a large inequality gap (Rehman and Shahbaz 2014). Ineffective policies, financial development, and inequalities lead to poverty (Bolarinwa et al., 2021) as is evident in Pakistan's case. According to the report of the Asian Development Bank Pakistan's population was 219.7 million with 48.1 million under the poverty line which is 21.9% in 2018. Another report submitted by the Ministry of Planning and Development in the National Assembly of Pakistan in 2022 states that out of a 235.8 million populations, 55 million are under the poverty line which 24.3%. These mentioned estimations justify that Pakistan has been facing a serious poverty issue. By addressing the weak and poor financial and institutional system there is a dire need for implementing better policies to promote financial development and entrepreneurship. This will help in generating economic activities, resulting in poverty mitigation and creating an active and strong financial system to empower common people, accelerating economic growth and generating a harmonic society (Sehrawat & Giri 2016b).

Literature Review

Labony et al. (2024) studied the connection among FD and deprivation in South Asian countries. The researcher estimated the data from 2019 to 2019 with methodology. Financial development has positive relationship with poverty as financial development increases it affect poverty to decrease corresponding to institutional quality the poverty and institutional quality both increasing. So financial development has more dominant effect on poverty than institutional quality. Abdulai and Hussain (2024) explored the entrepreneurship activities in Africa. The authors used the data from 2000 to 2021 with GMM approach. This study concluded that entrepreneurship activities have a substantial effect in the long run in an economy and shows that the entrepreneurial ecosystem affects the different stages of development which help in solving unemployment, poverty, and other welfare problems

Ndeffo et al. (2024) analyzed the influence of FD and institutions can affected formal entrepreneurship in developing economies. They used the data for 96 countries from 2006-18 and estimated by GMM approached. They conclude that financial development have strong impact on formal entrepreneurship as well as institutions also have encouraging impact on financial development. For more positive and strong impact in the economies there is need for more improvement in the institutions by minimized corruptions and encouraged legal institution department that makes more effective policies and implemented them. Shair et al. (2024) studied the connection of institutions and finance progress on poverty and discrimination in Pakistan. The researcher used the data from m 1984 to 2019 and ARDL methodology. Findings show that financial development influences public basic needs and discrimination but institutions strong impact on poverty in the short long rather than in the long term and no influence on income disbalance in the short and long run. Olaniyi et al. (2023) examined the asymmetric link of FD and scarcity in emerging economies. They used the data time period from 1980 to 2018 with NARDL methodology. The conclusion shows that financial sector is very important in poverty reduction. There is need to focus on the financial sector investment in productive and Ent activities. This will increase employment for the poor people and upgraded their standard of living.

Asante et al.(2023) studied the relationship among institutional quality, FD and economic expansion. The researcher used the data for investigation from 2000 to 2019 of 29 countries with GMM approached. Findings show that institutional quality is more effective and upgraded it positively and efficiently influences financial development which results in a significantly growing economy. Kanwal et al. (2023) examined the connection of financial sector through

foreign investment inflow proceeding economic progress in Pakistan. The Authors used data for estimation from 1998–2022 with ARDL and error correction methods. Results concluded that capital inflows positively and significantly affect the economic expansion. As Capital inflows like human capital, remittance and technology increases the economic growth also increases and this caused economic activities generated and boost the economy which results in economy growth gradually. Yap et al. (2023) investigated the role of financial development to achieving sustainable development goals. They used the data from 2017 to 2020 and regression methodology. Findings shows that financial development more effective in case of second, fifth and eight goals and not significantly for one, third, nine and ten goal. Strong and efficient financial development depends on the precise and comprehension financial inclusion and services.

Bros et al. (2023) searched the influence of microfinance institutions to encourage business setup. The researcher used the data for the survey was 2015 and 2016. After the survey they concluded that financial inclusion through microfinance is the most operative way to reduce poverty and accelerate economic growth by encouraging business activities. Especially in the case of Pakistan through microfinance credit poverty can be positively affected by providing small loans and giving them a chance to enhance their income and promote entrepreneurship in backward areas. Tabash et al. (2023) investigated the role of financial development on income disbalance and poverty. The authors used data for estimation from 2000 to 2017 with a correlated effect approach taken Gini index as a poverty proxy. Findings show that FD effects on money discrimination and poverty regarding their respective income groups. From all the groups FD have minimal effect on lower-middle-income countries. Results suggested that there is need for better policies for optimal financial development and decreasing these income inequality and poverty gaps. Tuyon et al. (2023) investigated the financial services regulated the economy and its future perceptive. The Authors used data for estimation 1991 and 2022 with Bibliometric and content analysis methods. The conclusion shows that globally there were less financial development services. This research focused at to analyze the financial product, services and product marketing and its future upcoming and innovations for better growth of economies and help in poverty reductions.

Kanat et al. (2023) examined the influence FD reducing deprivation in Pakistan. The researcher worked on the data from 1985-2022 and ARDL approached for estimations. The concluded that in Pakistan the financial development more influenced poverty than gender inequality and economic growth is efficient in decreasing poverty and the control variable education is reason for increasing poverty in the economy due to poor education quality. Government should focus on the education system for targeting poverty in the country.

Khanday et al. (2023) studied the link between finance development and poverty improvements by using NARDL cointegration test. The authors used data from 1980 to 2019. Poverty affects much more than when financial development is at its boom rather than at its worst condition. Wald tests proved that there is asymmetric cointegration which shows constructive and adverse variations in financial development in the expended term by balancing each other. The result suggested that we should focus on financial development to stay stable and better control poverty during their boom and worst times.

Abbas et al. (2022) studied that connection among FD, economic growth and income equality. They used the data duration from 1995 to 2018 with ARDL approached. Results indicate that FD took a part in speed up the economy expansion in the long term in emerging countries. Findings also shows financial development and income inequality have an inverted u shape association in both lower-middle and upper-middle-income countries.

Gu et al. (2021) studied the connection between entrepreneurship and social development. The authors used the data for estimation from 2005-2016 for 30 mainland provinces in China. Results concluded that FDI and business environment both have positive and strong impact on TPL with maintaining development. Economic and social development and entrepreneurial activities mutually affected each other. Entrepreneurship is significant for social development which impacts on economic growth and environmental pollution.

Bolarinwa et al. (2021) explored the connection of financial enhancement and poverty in Africa by using the Innovative vibrant panel threshold model. The authors used the data from 1996 and 2015. The result indicates that

there occurs a linear bond between financial threshold and PV as poverty is found to be less in high-income countries. The results suggest that economies should develop their funding to eliminate poverty in countries.

Khan et al. (2021) analyzed the link association of microfinance and poverty by using the ARDL and VECM granger causality approach. They used cross-sectional household data from 2007-2016. The findings indicate that microfinance has the greatest and strongest impact on poverty alleviation. Microfinance depends on whether it is in ruler or urban areas. In rural areas, poverty is eliminated more easily by providing loans for productive purposes as people usually don't have access to funds whereas in urban areas, poverty is eliminated by simple access to loans for productive purposes such as start-ups and small businesses. So, microfinance increases the number of borrowers for productive purposes. In the end, microfinance has an optimistic and substantial effect on the economy and mitigates poverty.

Boukhatem (2016) analyzed the measuring of the effect of finance on PV reduction in developing countries by using Generalized Method of Moments approach method. The authors used the data from 1986-2012. The research findings implied that the financial effect directly role a part in reducing poverty. The result proved that if the financial system is robust and timely accessibility of funds is available to poor people then poverty can be eradicated. When the government provides timely funds to the people, poor people can take part in financing businesses and saving and enhancing their lifestyle by upgrading their standard of living. Therefore, the financial system should be developed, and financial instability should not occur. This study also suggested that removing taxes from loans and funds for easy access to poor people in low- and middle-income countries helps improve the financial condition of such people.

Data and Methodology:
Econometric Model
This study aimed to research mainly the impact of financial development and entrepreneurship on poverty and EG in Pakistan. The data source for the research variables is taken from the World Bank, ICRG, and United nations development program from 1990 to 2020 with time series data and the Unit root test and Autoregressive distributed lag approach (ARDL) used for estimation. The study estimated the financial development and poverty with these variables that are given as GDP, trade, population, institutions, and entrepreneurship while all other factors that affect indirectly are added to the error term.

$$POV_t = \beta_\circ + \beta_1 lnFD_t + \beta_2 lnINST_t + \beta_3 ln\,Ent_t + \beta_4 lnTRADE_t + \epsilon_t \quad (1)$$

In model (I) poverty is the dependent variable and financial development, institution, entrepreneurship and trade are independent variables. $\beta_\circ$ is Intercept or constant in the model and β_1, β_2, β_3 β_4 are slope coefficients and this model is a time series model, and all other variables add to the error term which effect indirectly. We are estimating this model to check how financial development, institutions, entrepreneurship, and trade effect poverty whereas poverty is measured as human development index. We take HDI as a proxy in a sense that if HDI increases poverty will decrease and if HDI increases poverty will decrease. To take this scenario, we are measuring poverty through HDI as a proxy of poverty.

$$ln\,EG_t = \beta_\circ + \beta_1 lnFD_t + \beta_2 lnINST_t + \beta_3 ln\,Ent_t + \beta_4 lnPOP_t + \epsilon_t \quad (2)$$

In model (II) economic growth is dependent variable and financial development, institution, entrepreneurship and population are the independent variable. $\beta_\circ$ is Intercept or constant in the model and β_1, β_2, β_3 β_4 are slope coefficients and this model is a time series model, and all other variables add to error term which effect indirectly. We are estimating this model to check how financial development, institution, entrepreneurship and population affect the EG whereas EG is measure as GDP current US dollar. We take GDP as a proxy in a sense that if GDP increases EG will increase and if GDP increases EG will also increase. To take this scenario we are measuring EG through GDP as proxy of economic growth.

Description of Variables
Variables define each variable name and their source from where data is being taken.

Table /

Description of Variables

Variables	Variables Name	Proxies	Time period	Data sources
PV	Poverty	Human development index	1990 to 2020	UNDP
EG	Economic growth	GDP (constant US$)	1990to2020	WDI
FD	Financial development	Domestic credit to private sector (% of GDP)	1990to2020	WDI
TRADE	Trade	Trade (% of GDP)	1990to2020	WDI
INST	Institution	Govt. stability	1990to2020	ICRG
ENT	Entrepreneurship	Women business and the law index	1990to2020	WDI
POP	Population	Population (annual %)	1990to2020	WDI

Table 1 shows the dependent variable for model I is poverty which employed one proxy that is human development index during the period from 1990 to 2020 and data taken from united nation development program and another dependent variable for model II is EG which is measuring by the proxy of GDP in current US dollar which duration 1990 to 2020 from WDI. All variables taken as percentages of GDP except women's business and law index, human development index and institution and GDP. remaining variable i.e. institutions, women business and law index and human development index taken as averages for estimations and GDP taken as current US dollar. On the other side, we have some independent variables which are described one by one. Financial development data are taken via the proxy of domestic credit to the private sector (% of GDP) from 1990 to 2020 from WDI. Trade (% of GDP) taken for measuring trade openness time period from 1990 to 2020 from WDI. Institutions whose data taken by the proxy of government stability period from 1990 to 2020 from WDI. Entrepreneurship estimated by the proxy of women business and the law index ranges from 1990 to 2020 by WDI lastly populations (annual %) taken for measuring population growth time period from 1990 to 2020 from WDI.

Estimation Technique

To empirically investigate the data, we employed ARDL technique to find out effect of FD and entrepreneurship on poverty and EG and illustrate how these variables act in long and short run.

Results and Discussions

Descriptive Statistics

Descriptive statistics is the method for representing the characteristics of data. It measures a variety of factors such as frequency, mean median and mode, range percentage and dispersion of the data etc. These measurements explain how much data is dispersing from the mean and enable a comprehensive understanding of its key component. Table 2 includes descriptive of variables.

Table 2

Descriptive Statistics

Variable	Obs	Mean	Std. dev.	Min	Max
Human Development Index	31	0.47	0.05	0.39	0.54
Domestic credit to private sector (percentage of gdp)	31	19.79	4.13	13.88	25.47
GDP (current US$)	31	1.65e+11	1.04e+11	4.00e+10	3.56e+11
Trade (percentage of GDP)	31	30.79	4.88	21.46	38.50
Women Business and the Law Index Score	31	41.73	5.42	38.13	55.63
Institution	31	7.11	2.13	2.17	10.83
Population growth (annual %)	31	2.38	0.58	1.30	3.34

Descriptive statistics explored that there are 31 observations ranging from 1990 to 2020. All variables were taken as percentages of GDP except the women's business and law index, human development index and institution and GDP. GDP taken as current US dollar remaining variable i.e. institutions, women business and law index, and human development index taken as averages. Human development index with 31 observation ranges from minimum value 0.39 and maximum value 0.54 and average means value is 0.47 and standard deviation is 0.05 which is very low. Domestic credit to the private sector ranges from a minimum value during this period is 13.88 of GDP and the maximum value of domestic credit to the private sector of the percentage of GDP is 25.47 with an average value 19.79 and standard deviations is 4.13 which moderate from mean values. GDP on average in Pakistan is one billion, six hundred fifty million per year with minimum value during this period is forty billion and max value is three hundred fifty-six billion.

Trade ranges from minimum value during this period is 21.46 of GDP and maximum value of trade percentage of GDP is 38.50 with the average value 30.79 and standard deviations is 4.88 that is moderate. Women business and the law index ranges from minimum value during this period is 38.13 and maximum value of women business and the law index is 55.63 with the average value 41.73 and standard deviations is 5.42. Institutions ranges from minimum value during this period is 2.17 of GDP and maximum value of institutions is 10.83 with the average value 7.11 and standard deviation is 2.13. Population ranges from minimum value during this period is 1.30 per year and maximum value of population annual percentage is 3.34 with the average value 2.38 and standard deviations is 0.58 that is very low.

Correlation Matrix

Correlation is a statistical measure which shows the relations between two or more independent variables more precisely we can say it shows how many variables are associated with each other. The range of correlations is -1 to +1 which indicates that strong negative and positive correlation among variables. Results are shown in Table 3.

Table 3
Correlation Matrix

	Human Development Index (1)	Domestic credit to private sector percentage of GDP (2)	Women Business and the Law Index Score (3)	Trade (percentage of GDP) (4)	Institution (5)	GDP (current US$) (6)	Population growth (annual %) (7)
(1)	1						
(2)	-0.7388***	1					
(3)	0.8089***	-0.7233***	1				
(4)	-0.5152	0.7397***	-0.3611**	1			
(5)	-0.0509	0.0022	-0.2584	-0.4232**	1		
(6)	0.9706***	-0.7646***	0.8779***	-0.4680	-0.1846	1	
(7)	-0.8956***	0.8054***	-0.8299***	0.5195	0.0133	-0.9221***	1

Table 3 results showed that the correlation among these variables. Human development index is proxy of dependent variable poverty which has a strong positive correlation with women business and the law index score which is proxy of entrepreneurship that is 0.8089 and GDP that is 0.9706 and statistically significant at 1%. Human development index has a strong negative correlation with domestic credit to private sector is -0.7388 and population that is -0.8956 which is significant at 1%. and Human development index has strong negative correlation with Trade -0.5152 and which is not significant and weak negative correlation with institution -0.0509 which is also insignificant. Domestic credit to the private sector has a strong positive correlation with Trade 0.7397 and population 0.8054 these are significant at 1%. Domestic credit to the private sector has a strong negative correlation with women business and the law index Score -

0.7233 and GDP as -0.7646 and both are significant at 1%. Domestic credit to the private sector has a weak positive correlation with institutions which is insignificant.

Women business and the law index has strong positive correlation with GDP 0.8779 which is significant at 1%. Women business and the law index has strong negative correlation with trade -0.3611 and population as -0.8299 and significant at 5% and 1 % respectively. Trade has a strong positive correlation with population that is 0.5195 and it is insignificant. Trade has strong negative correlation with institution that is -0.4232 which is significant at 5% and also strong negative correlation with GDP which is insignificant. Institution has weak positive correlation with population that is 0.0133 and insignificant and weak negative correlation with GDP and insignificant. GDP has strong negative correlations with GDP that is -0.9221 and significant at 1%.

Unit Root Test

Unit root test shows the stationarity at different level of significance. We used the Augmented Dickey–Fuller test and Phillips–Perron test for unit root to check the stationarity. Augmented Dickey–Fuller and Phillips–Perron test provide a statistic that enable a researcher to compare these value and declare whether data is stationary at level or at first difference. The results found the stationary among the variables at level and first difference.

Table 4
Unit Root Test

Variables	ADF			PP		
	Level	I^{st} Diff	Decision	Level	I^{st} Diff	Decision
Human Development Index	-0.637	-7.156***	I(1)	-0.337	-40.967***	I(1)
Women' business and the Law Index Score	1.331	-5.209***	I(1)	2.540	-31.109***	I(1)
Domestic credit to private sector (%of GDP)	-1.272	-4.445**	I(1)	-4.686	-24.805**	I(1)
Institution	-4.244*	-4.763***	I(0)	-9.918	-20.611***	I(1)
Trade (%of GDP)	-1.755	-5.199***	I(1)	-7.089	-30.235***	I(1)
GDP (current US$)	-1.368	-5.301***	I(1)	-0.964	-25.995***	I(1)
Population growth (annual %)	-1.118	-2.900**	I(1)	-2.702	-14.774**	I(1)

Variable Human Development Index is not stationary at the level but stationary on first difference in both test at 1% significant level. Women business and the law index score is not stationary at the level but stationary on first difference in both test at 1% significant level. Domestic credit to the private sector is not stationary at level but stationary on the 1st difference at 5 in both test. Institution is stationary on the level in Augmented Dickey–Fuller which is significant at 10% test and in Phillips–Perron test stationary on first difference at 1% significant level. Trade (% of GDP is not stationary at the level but stationary on first difference in both at 1% significant level. GDP is not stationary at the level but stationary on first difference in both test at 1% significant level. Population is not stationary at level but stationary on the 1st difference at 5% in both tests.

Bound Test model I

Bound test is used to test the cointegrations among the variables where H^0 = No level relationship.

Table 5
Bound Test Model I

F Test	Critical Values	I(0)	I(1)	Decision
5.882	10%	2.45	3.52	
	5%	2.86	4.01	
	2.5%	3.25	4.49	There is Cointegration
	1%	3.74	5.06	

In Estimations findings indicate that F test is 5.882. It is greater at 10%, 5%, 2.5% and 1% from upper and lower bound which indicate that we reject H^0 and concluded that there is relationship and cointegrations which indicated that all variables are cointegrated with each other.

ARDL Long-Run and Short Run model (I)

The ARDL model is an economic model in which the researcher can analyze the long- and short-term effects among several time series data. The long run shows the effects of variables over the periods means of long period and short run shows the effects of variables for limited periods means immediate effects. In this model, we estimated that the dependent variable is HDI which is proxy of poverty. We take HDI as proxy in a sense that if HDI increases poverty will decrease and if HDI decreases poverty will increase. To take this scenario we are measuring poverty through HDI as proxy of poverty.

Table 6

ARDL Long-run Model (I)

Variables	Coefficient	Standard Error	T-value	P- value
Women's business and the law index	-.338	0.186	-1.82	0.103
Trade (% of GDP)	0.022	0.068	0.33	0.751
Domestic credit to private sector (percentage of GDP)	-.443	0.136	-3.25	0.010
Institution	0.041	0.040	1.02	0.335
R-squared	0.87			
Adj R-squared	0.63			

ARDL long run model I women's business and the law index proxy of entrepreneurship is its coefficient value is -0.338 and domestic credit to private sector which is the proxy of financial development has coefficient value is -0.443 significant with t value which describe that women business and law index has a negative impact on HDI in the long run but significant. Trade that is 0.022 and institutions that is 0.041 have positive impact on the HDI but are insignificant.

Whereas R squared shows variations explained by the independent variable to in dependent variable. In this case, there is 63% variations explained by the independent variables in the dependent variable, so our model data is a good fit about 63%.

Table 7

ARDL Short Run model (I)

Variables	Coefficient	Standard Error	T-value	P- value
Domestic credit to private sector (percentage of GDP)	0.037	0.012	3.02	0.014
Trade (% of GDP)	0.02	0.012	1.58	0.149
Women's business and the law index	0.061	0.029	2.13	0.062
Institution	-0.02	0.009	-2.18	0.057
Constant	0.492	0.107	4.58	0.001
Ect^{-1}	-0.165	0.067	-2.46	0.036

ARDL model in the short run result indicate that domestic cr to the private sector coefficient value is 0.037 and women business and the law index is proxy of entrepreneurship has coefficient value is 0.061 has aa positive and significant impact on the human development index which explain that 1 unit increase in independent variable will cause 0.037 and 0.061 percent increase in dependent variable hdi which is cause poverty to decrease whereas trade coefficient value is 0.020 which has positive impact on the dependent variable but insignificant but institutions coefficient has significant negative impact on the dependent variable hdi which cause inverse relationship and

poverty to increase. Constant in the model is 0.492 which is positive and highly significant. Error correction term tells us how much the economy takes time to come back to equilibrium. It always less than -1 and negative. In the short run, estimations declared that the error correction term that is -0.165 which is significant.

Bound Test model II

Bound test is used to test the cointegrations among the variables where $H^0 =$ No level relationship.

Table 8
Bound Testmodel II

F Test	Critical Values	I (0)	I (1)	Decision
6.491	10%	2.45	3.52	
	5%	2.86	4.01	There is Cointegration
	2.5%	3.25	4.49	
	1%	3.74	5.06	

Table 8, in estimations findings indicate that F test is 6.491. It is greater at 10%, 5%, 2.5% and 1% from upper and lower bound which indicate that we reject H^0 and concluded that there is relationship and cointegrations which indicate that all variable have cointegration found.

ARDL Long-Run model and Short Run model II

The ARDL model is an economic model in which the researcher can analyze the long- and short-term effects among several time series data. The long run shows the effects of variables over the periods means of long period and short run shows the effects of variables for limited periods means immediate effects. In this model we estimated as the dependent variable is GDP which is proxy of economic growth. We take GDP as proxy in the sense that if GDP increases EG increases and if GDP increases EG will increases. To taking this scenario we are measuring EG through GDP as proxy of EG.

Table 9
ARDL Long-run II

Variables	Coefficient	Standard Error	T-value	P- value
Domestic credit to private sector (percentage of GDP)	-0.87	0.66	-1.32	0.214
Institution	-0.378	0.466	-0.81	0.435
Women's business and the law index	-9.204	3.471	-2.65	0.023
Population	-3.441	1.068	-3.22	0.008
R-squared	0.8123			
Adj R-squared	0.5733			

ARDL long run model II estimated that Women's business and the law index proxy of entrepreneurship coefficient value is -9.204 and population coefficient value is -0.3441 both have negative and significant impact on the dependent variable EG. Domestic credit to private sector proxy of FD coefficient value is -0.870 and institutions coefficient value is -0.378 both have negative impact on the dependent variable EG. All variable in the long run have inverse impact on the economic growth. Whereas R squared shows variations explained by the independent variable to in dependent variable. In this case, there is 57% variations explained by the independent variables in the dependent variable, so our model data is a good fit about 57%.

Table 10

ARDL Short Run model II

Variables	Coefficient	Standard Error	T-value	P- value
Domestic credit to private sector (percentage of GDP)	-0.367	0.187	-1.97	0.075
Women's business and the law index	2.560	0.747	3.43	0.006
Institution	-0.101	0.160	-0.63	0.540
Population	1.727	0.384	4.50	0.001
Constant	16.486	3.012	5.47	0.000
Ect^{-1}	-0.250	0.073	-3.42	0.006

ARDL model in the short run result indicate that women business and the law index is proxy of entrepreneurship which coefficient value is 2.560 which has significant and positive impact on the dependent variable EG which indicate that Ent cause EG to increase. Secondly population also have positive and significant impact on the EG. Population because coefficient is 16.486 increase in the EG. Domestic Cr to private sector which is proxy of FD coefficient value is -0.367 which indicate that it has negative and significant impact on the EG which explain that FD through other aspect is not effective other the entrepreneurship. FD through entrepreneurship have strong, positive and significant impact on the EG. Institution coefficient is -0.101 which shows that it has negative and insignificant impact on the dependent variable EG. Institutions also effect the reliability of FD effectiveness as the institutions strong the FD also act efficient.

Conclusion

This researcher aimed to examine the connections among financial development, poverty, entrepreneurship, and economic development in Pakistan. This research used the time series analysis with ARDL model for estimation with time duration from 1990 to 2020. Estimations financial development proxy as domestic credit to private sector percentage of GDP, poverty is proxy as human development index and entrepreneurship proxy as women business and the law index score. The findings indicated that entrepreneurship has strong positive and significant correlation with human development index which is proxy of dependent variable that is poverty and also strong and positively correlation with GDP which is significant. Findings also indicate that in the long run model (I) financial development and entrepreneurship both have negative and significant impact on the dependent variable human development index. Along with trade and institutions have positive and insignificant impact on the dependent variable human development index.

In the short run od model (I) findings shows that women's business and the law index is proxy of entrepreneurship, financial development proxy as domestic credit to private sector percentage of GDP have positive and significant impact on the on the dependent variable human development index. Findings also indicate that in the long run model (II) financial development have negative and insignificant impact on the dependent variable human development index, entrepreneurship both have negative and significant impact on the dependent variable human development index. Along with population have positive and significant impact on the dependent variable human development index. In the short run od model (II) findings shows that women's business and the law index is proxy of entrepreneurship and population have positive and significant impact on the on the dependent variable human development index and financial development proxy as domestic credit to private sector percentage of GDP negative and insignificant impact on the dependent variable human development index.

All these findings of study illustrated that in the long run model (I) and model (II) FD and entrepreneurship both have negative and significant impact on the dependent variable poverty and EG but in the short run model (I) financial development and Entrepreneurship have positive and significant impact poverty which shows that both play important role in poverty reduction and in the short run model (II) financial development through entrepreneurship have positive and significant impact on EG which shows that both play important role in EG. Shortly we can say our model is effective in short run more than in long run. Gradually the FD and ENT can would impact the economy

positively and substantially and can help in uplift the economy. To tackle the poverty in this way there is needed for improvement in institutions and needed such schemes, strategies and facilities which reached the poor and interact them and give them opportunities by facilitating. These strategies upgraded the economy gradually and accelerated the economic growth.

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