Breaking Barriers, Building Bridges: Economic Freedom and Women's Empowerment

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ABSTRACT

Women's empowerment conduces economic growth and is crucial for empowering women. Economic freedom means that people can take economic actions independently. Yet, women remain disadvantaged in developing countries like Pakistan. The current study analyses how economic freedom fosters women's empowerment in Pakistan. We employed time series data for 1990-2021. We employed an index of women's empowerment (WEI) and the Women's Business and Law Index (WBLI) for economic freedom. WBLI is based on 8 distinct indicators that include diverse aspects of a woman's life. After unit root testing, we used the ARDL approach followed by the Bound test. The long and short-run empirics have confirmed the association of women's empowerment and economic freedom in Pakistan. There is a positive and statistically significant relationship between them. A significant ECT term with a negative sign further confirms the long-run association. Women's mobility, women's decision to work, rules and laws for equal pay, legal barriers to marriage for women, women's decision to work after childbirth, restrictions for registering a business on women entrepreneurs, discrimination in the division of property and regulation for women's pension are the factors that still impede the absolute economic freedom of women in the society.

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1.   Introduction

Women empowerment is an important area in development economics. Empowering women narrows down the gender disparity as well as conflict in societies. Besides, reducing gender disparities through an adequate supply of opportunities for women further pave the road for development (Bayeh, 2016; Ejumudo, 2013; King & Mason, 2001). Provision of equal employment opportunities, health care and education facilities empower the women so they can compete on the same level as men (Yadav, Sahni, & Jena, 2021). On the other hand, economic freedom is equally crucial for empowering women. A society with economic freedom enhances the ability of people of to take economic actions independently. These institutional features

enable people to attain a quality life, which includes both material and non-material dimensions (Stroup, 2011). It is equally important for achieving better opportunities and even better lives for all (Nikolaev, 2014).

The ability to make independent financial decisions, such as owning property, deciding whether to launch a business selecting what to buy, choosing where to work, engaging in trade, deciding whether to launch a business, selecting what to buy and even opening a bank account, is referred to as economic freedom (Fike, 2023). Women need equal opportunities to participate in the world economy: starting with access to jobs, wages, and benefits. Globally, the discrepancies in men's and women's cumulative predicted incomes are $172.3 trillion, comparable to double the global gross domestic product (GDP) (Wodon et al., 2020). Adopting legislation that promotes feminine liberties and opportunities is a vital beginning measure toward a better and more equitable society (Fortier, 2020). The laws governing women's activities can affect how much they earn and how resilient economies will be in the future (Gillard & Okonjo-Iweala, 2022). World Bank has constructed a Women Business and Law Index (WBLI) which is a composite index that tracks the economic liberty of women[1]. It measures the inclusiveness of women with diverse milestones a woman may experience in her lifetime. Based on the eight key indicators including mobility constraints, the decision at the workplace, laws, and regulations for pay, marital constraints, laws for working mothers, and female entrepreneur, gender bias in property and inheritance and laws and regulations for pensions for women[2].

Pakistan is standing at 5th position among global economies regarding the population size and the population is comprised of 49.2 percent of the female population against 50.8 percent male population[3]. Besides, Pakistan is also in the 6th position among the countries with the least gender equality. The R. R. Sharma, Chawla, and Karam (2021) has placed Pakistan at 153rd among 156 countries[4]. Even though fundamentally, all genders have equal rights, females are disfavored in education, health, the workplace and the political environment against men (Altaf, Ahmad, & Bhatti, 2022; Begum Sadaquat & Sheikh, 2011; Chaudhry, 2007; Imran & Shahzad, 2019; Shaukat, Siddiquah, & Pell, 2014; ul ain Rana, Tarar, & Sultan, 2022). The current study postulates that women in Pakistan can be empowered by improving the economic environment for women.

The Vision-2025 for Pakistan is an ambitious and complex set of development goals with a consolidated focus on improving human resource capacity and creating a conducive environment for value addition, innovation and sustainable growth[5]. It has identified seven pillars for inclusive growth. All of these pillars are interlinked with one another, and all address many aspects of the MDG objectives. Although Pakistan has a strong presence of women in the work force yet it has failed to achieve its Vision-2025 goals in areas of inclusiveness and gender disparity; aiming to increase women's participation in the labor force from 24 % to 45 % (Amir, Kotikula, Pande, Bossavie, & Khadka, 2018). But the statistics are showing a different picture, it declined to 20.7% in 2022[6]. The economic positioning of women is greatly affected by explicit discrimination in law and legal rights (Goltz, Buche, & Pathak, 2015; Sharma & Das, 2021). This study intends to empirically test the hypothesis of economic freedom and women empowerment in Pakistan.

This study contributes to literature in four ways. Firstly, we tried to bridge the theoretical breach of translating economic freedom for women. Traditionally economic freedom is restricted

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[1] https://wbl.worldbank.org/en/aboutus

[2] For details see: openknowledge.worldbank.org/bitstream/handle/10986/35094/9781464816529.pdf

[3] https://asiapacific.unwomen.org/en/countries/pakistan#:~:text=Gender%20inequality%20is%20of%20significant,95%2F156%20for%20political%20empowerment

[4] https://www.weforum.org/reports/global-gender-gap-report-2021/

[5] http://www.pc.gov.pk/wpcontent/uploads/2015/05/Pakistan-Vision-2025.pdf)

[6] https://genderdata.worldbank.org/countries/pakistan

to openness and trade liberalization but its computation in the empirical economic literature is sporadic. Secondly, the influence of economic freedom on empowering women has not been explored. There is not a single empirical study using this novel approach to economic freedom and its impact on improving the economic status of women in Pakistan. Thirdly, the study employed an inclusive measure for women's economic freedom instead of a traditional measure, the index of economic freedom (IEF). The study is using WBLI due to its broader scope and specification for women only. Lastly, this empirical analysis revalues the policy implications for women's empowerment through the influx of economic freedom in every aspect of women's life. With the help of this framework, barriers to the economic accomplishments of women can be identified and policies can be formed for the rigorous inclusion of women for sustainable growth.

2.   Literature review

Gwartney, Lawson, and Holcombe (1999) defined economic freedom as a nation's legal framework and policies which allow individuals and firms to engage in voluntary transactions without fear of physical invasions by others and without violating the very rights of others. Besides, economic freedom is not a single factor but a collection of continuous multidimensional phenomena (Caudill, Zanella, & Mixon, 2000). This explanation of economic freedom calls for a comprehensive index that assesses the degree of individual liberty: individuals may acquire property through fair deals with the autonomy of unrestricted transactions (De Haan & Sturm, 2000). Further, economic freedom is a much wider concept than political liberties. Political liberty postulates the freedom to choose and elect a political representative without external intervention. Economic freedom, on the other hand, concerns the ability to choose employment, earn income, and consume goods and services which are all economic decisions without undue interference. Therefore, while democracy is central to political freedom, the protection of economic liberty is equally important in building a prosperous society (Gwartney & Lawson, 2003).

Economically free economies tend to grow at a higher rate than traditional closed economies (Berggren, 2003). Bengoa and Sanchez-Robles (2003) explored the association of economic freedom and FDI inflows using panel data analysis for 18 Latin American countries covering data for 1970-1999. They found that economic freedom in the host country was positively related to FDI inflows. In addition, foreign direct investment was positively correlated with economic growth. Faria and Montesinos (2009) employed IEF and empirically tested it against income levels and economic growth and concluded the presence of a positive and significant relationship between economic freedom and economic growth as well as with income levels (Gillani, Ahmed, Khan, & Hussain, 2022). A large body of economic literature is devoted to exploring the relationship between economic freedom and growth (Ayal & Karras, 1998; Brkić, Gradojević, & Ignjatijević, 2020; Carlsson & Lundström, 2002; Doucouliagos & Ulubasoglu, 2006; Justesen, 2008; Panahi, Assadzadeh, & Refaei, 2014; Urooj, Ahmad, Bhatti, & Hussain, 2022; Williamson & Mathers, 2011).

The consistent and sustained economic policies toward economic freedom also ensure the reduced disparities among citizens and improve the well-being of the individuals. Berggren (1999) suggested that free economies tend to reduce inequality in societies. Teague, Storr, and Fike (2020) proposed that countries with high economic freedom and significant GDP growth rates have less temporal role toward growth. A part of economic literature has discussed how economic freedom is functionally improving the quality of life including Berggren (2003); Bergh and Bjørnskov (2021); Esposto and Zaleski (1999); Gehring (2013); Grubel (1998); Ken Farr, Lord, and Wolfenbarger (1998); Sirbu, Iacobuță-Mihăiță, Asandului, and Brezuleanu (2023); M. D. Stroup (2007).

Empirical literature also supports the hypothesis that a strong correlation exists between individual economic freedom and happiness (Evrensel, 2015; Gropper, Lawson, & Thorne Jr,

2011; Stryzhak, 2020). This further enhances the well-being of individuals. Russell, Tervo, Ariail, and Smith (2020) analyzed the effects of economic freedom on gender equality, social advancement and economic progress. The study took IEF as a measure of economic freedom and employed panel data. The study concluded that the countries with greater economic freedom are also better at gender equality than the economies having insufficient economic freedom. Besides, economic conditions and social progress were also appreciated in countries with high economic freedom indexes. M. Stroup (2011) has empirically tested the IEF against the well-being of women. They are in the view that economic freedom adds up to the well-being of women. It also ensures gender equality while contributing to the well-being of the marginalized group.

Economic freedom is also accounted for improved entrepreneurship and institutionalization (Bennett, 2021; Bjørnskov & Foss, 2008; Bradley & Klein, 2016; Kreft & Sobel, 2005; Nyström, 2008; Zamani, Mohammadi Khyareh, & Mazhari, 2021). S. Akram, Shaheen, and Kiyyani (2015) evaluated the socioeconomic empowerment of women in Azad Jammu & Kashmir. Survey and stakeholder interviews were conducted to collect data for this study. The study incorporated microenterprises as a measure of economic freedom. The results indicate that women gained a lot of benefits such as economic freedom and social uplift after they took up these ventures.

Josephine and Makokha (2018) examined the relationship between gender equality and economic freedom. They provided an understanding of how women's empowerment could be directed toward improving their economic situation. The study employed primary data and used random sampling. The study documented the response of 381 females and multi-variate regression methods were employed for empirical analysis. The study suggested that economic independence, household decision-making, education and freedom of mobility were the factors that empower women. In developing countries, gender differences are crucial. Khan (2021) found that women are less financially included than men in case of Pakistan irrespective of the fact that economic liberation and economic prosperity are positively related.

A deliberate review of the literature demonstrates that the relationship between economic freedom and women empowerment is definite, yet empirical verification of this relationship is rare. The lack of national research on the subject matter is quite evident as well. This study predicts that economic freedom affects women's empowerment directly and significantly.

3.   Theoretical Framework Methodology

A wide range of literature is dedicated to the concept and measurement of women's empowerment Kabeer (1999); Pradhan (2003); Richardson (2018) fewer studies are investigating its relationship with growth and development Duflo (2012); Falk and Hermle (2018); Mehra (1997) and others are devoted to the factors affecting women's empowerment (Abdullah, Shoukat, & Chaudhary, 2021; Banerjee, Alok, & George, 2020; Bushra & Wajiha, 2015; Moindi, 2012; Orso & Fabrizi, 2016). Empowerment has a strong bond with education; educated individuals are more empowered. Education not only equips the skill set and knowledge but helps people to realize their true potential (Hur, 2006). Although education is a fundamental pillar of individual strength yet every systematic move that encourages competitiveness is a leap toward empowerment (Haynes, Joseph, Patton, Stewart, & Allen, 2020). Income is also an important determinant of empowerment particularly for women. Household income is positively correlated with the extent of empowerment in women (Varghese, 2011). In addition, urban culture supports women's empowerment more than that the culture in slums (Guha-Khasnobis & James, 2010). The theoretical framework of the study is actualized in Figure-1.
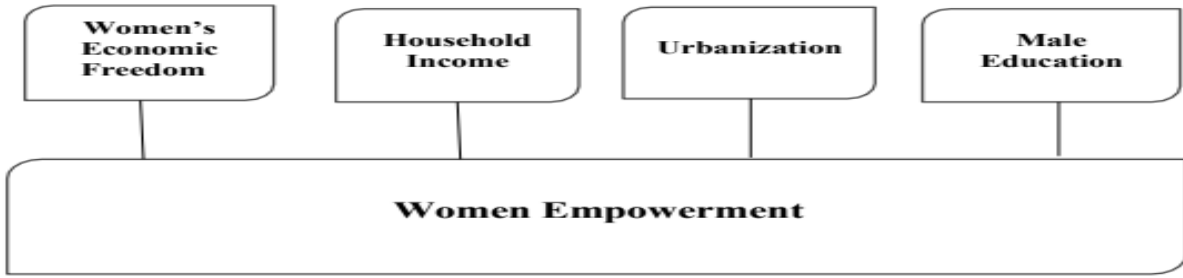
Figure 1: Theoretical Framework

4. Methodology

Since we are dealing with time series annual data, addressing the unit root problem is of utmost importance. If not addressed properly, the regression is going to be spurious. A stationary series has stable statistical properties over time i.e., mean, variance and covariance are time-invariant suggesting that Y_t is free from the unit root if

$$E(Y_t) = \mu \tag{1}$$
$$Var(Y_t) = E(Y_{t-\mu}) = \sigma^2 \tag{2}$$
$$Cov(Y_t, Y_{t-s}) = Cov(Y_t, Y_{t-s}) = \gamma s \tag{3}$$

Equations (1) and (2) assure that series are stationary with fixed mean and variance respectively. The last equation (3) shows that covariance is subjected to different parts in time (s) rather than the point in time (t). Econometric literature offers some of the most convenient and reliable tests for unit root like the Augmented Dicky Fuller Test (ADF) by Dickey and Fuller (1979, 1981). ADF test offers three regression equations:

ADF test equation without constant and trend:
$$\Delta y_t = \delta y_{t-1} + \sum_{i=1}^{p} \gamma_i \Delta Y_{t-i} + \varepsilon_t \tag{4}$$

ADF test equation with constant only:
$$\Delta y_t = \alpha + \delta y_{t-1} + \sum_{i=1}^{p} \gamma_i \Delta Y_{t-i} + \varepsilon_t \tag{5}$$

ADF test equation with constant and trend:
$$\Delta y_t = \alpha + \beta t + \delta y_{t-1} + \sum_{i=1}^{p} \gamma_i \Delta Y_{t-i} + \varepsilon_t \tag{6}$$

ADF test stats will help us to adopt the appropriate econometric methodology. If we have the same order of integration, cointegration will be applied. In the case of different order of integration, Auto regressive distributive lag (ARDL) would be an appropriate methodology. The current study followed the N. Akram (2018) approach and modified it. We propose the following mathematical model followed by an econometric model for women's empowerment:
$$WEI = f(WEF, HI, URB, ME) \tag{7}$$
$$WEI_t = \alpha_0 + \beta_1 WEF_t + \beta_2 HI_t + \beta_3 URB_t + \beta_4 ME_t + \varepsilon_t \tag{8}$$

Where WEI_t represents women empowerment index; WEF_t stands for women's economic freedom; HI_t is household income; $URB_t S$ is urbanization; ME_t shows male education. ε_t is a random disturbance term. α_0 is intercept and t is the specific period. Following a time series methodology, the study tested unit roots at first stage. The next step is to estimate the ARDL equation given equation (9) as:

$$\Delta WEI_t = a + \sum_{i=1}^{m} b_i \Delta(WEI)_{t-i} + \sum_{i=0}^{m} c_i \Delta(WEF)_{t-i} + \sum_{i=0}^{m} d_i \Delta(HI)_{t-i} +$$
$$\sum_{i=0}^{m} e_i \Delta(URB)_{t-i} + \sum_{i=0}^{m} f_i \Delta(ME)_{t-i} + \eta_1(WEI)_{t-i} + +\eta_3(HI)_{t-i} + \tag{9}$$
$$\eta_4(URB)_{t-i} + \eta_5(ME)_{t-i} + \upsilon_t$$

After confirming for the long run results, the next step involves the short run solutions by using error correction model. The error correction model usually consists of difference terms, lagged variables and lagged error correction term represented in equation (10) as:

$$\Delta WEI_t = \beta_o + \sum_{i=1}^{m} \alpha_i \Delta WEI_{t-i} + \sum_{i=1}^{m} \beta_i \Delta WEF_{t-i} + \sum_{i=1}^{m} \gamma_i \Delta HI_{t-i} +$$
$$\sum_{i=1}^{m} \rho_i \Delta URB_{t-i} + \sum_{i=1}^{m} \phi_i \Delta ME_{t-i} + \varphi ECM_{t-1} + \mu_t \qquad (10)$$

The coefficient of error correction term predicts the speed of adjustment for a new equilibrium. In the final step, important diagnostic tests have been applied to validate our model. The period for the study is 1990-2021 for the economy of Pakistan. Annual data for all variables have been taken from Nasim, Bashir, and Hussain (2022).

4.1. Description of Variables

Variables used in the model are listed below with a detailed description.

Table 1
Description of Variables

Variables	Constitutive Definition	Proxy
Women's Empowerment	Availability of equal employment opportunities, health care and education facilities as men	The women's empowerment index is constructed by taking three dimensions, employment, education and health.
Women's Economic Freedom	Economic freedom for women is freedom of personal choice, economic liberty, voluntary exchange, freedom to compete in markets, and personal legal protection for business and property.	The women business and law index (WBLI) is based on eight dimensions of women's life; mobility, workplace, pay, marriage, parenthood, entrepreneurship, asset and pension.
Household Income	Household disposable income is a measure of the amount of money available to be spent on domestic consumption. It includes wages, salaries and profits from other economic activity (OECD, 2011)	Final consumption expenditures as a percentage of GDP
Urbanization	Share of population living in urban areas	Urban population percentage of the total population
Male Education	Act of receiving knowledge	Male enrollment in an educational institution in thousands

4.2. Women's Empowerment Index (WEI)

The first principal component analysis (PCA) has been used to combine these variables to construct a single index for women's empowerment. PCA allows the removal of the unit bias, accords a comprehensive series based on multiple variables and gives an efficient measure without losing information (Dialga & Vallée, 2021). Following the lines of Abdullah et al. (2021), we have constructed an index for women's empowerment. Since women's empowerment is a multi-dimensional approach, it would be unjustified to use a single variable for it. The study incorporated three dimensions of women's life including employment (FE), education (FED) and health (FH). The proxy variables used for each dimension are female employment to population ratio; female enrollment in high-stage education and female life expectancy at birth respectively. The correlation matrix of indicators of women's empowerment has been reported in Table 2.

The indicators for women's empowerment are strongly correlated. The high correlation between variables implies the existence of multicollinearity. To get over this problem, we have converted these multiple series into a single series using PCA. Table 3 depicts the Eigenvalues and Eigenvectors by employing ordinary correlations.

Table 2
Correlations Matrix for Women's Empowerment Indicators

Indicators	FE	FH	FED
FE	1.000000		
FH	0.860550	1.000000	
FED	0.974036	0.851242	1.000000

Table 3
Eigenvalues and Eigenvectors for Women's Empowerment Indicators

Principle Component	Eigenvalue Values	Proportion	Cumulative Proportion
1	2.791746	0.9306	0.9306
2	0.182485	0.0608	0.9914
3	0.025769	0.0086	1.0000

Eigenvectors			
Variables	PC 1	PC 2	PC 3
FE	0.586874	-0.370997	-0.719680
FH	0.559791	0.828105	0.029599
FED	0.584990	-0.420241	0.693674

The correlation matrix is suitable for PCA (Shoukat, Ahmad, & Abdullah, 2017). The first principal component with eigenvalue 2.7 reflects the maximum variance (i.e., 93 percent) in all independent measures of women's empowerment. It is also explained by the scree plots presented in the following Figure-2.

These scree plots depict acute fall from PC1 to PC2. This implies that using PCA for the construction of WEI is appropriate. Each series in WEI is first normalized and then multiplied with their respective assigned weights as suggested by PC1. At the final stage, these series are combined to a broad measure of women's empowerment (i.e. WEI).
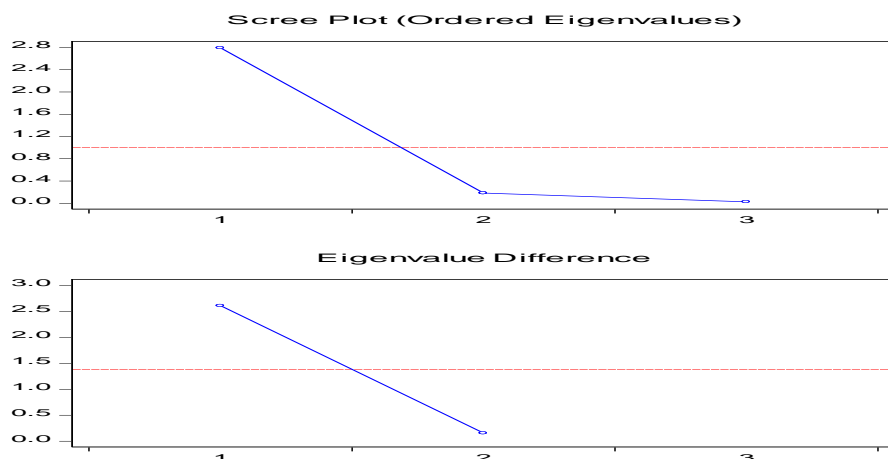

Figure 2: Scree Plots

4.3. Why Use WBLI Instead of EFI for Economic Freedom?

The Heritage Foundation has released an index of economic freedom (IEF) for 186 countries around the globe. This index is constructed by using four core areas from the public sector including the size of government, rule of law, regulation over efficiency and open markets. These domains are regulated by the government. The purpose of selecting these domains is to establish an economic environment that disapproves of individual deprivation. Unfortunately, the index suffers from statistical validity, where the pillar and size of government are problematic[7].

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[7] For details see:

In this pillar, two of the constituents are not only negative but also strongly correlated with each other. This implies that all of the constituents are not weighed identically while constructing the comprehensive index (Dialga & Vallée, 2021; Nardo, Saisana, Saltelli, & Tarantola, 2005).

An alternative and more comprehensive measure of economic freedom for women is the Women Business & Law Index[8] (WBLI) developed by The World Bank. This index has eight key domains represented in Fighure-3. The WBLI provides insights into gender equality, improved labor force participation, freedom of mobility and vulnerable employment (Trumbic, Loayza, Ramalho, & Kraay, 2021). This index employed extended features of economic freedom, particularly for women. These features covered a vast span of various stages of women's life and discriminative gender bias in general. Legal restrictions on women's engagement in the job market, ownership of assets, access to credit and travel consideration as constraints on women's full participation in the economy. Limiting women's abilities to make economic decisions, hamper their investment decisions and reduce productivity (Revankar, 2022).

Figure 3: Components of WBLI
Source: Women, Business and the Law team (World Bank, 2021)

5.   Estimation and Result Discussion

The study employed Augmented Dicky Fuller Test (ADF) for unit root. After confirming the order of integration, econometric methodology follows the cointegration test. However, critical bounds are utilized regardless of the order of integration in ARDL. In addition, it also ensures the absence of the series with higher orders of integration (like second order or above). Unit root test results are presented in Table-3. The ADF test results indicate that we have a mixed order of integration. Most of our variables are non-stationary at the level including the key explanatory variable. Only one variable household income is stationary at level. Other explanatory variables and explained variables become stationary after the first difference.

Strøm (1999) suggested that suitable modification of the orders of the ARDL approach can even out the problems like endogeneity and serial correlations in residual. ARDL methodology is abide by Bound testing. This is done by observing Wald statistics stated in Table 5 which support the existence of a long-run association among the variables. The value of the F-stat is higher than the upper bound value at a 5% level of significance (i.e., 4.51 > 4.01). Long-run coefficients are presented in Table 6.

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https://hal.science/hal-
01178202/document#:~:text=Index%20of%20Economic%20Freedom%3A%20methodological%20presentation&text=
The%20index%20focuses%20on%20four%20key%20aspects%20of%20economic%20activity,efficiency%20and%20ru
le%20of%20law.
[8] https://wbl.worldbank.org/en/wbl

Table 4
Unit Root Test

	ADF Test at Level		ADF Test at first difference		
Variables	ADF test statistics	Probability	ADF test statistics	Probability	Order of Integration
WEI	-0.3176	0.9111	-5.0177	0.0003	I (1)
WEF	1.2987	0.9981	-5.5039	0.0001	I (1)
ME	0.0324	0.9547	-4.5918	0.0010	I (1)
HI	-3.6059	0.0457	-8.1150	0.0000	I (0)
URB	-1.3553	0.5898	-3.5553	0.0433	I (1)

Table 5
ARDL Bounds Test

F-stat = 4.51 and K = 4		
Significance	Lower Bound	Upper Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Table 6
Long-run Results

Dependent Variable = WEI				
Variables	Coefficient	Std. Error	t-Statistic	Prob.
WEF	0.0217	0.0093	2.3319	0.0416
HI	0.0402	0.0078	5.1598	0.0009
URB	0.3155	0.0589	5.3497	0.0007
ME	-0.0002	0.0002	-1.4818	0.1767
C	-12.8103	2.1189	-6.0454	0.0003

Table 7
Short-run Dynamics

Variables	Coefficient	Std. Error	t-Statistic	Prob.
D(WBLI)	0.0019	0.0079	0.2465	0.8115
D(WBLI(-1))	0.0120	0.0066	1.8102	0.1079
D(FCE)	0.0126	0.0059	2.1320	0.0656
D(FCE(-1))	0.0000	0.0069	-0.0041	0.9968
D(FCE(-2))	-0.0070	0.0060	-1.1677	0.2765
D(FCE(-3))	-0.0063	0.0055	-1.1385	0.2878
D(UPG)	-0.2111	1.1563	-0.1825	0.8597
D(UPG(-1))	1.8051	3.7544	0.4808	0.6435
D(UPG(-2))	-4.1063	3.6891	-1.1131	0.2980
D(UPG(-3))	2.9507	1.7931	1.6456	0.1385
D(MEEHS)	0.0002	0.0001	1.7194	0.1238
D(MEEHS(-1))	0.0001	0.0002	0.2962	0.7746
D(MEEHS(-2))	0.0004	0.0002	1.9847	0.0825
D(MEEHS(-3))	0.0002	0.0002	1.1930	0.2670
ECT(-1)	-0.9281	0.2634	-3.5241	0.0078

R-squared	0.8472	Mean dependent var	0.0486
Adjusted R-squared	0.4843	S.D. dependent var	0.0431
S.E. of regression	0.0310	Akaike info criterion	-3.9369
Sum squared resid	0.0077	Schwarz criterion	-2.9853
Log-likelihood	75.1169	Hannan-Quinn criteria.	-3.6460
F-statistic	2.3346	Durbin-Watson stat	2.6503

Diagnostic Test for	Tests	F-statistics	Probability
Serial Correlation	Breusch-Godfrey Serial Correlation LM Test	3.7086	0.0961
Heteroskedasticity	ARCH Test	0.5961	0.5592
Normality	Jarque-Bera Statistics	0.0214	0.9894

A positive and long-run relationship between the dependent variable with the independent variables is confirmed except for the male education. All other variables are statistically significant as well as positively associated with women's empowerment including the core variable, economic freedom for women. Our findings coincide with those of Millar (2015). This implies that promoting women's economic liberation in society ensures women's economic empowerment in the long run. Besides, the provision of economic rights to women leads to bridging the gender disparities and consequently empowers women (Fike, 2023; Kabeer, 2005).

Urbanization also contributes toward women's empowerment according to our empirical findings. Access to better economic opportunities comes with the urban environment and therefore helps women to gain economic empowerment. These results are similar to the empirical estimates of Cinar and Ugur-Cinar (2018) in Turkey and Abdullah et al. (2021) in Pakistan. Short-run dynamics are reported in Table-7. We have mixed results in the short run. Since women's empowerment is a process than a situation and it also is the outcome of long-run practices that add up to female well-being. That is why short-run coefficients are part of standard conformity. However, our prime concern is the ECT term; a negative and significant ECT term supports the presence of a long-run relationship which is evident from our result. Besides, the coefficient of the ECT term also predicts the speed of convergence that is correction towards equilibrium. The empirical evidence shows that women's empowerment is positively and significantly affected by economic freedom for women in Pakistan.

Considerable diagnostic tests have also been employed for the study. The results illustrate that the model is free from heteroskedasticity and serial correlation issues. The error term in our model is serially non-correlated as well as being homoscedastic. Besides, the normality of the residuals has also been confirmed.

6. Conclusion and Discussion

Pakistan is a developing country with almost fifty percent female population. Yet, gender disparity is very high in the country. This is because women face discrimination and biases in terms of the provision of health, education, and employment opportunities. Consequently, women are marginalized in Pakistan. Access to basic facilities and equal employment and political representation aggregates women's empowerment. In addition, economic freedom for women is every bit like other socioeconomic factors. Our study attempted to build a hypothesis of women's empowerment through economic freedom by reviewing literature and then empirically testing it using time series data. This study bridges the theoretical gap in literature followed by developing an index of women's empowerment rather than measuring it with a single component. We have utilized PCA to construct this index to avoid unit bias and information loss. For economic freedom of women, we have employed an innovative approach; an index named WBLI developed by The World Bank. WBLI is based on 8 distinct yet comprehensive indicators throughout the women's life. Other independent variables are household income, urbanization, and male education. After determining the order of integration, we have used ARDL as our series exhibit mixed order of integration. The bound test has confirmed the existence of a long-run relationship among variables of our model. The long and short-run dynamics have further confirmed the relationship between women's empowerment and economic freedom in Pakistan. There is a positive and statistically significant relationship between them. A significant ECT term with a negative sign suggests the long-run association and predicts the speed of convergence to correct disequilibrium. Diagnostics has also confirmed that the model is immune against the issues of serial correlation and heteroskedasticity with normal distribution.

Although economic freedom for women certainly contributes towards women's empowerment, many aspects in Pakistan need improvement. Women's mobility, women's decision to work, rules and laws for equal pay, legal barriers to marriage for women, women's decision to work after childbirth, restrictions for registering a business on women entrepreneurs,

discrimination in the division of property and regulation for women's pension are the factors that still impedes the 100% economic freedom of women in the society. For instance, in Pakistan, women cannot register a business independently. In the case of a married woman, details of her husband are required for the company memorandum. This restricts women's ability to independently take economic decisions in Pakistan. However, a few advancements are also encouraging. Like the introduction of reforms for women working late hours. Previously, women were not allowed to work at night in Pakistan. Besides, a stable household income for women also positively affects empowerment in females. Economic prosperity can increase the chances of inclusion of females in health and education opportunities at the household level. Consequently, a healthy and educated woman can aggregate the income levels at domestic and national levels. Among others, urbanization is also adding to women's empowerment. In developing countries like Pakistan urban areas provides better access to infrastructure, health, education, and work opportunities for women. If similar facilities are available for the rural populations, women in backward areas would also be empowered. We expect that this study prompt other researchers to explore the other components of women's empowerment in Pakistan and other developing countries. The future course of the research can also include political rights as a determinant of women's empowerment.

Author contribution
Ayza Shoukat: Idea, software, Methodology, Writing-Original draft preparation, Reviewing and Editing; Methodology; Investigation, Reviewing and Editing
Muhammad Abdullah: Conceptualization, Methodology, Writing-Original draft preparation
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