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Do institutional quality and economic freedom matter for the finance-growth nexus? Empirical evidence from Nepal

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Abstract

Many studies explored the finance-growth nexus by using the proxy of several variables via multifaceted channels; however, a few of them addressed the role of institutional quality (IQ) and economic freedom (EF) on the finance-growth nexus in Nepal. This study thus explores the finance-growth nexus with the moderating role of IQ and EF. Using time-series data from 1996 to 2023, this study applied the autoregressive distributed lag (ARDL) model to analyze the finance-growth nexus with and without the moderating role of IQ and EF. In the long run, financial development (FD) positively influenced economic growth; however, the interaction of FD with IQ exhibited a positive but weakly significant effect ($\beta=0.025$, $p<0.10$). Additionally, the interaction between FD and EF evidenced a positive and significant effect on growth ($\beta = 0.184$, $p < 0.01$) in Nepal. Likewise, IQ and government expenditure have a negative effect on growth, and EF and trade (only after mediation) have a positive effect on growth, where IQ and EF have a positive effect on the finance-growth nexus in the long run. On the flip side, in the short run, the independent effect of financial development was negative, but the joint effect of financial development and institutional quality, as well as financial development and economic freedom, had a significantly positive impact on economic growth in Nepal. The empirical evidence suggests that financial development alone is not enough to promote economic growth in Nepal; instead, the quality of institutions and economic freedom become the main-moderators of the finance-growth nexus. Therefore, policymakers must focus on improving their governance systems and embracing market-based reforms to achieve maximum growth potential through financial development.

Keywords: Finance-growth nexus, institutional quality, economic freedom, ARDL, Nepal



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Introduction

Identifying the determinants of economic growth and assessing their impact has been gaining momentum for a long time in academic research. Although new determinants are emerging, traditional determinants are still exhibiting greater prevalence. Among them, financial sector development remains a crucial determinant, as it intermediates the funds from surplus units to deficit units, characterized by efficient allocation, reduced asymmetry, and the maintenance of economies of scale. Thus, it helps to increase the economic and industrial activities within an economy, thereby creating more job opportunities and income. Schumpeter was the first economist to connect finance with economic growth and developed a popular theory—supply-led hypothesis, garnering support and controversy in different economies (Adeyeye et al., 2015). There is substantial empirical evidence in support of a positive association between financial market development and economic growth. However, Lucas (1988) stated that the role of the financial system in economic growth is overemphasized. Consequently, the strength and consistency of the finance-growth nexus vary across the economies.

Additionally, there has been growing concern about the role of institutions, which translates the financial activities into the growth of the country. North (1990) identified another major determinant of economic growth—institutional quality. In his study, he observed the formal and informal institutions. Later on, this identification was supported by many studies stating institutional quality translates the efforts of financial development into economic output. Institutional quality has become the major determinant of growth and a widely discussed variable in many studies. It consists of the protection of property rights, the rule of law, regulatory effectiveness, government accountability, and control of corruption. The presence of strong institutional quality resembles the efficient fund intermediation process with greater transparency and economies of scale, and enhanced confidence of economic units. In contrast, poor institutional quality distorts investor confidence, fuels speculative activities, resulting in inefficient allocation of financial resources. Such a tendency weakens the translation capacity of financial intermediation into growth. Consequently, various economies experience different growth patterns despite the presence of financial markets and continuous effort of improving its status.

Economic freedom determines the level of entrepreneurship, property rights, monetary stability, market openness, and economic activities, thereby influencing the demand side of funding. The financial system links deficit units with surplus units by fostering saving and capital formation that enhances economic productivity, which was more efficient and competitive after the 1980s and 1990s worldwide financial reforms and economic and financial liberalization (Ghosh, 2023). Thus, the empirical study found the economic freedom fosters economic growth in isolation as well as jointly with financial development via institutional development (Oussama et al., 2017).

Many recent studies have found that institutional quality matters for economic growth and development in developing economies (Acquah et al., 2023; Gajurel et al., 2025; Hussain & Haque, 2016). Further, as shown by different empirical findings, economic freedom spurs financial development and economic growth (Brkić et al., 2020; Yang et al., 2023). Moreover,

financial development and economic growth are positively associated, as found by several empirical studies (Fung, 2009; Gajurel, 2022; Naeem Azmi & Akhtar, 2025; Ndoya et al., 2024; Nguyen et al., 2022). In this way, many studies found the linkage between finance and growth, institutional quality and growth, and economic freedom and growth, but did not find sufficient evidence of the moderating role of institutional quality and economic freedom in the finance-growth nexus.

Nepal government has been putting continuous efforts to develop the financial markets through various development strategies, periodic plans, and annual budgetary programs in pursuit of high economic growth. However, Nepal has been experiencing low economic growth for a long time. This paradoxical stance demands an empirical analysis on the nexus between the financial market development and the economic growth of Nepal. Many studies revealed the importance of institutional quality and economic freedom to improve the overall efficiency of financial intermediation and cautiously argue that the financial sector alone cannot accelerate growth. It means that only prioritizing the financial market is not sufficient. Institutional quality and economic freedom seem to be undermined when examining the finance-growth nexus of Nepal. This study aims to investigate the nexus of finance-growth of Nepal, along with examining the moderating role of institutional quality and economic freedom. This study provides empirical findings on the nexus of finance-growth and the role of institutional quality and economic freedom, which helps to prioritize policymakers' initiatives.

Literature Review

Theoretical Foundations

In finance-growth literature, Schumpeter (1911/1934) is a pioneer who developed the supply-led hypothesis, stating that financial development via financial service to innovative enterprises, technological progress, and capital accumulation precedes and drives economic growth. This hypothesis claims that financial market development influences economic growth. Similarly, early works of Gurley and Shaw (1967), Goldsmith (1969), McKinnon (1973), and Shaw (1973) emphasized that a well-developed financial system channels the financial resources to economic development within the financial liberalized framework. Furthermore, Levine (1997) stressed that the financial system plays a crucial role in mobilizing resources, diversifying risk, securing returns on investment, and evaluating investments that promote economic growth. Moreover, many endogenous growth models offered the financial deepening increases steady-state growth (Romer, 1986; Lucas, 1988).

The efficient and developed financial markets optimally allocate the financial resources, thereby contributing to economic growth. This connection is also known as the finance-led-growth hypothesis (Adeyeye et al., 2015). This hypothesis further argues that the financial deepening provides full access to financial services in the economy, and the economy responds to growth in the real sector via financial intermediation. Later on, institutional economists argued that the absence of institutional quality deters the capacity of financial development initiatives in promoting growth.

Empirical Review

Many extant studies (Senani et al., 2025; Fengju & Wubishet, 2024) confirmed the existence of the finance-growth nexus in different economies, such as Gulf Cooperation Council (GCC) countries and East African countries. However, these studies argue that the presence of a strong institutional framework plays a significant role in amplifying the role of the financial sector in growth. Likewise, Hamdi et al. (2017) observed similar results in 143 developed and developing countries. These studies use different variables to proxy the institutional quality. More specifically, Senani et al. (2025) used economic freedom to replicate the institutional quality, whereas Fengju and Wubishet (2024) took government stability, rule of law, presence of military in politics, and corruption controls to proxy the institutional quality. Similarly, Bayraktar et al. (2023) observed the positive impact of institutional variables on the finance-growth nexus.

By employing a quantile autoregressive distributed lag (QARDL) model in 11 countries consisting Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, Philippines, South Korea, Turkey, and Vietnam, between 1990 and 2021, Agan (2025) found the positive and significant impact of government efficiency, strong financial institutions, and an adaptive legal framework in promoting sustainable economic growth. The study further outlines the importance of regulatory quality and corruption control to boost growth. Interestingly, this study finds the nuanced impact of the rule of law, being negative at lower growth levels but diminishing as the economy matures. Association of Southeast Asian Nations (ASEAN) economies exhibited a strong and positive role of financial institutions on growth, despite financial markets. However, interaction with the rule of law and financial markets significantly contributes to growth (Haini, 2020).

The interaction of financial development and institutional quality reinforces economic growth. Both the formal and informal institutions are crucial for developing the financial institutions, which ultimately support the economic growth (Bousrih, 2012). Furthermore, Gazdar & Cherif (2015) stated that the financial development and strong presence of institutions ensure higher and steadier growth. They argue that the strong institutional framework mitigates the negative effect of the financial sector. Their study in the Middle East and North Africa (MENA) region exhibited the negative impact of financial development on growth. However, interaction with institutional variables, financial development showed a significant and positive impact. This finding is similar to the study of Hiani (2020) and Bayraktar et al. (2023), who investigated in emerging and middle-income countries.

Sohag et al. (2019) observed the inverted U-shape relationship between financial development and growth in Malaysia. In contrast, they found U-shape relationship in Indonesia. However, in both countries, they highlighted the decisive role of institutional quality in the finance-growth nexus. Using ARDL and threshold regression techniques on data from 1984-2017, they examined the nonlinear relationship between the variables.

Many literatures have similar findings on the positive and significant role of institutional quality in the finance-growth nexus. They further state that financial development alone is not sufficient to increase the output of the economy; hence, interaction with institutional variables is essential to translate the financial activities into growth. These literatures have used variables

such as control of corruption, government effectiveness, political stability and absence of violence/terrorism, regulatory quality, rule of law, voice and accountability to proxy the institutional quality. However, economic freedom is undermined in many literatures while examining the role of institutional quality in the finance-growth nexus. In this context, this study aims to investigate the role of institutional quality and economic freedom in the finance-growth nexus in Nepal.

Methodology

Data and Variable Description

This study is quantitative in nature and employs a deductive approach with time series data to examine the hypothesis that financial development might positively influence growth, considering the moderating role of institutional quality and economic freedom. Considering the data availability, this study used time series data spanning from 1996 to 2023. Table 1 summarizes the variable descriptions. This study has taken economic growth as a dependent variable, proxied by GDP ($\ln GDP$). Similarly, explanatory variables were domestic credit to the private sector by banks as a share, represented by financial development ($\ln FD$) and the institutional quality index ($\ln IQ$). This index is constructed by considering six governance indicators consisting of political stability, control of corruption, government effectiveness, rule of law, regulatory quality, and voice and accountability. Furthermore, some control variables, such as economic freedom ($\ln EF$), trade openness ($\ln Trade$), and government expenditure ($\ln GE$), have been included to reduce omitted variable bias, thereby enhancing the model's fit. Furthermore, all data are transformed into logarithmic form. However, due to the negative series of GDP, FD, and IQ, the shift-log transformation technique is applied to express them in log form (Buss & Hefeker, 2007; Gajurel et al., 2021). The major purpose of the shift-log transformation compared to the standard one is to smooth the series and address the unit root problem, which addresses the model issues, keeping all the relationships the same.

$$\ln x = \ln(x + \sqrt{x^2 + 1})$$

Where $x = \text{GDP or FD or IQ}$

Table 1

Variable Descriptions

Variable	Proxy	Descriptions	Measurement	Source
$\ln GDP$	Economic growth	Constant price GDP per capita (2015)	US\$	World Development Indicators
$\ln FD$	Financial development	Domestic credit to the private sector by banks as a share of GDP	Percentage	World Development Indicators
$\ln IQ$	Institutional quality	Principal components of six governance indicators: Political stability, control of corruption, government effectiveness, rule of law, regulatory quality, and voice and accountability, ranging from worst - 2.5 to the best +2.5 scores.	Index: -2.5 to + 2.5	World Governance Indicators

Variable	Proxy	Descriptions	Measurement	Source
<i>lnEF</i>	Economic freedom	Integrating 12 freedoms: property rights, government integrity, judicial effectiveness, government spending, tax burden, fiscal health, business freedom, labor freedom, monetary freedom, trade freedom, investment freedom, and financial freedom, it assesses the economic and entrepreneurship environment, which ranges from a score of 0 to the highest freedom 100.	Score: 0 to 100	Heritage Foundation
<i>lnTrade</i>	Trade openness	It indicates the economic integration and trade performance of a country, which is measured as the total trade (import plus export) as a share of GDP.	Percentage	World Development Indicators
<i>lnGE</i>	Government expenditure	General government final consumption expenditure as a share of GDP.	Percentage	World Development Indicators

The institutional quality was a principal component of six governance indicators (Table 1). Table 2 represents the outcome of principal component analysis by which an institutional quality index (IQ) was developed. This index consists of six indicators, such as political stability, control of corruption, government effectiveness, rule of law, regulatory quality, and voice and accountability. Principal components 1 (PC1) and 2 (PC2) have eigenvalues greater than one, whose cumulative proportion is 82.06 percent, explaining the total variance in the dataset. The other principal component's eigenvalue is less than one and explains a smaller proportion of variance. Thus, this study prepared an index based on PC1 for institutional quality.

Table 2

Eigenvalue Value for Each Component

Principal Components	Value	Difference	Proportion	Cumulative Value	Cumulative Proportion
1	3.0233	1.1232	0.5039	3.0233	0.5039
2	1.9001	1.2806	0.3167	4.9234	0.8206
3	0.6195	0.3101	0.1033	5.5429	0.9238
4	0.3094	0.2098	0.0516	5.8523	0.9754
5	0.0996	0.0515	0.0166	5.9519	0.9920
6	0.0481	-	0.0080	6.0000	1.0000

Model Specification

This study aims to examine the impact of financial development and institutional quality on GDP, where economic freedom, trade openness, and government expenditure are taken as control variables. This study used three baseline models. Model 1 showed the relationship between financial development and economic growth, along with control variables. In Equation 1, Model 1 is developed to measure the impact of explanatory variables and control variables on GDP.

$$\ln GDP = \alpha + \beta_1 \ln FD + \beta_2 IQ + \beta_3 \ln Trade + \beta_4 \ln GE + \beta_5 \ln EF + \epsilon_t \dots \dots (1)$$

where $\ln GDP$ represents the economic growth, and $\ln FD$ and $\ln IQ$ are explanatory variables, and $\ln Trade$, $\ln GE$, and $\ln EF$ are considered as control variables. Further, $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are the regression coefficients of the given explanatory and control variables, respectively. Similarly, Equation 2, the Model 2, as expressed below, introduces the interaction term of $\ln FD$ and $\ln IQ$ to examine the moderating impact of IQ on the finance-growth nexus.

$$\ln GDP = \alpha + \beta_1 \ln FD + \beta_2 IQ + \beta_3 \ln Trade + \beta_4 \ln GE + \beta_5 \ln EF + \beta_6 (\ln FD * \ln IQ) + \epsilon_t \dots \dots (2)$$

Eventually, to examine the impact of the interaction term of $\ln FD$ and $\ln EF$, this interaction term is introduced in Equation 3, Model 3, as follows:

$$\ln GDP = \alpha + \beta_1 \ln FD + \beta_2 IQ + \beta_3 \ln Trade + \beta_4 \ln GE + \beta_5 \ln EF + \beta_6 (\ln FD * \ln IQ) + \beta_7 (\ln FD * \ln EF) + \epsilon_t \dots \dots (3)$$

Based on these three models, this study applied the ARDL model to examine the short- and long-run relationship. The ARDL (p, q) model was proposed by Pesaran et al. (2001), which is suitable for small samples and for both stationary and non-stationary time series. The ARDL model performs after confirming the cointegration between variables by using the bound test technique. The baseline ARDL (p, q) model is estimated as:

$$\Delta \ln Y_t = \beta_0 + \beta_1 \ln Y_{t-1} + \beta_2 \ln X_{t-1} + \sum_{i=1}^p \gamma_i \Delta \ln Y_{t-i} + \sum_{i=1}^q \theta_i \Delta \ln X_{t-i} + \epsilon_t$$

where Y_t = dependent variable, X_t = independent and moderating variables, p = maximum lag of dependent variable, and q = maximum lags of independent variables, β_1 and β_2 = long run coefficients, γ_i and θ_i = short run coefficients. To estimate the short-run dynamics and long-run adjustment term, the error correction model (ECM) can be estimated as:

$$\Delta \ln Y_t = \beta_0 + \sum_{i=1}^p \gamma_i \Delta \ln Y_{t-i} + \sum_{i=1}^q \theta_i \Delta \ln X_{t-i} + \phi ECT_{t-1} + \epsilon_t$$

where ϕ = error correction term that determines the speed of adjustment of any disturbance in the short run in the long run.

Empirical Results

Descriptive Statistics

The descriptive summary provides the statistical nature of the time series. Table 3 presents the statistical summary of the variables included in this study. The standard deviation of all variables, except $\ln IQ$, is small, signaling low variation over the period ($n = 28$ years). Likewise, the Jarque-Bera statistic's probability value is greater than a 10 percent significance level, which approximately indicates the normality in distribution.

Furthermore, the lower panel of Table 3 demonstrates the correlation matrix. The results revealed that $\ln FD$ and $\ln GDP$ show a strong positive and significant correlation at the 1 percent level. Similarly, $\ln Trade$ and $\ln IQ$ also exhibit a significant positive relationship at the 1 percent level. In contrast, $\ln Trade$ and $\ln GE$ exhibit the inverse relationship with $\ln GDP$, which are significant at the 1 percent and 5 percent level. Additionally, $\ln IQ$ shows an insignificant relationship with $\ln GDP$, indicating the possibility of a transmission effect of IQ on GDP .

Table 3*Descriptive Summary and Correlation Matrix*

	lnGDP	lnFD	lnIQ	lnTrade	lnGE	lnEF
Mean	6.589	3.816	-0.061	3.845	2.153	3.953
Maximum	7.036	4.640	1.951	4.159	2.378	4.009
Minimum	6.199	3.114	-1.815	3.592	1.891	3.906
Std. Dev.	0.274	0.490	1.219	0.129	0.094	0.031
Jarque-Bera (JB)	2.270	2.125	2.624	1.207	2.042	2.195
Probability (JB)	0.321	0.346	0.269	0.547	0.360	0.334
Observations	28	28	28	28	28	28
lnGDP	1					
lnFD	0.961***	1				
lnIQ	-0.127	-0.103	1			
lnTrade	-0.523***	-0.477**	0.672***	1		
lnGE	-0.470**	-0.296	-0.104	0.335*	1	
lnEF	-0.063	0.002	0.030	0.214	0.412**	1

Note. *** significant at 1%, ** significant at 5%, and * significant at 10%

Unit Root Tests

Unit root tests are essential to confirm the stationarity of time series to employ the cointegration test under the ARDL framework. To identify the order of integration, this study employed the Augmented Dickey-Fuller test proposed by Dickey and Fuller (1979), Phillips Perron test (PP) proposed by Phillips and Perron (1988), and the Kwiatkowski-Phillips-Schmidt-Shin Test (KPSS) proposed by Kwiatkowski, Phillips, Schmidt, and Shin (1992). According to the PP test, all variables are stationary in first differences (I (1)), while the ADF tests show that some variables (lnFD and lnEF) are stationary at the level. However, as per the KPSS test, having opposite hypotheses to ADF and PP, there is a mixed order of integration. Overall, none of the variables is integrated at second differencing. The results of the ADF, PP, and KPSS tests are presented in Table 4.

Table 4*Unit Root Test Results of Constant & Trend*

Variables	PP		ADF		KPSS	
	Level	Δ	Level	Δ	Level	Δ
lnGDP	-2.16	-5.11***	-2.27	-4.84***	0.15**	0.16**
lnFD	-2.45	-4.21**	-5.40***	-4.20**	0.07	0.06
lnIQ	-0.71	-4.85***	-0.79	-4.34**	0.17**	0.08
lnTrade	-2.51	-9.74***	-2.72	-6.40***	0.18**	0.24***
lnGE	-2.43	-4.65***	-2.65	-1.95	0.13*	0.06
lnEF	-3.12	-5.25***	-3.63**	-5.25***	0.08	0.05

Note. *** significant at 1%, ** significant at 5%, and * significant at 10%

ARDL Bound Test for Cointegration

Since all the variables are integrated at the level and first differencing for stationarity, the autoregressive distributed lag (ARDL) to cointegration is employed to examine the long-run relationship among the dependent and explanatory variables. The ARDL model is also effective when the sample size is small (Gajurel & Chindengwike, 2025). This study used a 2-period

optimal lag by the AIC criteria because of limited observations that may lose the degree of freedom and the chance of misleading the estimation. The cointegration results of the three estimated models are presented in Table 5.

Table 5

Bound Tests for Cointegration

Model	Model specification	F	$\alpha = 0.1$		$\alpha = 0.05$		$\alpha = 0.01$	
			I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
1	$F_{\ln GDP} [(\ln GDP) \ln FD, \ln IQ, \ln Trade, \ln GE, \ln EF]$	8.90	2.41	3.52	2.91	4.19	4.13	5.76
2	$F_{\ln GDP} [(\ln GDP) \ln FD, \ln IQ, \ln Trade, \ln GE, \ln EF, \ln FD * \ln IQ]$	13.26	2.33	3.52	2.79	4.15	3.98	5.69
3	$F_{\ln GDP} [(\ln GDP) \ln FD, \ln IQ, \ln Trade, \ln GE, \ln EF * \ln FD, \ln FD * \ln IQ]$	13.23	2.33	3.52	2.79	4.15	3.98	5.69

The level relation or cointegration is confirmed when the F-bound statistic is greater than the upper-bound I (1) critical value of each model. Table 5 presents the F-statistics for all models, where the F-statistic score of each model is greater than the critical upper bound I (1) at the 1% significance level. This result confirms the stable long-run cointegration between growth and explanatory variables, which allows for estimating long-run coefficients and ECM short-term dynamics.

Long Run Estimate

This study employed three models: In Model 1, $\ln GDP$ was regressed with $\ln FD$, $\ln IQ$, $\ln Trade$, $\ln GE$, and $\ln EF$ without an interacting term; in Model 2, the same mechanism was used as Model 1 with one interacting term ($\ln FD * \ln IQ$); and eventually, Model 3 used the same regression as Model 1 with two interacting terms ($\ln FD * \ln EF$ and $\ln FD * \ln IQ$) to examine the moderating role of economic freedom and institutional quality on the finance-growth nexus. The long-run results are presented in Table 6.

As shown in the results of Table 6, in Model 1 and Model 2, FD has a lagged positive effect on growth, which is significant at 1% level, indicating that a 1 percent increase in financial development results in 0.64% growth in GDP , which satisfies the supply-led hypothesis. Interestingly, in Model 3, such an association weakened and exhibited a negative and insignificant relation while introducing the interaction term of financial development and economic freedom ($FD * EF$). Furthermore, in all models, institutional quality (IQ) exhibited a negative and significant relationship with growth, signaling that institutional quality alone cannot explain growth positively, producing a counterintuitive result. While interacting with FD , IQ becomes conditional for the finance-growth nexus. Additionally, in all models, trade ($Trade$) and EF showed a positive and significant relationship with growth. The consistent association of these variables indicates that market-friendly policy and external integration of the economy are helpful in accelerating the growth of Nepal.

In Model 3, the interaction term of financial development and economic freedom ($FD * EF$) revealed a positive and significant association ($\beta=0.184$, $p<0.01$) with growth. This association indicated that the financial development of the economy, having a higher degree of economic freedom, contributes to growth. Similarly, the interaction term of FD and IQ ($FD * IQ$) also has a positive relationship with growth and remains significant at 10% level only.

The OLS results also confirmed the positive financial development spill to economic development in Nepal. However, the government's effectiveness impeded the growth in Nepal.

Table 6

Long-run Results

Variable	Model 1: FD- Growth	Model 2: FD-Growth with FD*IQ	Model 3: FD- Growth with FD*IQ and FD*EF		OLS
$\ln FD (-1)$	0.640*** (0.078)	0.567*** (0.025)	-0.160 (0.223)	$\ln FD$	0.112*** (0.023)
$\ln IQ$	-0.084* (0.041)	...	...	$\ln EF$	0.319 (0.378)
$\ln IQ (-1)$	...	-0.153*** (0.052)	-0.156*** (0.053)	$\ln GE$	-0.619*** (0.147)
$\ln Trade$	...	0.480** (0.169)	0.483** (0.171)	$\ln Trade$	-0.072 (0.139)
$\ln Trade (-1)$	0.743 (0.487)	...	...	<i>Political stability</i>	0.014 (0.053)
$\ln GE$	-0.708** (0.267)	...	...	<i>Regulatory quality</i>	-0.040 (0.129)
$\ln GE (-1)$	...	-0.779*** (0.092)	-0.776*** (0.093)	<i>Rule of law</i>	0.063 (0.128)
$\ln EF$	1.674** (0.748)	0.756*** (0.235)	...	<i>Voice and accountability</i>	0.121 (0.116)
$\ln FD * \ln EF$	...	...	0.184*** (0.058)	<i>Government effectiveness</i>	-0.507*** (0.122)
$\ln FD (-1) * \ln IQ (-1)$	...	0.024 (0.014)	0.025* (0.014)	<i>Control of corruption</i>	0.139 (0.105)
C	-3.580 (3.742)	1.334 (1.224)	4.311*** (0.699)	C	6.708*** (1.480)
				R^2	0.981
				Adjusted R^2	0.970
				DW	2.266
				F-statistic	86.96***

Note. *** significant at 1%, ** significant at 5%, and * significant at 10%. Standard error is shown in parentheses

Short Run Results (Error Correction Model: ECM)

The error correction mechanism is performed to examine the long-run relations and short-run coefficients. Table 7 presents the short-run results. All the estimated models were statistically robust. The R^2 and adjusted R^2 stated that the model is fitted and the variables have strong explanatory power. Since the Durbin-Watson statistic is close to 2 in all models, indicating the absence of autocorrelation. Likewise, a significant F-statistic confirms the validity of three models as well. On the flip side, the error correction terms (ECT) of each model were statistically significant with a negative sign, implying long-run causation between finance and growth, and any short-run disequilibrium will converge back to the long run swiftly.

Table 7

Short-run Results

Variable	Model 1: FD-Growth	Model 2: FD-Growth with FD*IQ	Model 3: FD-Growth with FD*IQ and FD*EF
Ect (-1)	-0.188*** (0.020)	-0.488*** (0.036)	-0.482*** (0.036)
$\Delta \ln GDP$ (-1)	-0.195*** (0.111)	-0.202*** (0.070)	-0.215*** (0.071)
$\Delta \ln FD$	0.013 (0.020)	0.113*** (0.016)	-0.239*** (0.027)
$\Delta \ln FD$ (-1)	-0.085*** (0.025)	-0.112*** (0.022)	-0.108*** (0.022)
$\Delta \ln IQ$	...	-0.099*** (0.028)	-0.094*** (0.028)
$\Delta \ln IQ$ (-1)		-0.124*** (0.029)	-0.119*** (0.029)
$\Delta \ln Trade$	0.290*** (0.031)	...	...
$\Delta \ln GE$		-0.172*** (0.025)	-0.172*** (0.025)
$\Delta (\ln FD * \ln IQ)$		0.021** (0.007)	0.019** (0.007)
$\Delta (\ln FD (-1) * \ln IQ (-1))$		0.036*** (0.008)	0.035*** (0.008)
R ²	0.796	0.905	0.905
Adj. R ²	0.757	0.860	0.860
F-statistic	20.501***	20.195***	20.161***
Durbin-Watson	2.376	2.168	2.093

Note. *** significant at 1%, ** significant at 5%, and * significant at 10%. Standard error is shown in parentheses

In the short run, the previous year's GDP positively influenced the current year's GDP. Further, financial development (FD) and trade openness (Trade) have a positive effect on growth and are significant at 1% level. However, institutional quality (IQ) and government expenditure (GE) portrayed a negative and significant association with growth at 1% level. Furthermore, a positive association was exhibited by the interaction term of FD and IQ, and it remained significant at 1% level. This strong association reveals that the improvement in IQ helps to strengthen the finance growth nexus.

Coefficient Diagnostics and Stability Tests

Some coefficient diagnostic and residual stability tests were conducted to examine whether the models were statistically robust or not. Table 8 shows the results of these tests.

Table 8

Results of Residual Diagnostic and Stability Tests

Tests	Statistic	Model 1		Model 2		Model 3	
		Coefficient	p	Coefficient	P	Coefficient	p
Jarque-Bera	JB	0.736	0.692	1.343	0.511	1.413	0.493
BG Serial	Obs*R ²	1.649	0.199	0.424	0.515	0.158	0.691
Correlation LM	(χ^2)						
Heteroskedasticity	Obs*R ²	13.231	0.211	19.492	0.192	17.734	0.277
Test: White	(χ^2)						
Ramsey RESET	F-statistic	0.618	0.445	2.032	0.188	2.137	0.178
Test							
CUSUM		Stable		Stable		Stable	
CUSUM of square		Unstable (2019) but converged quickly		Unstable (2019) but converged quickly		Unstable (2019) but converged quickly	

As shown in Table 8, since Jarque-Bera statistics for all models were statistically insignificant, as shown by the p-value being greater than 5% significance level, indicating the residuals of all models were normally distributed. Further, the Breusch-Godfrey LM test was conducted to inspect the serial correlation, whose p-value is also greater than 5% significance level, suggesting no autocorrelation exists in the model. Similarly, the White test for heteroskedasticity was employed, which also yielded an insignificant coefficient, implying the existence of homoskedasticity. Ramsey RESET F-statistics signaled the absence of omitted variable biases and were free from functional misspecification, and the CUSUM test also presented the stability of parameters in the three models. However, the CUSUM of the square showed instability in parameter estimation, particularly in the year 2019, due to COVID, but converged into the critical boundary promptly. Overall, various diagnostics and stability tests confirmed and satisfied that all models are statistically well-fitted and stable.

Discussion

This study examines the finance-growth nexus, moderated by institutional quality and financial development in Nepal. These empirical results confirm the existence of the supply-led hypothesis, which states that the economic growth of Nepal is led by financial development (FD). This finding is consistent with the findings of many studies (Fengju & Wubishet, 2024; Hamdi et.al., 2017; Senani et al., 2025); and contradicts the findings of Sohag et.al. (2019). Surprisingly, this study found that institutional quality alone is negatively associated with growth in Nepal, but it is consistent with an empirical study (Gajurel et al., 2025). It is observed that regulatory quality and voice and accountability are not sufficient for combating corruption (Gajurel et al., 2023) and have an inferior institutional quality perception in Nepal, which may impede growth in Nepal.

On the flip side, economic freedom promotes growth in Nepal, implying that effective and competitive taxation, governance, monetary and fiscal policies, foreign investment, and financial systems can promote economic growth (Heckelman, 2000). However, the finding revealed that government expenditure may not support the growth trajectory in Nepal, indicating a lower priority of fiscal expansion on the human capital sector and the physical infrastructure sector (Dangal & Gajurel, 2021). Additionally, trade with financial development and interacting with economic freedom and institutions may promote growth in Nepal, validating the trade-led growth hypothesis in the long run, but not in the short run, which is consistent with the view that financial development enhanced Nepal's productive capacity but is not alone sufficient for the trade-led growth (Gajurel et al., 2021).

An interaction term of FD and IQ shows a positive association with growth; however, such effect is statistically insignificant. Interestingly, economic freedom (EF) exhibits a significant positive relation. Employing the ARDL framework, the results reveal the existence of a long-run equilibrium between the variables. Similarly, the interaction term of economic freedom and financial development also presents a statistically significant result, implying that the market-based policy helps the fund intermediation process efficiently and results in high growth in Nepal. The interaction term of FD with EF exhibits a significant positive relationship, which explains that EF strongly translates the FD into growth. The findings of the second and third model suggest that FD alone is not sufficient to increase the economic output of the country.

These findings are consistent with those of Gazdar and Cherif (2015), Bayraktar et al. (2023), Hiani (2020), and Agan (2025). Furthermore, in this study, the interaction term of FD and EF shows a significant positive relationship with growth, whereas the interaction term of FD and IQ is positive and insignificant. It means financial development supports economic growth only when strong institutional quality and a degree of economic freedom are present. Consequently, this empirical analysis depicts the conditional nexus of finance-growth. However, the government's poor performance or ineffectiveness hampers economic growth in Nepal.

Conclusion and Implications

High and sustainable economic growth is the aspiration of all countries in the world. Fund mobilization helps to achieve such aspirations as it channels the funds from surplus sectors to deficit sectors at lower cost, with transparency, and promotes governance as well. A Well- functioning financial market mobilizes the funds efficiently. However, the quality of institutions and economic freedom play a crucial role in the existence of the finance-growth nexus. Several studies have examined these issues globally; however, only a few have considered this issue in the Nepalese context. This study attempted an empirical examination into the existence of the finance-growth nexus, along with measuring the moderating role of institutional quality (IQ) and economic freedom (EF).

This study employs three models to examine the finance-growth nexus. The first model is used to examine the existence of the supply-led hypothesis. The other two models are introduced with interaction terms, and the second model is developed with the interaction term of FD and IQ. Similarly, the third model is constructed with two interaction terms consisting of FD and IQ, and FD and EF. The ARDL framework confirms the existence of the finance-growth nexus in Nepal. It is found that financial development has supported the growth of Nepal. However, institutional quality alone inversely affects growth. In contrast, economic freedom significantly affects the growth rate.

The results confirmed the existence of the long-run causation of the finance-growth nexus by looking at the long-run coefficient and interaction as well. However, financial development cannot be translated into growth automatically. The improved institutional quality and high degree of economic freedom help to make the financial system efficient, which results in growth. These empirical findings imply the existence of a conditional finance-growth nexus. Based on empirical findings, policymakers are suggested to strengthen institutional quality and formulate market-based policies to ensure economic freedom to increase the capacity of financial development. Stakeholders should ensure the government's integrity, judicial effectiveness, and trade freedom, credit facilitation, and investment freedom for the entrepreneurial environment. Likewise, strengthening institutional quality, particularly improving government effectiveness, should be a top priority as it helps to ensure regulatory quality, rule of law, transparency, corruption control, and accountability as well. Further, policy should be favorable to increase the trade volume at the global level.

Limitations and Future Research

This study empirically presents the nexus of financial development and economic growth, with a significant contribution of IQ and EF in accelerating the economic output of Nepal. However, this study is also limited by certain limitations. This study uses the dataset for

28 years, and private sector credit growth is the only proxy of financial development. Future research can extend the sample period and capital market indicators to proxy for financial development. Furthermore, this study applied linear models and did not examine the non-linear relations. Therefore, future research can apply the non-linear model and also the panel data to ensure the generalizability of empirical findings. This study used an aggregated IQ index but did not consider the disaggregated indices that may lack the IQ dimension for proper policies in the short and long run.

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