*Theoretical and Applied Economics*
*Volume XXXII (2025), No. 4(645), Winter, pp. 43-56*

# Financial development and economic growth in emerging economies: the mediating role of entrepreneurship

**Ismail HERRAZ**
Hassan II University of Casablanca, Morocco
ismailherraz@gmail.com
**Younes EL KHATTAB**
Hassan II University of Casablanca, Morocco
younes.master@hotmail.com

**Abstract.** *The purpose of this study is to explore the mediating role of entrepreneurship between financial development and economic growth. Using data from 29 emerging economies (2006–2022) and Structural Equation Modelling (SEM) to assess both the direct and indirect influence of the financial sector on growth through entrepreneurial activity. The findings indicate that financial development enhances growth when channelled through entrepreneurship, while its direct effect turns negative without this mediation. Entrepreneurship also has a direct positive impact on growth. These findings reveal the importance of promoting entrepreneurial activity to strengthen financial systems, human capital, institutional quality, and inclusive growth.*

**Keywords:** financial development, economic growth, entrepreneurship, emerging economies, Structural Equation Modelling (SEM).

**JEL Classification:** O16, O47, L26, C39, O57.

## 1. Introduction

(Schumpeter J., 1911) is widely acknowledged as one of the earliest economists to emphasise the pivotal role of the financial sector in fostering economic growth. He particularly underlined the contribution of financial intermediaries in stimulating innovation and entrepreneurship by facilitating access to financial resources for firms and individuals seeking to develop new ideas. The nexus between financial development, entrepreneurship, and economic growth has since attracted considerable attention across macroeconomics, development studies, and financial policy research. A large body of literature argues that a well-functioning financial system enhances economic performance by efficiently allocating resources, reducing transaction costs, and encouraging investment and innovation (King and Levine, 1993; Levine, 2005). Furthermore, entrepreneurship is increasingly recognised as a key driver of productivity gains and sustained long-term growth (Ács et al., 2005; Wong, Ho and Autio, 2005). However, recent studies extend the analysis beyond these separate relationships by examining whether entrepreneurship operates as a mediating factor within the transmission pathway connecting financial development and economic growth (Khyareh, 2023; (Cumba et al., 2024)). Despite mounting interest, this mediation channel remains underexplored at the global level, creating a pressing research gap.

To address this gap, this study empirically investigates the relationship between financial development, entrepreneurship, and economic growth, examining both the direct and indirect effects of the financial sector through entrepreneurship across 29 emerging economies over the period 2006–2022.

To this end, we employed structural equation modelling (SEM) — a multivariate statistical technique for testing hypotheses about the influences of sets of variables on other variables, as noted by (Hayashi, Bentler and Yuan, 2011). This approach enables the simultaneous estimation of multiple dependent relationships, including both direct and indirect (mediated) effects. To preview our main results, we find a statistically significant and positive direct impact of financial development on entrepreneurship, but it has a statistically and negative direct impact on economic growth, however it's indirect effect through entrepreneurship is statistically and positively significant. Additionally, entrepreneurship has a statistically significant and positive direct impact on growth. Our model demonstrates a good overall fit; thus, it is suitable for interpretation. Additionally, we've found that our results support the notion that the entrepreneurship-financial development nexus is conditional on institutional conditions, confirming the findings of (Dutta and Meierrieks, 2021).

This study contributes to the existing literature by providing empirical evidence on the mediating role of entrepreneurship in the nexus between financial development and economic growth within emerging economies. Unlike much of the previous research, which primarily focuses on the direct impact of financial development on growth or examines only the direct role of entrepreneurship, this study adopts a broader perspective. It also integrates key macroeconomic and institutional control variables, thereby offering a more comprehensive evaluation of how financial development influences growth.

The remainder of this paper is structured as follows: Section 2 reviews the relevant literature on the links between financial development, entrepreneurship, and economic growth. Section 3 describes the data and outlines the empirical methodology. Section 4 presents the main findings along with the model's goodness-of-fit results, and Section 5 concludes the study.

## 2. Literature review

The early theoretical foundations regarding the role of financial development in economic growth originate from two contrasting schools of thought. The Keynesian perspective, represented by Joan Robinson, asserts that "where enterprise leads, finance follows" (Joan Robinson, 1952). suggesting that financial development is largely reactive and evolves in response to the demands of the real sector. In this view, economic expansion generates financing needs, and the financial system adjusts accordingly. Conversely, (Schumpeter J., 1911) argues that financial intermediaries play an active role in promoting growth by facilitating innovation and directing capital toward its most productive uses, thereby triggering a long-standing debate on the contribution of financial development to the process of economic growth.

Building on this perspective, (King and Levine, 1993) and (Levine, 2005) argue that a well-functioning financial system enhances economic performance by efficiently allocating resources, reducing transaction costs, and facilitating investment and innovation. Subsequent empirical research has largely validated these conclusions. For instance, (Oluitan, 2012), using a panel of 30 African countries over the period 1970–2005, found evidence of bidirectional causality between financial development and economic growth. Similarly, (Herwartz and Walle, 2014) and Pradhan et al. (2018) confirmed the positive relationship between financial development and economic growth. Furthermore, (Quito et al., 2025) highlight that the impact of financial development differs across developed and developing economies. Drawing on a sample of 76 countries covering 1980–2019, their findings reveal that in developing countries, financial institutions—particularly banks—play a significant role in supporting economic growth, whereas in developed economies, stock market-oriented financial development contributes more substantially to growth.

In Schumpeter's analysis of growth, innovation is considered the primary driving force for economic progress. The financial sector, in this regard, promotes innovation by providing financial support to firms and entrepreneurs seeking to innovate. Therefore, the Schumpeterian view of finance and growth highlights the significant impact of financial intermediaries on productivity growth and technological change. Based on this perspective, the financial intermediary sector alters the path of economic progress (Levine and Loayza, 2000).

In this context, an increasing number of studies provide evidence of a positive relationship between financial development and entrepreneurial activity. (Dutta and Meierrieks, 2021) demonstrate that financial deepening increases entrepreneurship globally, especially in institutional contexts that provide property rights protection and regulatory efficiency.

Their panel analysis of 136 countries underscores the critical role of governance quality in conditioning this relationship. (Ajide and Ojeyinka, 2022) also find that the relationship becomes significant only once financial systems pass a certain development threshold, which wasn't the case for the 20 selected countries in Africa—below which financial access remains inadequate for entrepreneurial growth.

The type of financial instrument available is equally important. Beck et al. (2005, 2008) show that diverse financing sources—bank loans, venture capital, microfinance, and crowdfunding—differentially affect entrepreneurial outcomes. This aligns with (Prokopenko et al., 2025), who argue that sustainable and inclusive entrepreneurial ecosystems rely on flexible financial systems capable of serving both early-stage and high-growth ventures. Their study stresses that beyond structural banking reforms, policymakers must enhance digital finance, financial literacy, and funding equity.

Moreover, financial systems do not just fund business ideas but also foster innovation and then growth by reducing liquidity constraints and information asymmetries. Banks, for instance, enhance the quality of information about projects and facilitate resource allocation in the economy (John H. Boyd and Edward C. Prescott, 1986). Additionally, (Allen and Gale, 2000) argue that a competitive environment between banks and stock markets fosters innovation, reduces the cost of financial resources, and stimulates economic growth (Beck and Levine, 2002).

Although the direct relationship between finance and entrepreneurship, and between entrepreneurship and growth, are well-documented, few studies explore the effect of entrepreneurship as a mediator in the transmission mechanism linking finance to growth. (Khyareh, 2023) and (Cumba et al., 2024)) offer rare empirical tests of this hypothesis.

(Khyareh, 2023) used a panel of 42 countries that participated in the Global Entrepreneurship Monitor (GEM) spanning from 2001 to 2018, utilising the two-step Generalized Moment Method. He has identified that the combined effect of entrepreneurship and financial development on economic growth is largely positive, suggesting that financial development can amplify the positive effect of entrepreneurship on economic growth.

Moreover, Cumba et al. (2024), using panel GMM estimation on African countries, found that entrepreneurship partially mediates the relationship between financial support and GDP growth. Their results suggest that up to 40% of finance's growth-enhancing effects operate indirectly through entrepreneurial activity. Hence, the existing literature reveals a significant research gap: the mediation role of entrepreneurship in the finance–growth nexus is under-theorised, poorly quantified, and highly context-dependent. Addressing this gap is crucial for both theory building and evidence-based policy.

Drawing upon the insights from prior literature, the following hypotheses are formulated:

$H_1$ : Well-developed financial systems have a direct and positive effect on economic growth.

$H_2$ : Financial development exerts a positive influence on the level of entrepreneurial activity.

$H_3$ : Entrepreneurial activity has a positive and significant impact on economic growth.

$H_4$ : The relationship between financial development and economic growth is mediated by entrepreneurship.

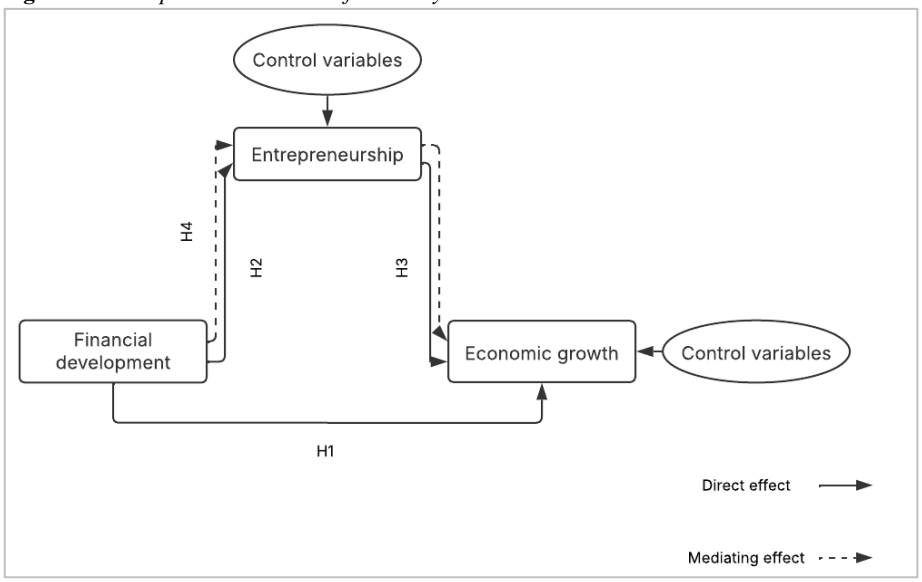
As presented in the hypotheses, Figure 1 illustrates the conceptual framework of this study, highlighting how entrepreneurship functions as a mediating variable in the relationship between financial development and economic growth.

## 3. Data and methodology

### 3.1. Description and sources of model variables

The primary objective of this study is to investigate the role of entrepreneurship as a mediating factor in the transmission mechanism through which financial development influences economic growth. To achieve this, the analysis relies on data from 29 emerging economies, classified according to the International Monetary Fund (IMF) based on income levels, covering the period 2006–2022. The majority of the data were obtained from the World Bank's World Development Indicators (WDI, 2023).

**Figure 1.** *Conceptual Framework of the study*




**Source:** Authors' illustration.

### 3.1.1. The dependent variable

The study uses economic growth (EG) as the dependent variable, measured by the annual percentage change in GDP per capita. The growth rate of GDP per capita is considered a more accurate indicator of economic performance compared to overall GDP growth, as it better reflects improvements in living standards. An increase in aggregate GDP does not necessarily imply better welfare for the population, since various demographic and structural factors may influence this relationship. For instance, when population growth outpaces production growth, per capita output may decline, even if total GDP rises. Therefore, GDP per capita is adopted as a more reliable measure of economic growth. The data for this variable were obtained from the World Bank's World Development Indicators (WDI).

### 3.1.2. The key explanatory variable

For financial development (FD), the study employs domestic credit to the private sector (expressed as a percentage of GDP) as a proxy indicator. This measure reflects the degree to which financial institutions, particularly banks, allocate resources to the private sector, which represents a core function of a well-developed financial system (King and Levine, 1993; Levine, 2005).

### 3.1.3. The key mediating variable

For the mediating variable, entrepreneurship (ENTR), the study employs new business density—measured as the number of newly registered firms per 1,000 individuals aged 15–64—as a proxy indicator. This metric offers a clear and quantifiable measure of the intensity of entrepreneurial activity within an economy, capturing the extent to which new businesses are being established, which represents a fundamental dimension of entrepreneurship.

### 3.1.4. Control variables

Based on the literature review presented, it is crucial to incorporate institutional quality as a control variable, alongside human capital and employment levels in the mediating equation. Specifically, government efficiency (GE) and the rule of law (RL) are utilised as proxies for institutional quality; school enrolment (tertiary, % gross) serves as a proxy for human capital (HC), while the employment-to-population ratio for those aged 15 and over (total, %) is used to represent the level of employment (EMP).

In the economic growth equation, and in line with the endogenous growth theory, the model controls for human capital (HC), capital accumulation (GCF), and other key macroeconomic indicators, including inflation (CPI) and trade openness (OP). Capital accumulation is proxied by gross capital formation (as a percentage of GDP), inflation is measured by the annual percentage change in consumer prices, and trade openness is captured by the trade-to-GDP ratio.

### 3.2. Methodology framework

The primary objective of this study is to investigate the mediating role of entrepreneurship in the relationship between financial development and economic growth. Specifically, it seeks to determine whether financial development affects economic growth indirectly through entrepreneurial activity. To achieve this, the study applies Structural Equation Modelling (SEM), a statistical technique particularly suitable for estimating simultaneous direct, indirect, and total effects within a theoretically structured framework.

SEM is a multivariate analytical approach that combines the features of multiple regression and path analysis, enabling researchers to examine complex causal relationships among observed variables. As explained by Kline (2023) "SEM is a comprehensive statistical approach to testing hypotheses about relations among observed and latent variables." While SEM was originally designed for models involving latent constructs, it can also be effectively applied to frameworks that rely exclusively on observed variables, which is the case in this study.

The use of SEM is particularly appropriate for this research as it enables the simultaneous estimation of the effects of financial development on economic growth, both directly and indirectly through entrepreneurship. Unlike traditional regression methods, SEM facilitates the evaluation of mediating pathways within a single, unified framework, thereby providing greater analytical power, precision, and interpretability.

The model used in this study consists of two structural equations:

- Entrepreneurship Equation (Financial Development → Entrepreneurship)

$$ENTR_{it} = \alpha_{0i} + \alpha_{1i}FD_{it} + \alpha_{2i}GOV_{it} + \alpha_{3i}RL_{it} + \alpha_{4i}HC_{it} + \alpha_{5i}EMP_{it} + \varepsilon_{1it}$$

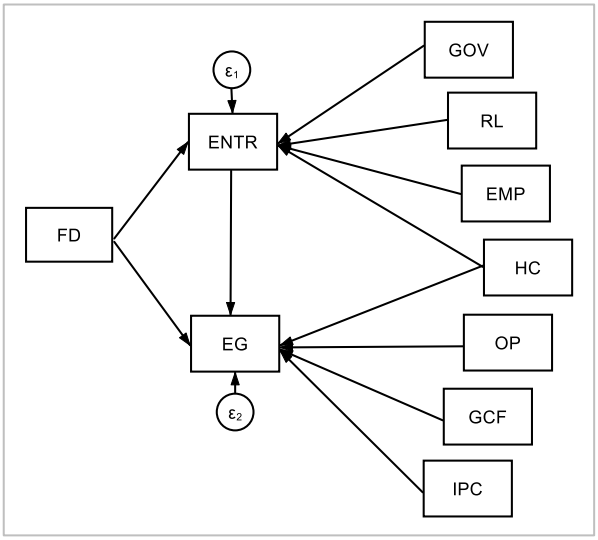
This equation captures how financial development and institutional/human factors influence entrepreneurial activity.

- Economic Growth Equation (Financial Development → Entrepreneurship → Economic Growth)

$$EG_{it} = \beta_{0i} + \beta_{1i}FD_{it} + \beta_{2i}ENTR_{it} + \beta_{3i}HC_{it} + \beta_{4i}GCF_{it} + \beta_{5i}OP_{it} + \\ + \beta_{6i}CPI_{it} + \varepsilon_{2it}$$

The second structural equation examines how both financial development (FD) and entrepreneurship (ENTR) contribute to economic growth (EG), while controlling for other macroeconomic variables, including human capital (HC), gross capital formation (GCF), trade openness (OP), and an innovation proxy (IPC). The estimation and interpretation of the proposed model (Figure 2) are carried out following the guidelines outlined by Kang & Ahn (2021) for reporting Structural Equation Modelling results.

**Figure 2.** *Structural equation model*




**Source:** Authors' illustration.

## 4. Results and discussion

As a first step, we examine the coefficient correlation matrix. (Table 1) to assess the relationships between observed variables and to identify potential issues such as multicollinearity or unexpected signs.

**Table 1.** *Coefficient correlation matrix*

| Variables | EG | ENTR | FD | RL | EMP | HC | OP | GOV | GCF | IPC |
|---|---|---|---|---|---|---|---|---|---|---|
| EG | 1.0000 | | | | | | | | | |
| ENTR | 0.1046 | 1.0000 | | | | | | | | |
| FD | -0.11 78 | 0.4379 | 1.0000 | | | | | | | |
| RL | 0.0114 | 0.3886 | 0.6222 | 1.0000 | | | | | | |
| EMP | 0.1627 | -0.0091 | -0.0143 | 0.0605 | 1.0000 | | | | | |
| HC | 0.0757 | 0.2620 | -0.1394 | -0.2905 | 0.1926 | 1.0000 | | | | |
| OP | 0.1481 | 0.2302 | 0.3308 | 0.3877 | 0.3662 | 0.2821 | 1.0000 | | | |
| GOV | 0.0146 | 0.2897 | 0.6224 | 0.7931 | 0.2421 | -0.2598 | 0.4202 | 1.0000 | | |
| GCF | 0.5025 | 0.0313 | -0.0758 | 0.0040 | 0.0712 | 0.0048 | 0.1143 | -0.0260 | 1.0000 | |
| IPC | 0.0673 | -0.0954 | -0.2466 | -0.2914 | 0.0305 | 0.1747 | -0.0264 | -0.3758 | 0.0309 | 1.0000 |

**Source:** Authors' own elaboration.

Economic growth (EG) exhibits the strongest correlation with gross capital formation (GCF) (r=0.50), followed by moderate positive correlations with trade openness (OP) (r=0.15) and employment (r=0.16), which aligns with the expectations of standard macroeconomic theory.

Entrepreneurship (ENTR), used as a proxy for innovation, shows moderate positive correlations with financial development (FD) (r=0.44), rule of law (r=0.39), and government efficiency (r=0.29), underscoring the importance of institutional quality and

financial environments in fostering innovative activity. Furthermore, institutional variables, specifically rule of law and government efficiency, are highly correlated (r=0.79), suggesting the potential presence of multicollinearity and highlighting the need for diagnostic tests. Overall, these correlations provide empirical support for the hypothesised relationships in the structural model and justify the inclusion of institutional and macroeconomic control variables in the analysis.

**Table 2.** *VIF test to asses multicollinearity*

| Variable | VIF | 1/VIF |
|---|---|---|
| GOV | 3.74 | 0.267278 |
| RL | 3.46 | 0.289153 |
| FD | 2.04 | 0.490656 |
| HC | 1.78 | 0.560561 |
| OP | 1.77 | 0.563517 |
| ENTR | 1.62 | 0.617087 |
| EMP | 1.35 | 0.740246 |
| IPC | 1.21 | 0.829741 |
| GCF | 1.05 | 0.956629 |
| Mean VIF | 2.00 | |

**Source:** Authors' own elaboration.

To evaluate the presence of multicollinearity among the explanatory variables, a Variance Inflation Factor (VIF) test was performed (Table 2). The results indicate that all VIF values are below the commonly accepted threshold of 5, with the highest values observed for government efficiency (VIF=3.74) and rule of law (VIF=3.46). These relatively elevated values are consistent with their strong correlation (r=0.79), yet they remain within acceptable limits. The mean VIF is 2.00, indicating that multicollinearity is not a significant concern in the model and is unlikely to distort coefficient estimates or standard errors.

Table 3 presents the estimation results of the structural model. In the entrepreneurship equation (Financial Development → Entrepreneurship), financial development—measured by domestic credit to the private sector—has a positive and statistically significant effect on entrepreneurship. Specifically, a 1% increase in financial development is associated with a 3.82% increase in entrepreneurial activity. In addition, both human capital (HC) and the rule of law exert positive effects on entrepreneurship, with impacts estimated at 5.07% and 101.63%, respectively.

In the economic growth equation (Financial Development → Entrepreneurship → Economic Growth), entrepreneurship emerges as a significant driver of growth: a 1% increase in entrepreneurship corresponds to a 28.63% rise in the economic growth rate. Furthermore, gross capital formation (GCF) and trade openness (OP) exhibit positive and statistically significant effects on growth, estimated at 14.22% and 1.37%, respectively. Conversely, financial development shows a negative association with economic growth, as a 1% increase in financial development leads to a 3.22% decline in the growth rate.

**Table 1.** *Estimates of Structural Model.*

| Dependent Variable | Independent Variable | Coefficient | Std. Error | z-value | p-value |
|---|---|---|---|---|---|
| ENTR | FD | 0.0382*** | 0.0051 | 7.47 | 0.000 |
| | HC | 0.0507*** | 0.0057 | 8.85 | 0.000 |
| | EMP | -0.0192 | 0.0121 | -1.58 | 0.113 |
| | RL | 1.0163*** | 0.3381 | 3.01 | 0.003 |
| | GOV | -0.1474 | 0.3686 | -0.40 | 0.689 |
| | Constant | -0.1974 | 0.7082 | -0.28 | 0.780 |
| EG | ENTR | 0.2863*** | 0.0844 | 3.39 | 0.001 |
| | FD | -0.0322*** | 0.0088 | -3.66 | 0.000 |
| | GCF | 0.1422*** | 0.0117 | 12.11 | 0.000 |
| | OP | 0.0137** | 0.0064 | 2.15 | 0.032 |
| | HC | -0.0066 | 0.0111 | -0.59 | 0.553 |
| | IPC | 0.0268 | 0.0360 | 0.74 | 0.457 |
| | Constant | 1.6810*** | 0.7081 | 2.37 | 0.018 |

LR test of model vs. saturated: chi2(6) = 10.34 Prob > chi2 = 0.1109

**Note:** ***, ** and * denotes the significance at 1%, 5% and 10% significance level respectively.

Although financial development (FD) exhibits a negative direct effect on economic growth (EG), the results reported in Table 4 indicate that FD exerts a statistically significant and positive indirect effect on growth through entrepreneurship (ENTR), thereby confirming the mediating role of entrepreneurship. Specifically, a 1% increase in the indirect effect of FD via ENTR is associated with a 1.09% rise in EG. However, since the total effect of FD on EG remains negative, the findings suggest that, in emerging economies, the financial sector should channel a greater share of investment towards entrepreneurial activities in order to enhance its positive contribution to economic growth.

Similarly, while human capital (HC) exhibits a negative direct effect on growth, its indirect effect through entrepreneurship is significantly positive. A 1% increase in this indirect effect results in a 1.45% rise in economic growth. This indicates that entrepreneurship enhances the productivity of human capital, transforming it into a positive driver of growth.

The rule of law also exerts a significant and positive indirect effect on economic growth through its influence on entrepreneurship. A stronger institutional framework enhances entrepreneurial activity, which subsequently contributes to higher levels of economic performance. These findings underscore the critical role of robust regulatory and institutional systems in promoting entrepreneurship and, consequently, supporting sustainable long-term economic development.

**Table 4.** *Mediating Effects of Structural Model*

| Endogenous Variable | Exploratory Variable | Direct Effect | Indirect Effect | Total Effect |
|---|---|---|---|---|
| ENTR | FD | 0.0382 (0.0051)*** | – | 0.0382 (0.0051)*** |
| | HC | 0.0507 (0.0057)*** | – | 0.0507 (0.0057)*** |
| | EMP | −0.0192 (0.0121) | – | −0.0192 (0.0121) |
| | RL | 1.0163 (0.3381)** | – | 1.0163 (0.3381)** |
| | GOV | −0.1474 (0.3686) | – | −0.1474 (0.3686) |
| EG | ENTR | 0.2863 (0.0844)*** | – | 0.2863 (0.0844)*** |
| | FD | −0.0322 (0.0088)*** | 0.0109 (0.0035)** | −0.0212 (0.0079)** |
| | HC | −0.0066 (0.0111) | 0.0145 (0.0046)** | 0.0079 (0.0103) |

| Endogenous Variable | Exploratory Variable | Direct Effect | Indirect Effect | Total Effect |
|---|---|---|---|---|
| | EMP | – | −0.0055 (0.0038) | −0.0055 (0.0038) |
| | RL | – | 0.2910 (0.1287)** | 0.2910 (0.1287)** |
| | GOV | – | −0.0422 (0.1062) | −0.0422 (0.1062) |
| | GCF | 0.1422 (0.0117)*** | – | 0.1422 (0.0117)*** |
| | OP | 0.0137 (0.0064)** | – | 0.0137 (0.0064)** |
| | IPC | 0.0268 (0.0360) | – | 0.0268 (0.0360) |

**Note:** ***, ** and * denotes the significance at 1%, 5% and 10% significance level respectively.

The results of the structural equation model (SEM) estimation (Table 5) indicate that the proposed model provides a good overall fit to the data. The Chi-square statistic is $\chi 2(6)=10.344$ with a p-value of 0.111. Since the p-value exceeds the conventional significance threshold of 0.05, the null hypothesis—that the model fits as well as the saturated model—cannot be rejected. This suggests that the proposed model adequately reproduces the observed covariance matrix.

The Root Mean Square Error of Approximation (RMSEA) is 0.038, with a 90% confidence interval ranging from 0.000 to 0.077. The associated p-close value of 0.640 provides strong evidence in favour of the hypothesis that the population RMSEA is less than or equal to 0.05, indicating a close model fit.

The incremental fit indices also confirm the adequacy of the model. The Comparative Fit Index (CFI) equals 0.987, and the Tucker–Lewis Index (TLI) equals 0.962. Both values exceed the conventional benchmark of 0.95, demonstrating an excellent improvement over the null (independence) model.

Finally, the Coefficient of Determination (CD) is 0.508, indicating that the model explains approximately 51% of the variance in the endogenous variables, providing further support for the robustness of the proposed framework.

**Table 2.** *Goodness of Fit Indices*

| Model | $\chi^2$ | df | RMSEA | SRMR | CFI | TLI | CD |
|---|---|---|---|---|---|---|---|
| Final SEM Model | 10.344 | 6 | 0.038 | – | 0.987 | 0.962 | 0.508 |

**Note:** SRMR is not reported because of missing values.

## 5. Conclusions and Policy implications

The findings of this study reveal that financial development (FD) exerts a negative direct effect on economic growth (EG) but demonstrates a positive and statistically significant indirect effect through entrepreneurial activity (ENTR), thereby confirming the mediating role of entrepreneurship. Specifically, a 1% increase in FD leads to a 3.82% rise in ENTR, which subsequently contributes to a 1.09% increase in EG. Similarly, human capital (HC) shows a negative and statistically insignificant direct effect on growth but exhibits a significant positive indirect impact via ENTR, where a 1% increase in HC along the indirect pathway raises EG by approximately 1.45%. Moreover, the rule of law (RL) also has a significant positive indirect effect on growth through its influence on entrepreneurship.

Importantly, entrepreneurship itself emerges as a key driver of growth: a 1% increase in ENTR results in a 28.63% rise in EG. In addition, gross capital formation (GCF) and trade openness (OP) contribute positively to economic growth, with estimated effects of 14.22% and 1.37%, respectively.

These findings imply that emerging economies must reorient their development strategies to develop their financial sector, strengthen human capital, and improve institutional quality—always with a clear focus on entrepreneurship. Rather than simply expanding overall credit, financial institutions should introduce dedicated credit lines for start-ups and small businesses, featuring lighter collateral requirements and grace periods tailored to the cash-flow realities of early-stage firms. At the same time, the emergence of fintech innovations and digital lending platforms presents a significant opportunity to reduce transaction costs, expand financial inclusion, and facilitate the creation of peer-to-peer lending networks. To encourage the flow of risk-tolerant capital into entrepreneurial ventures, governments could implement matching-grant programs and offer tax incentives targeted at venture-capital funds that focus on high-growth potential sectors. Additionally, the alignment of education and skills development with market needs. Embedding entrepreneurship modules into secondary and tertiary curricula—alongside incubator programmes and mentorship from seasoned entrepreneurs—will equip students with both the mindset and practical know-how to launch viable ventures. Lifelong learning initiatives, supported by public–private partnerships, can certify in-demand technical, managerial, and digital competencies, while innovation clusters that link universities and industry can channel cutting-edge research into commercial applications. Finally, the rule of law must be strengthened to reduce uncertainty and lower the cost of doing business. Simplifying business registration through one-stop digital portals; modernising land and asset registries; and introducing fast-track commercial courts will protect property and enforce contracts more efficiently. Transparent e-procurement systems and open-budget platforms, coupled with rigorous audit regimes, can curb corruption and build investor confidence. In this context, a robust regulatory framework not only directly fosters entrepreneurship but also enhances the indirect effects of financial development and human capital on economic growth. Regarding the hypothesis testing, the results lead to the rejection of $H_1$, indicating that strengthened financial systems do not exert a direct positive effect on growth. Conversely, $H_2$, $H_3$, and $H_4$ are supported: financial development positively influences entrepreneurial activity; entrepreneurship has a significant positive impact on economic growth; and the relationship between financial development and growth is partially mediated by entrepreneurship. By illuminating these mechanisms, our research contributes both theoretically and practically. It demonstrates that entrepreneurship is the vital conduit through which financial and institutional resources are converted into economic performance. For policymakers in emerging economies, this means shifting from a narrow focus on credit expansion to a broader, entrepreneurship-driven development agenda—one that harnesses the productivity of human capital and institutional reforms to create sustainable, long-term growth.

## References


Ács, Z.J., Audretsch, D.B., Braunerhjelm, P., and Carlsson, B. (2005). Growth and entrepreneurship: An empirical assessment. Available at: <https://www.econstor.eu/handle/10419/24892> [Accessed: 28 June 2025].

Ajide, F.M., and Ojeyinka, T.A. (2022). Financial development and entrepreneurship: insights from Africa, *Journal of Financial Regulation and Compliance*, 30(5), 596–617. <https://doi.org/10.1108/JFRC-09-2021-0079>

Allen, F., and Gale, D. (2000). Financial contagion, *Journal of Political Economy*, 108(1), 1–33.

Beck, T., Demirgüç-Kunt, A., and Maksimovic, V. (2005). Financial and legal constraints to growth: Does firm size matter? *Journal of Finance*, 60(1), 137–177. <https://doi.org/10.1111/j.1540-6261.2005.00727.x>

Beck, T., Demirgüç-Kunt, A., and Maksimovic, V. (2008). Financing patterns around the world: Are small firms different? *Journal of Financial Economics*, 89(3), 467–487. <https://doi.org/10.1016/j.jfineco.2007.10.005>

Beck, T., and Levine, R. (2002). Stock markets, banks and growth: Panel evidence, *Journal of Monetary Economics*, 27(3), 423–452.

Cumba, L.T., Huang, X., Zhang, Z., and Muhammad, S. (2024). The mediating effect of entrepreneurship on financial support and economic growth in African emerging economies, *International Journal of Emerging Markets*, ahead-of-print. <https://doi.org/10.1108/IJOEM-03-2022-0453>

Dutta, N., and Meierrieks, D. (2021). Financial development and entrepreneurship, *International Review of Economics and Finance*, 73, 114–126. <https://doi.org/10.1016/ j.iref.2021.01.002>

Hayashi, K., Bentler, P.M., and Yuan, K.H. (2011). Structural equation modeling, in *Essential Statistical Methods for Medical Statistics*, 202–234. <https://doi.org/10.1016/B978-0-444-53737-9.50010-4>

Herwartz, H., and Walle, Y.M. (2014). Determinants of the link between financial and economic development: Evidence from a functional coefficient model, *Economic Modelling*, 37, 417–427.

Robinson, J. (1952). *The rate of interest and other essays*. London: MacMillan.

Boyd, J.H., and Prescott, E.C. (1986). Financial intermediary-coalitions, *Journal of Economic Theory*, 38(2), pp. 211–232.

Kang, H., and Ahn, J.W. (2021). Model setting and interpretation of results in research using structural equation modeling: a checklist with guiding questions for reporting, *Asian Nursing Research*. <https://doi.org/10.1016/j.anr.2021.06.001>

Khyareh, M.M. (2023). Entrepreneurship, financial development and economic growth, *Bulletin of Monetary Economics and Banking*, 26(3), 469–490. <https://doi.org/10.59091/2460-9196.2127>

King, R.G., and Levine, R. (1993). Finance, entrepreneurship and growth: Theory and evidence, *Journal of Monetary Economics*, 32, 513–542.

Kline, R.B. (2023). *Principles and practice of structural equation modeling*. New York: Guilford Publications.

Levine, R. (2005). Finance and growth: Theory and evidence, in *Handbook of Economic Growth*. <https://doi.org/10.1016/S1574-0684(05)01012-9>

Levine, R., and Loayza, N. (2000). Finance and the sources of growth, *Journal of Financial Economics*, 58(2), pp. 261–300. Available at: <http://hdl.handle.net/10411/13613> [Accessed: 6 May 2024].

Oluitan, R.O. (2012). Financial development and economic growth in Africa: Lessons and prospects, *Business and Economic Research*, 2(2).

Pradhan, R.P., Arvin, M.B., and Bahmani, S. (2018). Are innovation and financial development causative factors in economic growth? Evidence from a panel Granger causality test, *Technological Forecasting and Social Change*, 132, 130–142. <https://doi.org/10.1016/j.techfore.2018.01.024>

Prokopenko, O., Sitenko, D., Zhanybayeva, Z., Lomachynska, I., and Rakhmetova, A. (2025). 'Financial systems and their influence on entrepreneurial development: Insights for building sustainable and inclusive ecosystems', *Journal of Risk and Financial Management*, 18(3), 131. <https://doi.org/10.3390/jrfm>

Quito, B., Guerrero-Riofrío, P., Álvarez-García, J., and Flores-Chamba, J. (2025). Efeito do desenvolvimento financeiro no crescimento económico nas economias desenvolvidas e em desenvolvimento: será a medição do desenvolvimento financeiro relevante? *RPER*, 70(70), 161–181. <https://doi.org/10.59072/RPER.VI70.714>

Schumpeter, J. (1911). *Theorie der wirtschaftlichen Entwicklung*. Berlin: Duncker & Humblot.

Wong, P.K., Ho, Y.P., and Autio, E. (2005). Entrepreneurship, innovation and economic growth: Evidence from GEM data, *Small Business Economics*, 24(3), 335–350. <https://doi.org/10.1007/s11187-005-2000-1>