

An Empirical Study of the Role of Entrepreneurship In Zambia's Economic Growth (1990-2023)

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Abstract:

Entrepreneurship has been recently considered a vital ingredient for stimulating economic growth in most emerging economies. The empirical study investigated the role of entrepreneurship in Zambia's economic growth. The study utilized secondary annual data for the period from 1990 to 2023. Data was analysed using ARDL regression, granger causality and co-integration test. The results revealed a significant positive long-run relationship between economic growth and entrepreneurship. The study further revealed a uni-directional causality running from entrepreneurship to economic growth. The study concluded that entrepreneurship represents a catalyst for boosting economic growth of Zambia. The research therefore recommended for policymakers including the government of the Republic of Zambia to emphasize on policies which promote innovative entrepreneurial activities in Zambia in order to achieve sustainable economic growth. The study made significant contributions to theory and policy.

Keywords: Entrepreneurship, Economic Growth, Zambia, TEA rate (Total Early-stage Entrepreneurial Activity), ARDL regression model, Granger causality, Sustainable economic development, Macro-economic environment, Unemployment rate, Inflation

1. Introduction

Recently, entrepreneurship has been considered a significant driver for sustainable economic growth particularly in developing economies. According to [Gaba and Gaba \(2022\)](#), entrepreneurship is a key driver for economic growth due to its enormous contribution towards creation of innovations, startups and new jobs. In the context of African developing economies particularly Sub-Sahara African (SSA) countries,

entrepreneurship has been considered an engine to stimulate economic growth (Peprah & Adekoya, 2020; Ojapinwa, 2021). As also observed by Mathibe and Oppong (2024), sustainable entrepreneurship represents a catalyst for reducing unemployment and stimulating economic growth in African countries.

In Zambia, entrepreneurship has gained prominence for its potential contribution towards sustainable economic growth. For instance, the current blueprint, the 8th National Development Plan (NDP) (2022-2026) entails prioritisation of investments aimed at creating supportive environments and opportunities for entrepreneurship in Zambia (Government of Zambia, 2022). Furthermore, the 8th NDP (2022-2026) highlighted the need for the Zambian government to promote entrepreneurship education and training to promote enterprise development and citizen participation in economic activities (Government of Zambia, 2022).

In addition, entrepreneurship has been considered key towards attainment of middle-income status by Zambia by the year 2030 (Choongo et al., 2020). These show acknowledgment of the potential contribution of entrepreneurship to drive economic growth in Zambia. However, over the past decade, Zambia continues to grapple with the challenge of low and declining economic growth of less than 10% as illustrated in Figure 1. This has been a concern to the government of Zambia with the objective of attaining and sustaining annual real economic growth rates between 6% and 10% towards attainment of the Vision 2030 agenda as stipulated in the 8th NDP (Government of Zambia, 2022).

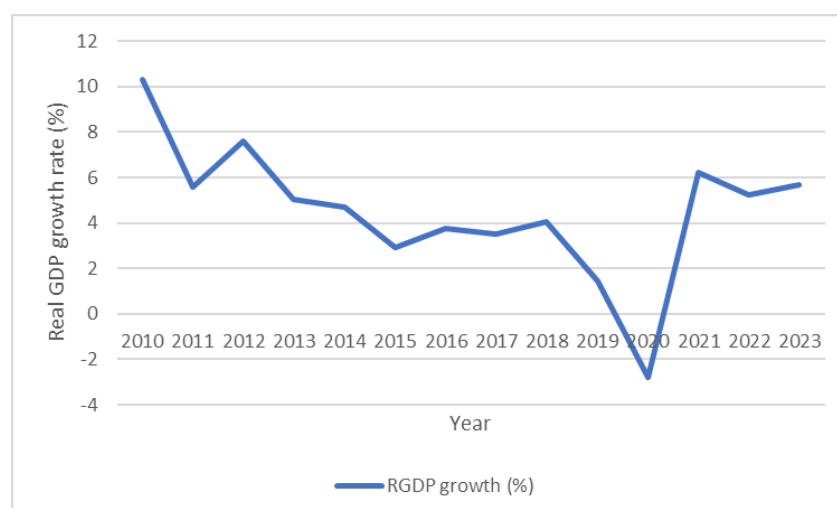


Figure 1. Real GDP growth rate for Zambia (2010-2023)

Source: Zambia Statistical Agency (2023)

The declining trend and low economic growth where during the period from 2013 to 2023, annual real Gross Domestic Product (GDP) growth rate was below the target of 6-10% (Figure 1) has been a concern to the government of Zambia and policy development policymakers. This unfavourable trend has been largely attributed to the harsh macroeconomic environment, COVID-19 pandemic as well as high unemployment rates (Mphuka, Kaonga & Tembo, 2022). In this regard, promoting entrepreneurship has recently received noteworthy attention from development policymakers in Zambia as an intervention to address the challenge of unemployment and boost economic growth (Kazhila, 2024; Mathibe & Oppong, 2024). However, no empirical research has been done to confirm the potential role of entrepreneurship on economic growth in the context of Zambia.

A comprehensive and critical analysis of existing literature reveals that research attention on entrepreneurship and economic growth has mainly been focused on developed economies leaving a significant gap in literature in the context of African developing economies especially Zambia. Moreover, the existing literature has shown inconclusive findings on the relationship between economic growth and entrepreneurship. For instance, whilst several studies shown positive effects (Peprah & Adekoya, 2020; Gautam & Lal, 2021; Tahir & Burki, 2023), another strand of empirical studies has revealed insignificant effects (Kim et al., 2022). Hence, the question of whether economic growth is stimulated by entrepreneurship remains unanswered for most developing countries such as Zambia. These prompted the need for this research on the role of entrepreneurship on economic growth drawing evidence from Zambia. This research therefore makes important contributions to theory and policy. The research findings would expressively contribute to development policymaking in Zambia by enhancing understanding of how entrepreneurship can shape economic growth. In line with the main aim, the following hypotheses were developed for testing in this research:

H1: Entrepreneurship has significant positive impacts on economic growth

H2: There is causality between entrepreneurship and economic growth

H3: There is a long-run relationship between entrepreneurship and economic growth

The rest of the research is organised as follows: review of relevant literature, methodology, results and discussion and lastly conclusions and recommendations.

2. Literature Review

2.1 Entrepreneurship

The concept of entrepreneurship has been conceptualised and defined in different ways in existing literature. Various authors, theorists and scholars have adopted idiosyncratic conceptualisations and definitions which suit their contexts thereby leading to numerous definitions (Peprah & Adekoya, 2020). According to Nwagu and Enofe (2021) define entrepreneurship as establishment of new business ventures in form of individuals who pull their efforts economically to make available innovative economic goods or services. In simple terms, Schumpeter and Swedberg (2021) relate entrepreneurship to innovation.

2.2 Economic growth

Generally, economic growth is defined as the increase in production of goods and services in particular economy over a specific time period usually a year (Mankiw, 2020; Spash, 2021). Lewis (2018) relate economic growth to the indicator of economic progress and development in an economy. According to Todaro and Smith (2020), economic growth is generally well-defined as the persistence decrease or increase in the gross domestic product (GDP) values of an economy over a specified period of time. Mankiw and Taylor (2020) highlighted that economic growth represents an indicator overall health, size or performance of an economy. The commonly employed indicators for economic growth include gross domestic product (GDP) at market value GDP, GDP per capita and Gross National Income (GNI) (Mankiw, 2020).

2.3 Entrepreneurship and economic growth: Empirical evidence

The nexus between entrepreneurship and economic growth has attracted a lot of empirical research leading to inconclusive evidence. The source of the debate is based on the arguments by Lucas and Fuller (2017) that there is productive entrepreneurship with positive impacts on GDP levels and destructive entrepreneurship with adverse impacts on GDP level. Also, there is the “supply-leading hypothesis” which claims that entrepreneurship stimulates economic growth and the “demand-following hypothesis” which claims that economic growth stimulates entrepreneurship (Pradhan et al., 2020). However, most of the empirical studies tend to have found significant positive impacts.

For instance, in the context of the developed world, Gautam and Lal (2021) also studied the relationship between economic growth and entrepreneurship drawing evidence from G-20 economies. The researchers employed panel data for the period of 2001 to 2016

where entrepreneurship was measured by TEA rate and economic growth measured by GDP per capita. Competitiveness measured by Growth Competitiveness index (GCI) was included as the control variable. Using pooled panel regression, the study found a significant positive relationship between economic growth and entrepreneurial activities.

Similarly, [Stoica, Roman and Rusu \(2020\)](#) carried an empirical analysis to establish the nexus between economic growth and entrepreneurship focusing on European countries. The empirical analysis was based on panel data for 22 European countries covering the period from 2002 to 2018. The results showed that entrepreneurship has significant positive impacts on economic growth for European countries. Similarly, [Pradhan et al. \(2020\)](#) investigates the relationship between entrepreneurship and economic growth among Eurozone economies for the period from 2001 to 2016. Employing the vector error-correction model (VECM) and granger causality, [Pradhan et al. \(2020\)](#) revealed a significant positive long-run relationship between entrepreneurship and economic growth. However, these findings by [Pradhan et al. \(2020\)](#) and [Stoica et al. \(2020\)](#) lack applicability to developing economies such as Zambia.

On the other hand, [Tahir and Burki \(2023\)](#) studied the impacts of entrepreneurship on economic growth using evidence from BRICS¹ economies. The study utilised panel data for the period from 2002 to 2021. Education and domestic investment were included as control variables. Data were analysed using panel regression analysis and causality test. The panel regression results revealed a significant positive effect of entrepreneurship on economic growth. Moreover, the causality test results revealed a uni-directional relationship from entrepreneurship to economic growth.

Another research by [Almodóvar-González, Fernández-Portillo and Díaz-Casero \(2020\)](#) examined the relationship between entrepreneurial activities and economic growth employing a multi-country analysis. The research was based on panel data for 74 countries for the period from 2004 to 2009. TEA was employed as the measure for entrepreneurial activities. The study revealed significant positive impacts of entrepreneurship on economic growth. However, the researchers concluded that developing economies must not only base on entrepreneurship promotion if to realized sustainable economic growth.

[Ordeñana et al. \(2024\)](#) also analysed the contribution of innovative and high-growth entrepreneurship to economic growth. Panel data from 61 countries over a period of 13 years was utilized. The panel regression revealed that whilst innovative entrepreneurship positively influenced economic growth, there was no relationship between high-growth entrepreneurship and economic growth. However, using the Bayesian model averaging

¹ Brazil, Russia, India, China and South Africa

(BMA) technique, the researchers found entrepreneurship in terms of innovative entrepreneurship and TEA to be significant determinants for economic growth.

Furthermore, [Ivanović-Đukić, Radenović and Talić \(2021\)](#) examined the relationship between innovative entrepreneurship and economic growth in the context emerging economies. Pooled panel regression analysis was performed to estimate the impacts of innovative entrepreneurship on economic growth for 13 emerging economies from America, Asia and Europe. The results showed significant positive effects of innovative entrepreneurship on economic growth. However, the contribution of entrepreneurship to economic growth was not the same across the 13 emerging economies. Similarly, [Munyo and Veiga \(2024\)](#) in the context of South American economies found a significant positive relationship between entrepreneurship and economic growth.

In the context of African countries, [Peprah and Adekoya \(2020\)](#) examined the nexus between economic growth and entrepreneurship drawing evidence from a sample of 10 selected African countries². Panel data for the period from 2006 to 2016 was analysed using the pooled ordinary least square (OLS) technique. Labor force participation, education and inflation rate were included as control variables. The results showed significant positive effects of entrepreneurship on economic growth. Similar results were obtained from the empirical analysis by [Ojapinwa \(2021\)](#) which established significant positive impacts of entrepreneurship on economic growth in Sub-Saharan Africa. [Biltagy et al. \(2017\)](#) and [Musara \(2020\)](#) also found significant positive impacts of entrepreneurship on economic growth in Egypt and South Africa respectively.

However, there are studies which have revealed contradictory findings. For instance, at international level, the research by [Kim et al. \(2022\)](#) based on panel data for the period from 2001 to 2019 for 111 countries attempted to estimate the impacts of entrepreneurship on economic growth. Entrepreneurship was measured using total early-stage entrepreneurship (TEA)³ rate whilst economic growth was measured using real GDP growth. Population growth rate and investment were included as control variables. However, the research failed to find evidence of positive link between economic growth and entrepreneurship.

2.4 Theoretical Framework

The main theories underpinning the research are the Schumpeterian theory and the Endogenous growth theory. The Schumpeterian theory of economic development

² Botswana, Mauritius, Namibia, Morocco, Nigeria, Rwanda, Sierra Leon, Senegal, South Africa and Zambia

³ Percentage of working age population (18-64 years) who are either actively involved in starting new businesses (nascent entrepreneurs) or are running new businesses less than 42 months old (new entrepreneurs)

developed by Schumpeter (1911) maintains that entrepreneurship promotes innovation which eventually stimulated economic growth and development. This theory underscores the critical role of entrepreneurship as principal source for economic development and growth (Schumpeter & Swedberg, 2021). According to Henrekson, Johansson and Karlsson (2021), the Schumpeterian theory consider entrepreneurs to be the “primus motor” for economic growth. On the other hand, the endogenous growth theory put forwards by Paul Romer in 1986 conceptualises entrepreneurship as an endogenous factor with the potential for stimulating economic growth (Peprah & Adekoya, 2020). These two theories were found to have great relevance and applicability to this study attempting to examine the role of entrepreneurship on economic growth in Zambia.

2.5 Conceptual Framework

Figure 2 presents the conceptual framework for the study showing the relationships between entrepreneurship (independent variable), economic growth (dependent variable) and control variables (unemployment, macroeconomic environment and education).

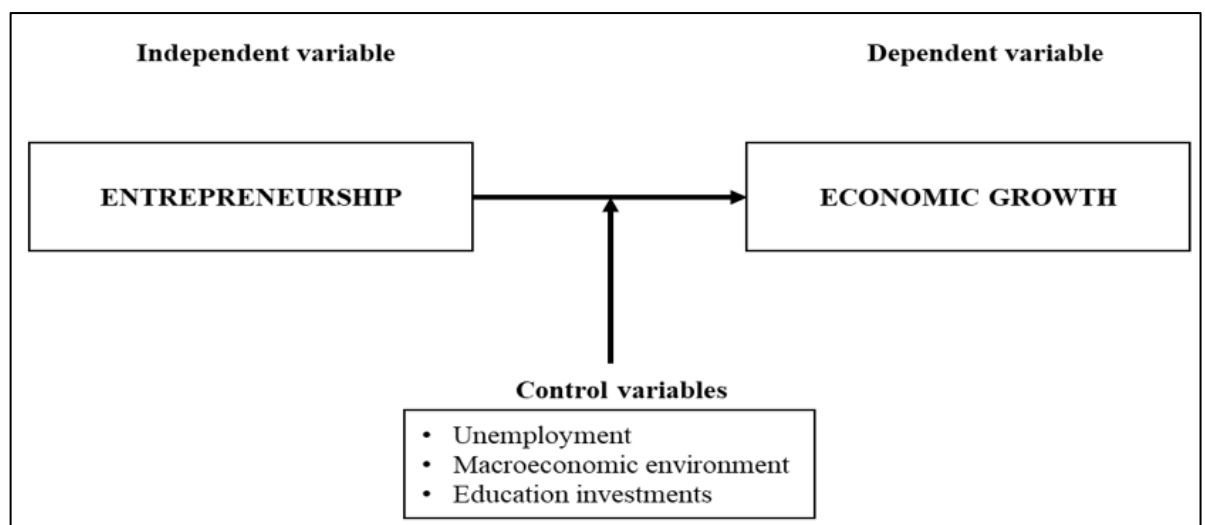


Figure 2. Conceptual framework

Source: Author's constructions

3. Material and Methods

The research followed the quantitative approach based on the explanatory research design. Secondary quantitative data for the period from 1990 to 2023 was gathered. This time period was selected based on data availability. The main sources of data were the Global Entrepreneurship Monitor (GEM) reports, the World Bank Development

Indicators (WDI) and World Bank Enterprise Survey (WBES) database. Data was collected on the following variables real GDP annual growth, entrepreneurship measured by TEA rate, expenditure on education as a percentage of GDP measuring investments in education, inflation rate by consumer price index (CPI) and unemployment.

Unemployment has been included as a control variable based on the theoretical views that unemployment promotes entrepreneurship (“refugee effect”) and that entrepreneurship reduce unemployment (“Schumpeter Effect”) (Biltagy et al., 2017; Gautam & Lal, 2021). On the other hand, inflation was included as the control variable measuring macroeconomic stability as scholars argue that macroeconomic environment plays a significant role in driving entrepreneurship and economic growth (Stoica et al., 2020). Expenditure on education was also included as the control variable due to the significant role of education (knowledge) in entrepreneurship and economic growth (Almodóvar-González et al., 2020; Tahir & Burki, 2023).

Guided by research aim, prior empirical and theoretical literature, the study derived the following autoregressive regressive distributed lag (ARDL) model was derived to estimate the impacts of entrepreneurship on economic growth in Zambia. More precisely, the linear-logarithmic model was adapted from the empirical model specifications by Peprah and Adekoya (2020), Kim et al. (2022) and Tahir and Burki (2023).

$$EG_t = \beta_0 + \beta_1 \ln EG_{t-1} + \beta_2 \ln ENT_t + \beta_3 \ln EDU_t + \beta_4 \ln INF_t + \beta_5 \ln UE_t + \mu_t \dots \dots \dots (1)$$

Where; EG- economic growth rate measured by annual real GDP growth rate (%); β_0 - regression coefficient; β_1 - β_5 - regression-coefficients; ENT- entrepreneurship proxied by TEA rate; EDU- expenditure on education as a percentage of GDP; INF- annual inflation rate; UE- unemployment rate (%) μ_t - error term, ln- natural logarithm; t – time period from 1990-2023. The OLS technique was employed to estimate the ARDL model. The Granger causality test and the Johansen co-integration test were also undertaken. E-views version 13 was employed in carrying out the statistically analyses.

In addition, pre- and post-estimation tests for regression assumptions were carried out. The assumption for multicollinearity was checked using the Variance Inflation Factor (VIF) method whilst normality assumption was evaluated using the Jarque-Bera (JB) test. Autocorrelation (independence of errors) was checked using the Breusch-Godfrey and the Durbin-Watson (DW) test whilst model specification was checked using the Ramsey

RESET test. Heteroskedasticity was checked using the Autoregressive Conditional Heteroskedasticity ARCH) test. Unit root tests were done using the Augmented Dickey-Fuller (ADF) test. Table 1 shows the description and measurement of the variables included in the model.

Table 1. Description of variables

Variable	Variable type	Description and Measurement	Source(s)	Priori expectations
<i>EG</i>	Dependent variable	Economic growth measured by annual real GDP growth (%)	WDI	N/A
<i>ENT</i>	Independent variable	Entrepreneurship measured by annual TEA rate	GEM and WBES	+
<i>EDU</i>	Control variable	Total government expenditure on education as a percentage of GDP measuring human capital investments	WDI	+
<i>UE</i>	Control variable	Unemployment rate (annual %)	WDI	-
<i>INF</i>	Control variable	Inflation rate measuring macroeconomic stability proxied by CPI (annual %)	WDI	-

Source: Author's constructions

4. Results and Discussion

This section presents and discusses empirical results of the study.

4.1 Descriptive statistics

Table 2. Descriptive statistics

Statistic	RGDP	EDU	INF	ENT	UE
Mean	4.25	2.68	31.82	29.35	11.79
Median	4.88	2.13	17.92	30.18	12.25
Maximum	10.30	4.74	183.31	62.83	19.70
Minimum	-8.63	1.01	6.43	7.85	5.03
Std. Dev.	3.84	1.08	42.89	12.06	4.57
Obs.	34	34	34	34	34

The results relayed in Table 2 show that the average economic growth rate measured by annual RGDP for Zambia has been about 4.25% over the years from 1990 to 2023. In addition, the mean statistic for EDU show that on average, the government of Zambia spent about 2.68% of the country's GDP on the education sector. Moreover, inflation rate

measured by CPI also averaged about 31.82%. The mean for ENT further shows that the TEA rate for Zambia averaged 29.35 for the years from 1990 to 2023. Table 2 further shows that the unemployment rate for Zambia average about 11.79% over the period from 1990 to 2023.

4.2 Unit root test results

Table 3. Unit root test results

Variable	Level		1 st difference		Decision
	t-statistic	Prob.	t-statistic	Prob.	
<i>RGDP</i>	-4.22***	0.0023			I(0)
<i>lnENT</i>	0.62	0.8446	-2.23***	0.0274	I(1)
<i>lnEDU</i>	-1.34	0.6010	-5.33***	0.0001	I(1)
<i>lnINF</i>	-1.98	0.2928	-5.87****	0.0000	I(1)
<i>lnUE</i>	-0.99	0.7449	-5.59***	0.0001	I(1)

Note: *** P < 0.05

The ADF test results relayed in Table 3 show that only one variable (*RGDP*) was found to have no unit root tests at level while the other variables (*ENT*, *EDU*, *UE* and *INF*) were found to contain unit roots. However, these series were made stationary after first differencing that is I(1). From these results, unspurious regression with robust and unbiased estimates was estimated.

4.3 Pre- and post-estimation test results for regression assumptions

This section presents the results for the pre- and post-estimation results for regression assumptions namely multicollinearity, normality, autocorrelation, model specification and heteroskedasticity. Table 4 presents the VIF test results.

Table 4. VIF test results for multicollinearity

Variable	Coefficient variance	Uncentered VIF	Centered VIF
C	126.02	515.22	NA
<i>RGDP (-1)</i>	0.02	3.25	1.47
<i>lnENT</i>	4.26	190.70	3.71
<i>lnEDU</i>	2.60	10.16	1.82
<i>lnINF</i>	0.95	37.61	3.22
<i>lnUE</i>	5.08	123.69	3.41

The results presented in Table 4 show that all the predictor variables included in the model had centered VIF values ranging from 1.47 to 3.71. These indicate absence of the problem of multicollinearity as Shrestha (2020) state that VIF from less than 5 indicate absence of the serious problem of multicollinearity.

Further, Figure 3 presents the results for the JB test for normality of residuals

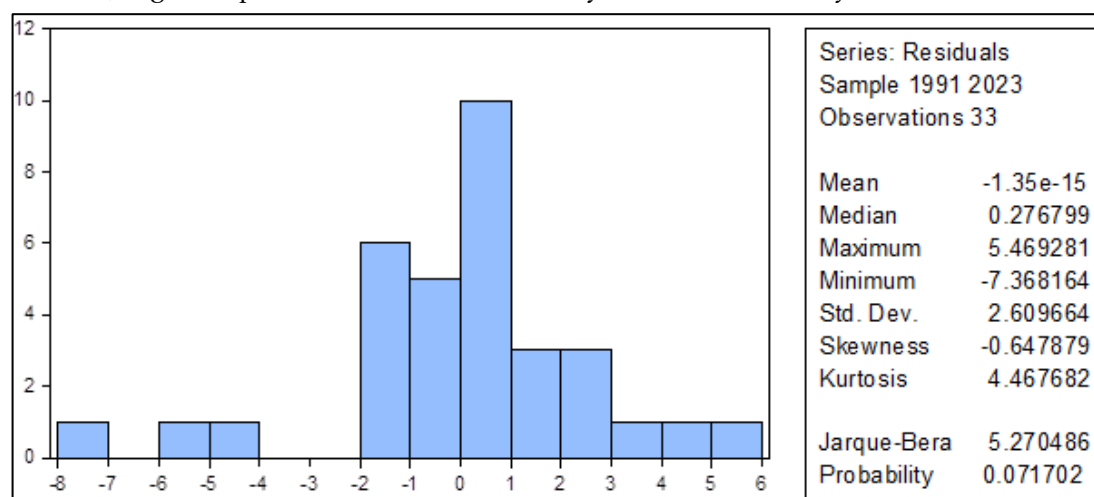


Figure 3. Jarque-Bera test results for normality of residuals

The results reported in Figure 3 showing a JB statistic of 5.27 which is statistically insignificant at 5% ($p=0.0717$) imply that the null hypothesis of normal distribution could not be rejected. The results show that regression residuals were normally distributed.

Moreover, the results for the other regression assumptions are reported in Table 5.

Table 5. Results for autocorrelation, heteroskedasticity and model specification

Test	Statistic	Prob.	Decision
Breusch-Godfrey test	F-statistic = 0.62	0.5463	No autocorrelation
Durbin-Watson test	DW statistic = 2.11		
ARCH test	F-statistic = 0.29	0.5967	No heteroskedasticity
Ramsey RESET test	F-statistic = 0.30	0.5903	Model correctly specified

The results reported in Table 5 show that the assumptions for autocorrelation, heteroskedasticity and model misspecification were met. Hence, the study proceeded in estimating the empirical model.

4.4 ARDL regression results for entrepreneurship and economic growth

The results for the ARDL model are presented in Table 6.

Table 6. Results of ARDL regression model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-10.22	11.226	-0.911	0.3705
$RGDP_{t-1}$	-0.12	0.157	-0.744	0.4633
$\ln ENT_t$	5.27	2.063	2.555	0.0166***
$\ln EDU_t$	-5.33	1.612	-3.306	0.0027***
$\ln INF_t$	-1.93	0.977	-1.973	0.0588**
$\ln UE_t$	3.44	2.255	1.525	0.1389
R-squared	0.529707	Mean dependent var		4.395455
Adjusted R-squared	0.442616	S.D. dependent var		3.805400
S.E. of regression	2.841042	Akaike info criterion		5.089185
Sum squared resid	217.9310	Schwarz criterion		5.361277
Log likelihood	-77.97155	Hannan-Quinn criter.		5.180735
F-statistic	6.082204	Durbin-Watson stat		2.111988
Prob(F-statistic)	0.0007			

Note: *** P < 0.05; ** P < 0.1

The F-statistic of 6.08 and the p-value of the F-statistic of 0.0007 in Table 6 show that the overall model was statistically significant at 5%. In addition, the R-squared show goodness-of-fit of the model implying that about 52.9% of the variations in economic growth were explained by the included variables such as entrepreneurship. The other 47.1% accounted for other variables excluded in the model. These confirm that the model represents a good entrepreneurship-economic growth prediction model for Zambia. However, lagged RGDP ($RGDP_{t-1}$) and unemployment were found to be statistically insignificant in influencing Zambia's economic growth whilst ENT, EDU and INF were found to be statistically significant.

The results in Table 6 show a positive coefficient of 5.27 for entrepreneurship which is statistically significant at 5% level ($p=0.0166$). These results show that entrepreneurship has a significant positive effect on economic growth in Zambia. Given the linear-log form of the regression model, the results show that a percentage change in TEA rate for Zambia would result in positive real GDP growth of about 0.05%. In other words, an increase in entrepreneurial businesses by 10% in Zambia can potentially increase economic growth by

approximately 0.53%. From these results, entrepreneurship represents a catalyst for economic growth in Zambia. The results confirm the predictions of the Schumpeterian theory and the Endogenous growth theory. In addition, the results support the findings by Stoica et al. (2020), [Peprah and Adekoya \(2020\)](#), [Gautam and Lal \(2021\)](#), [Tahir and Burki \(2023\)](#) and [Ordeñana et al. \(2024\)](#) that entrepreneurship has significant positive impacts on economic growth. The research therefore rejected the null hypothesis concluding that entrepreneurship has significant positive impacts on economic growth in Zambia.

Furthermore, the results in Table 6 show that government expenditure on education (EDU) has significant negative impacts on economic growth ($B = -5.33$; $p = 0.0027$). The results imply that increase in education investments by the government can reduce economic growth for Zambia. The results show that a 1% increase in government expenditure on education would potentially reduce economic growth by about 0.053%. The results contradict the endogenous growth theory whilst supporting the empirical results by [Tahir and Burki \(2023\)](#).

The results further shown in Table 6 show that inflation (INF) had a significant negative impact on economic growth as shown by the coefficient of -1.93 statistically significant at 10% level. These results infer that increase in inflation rate by 1% can potentially reduce economic growth by about 0.02%. The results imply that macroeconomic stability characterized by inflation may significantly harm economic growth in Zambia. The results corroborate the findings by [Peprah and Adekoya \(2020\)](#).

4.5 Cointegration results

To determine existence of a long-run relationship between economic growth and entrepreneurship in Zambia, the Johansen co-integration test based on the Engel-Granger method was carried. The results are reported in Table 7.

Table 7. Co-integration test results

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.716322	90.84750	69.81889	0.0004
At most 1 *	0.551846	51.79008	47.85613	0.0204
At most 2	0.395608	26.90890	29.79707	0.1039
At most 3	0.300517	11.29939	15.49471	0.1937
At most 4	0.007058	0.219570	3.841466	0.6394
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level				
* Denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

The results presented in Table 7 show that there were two cointegrating equations showing existence of a long-run relationship between economic growth and entrepreneurship in Zambia. The results are in line with the findings from the research by Pradhan et al. (2020) which found a significant positive long-run relationship between entrepreneurship, and economic growth. The results also concur with the endogenous growth theory which predicts a long-run relationship. The study rejected the null hypothesis concluding that there is a long-run relationship between entrepreneurship and economic growth in Zambia.

4.5 Granger causality test results

Further, the study undertook the granger causality to determine the causality between entrepreneurship and economic growth. The results are reported in Table 8.

Table 8. Granger causality test results

Null Hypothesis:	Obs	F-Statistic	Prob.
ENT_{t-1} does not Granger cause $RGDP_t$	32	7.65612	0.0443***
$RGDP_{t-1}$ does not Granger Cause ENT_t		0.18996	0.8288

Note: *** $P < 0.05$

The granger causality test results reported in Table 8 show a uni-directional relationship between economic growth and entrepreneurship in Zambia. The results imply that entrepreneurship Granger cause economic growth and not vice versa. These results confirm that entrepreneurship can significantly stimulate economic growth in Zambia. The study therefore partially accepted the hypothesis of causality between entrepreneurship and economic growth implying a uni-directional relationship. The results confirm the findings by Pradhan et al. (2020) and Tahir and Burki (2023) that there is a uni-directional relationship spanning from entrepreneurship to economic growth.

5. Conclusions and recommendations

The empirical study investigated the role of entrepreneurship in Zambia's economic growth. The study utilized secondary annual data for the period from 1990 to 2023. Data was analysed using ARDL regression, granger causality and co-integration test. The results revealed a significant positive long-run relationship between economic growth and entrepreneurship. The study further revealed a uni-directional causality running from entrepreneurship to economic growth. The study concluded that entrepreneurship

represents a catalyst for boosting economic growth of Zambia towards attaining national objectives such as the Vision 2030 Agenda for sustainable development and attaining the middle-income status by the year 2030. The research therefore recommends for policymakers including the government of the Republic of Zambia to emphasize on policies which promote innovative entrepreneurial activities in Zambia in order to achieve sustainable economic growth. The study's findings showed significant implications for theory and policy. However, the study had its own unique limitations such as use of limited variables thereby recommending further researches to consider several variables which influence economic growth.

References

- Almodóvar-González, M., Fernández-Portillo, A., & Díaz-Casero, J. C. (2020). Entrepreneurial activity and economic growth. A multi-country analysis. *European research on management and business economics*, 26(1), 9-17.
- Biltagy, M., Mahrous, M., Said, M., & Kamel, M. (2017). Entrepreneurship, Unemployment and Economic Growth: Evidence from Egypt. *Journal of Applied Economic Sciences*, 12(7), 1984-1995.
- Choongo, P., Eijdenberg, E. L., Chabala, M., Lungu, J., & Taylor, T. K. (2020). The evolution of urban entrepreneurship in Zambia. *Urban studies and entrepreneurship*, 1(1), 249-269.
- Gaba, A.K., & Gaba, N. (2022). Entrepreneurial activity and economic growth of BRICS countries: retrospect and prospects. *J. Entrep.*, 31(2), 402-424.
- Gautam, S., & Lal, M. (2021). Entrepreneurship and economic growth: Evidence from G-20 economies. *Journal of East-West Business*, 27(2), 140-159. <https://doi.org/10.1080/10669868.2020.1859427>
- Government of Zambia (2022). Eighth National Development Plan 2022-2026. [online]. Available at: <https://www.sh.gov.zm/wp-content/uploads/2022/09/eighth-national-development-plan-2022-2026-05-07-2022.pdf> [Accessed 10 November 2024].
- Henrekson, M., Johansson, D., & Karlsson, J. (2021). To be or not to be: The entrepreneur in endogenous growth theory. IFN Working Paper, No. 1385, Research Institute of Industrial Economics (IFN), Stockholm.
- Ivanović-Đukić, M., Rađenović, T., & Talić, M. (2021). Innovative Entrepreneurship and Economic Growth in Emerging Markets. *Ekonomika*, 67(4), 55-64.

- Kazhila, S. (2024). Analysis of the effects of environmental entrepreneurship on sustainable development among small medium enterprises in Zambia: a case of Lusaka central business district (CBD) (Doctoral dissertation, The University of Zambia).
- Kim, J., Castillejos-Petalcorin, C., Jinjarak, Y., Park, D., Quising, P., & Tian, S. (2022). Entrepreneurship and economic growth: A cross-sectional analysis perspective (No. 672). ADB Economics Working Paper Series. <https://doi.org/10.22617/WPS220399-2>
- Lewis, W. A. (2018) Theory of economic growth. 3rd edn. London: Routledge.
- Lucas, D. S., & Fuller, C. S. (2017). Entrepreneurship: Productive, unproductive, and destructive—Relative to what? *Journal of Business Venturing Insights*, 7, 45-49.
- Mankiw, N. G. (2020) Principles of macroeconomics. 12th ed. Thompson: South-Western Cengage.
- Mankiw, N. G., & Taylor, M. P. (2020). Economics. Cengage Learning EMEA.
- Mathibe, M., & Oppong, C. (2024). Sustainable entrepreneurship: A catalyst for unemployment reduction and economic growth in Anglophone and Francophone countries. *Business Strategy & Development*, 7(2), 362-372.
- Mphuka, C., Kaonga, O., & Tembo, M. A. (2022). Economic growth, inequality, and poverty: Estimating the growth elasticity of poverty in Zambia, 2006–2015. In *Inequality in Zambia* (pp. 83-119). Routledge.
- Munyo, I., & Veiga, L. (2024). Entrepreneurship and economic growth. *Journal of the Knowledge Economy*, 15(1), 319-336.
- Musara, M. (2020). Entrepreneurial activity for economic growth and unemployment reduction in South Africa. *International Journal of Entrepreneurship*, 24(2), 1-7.
- Nwagu, N. B., & Enofe, E. E. (2021). The impact of entrepreneurship on the economic growth of an economy: An overview. *Journal of Emerging Trends in Economics and Management Sciences*, 12(4), 143-149.
- Ojapinwa, T. V. (2021). Entrepreneurship, Economic Growth and Unemployment Reduction in Sub-Saharan Africa. *Journal of Academic Research in Economics (JARE)*, 13(1), 30-56.
- Ordeñana, X., Vera-Gilces, P., Zambrano-Vera, J., & Jiménez, A. (2024). The effect of high-growth and innovative entrepreneurship on economic growth. *Journal of Business Research*, 171, 114243-114253. <https://doi.org/10.1016/j.jbusres.2023.114243>

- Peprah, A. A., & Adekoya, A. F. (2020). Entrepreneurship and economic growth in developing countries: Evidence from Africa. *Business Strategy & Development*, 3(3), 388-394. <https://doi.org/10.1002/bsd2.104>
- Pradhan, R. P., Arvin, M. B., Nair, M., & Bennett, S. E. (2020). The dynamics among entrepreneurship, innovation, and economic growth in the Eurozone countries. *Journal of Policy Modeling*, 42(5), 1106-1122. <https://doi.org/10.1016/j.jpolmod.2020.01.004>
- Schumpeter, J. A. (1911). *The theory of economic development*. Cambridge, MA: Harvard University.
- Schumpeter, J. A., & Swedberg, R. (2021). *The theory of economic development*. London: Routledge.
- Shrestha, N. (2020). Detecting multicollinearity in regression analysis. *American Journal of Applied Mathematics and Statistics*, 8(2), 39-42.
- Spash, C. L. (2021) The economy as if people mattered: revisiting critiques of economic growth in a time of crisis. *Globalizations*, 18(7), 1087-1104.
- Stoica, O., Roman, A., & Rusu, V. D. (2020). The nexus between entrepreneurship and economic growth: A comparative analysis on groups of countries. *Sustainability*, 12(3), 1186-1204.
- Tahir, M., & Burki, U. (2023). Entrepreneurship and economic growth: Evidence from the emerging BRICS economies. *Journal of Open Innovation: Technology, Market, and Complexity*, 9(2), 88-98. <https://doi.org/10.1016/j.joitmc.2023.100088>
- Todaro, M. P., & Smith, S. C. (2020). *Economic development*. Pearson UK.
- Zambia Statistics Agency (2023). *Economic Statistics*. [online]. Available at: <https://www.zamstats.gov.zm/economic-statistics/> [Accessed 10 November 2024].