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CONTRIBUTION OF ENTREPRENEURIAL LEADERSHIP ON ENTREPRENEURIAL DEVELOPMENT: A SOUTH AFRICAN CASE

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ABSTRACT
The paper examines the contribution of entrepreneurial leadership (EL) to entrepreneurial development (ED) in South Africa. A quantitative, correlational research design was applied to moderately measure the contribution level of critical thinking, innovation adoption, business growth, financial performance, accountability, and sustainability as a basis of entrepreneurial development. Data were collected from 280 small, micro, and medium business owners and managers across various sectors in the Gauteng Province. Descriptive statistics showed moderate to high levels of agreement on the significance of EL and ED, with mean scores of 3.9 and 3.5, respectively. The Nagelkerke pseudo-R-squared value (0.45) and the positive parameter estimates for EL (1.81, $p < 0.001$) and the moderate Spearman correlation (0.61, $p < 0.001$) indicate that EL positively influences ED; other contextual factors may also contribute, highlighting the need for further research into complementary determinants. The study links EL behaviours with ED sustainability and provides empirical evidence supporting previous theoretical frameworks, thereby contributing to the body of knowledge by reinforcing the role of EL as a significant measure of ED. However, the moderate correlation indicates that while EL is crucial, additional approaches and supports, such as financial support, innovation, and mentorship programs, should be considered in fostering entrepreneurial growth and sustainability.

KEYWORDS: Entrepreneurial leadership, Entrepreneurial development, innovation, strategic, knowledge management

JEL CLASSIFICATION: M13, D03 G3, O2, H42

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INTRODUCTION

Access to finance, market conditions, skill shortages, bureaucratic red tape, and regulatory hurdles pose recurring challenges that limit the prospects of entrepreneurship development. However, overcoming these challenges is possible with adequate support through entrepreneurial leadership. Entrepreneurial development is fostered by entrepreneurship development, which has emerged as a critical factor within dynamic and rapidly changing environments over the years. The changes have extended beyond business and economic benefits; in other words, they serve as a social necessity and lay the foundation for robust business, particularly in emerging economies. Entrepreneurial development promotes innovation and new opportunities, which, as a result, contribute to business growth and social and economic prospects through the creation of jobs and alleviation of poverty, which often leads to business expansion from small to larger and sustainable businesses. Therefore, entrepreneurial development can be referred to as a system that fosters and supports entrepreneurship by providing the resources, tools, and knowledge required for a start-up business to thrive and for existing new businesses to expand. On the other hand, entrepreneurial leadership plays a prominent role in its ability to influence organisational behaviour and culture within the business entity.

The entrepreneurial capacity to recognise opportunities, overcome obstacles, and seize new trends is influenced by the leadership style, skill set, and ability to make decisions of significant figures. This spirit is propelled by entrepreneurial leadership, which goes beyond conventional managerial responsibilities. Entrepreneurial leadership, according to Sandybayev (2019), enables businesses to adapt to the ever-changing business environment effectively and create sound business strategies that maximize opportunities in management and market conditions. Further, entrepreneurial leadership is a style of leadership that develops passionate scenarios that use available resources and encourage innovation to add strategic value for businesses (Leitch & Volery, 2017). The lack of attention given to entrepreneurial leadership, which is essential for promoting entrepreneurship development, in South Africa within the academic research and business community suggests that more research is necessary. Therefore, this study serves as the foundation for empirical testing and provides a structured context for examining the relationship between entrepreneurial leadership and entrepreneurial development. This hypothesis is formed on the basis that there is a positive and significant relationship between entrepreneurial leadership and entrepreneurial development in South Africa. The entrepreneurial approach is to intermediate the relationship between entrepreneurial leadership and entrepreneurial development.

Prior research has concentrated exclusively on the traits of entrepreneurial leadership concerning corporate sustainable development and firm performance (Razzaque & Mangalaraj, 2024), the impact of entrepreneurial leadership on employee creativity and sustainable innovation performance (Ibrahim et al., 2024), the relationship between entrepreneurial leadership orientation, dynamic capabilities, and firm performance (Nguyen et al., 2024), the importance of entrepreneurial leadership in sustainable organisational performance (Al-Refaei et al., 2024), and the influence of entrepreneurial leadership on the performance of women-owned Micro, Small, and Medium Enterprises (MSMEs) (Ariasih et al., 2024). Nevertheless, identifying seasoned leaders adept at manoeuvring through the intricacies of the business landscape is essential. Additionally, establishing robust networks in collaborative partnerships, financial access, and market opportunities is also essential for fostering entrepreneurial leadership. The management approach is more dynamic, emphasising long-term vision and strategic growth that fosters innovative ideas and efficient decision-making. Despite several studies referenced above regarding the relationship between entrepreneurial leadership and development, none of such preceding studies analysed the relationship between entrepreneurial leadership and entrepreneurial development in South Africa. Therefore, this study addressed this research gap and contributed to this field of entrepreneurial development from both an empirical and theoretical standpoint. It is also essential to delineate the connection between entrepreneurial leadership and entrepreneurial development, as this relationship is inadequately documented in the literature, particularly in South Africa. This study amalgamates aspects of business, social, and economic performance to address the gap by examining the correlation between entrepreneurial leadership and entrepreneurship development.

The paper hopes to add to a better understanding of how leadership promotes the long-term growth of entrepreneurial development by exploring the particular aspects of leadership that have a direct influence on entrepreneurial development. The study therefore proposed the following question: Is there any direct relationship between entrepreneurial leadership and entrepreneurial development in South Africa? The study findings are intended to educate academics, business executives, and policymakers about the critical role that leadership plays in influencing the entrepreneurial landscape, promoting economic growth, and raising the general competitiveness of entrepreneurial development in the South African context. The remainder of the paper is structured as follows: the next section discusses the literature review and also points to the theoretical underpinning of the study, the methodology follows, section four presents the results, and sections five and six discuss the results and conclusion, respectively.

1 LITERATURE REVIEW

Entrepreneurial leadership is increasingly identified as a critical influence on entrepreneurial development, in emerging economies, for instance. Entrepreneurial leadership is characterised by its ability to take risks, critical thinking, innovation, and the ability to create a culture of positivity in a work environment. Entrepreneurial leadership is defined by Anyanwu (2016) as a type of leadership that forges passionate scenarios that make use of resources and encourage creativity to produce strategic value for businesses. Ghazali et al. define entrepreneurial leadership as holistic qualities that support innovation and fast decision-making (Ghazali et al., 2020). These are crucial for navigating the complexities of entrepreneurship development in emerging markets (Khan et al., 2023; Ghazali et al., 2020). This leadership style is not merely a function of individuality but is also influenced by the business environment and the socio-economic dynamics in which an organisation operates. Leitch et al. (2012), for example, emphasize the role of human, social, and institutional capital in shaping entrepreneurial leadership. The study corroborates Paudel (2019), which suggests that these factors are essential for understanding leadership dynamics in various entrepreneurial stages.

The transformational nature of entrepreneurial leadership is clear and important, especially in promoting innovation. Transformational leadership has a significant influence on entrepreneurial development by fostering team building and stimulating intellectual engagement, thereby creating an environment conducive to innovation and creativity (Susantinah, 2023). This aligns with the findings of Yang and Bentein (2023), which demonstrate that entrepreneurial leadership positively influences employee performance and creativity through mechanisms such as entrepreneurial self-efficacy and initiative. This concept emphasizes the importance of leadership styles and the need to adapt to organizational culture, as noted by Sundararajan et al. (2012), who advocate for a flexible approach that integrates transformational and transactional leadership styles based on situational expectations. In addition, Khan et al. (2023) revealed in their study a strong positive correlation between entrepreneurial development and entrepreneurial leadership as determined by scenario and cast enactment (Paudel, 2019). Innovation, risk-taking, and proactiveness are recognized as essential components of entrepreneurial leadership by Abubakar et al. (2018), who elaborate on the concept of entrepreneurial leadership as a fusion of entrepreneurship and leadership concepts, with each contributing to the success of the latter. The constructs of entrepreneurial leadership responsibility, analytical thinking, emotional intelligence, and accountability are the dimensions that have a positive influence on entrepreneurship development (Bacq & Eddleston, 2018). The study by Hussain and Li (2022) aims to determine the relationship between entrepreneurial leadership and entrepreneurial success. It employed data from 390 entrepreneurial venture owners, co-founders, and managers operating in Pakistan. The study also found that entrepreneurial leadership significantly promotes the growth of new businesses by offering direction, resources, and encouragement.

The cultivation of entrepreneurial leadership skills is crucial for maintaining innovation and growth. Mehmood et al. (2021) advocate the necessity for organisations to prioritise the development of entrepreneurial leadership skills to enhance innovation, creativity, and adaptability (Elegunde et al., 2024). Leitch and Harrison (2018) emphasise a transition from individual leader development to a collective teamwork approach that improves leadership capacity in emerging economies, as collaborative efforts can yield more substantial entrepreneurial development results. Therefore, the theory of entrepreneurial leadership has become complex due to the dynamic nature of entrepreneurial development in emerging economies. This new idea underscored the importance of entrepreneurial leaders in resolving issues and on the other hand, capitalising on opportunities essential for entrepreneurial sustainability and development. However, the literature's diverse and scholarly contributions indicate that effective entrepreneurial leadership fosters creativity and innovation in enhancing development and organisational performance. Additionally, the theory of entrepreneurship emphasizes the process of locating, developing, and seizing chances to add value within businesses

(Pauceanu et al., 2021). Proficient leadership in entrepreneurial development cultivates an enterprising mentality in staff members, motivating them to exercise creativity, assume risks, and seek out novel approaches to business predicaments (Al Doghan et al., 2023). Fusing the insight from entrepreneurship theory and the dynamics of emerging markets, an organisation's ability to take advantage of opportunities, overcome obstacles, and gain a competitive edge in ever-changing and dynamic markets is largely dependent on its leadership (Khan et al., 2023). There are opportunities and challenges for entrepreneurial development and its leaders in the context of emerging markets. To effectively navigate the dynamic business environment, seize market opportunities, and manage risks associated with operating in volatile and uncertain markets, emerging market entrepreneurial leaders must possess adaptability, resilience, and cross-cultural competence (Suriyankietkaew et al., 2022). According to a study by Naradda et al. (2020), technological innovation, cultural diversity, complex regulations, and rapid economic growth are the hallmarks of entrepreneurial leadership.

1.1 Understanding leadership in entrepreneurial development

The success of an organisation is directly impacted by a variety of traits and behaviours that leaders in entrepreneurship display (Paudel, 2019). This is known as leadership performance. Managing dynamic environments with limited resources and taking on multiple hats are common aspects of leadership in entrepreneurial development (Nor-Aishah et al., 2020). In contrast to large corporations where roles may be more clearly defined and hierarchical. Understanding leadership performance in entrepreneurial development necessitates a nuanced approach that considers the special opportunities and challenges that enterprises present. Knezović and Drkić (2021), for instance, describe effective leaders in entrepreneurial development as having the capacity to foresee market trends, identify opportunities, and modify their plans in response to shifting conditions. These traits are demonstrated through the development of strategic plans that articulate a compelling vision for the future. The problem of building relationships and communicating is another (Men et al., 2021). To promote teamwork, inspire workers, and cultivate enduring relationships with stakeholders, a leader needs to have these critical abilities (Sawaean & Ali, 2020). This culture can be characterized by open doors, transparency, and clear communication as a result of leadership traits.

Leadership is about presenting an opportunity to demonstrate good judgment, critical thinking, and the capacity to make difficult decisions under duress (Belsito & Reutzel, 2020). These traits also make successful leaders in entrepreneurs skilled at problem-solving and able to use imagination and ingenuity to get past obstacles (Sawaean & Ali, 2020). Leadership also entails assigning tasks to subordinates, developing talent inside the company, and empowering staff members (Sawaean & Ali, 2020; Malik et al., 2020). Anning-Dorson, (2021) opined that by collaboratively striving to achieve shared objectives, effective leaders foster an atmosphere in which team members feel appreciated, inspired, and enabled to offer their utmost efforts Moreover, because entrepreneurs are dynamic institutions, leadership is flexible and resilient in the face of uncertainty and change, embraces innovation, learns from mistakes, and acts fast to seize new opportunities or counteract risks (Knezović & Drkić, 2021; Sawaean & Ali, 2020). The interaction between leadership behaviours, organisational culture, and business outcomes supports and influences leadership performance in entrepreneurs (Zia, 2020). Furthermore, entrepreneurial competitiveness, innovation, and sustainable growth in dynamic and competitive markets have also increased through the development of strong leadership practices (Hoang et al., 2021).

1.2 Leadership competencies and entrepreneurial development

The knowledge, skills, and abilities that leaders require to successfully navigate the complexities of entrepreneurship and propel growth are collectively referred to as leadership competencies (Schiuma et al., 2022). For entrepreneurs to be innovative, resilient, and experience sustainable growth, it is

imperative to identify and develop the appropriate leadership competencies (Eva et al., 2021). Entrepreneurship is dynamic by nature; leaders must be nimble and flexible to adjust to shifting conditions, shifting market dynamics, and new obstacles (Schiuma et al., 2022). Entrepreneurs can navigate uncertainty and take advantage of opportunities for development through resilience and adaptability. To promote entrepreneurial development in the enterprise, for instance, leadership competencies must include skills in goal-setting, strategic planning, and execution (Mahdi and Nassar, 2021). These are traits a leader must possess as strategic thinking abilities that create feasible plans, manage resources efficiently, and track the accomplishment of their goals (Eva et al., 2021). A study by Razzaque and Mangalaraj (2024) suggests that the entrepreneurial capabilities of leaders improve by integrating leadership competencies into talent management initiatives and leadership development programmes. For example, entrepreneurs create a pool of competent leaders through innovation (Kassai, 2022; Kerrin et al., 2017), which contributes to achieving a long-term expansion of business through investment in the development of leadership competencies (Schiuma et al., 2022).

1.3 Leadership performance and entrepreneurial development

Entrepreneurial development is greatly influenced by leadership performance (Nguyen et al., 2021; Akbari et al., 2021). Innovation, resiliency, and strategic agility are fostered by effective leadership, which helps entrepreneurs seize opportunities, overcome obstacles, and promote sustainable growth (Łucjan et al., 2023; Rae, 2017). Strong judgment, critical thinking, and a willingness to take calculated risks are qualities of effective leaders. In essence, organisational culture, talent development, strategic direction, and innovation are all influenced by leadership performance, which is a major factor in entrepreneurial development (Sawaean & Ali, 2020). Entrepreneurs strengthen their competitive edge, promote sustainable growth, and prosper in the fast-paced business world (Nor-Aishah et al., 2020) by developing excellent leadership practices and a culture of leadership excellence.

Entrepreneurial development encompasses more than the attainment of business growth through economic or financial metrics, as these indicators alone offer a subjective classification. Equating entrepreneurial development solely with value creation or other impactful activities, which are merely supplementary indicators of growth, is inadequate, while entrepreneurial development is primarily linked to the overall performance of the enterprise (Rodríguez-Gutiérrez et al., 2015). Research indicates that entrepreneurial behaviour is essential for promoting growth and success in entrepreneurs (Hassain & Li, 2022). This viewpoint is substantiated by the findings of Harrison et al. (2018), who contended that leadership qualities do not exclusively dictate entrepreneurial performance but are fundamentally associated with the traits of individuals displaying entrepreneurial leadership. Entrepreneurs by all means possess strong determination, according to (Cnossen et al., 2019). The determination allows entrepreneurs to efficiently utilise resources, minimise unnecessary costs, and manage risk in order to attain success (Caliendo and Kritikos, 2008). Alongside effective leadership and determination, entrepreneurs exhibiting these traits improve performance and business sustainability (Mapunda, 2007). Consequently, entrepreneurial development has been shown to be a complex phenomenon shaped by various factors and parameters. The concept encompasses multiple dimensions, including economic, social, financial, and non-financial factors, all of which impact business performance indicators such as profitability, investment, and productivity.

In their studies, Shakeel et al. (2020) and Urbano et al. (2020) contend that entrepreneurial development is intricately associated with stable economies. The studies further suggest that the presence of opportunities is crucial for enhancing the connection between entrepreneurial leadership and entrepreneurial development. However, studies by Cnossen et al. (2019) indicate that entrepreneurs' attitude and determination improve business performance, thereby fostering overall entrepreneurial development. Moreover, a leadership strategy that cultivates an environment favourable to entrepreneurship and innovation is essential for entrepreneurial development (Szczepańska-

Woszczyna, 2015). These traits are fundamental components of entrepreneurial leadership that profoundly influence entrepreneurial development. Therefore, with this particular framework in mind, this study sought to ascertain whether entrepreneurial leadership and entrepreneur development in South Africa are related. The identified research problem highlights the necessity of conducting a study to comprehend the effect of entrepreneurial leadership on the development of entrepreneurship. Given this context, the following hypothesis is proposed: Entrepreneurial leadership positively influences entrepreneurial development.

2 METHODOLOGY

This study examined the relationship between two variables in one kind of non-experimental research method known as a correlational research design. This research design is used to ascertain whether the two variables are correlated and, if so, what kind of correlation there is. A correlation shows how strongly and/or in which direction two or more variables are related to one another. A correlation's direction might be either positive or negative. This study used the quantitative research method as its research method by gathering numerical data via a survey while focusing on variables that measure the contribution of market satisfaction, competitiveness, sales growth, returns on investment, and efficient delivery services to the customers as a basis of entrepreneurial development.

2.1 Selection of respondents and data collection

The study adopted a survey approach to collect primary data through the distribution of questionnaires. The process enables the researcher to understand entrepreneurial leadership traits and how they influence their development, and also through field notes to complement the completion of the questionnaires by the SMEs. To identify the participating SMEs for the study, the researcher relied on the database of the Accounting, Tax, and Financial Services firms in South Africa. The SME policy in South Africa defines SMEs as those with 1-250 employees, and an annual turnover of between and less than 50 million South African Rands. Notably, South African SMEs are in different economic sectors (agriculture, mining, manufacturing, transport, wholesale and retail, services, and construction). These categorisations of SMEs are owner-managed profit companies that have a public interest score of 350 or less, and their financial statements are independently compiled by accounting officers or reviewed by independent reviewers. All active SMEs on the Accounting firm's database have the probability to be selected and participate in the survey, and this was the basis and adopted method in the selection of SMEs who participated in the study. The sampling size is based on a database of two Accounting and Financial Service Firms that assisted these SMEs occasionally or annually with their secretarial, accounting, and business services request. The SMEs that were surveyed are located across South Africa and have a working relationship with the Accounting and Financial Services firms, which serve as gatekeepers for the study.

To contact the SMEs, a clearance was sought from the Accounting and Financial Services firms, which provided the researcher with the list of SMEs data set after written consent had been obtained. More than 400 SMEs who are on the gatekeepers' database were contacted through emails and telephone calls. A questionnaire was distributed through email. The designed questionnaire is long enough to question critical issues whilst saving respondents time, convenience, and efficiency. Follow-ups were necessary, some physical, some telephonically, and others using WhatsApp calls were made, which made it easy for business owners and managers to participate freely in the study with little motivation and no incentives for their participation. The data collection process achieved a 70 per cent record, with a total number of 280 participants completing the questionnaire, which took more than three months to complete. The process was also made possible with the assistance of the accounting firms with which the participants have a long working relationship.

Data were collected through a structured survey distributed to entrepreneurs, business owners, and managers across various demographic indices. The data collection period spanned four months, from September to December 2023, ensuring a sufficient response rate for statistical analysis. The questionnaire was designed in English, the language the researcher believed was widely acceptable among business operators in South Africa, also to enhance comprehension among respondents. Participants were selected using a random stratified sampling technique, ensuring representation across different business sizes, ages, genders, industries, educations, and races. The survey instrument was developed based on validated scales from prior research studies on EL and ED (Nguyen et al., 2021; Akbari et al., 2021). The questionnaire consisted of three main sections: demographic information to capture respondent details such as business size, age, gender, industry, education, and race. EL measurement, using a Likert scale (1 = strongly disagree to 5 = strongly agree, and statements such as their role in their business, vision, risk-taking, and innovation to assess leadership behaviours. Also, the ED measurement captures indicators such as the level of critical thinking, innovation adoption, business growth, financial performance, accountability, and sustainability.

To examine the relationship between EL and ED, the following hypotheses were formulated for the study.

- H_0 (Null Hypothesis): Entrepreneurial leadership does not significantly influence entrepreneurial development.
- H_1 (Alternative Hypothesis): Entrepreneurial leadership significantly influences entrepreneurial development.

The choice of this methodology is justified through the application of several statistical techniques employed to evaluate the research hypotheses. For example, descriptive statistics were used to summarise demographic characteristics information and provide an overview of the dataset. This is followed by reliability and validity Tests of Cronbach's alpha and factor analysis conducted to assess the internal consistency and construct validity of measurement scales. Also, correlation analysis (Spearman's Rank Correlation Test) was applied to assess the direction and strength of the relationship between EL and ED, given the ordinal nature of the Likert scale data. Regression Analysis (Logistic Regression & Nagelkerke R^2 Test) was conducted to determine the extent to which EL predicts ED. The Nagelkerke pseudo-R^2 value (0.45) indicated that EL explains 45% of the variance in ED. The positive parameter estimate (1.81, $p < 0.001$) further supports EL as a significant predictor of ED. The last process was the deviance Test, to verify model appropriateness by ensuring that the model specification was statistically valid (p-value = 1.00). The statistical methods were selected based on their appropriateness for analysing relationships between categorical and continuous variables to ensure robust and reliable results. The descriptive analysis reveals diversity in gender, age, education, business size, and industry, providing a thorough overview of the participants' demographic and business characteristics.

2.2 Data techniques

Descriptive statistics for the business performance variable scores were obtained in SPSS. The hedonic 5-point scale used to measure the entrepreneur's development parameters was scored 1 for strongly disagreeing and 5 for strongly agreeing. The leadership variables data were tested for normality using the Kolmogorov-Smirnov and Shapiro-Wilk tests. Data did not comply with conditions necessary for linear regression even after transformation through a base 10 logarithm. Non-parametric analyses were therefore used for data analyses. It was implied that there was a natural ordering. So, utilizing the ordinal logistic regression procedure, the impact of entrepreneurial leadership on entrepreneurial development was statistically assessed. The model of logistic regression utilized was as follows:

$$Log\left[\frac{P}{1-P}\right] = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + e$$

where the odds of scoring higher for the entrepreneurial development parameter (entrepreneurial leadership) in comparison to the reference class are expressed as $\left[\frac{P}{1-P}\right]$. P is the likelihood that the entrepreneurial development parameter will receive a higher score than the reference class. The intercept is $\boldsymbol{\beta_0}$. The random residuals are denoted by e, and the partial regression coefficients $\boldsymbol{\beta_1}$and $\boldsymbol{\beta_t}$ relate treatment class to the log odds for scoring the business parameters higher.

Table 1 **Descriptive characteristics of the respondents**

Variables	Categorisation	Percentage`
Gender	Female	49
	Male	51
Race	Black/African	93
	Indian/Asian	1
	White	6
Age category	18-32	60
	33-42	19
	43-52	11
	Above 53	10
Education	Bachelor's Degree	76
	Masters	3
	PhD	3
Size of the Business	Micro	73
	Medium	6
Industry	Community and Social Services	18
	Construction	10
	Electricity and gas Supplies	6
	Financial Services	5
	Manufacturing	8
	Transport Services	11
	Wholesale and retail	19
	Mining and Quarry	1
	Other	15

(Source: own elaboration)

The analysis of the data in Table 1 reveals insights into the demographic and business characteristics of the participants. The gender distribution exhibits a near-equal balance, comprising 51 percent male and 49 percent female representation. The racial composition of respondents indicates that the majority do not belong to minority groups, with 6 percent identifying as White, 93 percent as Black/African, and only 1 percent as Indian/Asian. The age distribution reveals that the majority of participants, 60 percent, are in the 18-32 age range. In contrast, 19 percent belong to the 33-42 age group, 11 percent are aged 43-52, and 10 percent are over 53. This indicates a youthful demographic, characterised by a notable presence of young adults within the dataset. Educational qualifications indicate significant academic achievement among participants, with 76 percent holding a Bachelor's degree, 18 percent possessing a Diploma, and 6 percent having advanced degrees (Master's or PhD). The data indicates that a significant majority of businesses are categorised as Micro enterprises (73%), with Small enterprises at 21 percent and Medium enterprises at 6 percent. This distribution highlights an emphasis

on smaller-scale enterprises in the sample. The distribution of industries reveals a variety of sectors, with Wholesale and Retail comprising the largest share at 19 percent, followed by Community and Social Services at 18 percent, and Transport Services at 11 percent. Additional sectors comprise Manufacturing (8%), Construction (10%), and Agriculture (7%), whereas Mining and Quarrying, along with Financial Services, exhibit lower representation at 1 percent and 5 percent, respectively. Furthermore, 15 percent of respondents are classified under the "Other" category, signifying the existence of diverse miscellaneous industries.

3 DATA ANALYSIS AND RESULTS

3.1 Descriptive statistics of the variables

The study explores the relationship between the two variables, Entrepreneurial Leadership (EL) and Entrepreneurial Development (ED). Descriptive statistics were computed. Respondents were asked to rank various statements on a scale of 1(Strongly Disagree 0 to 5(Strongly Agree). Entrepreneurial leadership has the highest mean score of 3.8, followed by Entrepreneurial development (3.4)

Table 2 **Descriptive statistics of the variables**

Variable	Mean	Stand. Dev	Minimum	Maximum	Skewness	Kurtosis
Entrepreneurial Leadership (EL)	3.9	1.0	1	5	-1.40 (0.17)	1.83 (0.34)
Entrepreneurial Development (ED)	3.5	1.0	1	5	-0.76 (0.17)	0.33 (0.34)

[a]Numbers in Parenthesis are standard errors

(Source: own elaboration)

Table 3 **Shapiro-Wilk test for normality of the variables**

Variable	Statistic	Degrees of Freedom	P-Value
Entrepreneurial Leadership (EL)	0.866	120	0.000
Entrepreneurial Development (ED)	0.938	120	0.000

(Source: own elaboration)

Before the estimation of the ordinal regression model, the study tested for normality of the variables using the Shapiro–Wilk test in Table 2. The null hypothesis of the Shapiro-Wilk test states that the variables are normally distributed. If the p-value is less than 0.05, then we reject the null hypothesis and conclude that the variables are not normally distributed. After determining that the variables are not normally distributed, the study transformed the variables into logarithms to normalize them. The variables were gain-tested for normality using the Shapiro-Wilk test of normality.

Table 4 shows that the logged variables are not normally distributed, since their significance level is below 0.05. This confirms that Ordinary Least Square (OLS) regression cannot be used to estimate the

relationship between the two variables. On that note, an analysis using the non-parametric ordinal regression to estimate the relationship between entrepreneurial leadership as the dependent variable and entrepreneurial development as an independent variable was tested. This is done by running a series of diagnostic tests to check the suitability of the data and the model. The Model Fitting Information test is to show if the data fits the model which states that, when the test p-value is less than 0.05, you can reject the null hypothesis. The test result shows a significant level of 0.000, which is less than 0.005, meaning that the data fits the model well. The goodness test results of the deviance test value of 1.00, which is greater than 0.05, means that we cannot reject the null hypothesis and confirm that the model fits the data and therefore the model is correctly specified.

Table 4 **Shapiro-Wilk test for normality of the transformed variables**

Variable	Statistic	Degrees of Freedom	P-Value
Entrepreneurial Leadership (Log_EL)	0.705	120	0.000
Entrepreneurial Development (Log_ED)	0.798	120	0.000

(Source: own elaboration)

The Nagelkerke pseudo R-Squared is interpreted in the same way with the adjusted R-squared in linear regression. The Nagelkerke pseudo R-Squared value of 0.45 shows that a 45 percent change in entrepreneurial development was a result of entrepreneurial leadership. Also, after running all the above diagnostic tests, and noting that our data doesn't violet the basic assumptions, the study estimated the ordinal logistic regression model and the results are presented in Table 5.

Table 5 **Ordinal regression parameter estimate results**

Variable	Estimate	SE	Wald	p-value	95% Lower Bound	95% Upper Bound
Entrepreneurial Leadership (EL)	1.81	0.18	102.02	0.000	1.46	2.16

(Source: own elaboration)

The ordinal regression coefficients are interpreted as the estimated or predicted change in the log odds of being in a higher category, as opposed to being in the lower category of the dependent variable per unit increase in the independent variable. The result shows that entrepreneurial leadership is a positive predictor of entrepreneurial development. For every unit increase in entrepreneurial leadership, there is an associated increase of 1.81 in the log odds of being at a higher level of entrepreneurial development. The above results confirm that entrepreneurial development is positively influenced by entrepreneurial leadership. The 95% Lower Bound and 95% Upper Bound in Table 5 provide the confidence interval for the estimate of EL. The 95% confidence interval (1.46 to 2.16) indicates that the true effect of EL on ED is likely to fall within this range. The zero absence within this interval further supports the statistical significance of the estimate ($p < 0.001$).

3.2 Non-parametric correlations

The study further explored the correlation between the variables under consideration in Table 6. A correlation coefficient of above 0.7, means highly correlated variables; a correlation of 0.5 to 0.7 means the variables a moderately correlated and below 0.5 means the variables are weakly correlated.

Table 6 **Non-Parametric correlations results**

	Entrepreneurial Leadership (EL)	**Entrepreneurial Development (ED)**
Entrepreneurial Leadership (EL)	1	0.61(0.001)
Entrepreneurial Development (ED)	0.61(0.001)	1

[a] Figures in parenthesis are the p-values

(Source: own elaboration)

Since the variable we found to be not normally distributed, the Spearman rho correlation was used to correlate the variables. The results show that entrepreneurial leadership and entrepreneurial development are moderately correlated, with a correlation coefficient of 0.61. The correlation coefficients simply demonstrate the statistical relationship between the two variables. In other words, it depicts that the two variables move in relation to one another.

4 DISCUSSION OF RESULTS

The study aimed to examine the relationship between Entrepreneurial Leadership (EL) and Entrepreneurial Development (ED) using descriptive statistics, regression analysis, and correlation analysis. The descriptive statistics findings show the mean scores for EL (3.9) and ED (3.5), suggesting that respondents generally agree with the statements on entrepreneurial leadership and development. This indicates a moderate to high level of agreement on the significance of EL and ED in the context of entrepreneurship (Mapunda, 2007). The negative skewness values for both variables (EL: -1.40, ED: -0.76) suggest that the data is skewed towards higher scores, indicating that most participants perceive high levels of entrepreneurial leadership and development.

The normality assessment and data transformation via the Shapiro-Wilk tests revealed that both the original and log-transformed variables exhibited non-normal distribution (p-values < 0.05). This indicates that the data contravened the assumptions requisite for parametric statistical techniques such as Ordinary Least Squares (OLS) regression. The results endorsed the application of non-parametric methods, including ordinal regression, to examine the correlation between EL and ED. The ordinal regression analysis reveals that the model fitting information demonstrates a good fit of the data to the model, with a p-value < 0.05, thereby affirming the model's appropriateness for the analysis. The deviance test verified that the model was appropriately specified, as the p-value (1.00) exceeded the significance threshold (0.05), signifying that the model effectively represented the data structure. The Nagelkerke pseudo-R-squared value of 0.45 indicates that around 45% of the variance in entrepreneurial development is attributable to entrepreneurial leadership (Paudel, 2019), underscoring a robust correlation between the two variables. The positive parameter estimates for EL (1.81, $p < 0.001$) suggest that an increase in EL significantly enhances the probability of attaining a higher level of ED (Hussain and Li, 2022). This discovery substantiates that entrepreneurial leadership is a significant predictor of entrepreneurial development (Nguyen et al., 2021; Akbari et al., 2021). Correlation analysis of the findings shows the non-parametric Spearman correlation which showed a moderate positive correlation (0.61, $p < 0.001$) between EL and ED. This suggests that improvements in entrepreneurial leadership are associated with improvements in entrepreneurial development (Nguyen et al., 2021). The

moderate correlation suggests that although EL significantly influences ED, additional factors may also play a role (Zia, 2020).

RECOMMENDATIONS AND CONCLUSION

This study provides empirical evidence supporting the significant role of entrepreneurial leadership (EL) in driving entrepreneurial development (ED). These findings align with existing literature, highlighting EL as a key determinant of ED and providing valuable insights for researchers, policymakers, and entrepreneurs. The study links EL behaviours with ED sustainability and provides empirical evidence supporting previous theoretical frameworks, thereby contributing to the body of knowledge by reinforcing the role of EL as a significant predictor of ED. However, the moderate correlation indicates that while EL is crucial, additional strategies such as financial support, innovation policies, and market access must be considered to achieve comprehensive entrepreneurial growth (Zia, 2020). From a practical standpoint, this study emphasises the need for leadership development programs in entrepreneurship education, training initiatives, and policy interventions.

Considering the findings and the substantial positive correlation between EL and ED, policymakers and educators should prioritise the cultivation of entrepreneurial leadership competencies in training programs. These programs ought to concentrate on augmenting strategic thinking, risk management, and innovation to enhance entrepreneurial performance. Governments and business development organisations ought to provide specialised assistance to entrepreneurs to enhance their leadership skills. This may encompass mentorship initiatives, leadership seminars, and coaching sessions to assist entrepreneurs in managing the intricacies of business expansion. Also, entrepreneurs ought to be motivated to perpetually enhance their leadership competencies and remain abreast of industry developments. Integrating leadership development into continuous professional growth may improve entrepreneurs' capacity to respond to market fluctuations and sustain competitiveness. Moreover, given that entrepreneurial leadership accounts for 45% of the variance in entrepreneurial development, subsequent investigations should examine supplementary factors that may influence this development, including access to finance, market conditions, or technological adoption. Recognising additional critical factors may yield a more thorough comprehension of the determinants of entrepreneurial success.

Despite its contributions, this study has certain limitations. First, the model applied explains some variance in ED, indicating that other unexamined factors may also influence entrepreneurial success. Future research should explore additional variables in this regard and, examine the impact of external factors, including economic policies, market dynamics, and cultural variances, on the relationship between EL and ED. This would offer a more nuanced comprehension of how various environments influence entrepreneurial success. Longitudinal studies examining the progression of entrepreneurial leadership and development over time would yield insights into the causal relationships among these variables. This may assist in determining the influence of leadership style alterations on sustained business performance. Integrating quantitative data with qualitative insights, such as interviews or case studies, may augment the comprehension of the impact of entrepreneurial leadership practices on development. This mixed-methods approach may reveal the fundamental mechanisms that influence the observed statistical relationships. In conclusion, the study reveals a substantial correlation between entrepreneurial leadership and development, highlighting the necessity of fostering leadership skills to improve entrepreneurial success. The recommendations offered can assist in directing practical applications and future research to better support entrepreneurs in their developmental journey.

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