



**THE MEDIATING ROLE OF RESEARCH AND DEVELOPMENT PERFORMANCE IN
THE RELATIONSHIP BETWEEN ENTREPRENEURIAL ORIENTATION AND FIRM
PERFORMANCE IN ARBEGONA, SIDAMA**

*A thesis submitted to Addis Ababa University College of Business and Economics, School of
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DECLARATION

I, Aklil Workneh, declare that this thesis entitled: “**Entrepreneurial orientation and firm performance: the mediating role of R&D performance**” is my original work. I have undertaken the research work independently with the guidance and support of the research supervisor, Dr. *Yared Asrat*. This study has not been submitted for any degree or diploma program in this or any other institutions and all sources of materials used for the thesis has been duly acknowledged.

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Date

This is to certify that the thesis entitled: [**Entrepreneurial orientation and firm performance: the mediating role of R&D performance**] submitted in partial fulfilment of the requirements for the degree of Masters of *Business administration* of the Postgraduate Studies, Addis Ababa University and is a record of original research carried out by **Aklil Workneh** under my supervision, and no part of the thesis has been submitted for any other degree or diploma. The assistance and help received during the course of this investigation have been duly acknowledged. Therefore, I recommend it to be accepted as fulfilling the thesis requirements.

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CERTIFICATE OF APPROVAL

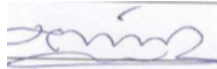
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ABBREVIATIONS

ANOVA - Analysis of Variance

MSMEs – Micro, small, and medium enterprises

R&D – Research and Development

SPSS- Statistical package for social science

VIF – Variance Inflation Factor

ABSTRACT

This study investigates the mediating role of research and development (R&D) performance in the relationship between entrepreneurial orientation (EO) and overall firm performance. Entrepreneurial orientation is conceptualized through three key dimensions: innovativeness, proactiveness, and risk-taking. While past studies have often linked EO to enhanced firm performance, this research proposes that R&D performance is a central internal capability that translates entrepreneurial orientation into tangible business outcomes. The study aims to examine the individual effects of EO dimensions on R&D performance and subsequently assess whether R&D performance significantly contributes to overall firm performance. A quantitative approach was employed using data collected from 237 MSMEs operating in Arbegona woreda, Sidama region. A 7-point likert scale questionnaire was used to collect data from respondents. Mean and standard deviation were used to present the result of respondents' level of agreement to the study variable and correlation and regression analysis were conducted to identify the significant factors that affect firm performance in addition, descriptive statistics was also used to present the result.

This offers strong evidence that entrepreneurial orientation comprising innovation, proactivity, and risk-taking plays a key role in driving the performance of MSMEs in Arbegona, Sidama. Each dimension of entrepreneurial orientation showed a strong, statistically significant relationship with firm performance. The research also shows R&D performance as a driver of firm performance. Finally, the study also revealed a significant mediating role for R&D performance, especially on innovation.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The importance of small and medium-sized businesses (MSMEs) is known globally. MSMEs are seen as key drivers of economic progress, initiating innovation and creating jobs, especially in lower and middle income countries (Rezaei & Ortt, 2023). These MSMEs make up over 90% of businesses and provide livelihoods for about 70% of the workforce globally. This impact is even bigger in developing countries like Ethiopia, where they often serve as the main source of livelihood (Nyello & Kalufya, 2023; Kuratko et al., 2022).

In Ethiopia, MSMEs contribute for about 99% of all businesses and employ around 7.5 million people and are mostly located in city centers like Addis Ababa, Hawassa, and Mekelle (Gada et al., 2022; Shitaye, 2023). While many operate in trade, manufacturing, and services, there's a growing trend of agro-processing in more agricultural areas like Sidama (Shitaye, 2023). Interestingly, despite their high number, Ethiopian MSMEs only contribute about 20% to the country's GDP. This suggests there are underlying issues with how productive, scalable, and value-adding these businesses are (Tirfe, 2021; Kosa et al., 2023).

The Sidama region, one of Ethiopia's newest state is largely agricultural, with over 85% of people involved in coffee farming and related activities (Shitaye, 2023). However, as cities like Hawassa (home to Ethiopia's largest industrial park) grow, so do MSMEs, particularly in areas like textiles, food processing, and retail (Shitaye, 2023; Geda, 2022). Local authorities have rightly focused on boosting MSME development to create more diverse income opportunities, tackle youth unemployment, and lessen the risks posed by climate change to agriculture (Shitaye, 2023). Yet, businesses in Sidama face significant challenges. They often struggle to access credit, deal with underdeveloped infrastructure, and haven't widely adopted digital technologies, all of which limit their ability to compete effectively (Gada et al., 2022; Pratono & Mahmood, 2023).

Entrepreneurial Orientation (EO) is driven by innovation, proactiveness, risk-taking. It's increasingly recognized as a key factor for a company's success (Miller, 1983; Kuratko et al., 2022). Various research shows that when businesses have a strong EO, they're better at seizing

market opportunities, navigating uncertain times, and staying ahead of the competition (Rezaei & Ortt, 2023; Le Roux & Bengesi, 2023). For example, in Nigeria's Abia State, studies found that MSMEs with high EO scores were significantly more profitable because they actively engaged with customers and came up with unique products (Eze et al., 2020). Similarly, small businesses in Tanzania that were willing to take risks and operate with autonomy bounced back from economic downturns much faster (Nyello & Kalufya, 2023).

Looking at Ethiopia, evidence suggests EO is important here too. One study in the Tigray region found that being innovative and proactive significantly predicted the growth of small manufacturing businesses (Tirfe, 2021). Another study in Addis Ababa showed innovation as a key driver between EO and how well SMEs performed, with companies investing in research and development seeing much better sales growth (Gada et al., 2022). However, this leaves a gap in our understanding of more rural and semi-urban areas like Sidama, where informality, reliance on agriculture, and cultural norms might influence how EO works (Shitaye, 2023; Kosa et al., 2023). In Sidama, many MSMEs are coffee cooperatives that prioritize group decisions over individual autonomy, a key aspect of EO which could potentially reduce individual entrepreneurial drive (Le Roux & Bengesi, 2023).

The business environment for MSMEs in Sidama is shaped by several factors. Firstly, the region's strong dependence on rain-fed agriculture makes these businesses vulnerable to climate changes, often leading them to adopt cautious, risk-averse approaches (Shitaye, 2023; Pratono & Mahmood, 2023). Secondly, Sidama's recent achievement of political autonomy presents both opportunities and challenges. While decentralization aims to empower local governments to create supportive regulations for MSMEs, inexperience and limited resources can slow down progress (Shitaye, 2023). As an example, the industrial park in Hawassa, which was meant to advance connections with MSMEs but struggles with unreliable utilities and poor transportation, limiting growth driven by EO (Kosa et al., 2023).

The relationship between EO and how well a business performs is rarely straightforward. Often, it's influenced by practical abilities (like marketing and operations) and external factors like the size of the company, the industry it is in, and where it is located (Rezaei & Ortt, 2023; Asad et al., 2021). Some researchers suggest that EO indirectly boosts performance by making these practical functions more efficient (Rezaei & Ortt, 2023). For instance, in Pakistan, it was found that

innovation played a significant role in how EO increased the revenue of very small businesses, although this effect lessened in companies with fewer employees (Asad et al., 2021). Similarly, in Ethiopia, SMEs with dedicated research and development departments were better at leveraging EO, leading to higher customer retention (Gada et al., 2022).

It has been noted that only a small fraction of businesses in Hawassa have formal marketing strategies, mostly relying on word-of-mouth (Shitaye, 2023). At the same time, factors like the size of the business and the sector it operates in might also change how effective EO is. For example, research in Ethiopia found that manufacturing firms benefited more from risk-taking than service businesses, while very small businesses in Tigray struggled to turn innovation into growth due to limited market access (Kosa et al., 2023; Tirfe, 2021).

1.2 Statement of the problem

It is commonly accepted that having an entrepreneurial spirit is important for boosting the performance of small and medium-sized businesses around the world (Kuratko et al., 2022; Wahyuni, 2023). However, there are no research that show how this works in the Sidama region of Ethiopia. The research available on Ethiopia usually to focus on places like Tigray (Tirfe, 2021) and Addis Ababa (Kosa et al., 2023), leaving out the unique social and economic characteristics of Sidama. For instance, while a study in Tigray found that EO predicted growth in urban businesses, Sidama's context where most MSMEs are informal and based on agriculture (Shitaye, 2023) might result in a different outcome.

This lack of research makes it difficult for policymakers to create effective strategies to improve the performance of MSMEs. The government in Sidama has made MSME development a priority to reduce unemployment (Shitaye, 2023), but the programs they implement tend to be general and don't specifically focus on raising an entrepreneurial mindset (Geda, 2022; Asad et al., 2021). Meanwhile, many MSMEs in Sidama report slow growth, with most operating below their potential due to management issues (Shitaye, 2023), implying that there's untapped entrepreneurial potential.

Furthermore existing research often looks at the direct impact of EO, not addressing the other factors that might come into play, such as a company's functional performances (Rezaei & Ortt,

2023) or external influences like the size of the business and the industry they operate in (Asad et al., 2021; Kosa et al., 2023).

The absence of a comprehensive framework that brings together the different aspects of EO, the factors that might influence its impact, and the specific conditions in Sidama also limits our theoretical understanding. Some researchers have highlighted the need to adapt EO models to the realities of developing economies (Le Roux & Bengesi, 2023; Pratono & Mahmood, 2023), but Sidama's situation has not been specifically addressed. This makes it difficult to compare Sidama with other regions facing similar challenges, like the East Guji Zone (Geda, 2022).

1.3 Objective of the study

General Objective

To assess the mediating role of R&D performance on the relationship between entrepreneurial orientation on firm performance.

Specific Objectives

1. To assess the direct effect of innovation on firm performance.
2. To examine the direct effect of proactiveness on firm performance.
3. To examine the direct impact of risk-taking on firm performance.
4. To investigate the direct impact of R&D performance on firm performance.

1.4 Significance of the study

This study addresses critical gaps in entrepreneurial orientation (EO) literature by contextualizing its dimensions within Sidama's agrarian, collectivist, and institutionally nascent setting. While prior research in Ethiopia focuses on urban areas like Addis Ababa and Tigray, this work starts an exploration of EO in Sidama. Additionally, it expands understanding of mediating mechanisms in resource-constrained environments, challenging assumptions from developed economies. Practically, the findings will inform Sidama's regional policymakers in designing targeted EO-centric programs, such as risk-sharing financial instruments for agro-processors or innovation grants aligned with local needs. For MSME owners, the study identifies actionable EO strategies

to improve performance, such as proactive market-entry tactics or leveraging collective networks for competitive advantage. Development agencies, including NGOs and international bodies, can utilize insights into moderators like enterprise size and sector to prioritize support for vulnerable MSME categories, such as rural micro-enterprises. Societally, by enhancing MSME performance, the study aligns with Sidama's socio-economic goals, including youth employment, poverty reduction, and diversification from climate-vulnerable agriculture. It also promotes gender inclusivity by highlighting EO practices among women-led MSMEs, a sub-group often marginalized in Ethiopian entrepreneurship studies.

1.5 Scope of the study

The study assesses the relationship between entrepreneurial orientation (EO) and firm performance among Micro, Small, and Medium Enterprises (MSMEs) in Sidama, Ethiopia. It examines three core EO dimensions including innovativeness, proactiveness, and risk-taking and evaluates their direct effect on firm performance through functional performances such as production efficiency, marketing and sales performance, and R&D outcomes.

1.6 Limitation of the study

While this study provides valuable insights into the mediating role of R&D performance in the entrepreneurial orientation (EO) and firm performance relationship, several limitations must be recognized. First, the findings are context-specific to Sidama, which may limit their generalizability to other settings/regions with distinct cultural and institutional dynamics. Second, the reliance on self-reported data from MSME owners introduces potential response bias, particularly in subjective assessments of EO dimensions (e.g., risk-taking, innovativeness) and functional performance outcomes. Additionally, the study which focuses on mediating mechanisms may overlook unmeasured moderators, such as access to external funding or informal networks, which could influence EO's effectiveness. Despite these limitations, the study offers foundational insights into EO's applicability in under-researched, institutionally nascent environment.

1.7 Definition of terms

Entrepreneurial Orientation (EO): A strategic mindset reflecting a firm's propensity to innovate, act proactively, and take risks to exploit market opportunities.

Innovativeness: The degree to which a firm prioritizes creativity, experimentation, and novelty in its products, services, or processes.

Proactiveness: A firm's anticipation of future market needs and preemptive action to shape industry trends or seize opportunities ahead of competitors.

Risk-taking: The willingness to commit significant resources to ventures with uncertain outcomes, such as entering new markets, adopting unproven technologies, or securing high-risk loans.

Research and Development: Systematic activities aimed at creating new knowledge or improving existing products, services, or processes.

Marketing and sales performance: The effectiveness of a firm's strategies in reaching target customers, building brand awareness, and driving revenue growth.

Production performance: The efficiency and quality of a firm's manufacturing or service delivery processes.

R&D performance: The measurable outcomes of R&D activities, such as successful product launches, patents, process improvements, or technological advancements.

1.8 Organization of the study

This study is organized into five chapters. The first chapter is the introduction part, which includes; background of the study, statements of the problem, and objectives of the study, research question, scope and organization of the paper. The second chapter consists of a review of relevant theoretical and empirical literature. The third chapter was focused on the proposed research methodology. The fourth chapter is present data analysis and interpretation. Finally, chapter five comprised the finding of the study, conclusions, and recommendation.

CHAPTER TWO

LITRETURE REVIEW

2.1.Theoretical review

2.1.1. Introduction to MSMEs

The conceptualization of MSMEs displays considerable variability across different countries and even within various economic sectors of the same nation, highlighting a lack of universal consensus in their definition. For instance, in Malaysia, micro-enterprises are characterized by an annual sales turnover of less than RM300,000 or fewer than five employees (SME Corporation Malaysia, 2020). This contrasts sharply with the Ethiopian context, where the definition of MSMEs has evolved over time, primarily relying on criteria such as capital, manpower, and the type of services provided, rather than annual sales or turnover (Federal Micro and Small Enterprises Development Agency, 2011).

Specifically, in Ethiopia, micro-enterprises are defined as those whose total assets are less than Birr 20,000 and employ up to 5 people. Small enterprises, on the other hand, are characterized by total assets between Birr 20,000 and 500,000 and employ between 6 and 30 people (Tarfasa et al., 2016).

Many Ethiopian MSMEs fall into what is frequently termed the "missing middle"—entities that are too substantial for microfinance services but simultaneously too small or perceived as too risky for conventional commercial bank loans. The Ethiopian definitional framework, which notably omits annual sales or turnover as a criterion, can inadvertently exacerbate this issue (Wajebo, et al., 2022). Traditional financial institutions commonly rely on such metrics for assessing creditworthiness, thereby creating a structural gap that hinders the growth and formalization of a significant segment of MSMEs. This structural impediment suggests that current policy frameworks and financial interventions may inadvertently overlook this crucial segment. Consequently, any strategic recommendations must advocate for tailored financial solutions, such as public credit guarantee schemes, cash flow-based lending, or psychometric testing for credit scoring, alongside the promotion of digital financial tools, to effectively bridge this financing gap (Wajebo, et al., 2022).

2.1.1 Significance of MSMEs in developing economies

MSMEs are widely recognized as key catalysts for economic growth, fostering innovation, creating employment opportunities, and significantly contributing to poverty reduction across developing nations (Worku, et al., 2009). In Ethiopia, the MSME sector represents a dynamic and integral component of the national economy. It plays a crucial role in job creation and socio-economic advancement, particularly in facilitating the country's transition towards an industrialized society (Invest for Jobs, n.d.). This sector stands as the second-largest employer in Ethiopia, surpassed only by agriculture (Wajebo, et al., 2022).

Despite the consistent emphasis by the Ethiopian government on promoting MSMEs as a primary instrument for poverty reduction and economic transformation within its national development plans (Kuriakose et al., 2016), empirical evidence reveals a notable disparity. MSMEs in sub-Saharan Africa, including Ethiopia, reportedly contribute minimally to national economic growth. Furthermore, the urban informal sector, where a substantial number of these enterprises operate, has not experienced significant growth since 2005 (Stewart, 2025).

The absence of a comprehensive and effective policy specifically for the manufacturing SME sector further underscores this disconnect between policy formulation and practical execution (Netsanet. J et al. 2024).

2.1.3. Challenges and opportunities for MSMEs in Ethiopia

Challenges:

A significant impediment to SME performance in Ethiopia is the identified lack of entrepreneurial orientation, coupled with the absence of a robust work culture and a prevailing fear of business risks among entrepreneurs (Worku, 2009). Access to finance remains a formidable barrier, with many MSMEs relying heavily on informal credit sources due to stringent high collateral requirements, convoluted application procedures, unfavorable interest rates, and insufficient loan sizes offered by formal financial institutions (Bahru, 2024). A minimal percentage of MSMEs manage to secure initial capital from formal financial channels (Wajebo, 2022).

Inadequate infrastructure further constrains operations, particularly the limited reliability of electricity and internet access, which impedes the adoption of digital tools (Munir, 2019). Frequent

and unscheduled power interruptions severely cripple manufacturing MSEs, leading to reduced production capacity, significant losses of raw materials in process, and damage to machinery (Abate, 2025).

The regulatory landscape in Ethiopia is often described as complex and inconsistent, deterring innovation and broader business growth (Awoke, 2019). There is a notable absence of comprehensive and effective policies and strategies specifically tailored for the manufacturing SME sector (Netsanet, 2024). Ethiopia's low global ranking in the ease of doing business highlights systemic issues related to burdensome business licensing and permits, cumbersome customs and trade regulations, and inefficient tax administration (Cepheus Capital research team, n.d.).

Limited market access and weak market linkages are also prevalent issues, confining many MSMEs to low-income market segments (Ali et al., 2016). Support for foreign market linkages is insufficient, and mechanisms for building product brands are often lacking (DABLO LAW FIRM LLP, 2025). Furthermore, government procurement processes do not consistently prioritize or support SMEs (World Bank, n.d.-a).

A shortage of skilled labor, inadequate technical skills, and restricted access to modern technology pose significant operational challenges (Cvetkoska et al., 2025). Many SMEs continue to utilize outdated and traditional technologies, and even those with better technology struggle to access skilled technicians and affordable spare parts when machinery breaks down (Cvetkoska et al., 2025).

Additionally, poor managerial skills are common, as many MSMEs are operated by individuals or small teams who may not possess all the necessary expertise to run a business efficiently (Worku, 2009). A general lack of basic business knowledge, skills, and attitude also serves as a fundamental barrier (Worku, 2009). These factors contribute to persistently high operating costs for MSMEs (Shemsu, 2025).

Opportunities:

Despite these challenges, several opportunities are emerging. The Ethiopian government has placed a strong focus on MSME development, initiating programs such as the Small and Medium Enterprise Development Agency of Ethiopia (SMEDAE) and the National Business Development Program (NEDEP), alongside efforts to improve access to finance (World Bank, 2025a).

Specific to the Sidama region, empirical evidence suggests that certain factors enhance MSME growth. These include a partnership-based ownership structure, the persistence of growth from previous years, and an increasing number of permanent employees (Worku, 2009). Partnerships, in particular, are associated with improved financial capacity, shared managerial skills, and broader management experience, leading to faster growth compared to sole proprietorships (Worku, 2009).

The double nature of risk in the Ethiopian MSME environment presents a key dynamic. While risk-taking is a fundamental dimension of entrepreneurial orientation (Rezaei & Ortt, 2018; Eze et al., 2019; Gede & Warie, 2024), the prevailing business climate is characterized by a "fear of business risks" (Worku, 2009), high collateral requirements, political instability, and a weak regulatory environment (European Union External Action Service, 2025; Bahru, 2024). The empirical findings on the impact of risk-taking are contradictory: studies in East Guji Zone, Ethiopia, and Abia State, Nigeria, reported positive effects (Gede & Warie, 2024; Eze et al., 2019). Another study in Malaysia found a negative, albeit insignificant, effect (Md Husin & Haron, 2020). This highlights significant contextual variability in the impact of risk-taking.

2.1.4. Conceptualizing entrepreneurial orientation (EO)

This section discusses the theoretical foundations of entrepreneurial orientation (EO), discovering its evolution and exploring its various dimensions.

Entrepreneurial Orientation (EO) stands as one of the most widely adopted constructs for assessing firm-level entrepreneurship, with its conceptual roots tracing back to the 1970s. Its foundational definition, articulated by Miller (1983), characterizes an entrepreneurial firm as one that actively engages in product-market innovation, willingly undertakes somewhat risky ventures, and is "proactive" in innovations, thereby gaining a competitive advantage over rivals (Rezaei & Ortt, 2018; Miller, 1983). More broadly, EO represents the strategic approach a company adopts, encompassing specific entrepreneurial elements within its decision-making styles, methods, and practices. It reflects the overarching manner in which a firm operates, rather than focusing solely on isolated activities. This orientation is manifested through a set of behaviors that include a willingness to take risks, innovativeness, proactiveness, autonomy, and competitive aggressiveness (Boohene et al., 2012).

Given the complex and intense challenges confronting MSMEs in Ethiopia—such as fierce competition from larger domestic and imported firms (Worku, 2009) , inadequate infrastructure (Netsanet, 2024; Munir, 2019), and limited access to formal finance (Wajebo, 2022; Netsanet, 2024) survival itself often becomes unwarranted.

2.1.5. Dimensions of Entrepreneurial Orientation

Entrepreneurial Orientation is a multifaceted construct, broken down into many key dimensions that collectively describe a firm's entrepreneurial posture. While Miller (1983) initially proposed three core dimensions, subsequent research has expanded this framework to include additional elements (Rezaei & Ortt, 2018) including:

Innovativeness

Innovativeness reflects a firm's inherent tendency to engage in and actively support new ideas, novelty, experimentation, and creative processes. These efforts are aimed at developing new products, services, or technological processes (Rezaei & Ortt, 2018; Eze et al., 2019; Gede & Warie, 2024).

Proactiveness

Proactiveness denotes an opportunity-seeking and forward-looking perspective. It involves the strategic introduction of new products or services ahead of competitors, driven by an anticipation of future market demand and a deliberate aim to shape the environment in the firm's favor (Rezaei & Ortt, 2018; Eze et al., 2019; Gede & Warie, 2024).

Risk-taking

Risk-taking refers to the degree to which managers are prepared to commit substantial and potentially costly resources to ventures that carry a reasonable chance of failure (Rezaei & Ortt, 2018; Eze et al., 2019). This involves a tendency to take bold actions, such as venturing into uncharted new markets, allocating significant resources to endeavors with high uncertainty, or undertaking substantial borrowing in unpredictable environments (Gede & Warie, 2024).

2.1.6. Unidimensional vs. Multidimensional EO

The conceptualization of Entrepreneurial Orientation (EO) has spurred an ongoing academic debate regarding whether it should be treated as a unidimensional or a multidimensional constructs. Proponents of the unidimensional approach view EO as a single, cohesive construct where its various dimensions are expected to co-vary. A meta-analysis by Rauch et al. (2009) indicated that most reviewed studies (37 out of 51) adopted unidimensional treatment of EO.

Conversely, advocates for a multidimensional approach argue that EO's dimensions can and often do vary independently. Lumpkin and Dess (1996) are prominent proponents of this view, asserting that EO should be conceptualized as a multi-dimensional construct. They contend that not all dimensions may be present in equal measure within a firm, nor are they necessarily interrelated in a fixed manner (Lumpkin & Dess, 1996). They further argue that this multidimensionality can lead to distinct relationships between individual EO dimensions and firm performance, emphasizing the need for separate considerations of each dimension to avoid generating misleading theoretical conclusion (Lumpkin & Dess, 1996).

2.1.7. Understanding firm performance in MSMEs

This section defines and elaborates on the concept of firm performance, distinguishing between overall and functional performance indicators.

Overall firm performance: conceptualization and measurement

Organizational performance is fundamentally understood as a measure of an organization's success in delivering value to both its internal and external stakeholders. However, a universal consensus on the optimal method for measuring organizational performance remains elusive among researchers (Ion & Criveanu, 2016). Historically, and still now, performance measurement has relied on traditional cost and account-based financial metrics. These include indicators such as sales growth, profit margin, return on assets (ROA), and return on investment (ROI) (Arisi-Nwugballa et al., 2016). Yet, in contexts where MSMEs operate predominantly in the informal sector and may not maintain meticulous financial records, perceptual or subjective measures are often employed. For example, in Nigeria, revenues, often tracked through sales books or distributors' ledgers, is a commonly used performance indicator due to its accessibility (Arisi-Nwugballa et al., 2016).

Beyond financial metrics, non-financial indicators also play a crucial role in assessing overall firm performances including market share, customer satisfaction, and product quality (Arisi-Nwugballa et al., 2016; Shinwell & Žarnic, 2022). In the Ethiopian context, employment size is often a preferred measure of growth due to its ease of accessibility, its insensitivity to fluctuations in inflation and exchange rates, and its direct alignment with policy interests in job creation (Gedif, 2023).

The diverse array of performance measures—ranging from objective financial metrics to subjective perceptual assessments and non-financial indicators—presents a significant challenge for synthesizing empirical findings across different studies. A study employing "revenue" as its primary metric (Arisi-Nwugballa et al., 2016) might yield different results or interpretations compared to one focusing on "profitability and employment growth" or "customer performance" (Arisi-Nwugballa et al., 2016). This lack of standardization in performance measurement directly complicates direct comparisons across literature, often contributing to seemingly contradictory or inconsistent findings in the entrepreneurial orientation (EO)-performance relationship.

2.1.8. Research & Development (R&D) performances

R&D performance is comprehensively measured by a range of factors that reflect the effectiveness of a firm's innovation effort. These include customer satisfaction and market response to new offerings, the percentage of new products successfully launched in the market, the number of products or projects completed, the speed of development, efficiency in adhering to budgets, the quality of output, the volume of new ideas or findings, the level of creativity and innovation fostered, and profit or market share gained as a direct result of R&D activities (Rezaei & Ortt, 2018). The primary objective of the R&D function is to develop novel products and continuously improve existing production processes (Rezaei & Ortt, 2018).

2.2. Empirical review

2.2.1 Entrepreneurial orientation dimensions and firm performance

This section synthesizes empirical findings on the relationship between Entrepreneurial Orientation (EO) and the performance of Micro, Small, and Medium Enterprises (MSMEs) from various studies.

Innovativeness and MSME performance

Innovativeness is consistently identified as a key dimension of entrepreneurial orientation. In Ethiopia, a study focusing on small and micro enterprises in the East Guji Zone found a strong and positive correlation between innovative behavior and business performance (Gede & Warie, 2024). This relationship manifested in improvements in market share, product quality, sales volume, and an expanded product portfolio, underscoring the critical role of innovativeness in business success (Gede & Warie, 2024).

However, some studies present contrasting views. For instance, in Ebonyi State, Nigeria, innovativeness showed a moderate and significant positive correlation with customer performance but no statistically significant correlation with product performance (Arisi-Nwugballa et al., 2016). This divergence was attributed to the predominantly rural and agrarian nature of Ebonyi State's economy, where most MSMEs operate in traditional, low-risk ventures with less pressure for new product development (Arisi-Nwugballa et al., 2016).

In Abia State, Nigeria, innovativeness was found to positively and significantly affect MSMEs performance, aligning with expectations that new products, techniques, and market channels driven by innovation should enhance performance (Eze et al., 2019; Octasyilva et al., 2022). The empirical findings on the relationship between creativity and innovativeness and micro-enterprise performance in Malaysia indicate a positive but statistically insignificant effect on micro-enterprise performance, suggesting that while beneficial, creativity and innovativeness alone may not suffice to enhance enterprise performance without additional resources and competencies (Md Husin & Haron, 2020). These varied findings underscore that while innovativeness is generally beneficial, its specific impact on different performance metrics (e.g., customer vs. product performance) and its overall significance can be highly dependent on the local business environment and the nature of the MSMEs.

Proactiveness and MSME performance

Proactiveness, characterized by an opportunity-seeking and forward-looking perspective that involves introducing new products or services ahead of competitors (Rezaei & Ortt, 2018; Gede & Warie, 2024), is another critical dimension of EO. In Ebonyi State, Nigeria, proactiveness demonstrated a weak but significant positive correlation with customer performance but an

insignificant correlation with product performance (Arisi-Nwugballa et al., 2016). This outcome was linked to the low-risk nature of businesses in the state, where less pressure exists for new product development (Arisi-Nwugballa et al., 2016). Conversely, in Abia State, Nigeria, proactiveness was found to positively and significantly affect MSMEs performance. This was attributed to the competitive advantage gained by introducing innovations ahead of rivals, suggesting that the foresightedness of local entrepreneurs contributes to this effect (Eze et al., 2019).

A study in Malaysia on micro-enterprises found that proactiveness had a positive but statistically insignificant effect on micro-enterprise performance. This suggests that while proactiveness can foster entrepreneurial competencies, this does not always translate into a statistically significant direct impact on overall enterprise performance in that context (Md Husin & Haron, 2020). For overall firm performance, research indicates that proactiveness has a strong and positive relationship with marketing and sales performance (Rezaei & Ortt, 2018). This suggests that proactiveness primarily influences performance through its impact on market-facing functions, which then indirectly contributes to overall firm performance (Rezaei & Ortt, 2018). These findings highlight that while proactiveness is generally associated with positive outcomes, its direct impact on overall firm performance may be mediated by specific functional areas, and it can change based on the competitive dynamics and market maturity of the operating environment.

Risk-taking and MSME performance

Risk-taking, presents some of the most inconsistent empirical findings in the EO literature. In Ebonyi State, Nigeria, risk-taking showed no significant correlation with either product or customer performance for MSMEs. This was explained by the state's predominantly rural and agrarian economy, where MSMEs engage in traditional, low-risk ventures, leading to a general risk aversion among businesses (Arisi-Nwugballa et al., 2016). On the other hand, in Abia State, Nigeria, risk-taking orientation was found to positively and significantly affect MSMEs performance, suggesting that a risk-tolerant posture can enhance outcomes in that specific context (Eze et al., 2019). Similarly, a study on small and micro enterprises in the East Guji Zone, Ethiopia, found a strong positive correlation and significant effects of risk-taking on business performance, aligning with the idea that risk-taking is essential for acquiring benefit and enhancing business performance (Gede & Warie, 2024).

However, other studies present conflicting results. For overall firm performance, when the three individual EO dimension were directly related to overall firm performance within a single model, the relationship for risk-taking was found to be statistically insignificant (Rezaei & Ortt, 2018). A more granular analysis reveals a significant negative relationship between risk-taking and production performance (Rezaei & Ortt, 2018). This suggests that a high propensity for risk conflicts with the conservative approach needed for efficient production (Rezaei & Ortt, 2018). A study on micro-enterprises in Malaysia additionally found a negative and statistically insignificant effect of risk-taking propensity on micro-enterprise performance, implying that a willingness to take risks could have an adverse impact (Md Husin & Haron, 2020). These contradictory finding underscore that the impact of risk-taking on MSME performance is highly context-dependent.

2.2.2 R&D performance and firm performance

A study on SMEs in China found that R&D investment has a significant positive impact on current profitability (Zhang et al., 2020). Other study studying the impact of R&D expenditure in an emerging economy found a significant and positive association between R&D expenditure and both financial and market performance, confirming R&D as key investment for organizational sustainability (Hossain et al., 2022). A study on Ethiopian firms also supports this by showing that investment in R&D positively influences both innovation and long-term financial performance, while it having a negative impact on shorter-term financial performance (Kebede et al., 2025).

2.2.3 Mediating role of R&D performance

Mediating role of R&D on the relationship between innovation and firm performance

Research highlights R&D as a critical mediator between innovation and firm performance. Wales, Gupta, and Mousa (2020) found that innovation driven firms use R&D to convert ideas into marketable products, which in turn increases profitability and market share. Similarly, Rosenbusch, Rauch, and Bausch (2019) demonstrated that R&D intensity mediates innovation's impact on growth, particularly in technology sectors where rapid commercialization is key. A study by Audretsch, Belitski, and Guerrero further confirmed this, showing that SMEs with strong R&D pipelines translate innovative capabilities into performance gains 30% faster than peers. These studies affirm that R&D acts as the mediator between innovation and firm performance.

Mediating role of R&D on the relationship between proactiveness and firm performance

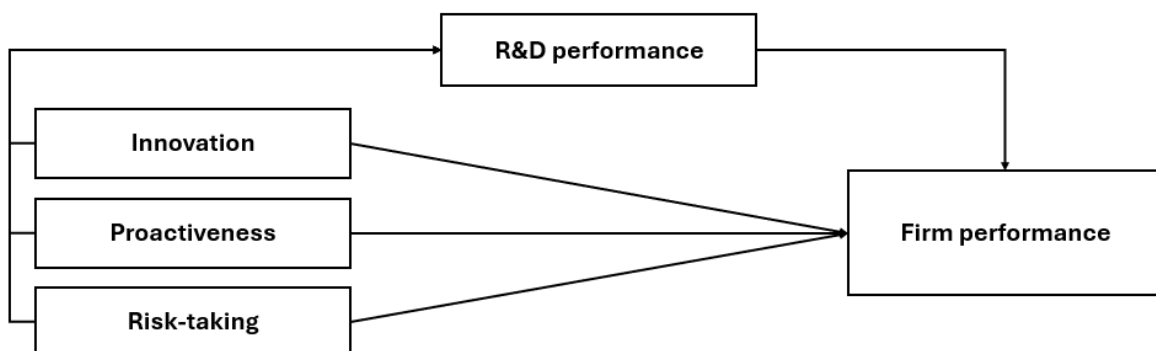
Miller and Le Breton-Miller (2018) showed that proactive strategies (e.g., anticipating market shifts) require R&D investments to develop first-mover advantages, which drive long-term profitability. A 2022 study by Arzubiaga, Kotlar, and De Massis linked proactive governance in family firms to higher R&D allocations, which improved innovation outcomes and financial returns. Recently, Chen, Tang, and Jin (2023) found that proactive firms in renewable energy sectors rely on R&D to align strategic foresight with technological advancements, resulting in 25% higher revenue growth. These findings indicate that R&D mediates the relationship between proactiveness and firm performance.

Mediating role of R&D on the relationship between risk-taking and firm performance

Risk-taking drives performance when coupled with R&D to mitigate uncertainties. Talke, Salomo, and Kock (2021) found that firms taking calculated risks in new markets allocate 40% more to R&D, enabling them to adapt products to local needs and achieve higher ROI. Brouthers, Geisser, and Rothlauf (2021) showed that risk-taking in internationalization boosts performance only when paired with R&D to address cultural and regulatory barriers. A study by Nguyen, Mort, and D'Souza highlighted that R&D mediates risk-performance relationships in emerging markets by converting exploratory risks into scalable innovations.

2.2.4. Conceptual framework

Figure 1: Conceptual framework



Source: Lumpkin & Dess, 1996

This conceptual framework is developed based on the findings from the following research. Entrepreneurial orientation (EO) comprising innovation, proactivity, and risk-taking (Lumpkin & Dess, 1996) serves as the foundational driver of firm performance. The mediating role of R&D performance aligns with evidence that R&D activities translate entrepreneurial strategies into competitive advantages, particularly for innovation and proactivity (Gupta & Gupta, 2015). The framework also reflects the dual pathways highlighted by Wales et al. (2013). While the mediation effect between R&D and risk taking aligns the study by Rosenbusch et al., 2011.

2.2.4. Research Hypothesis

The following are the research hypothesis:

H 1. A firm's innovativeness has a positive effect on its firm performance

H 2. A firm's proactiveness has a positive effect on its firm performance

H 3. Risk taking has a positive effect on its firm performance

H 4. A firm's R&D performance has a positive effect on its firm performance

H5. R&D performance mediates the positive relationship between innovation and firm performance.

H6. R&D performance mediates the positive relationship between proactivity and firm performance.

H7. R&D performance mediates the positive relationship between risk-taking and firm performance.

CAPTER THREE

RESEARCH METHODOLOGY

In this chapter the study area, research design and research approach, population and sampling design, data source and collection methods, data analysis methods and ethical considerations are discussed.

3.1 Description of The Study Area

The Sidama Zone, located in the Southern Nations, Nationalities, and Peoples' Region (SNNPR) of Ethiopia, serves as the focal area for this study. Sidama is geographically situated between 6°45' and 7°45'N latitude and 38°15' and 39°00'E longitude, encompassing a diverse landscape of fertile highlands, coffee-growing areas, and the city center of Hawassa, its administrative capital. The region play a key role in Ethiopia's coffee economy, producing over 40% of the country's high-quality Arabica beans. With a population exceeding 4 million, Sidama's economy is predominantly agrarian, characterized by smallholder farming systems, though rapid urbanization and industrialization around Lake Hawassa are reshaping its socio-economic dynamics.

3.2 Research Design

Research design refers to the plan or road map identified to conduct research and best meet certain intended objectives, which also involves the intersection of philosophical or worldview position, research strategies and methods employed (Creswell, 2013). The research design sets the procedure on the required data the methods to be applied to collect and analyze data how well all of this is going to answer the research question (Grey, 2014). As Explained by Robson (2002) there are three possible forms of research design, exploratory, descriptive and explanatory. This study has employed explanatory research design to assess the mediating effect R&D performance on the relationship between entrepreneurial orientation and overall firm performance

3.3 Research Approach

Research designs are plans and procedures to the research that spans the steps from broad

assumptions to details methods of data collection, analysis, and interpretation. Creswell (2009) there are three approaches to research; quantitative, qualitative, and mixed. The following discussions briefly present the basic features of these research approaches. Quantitative research is a means for testing objective theories by examining the relationship among variables (Creswell, 2009). on the other hand, the qualitative research approach is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem (Creswell, 2009). Finally, the mixed-methods approach to inquiry combines or associate both qualitative and quantitative forms. Thus it is more than simply collecting & analyzing both kinds of data (Creswell and Plano Clark, 2009). Because the main objective of the study is to examine the effect of entrepreneurial orientation on overall firm performance, a quantitative research approach will be adopted.

3.4 Population and Sample Size

3.4.1 Population of the Study

A population is the group of units about which the researcher wants to make judgments. These units can be groups of individuals, customers, companies, or products (Mooi and Sarstedt, 2011). Population is the entire group of individuals, events, or objects having a common characteristic (Copper & Schindler, 2014). This research focuses on MSMEs in Sidama region operating across sectors.

3.4.2 Sample Size and Sampling Techniques

3.4.2.1 Sample Size

Estimating an appropriate sample size was critical to ensuring statistical power, precision, and generalizability of the study's findings. To address this, the research adopted a multifaceted approach tailored to the research design. First, guided by Green's (1991) recommendation for multivariate regression and mediation analysis, a minimum sample size of 90 participants was initially targeted, adhering to the rule of thumb of 10–15 observations per predictor variable (e.g., entrepreneurial orientation, R&D, production, and marketing performance). To further refine this estimate, a power analysis was conducted using G*Power software (Faul et al., 2007), which

recommended a sample size of 85 participants to detect a medium effect size with 80% statistical power and a 5% significance level ($\alpha=0.05$).

Given the study's focus on small and medium enterprises (SMEs) in Sidama, Ethiopia, Cochran's formula for finite populations was applied to adjust for the estimated population size (N=1,200 MSMEs). Assuming a 95% confidence level ($Z=1.96$), maximum variability ($p=0.5$), and a 5% margin of error ($e=0.05$). The formula yielded a sample size of 292 MSMEs.

3.4.2.1 Sampling technique

Sampling is the process of selecting units (e.g. people, organization) from a population of interest so that by studying the sample the researcher may fairly generalize the study results back to the population from which they chosen (Trochim, 2000).

A stratified sampling technique was first applied, segmenting small and medium enterprises (SMEs) by industry type—agriculture, manufacturing, and services—to ensure proportional representation of each sector within the sample. Subsequently, simple random sampling was employed within each stratum to select participants fairly and impartially. To operationalize this, data collectors were rigorously trained to administer surveys through in-person visits and phone interviews, ensuring adherence to ethical standards and consistency in data collection. This approach balanced methodological rigor with practical feasibility, aligning with the socio-economic context of Sidama's MSME ecosystem.

3.5 Data Types and Source

This study used both primary and secondary data. The primary data is the data collected through questionnaires from MSMEs. Secondary data was collected from various research papers, documents, and statistical report.

3.6 Data Collection Procedure

The data collection procedure was meticulously designed to ensure accuracy, reliability, and ethical compliance. Following the stratified random sampling of MSMEs in Sidama, structured questionnaires were administered to gather primary data on entrepreneurial orientation (e.g., innovativeness, proactiveness, risk-taking) and functional performance metrics (R&D, production, marketing). Data collectors, fluent in local languages and trained in ethical research practices,

conducted in-person interviews and phone surveys to accommodate geographic and logistical constraints. Prior to fieldwork, a pilot test with 30 MSMEs refined the questionnaire for clarity. Local business associations facilitated access to participants, while informed consent ensured confidentiality and voluntary participation. Data collection spanned six weeks, with follow-ups conducted for incomplete responses.

3.7 Methods of Data Analysis

The primary and secondary data was collected from all sources using the aforementioned techniques analyzed using appropriate models and analysis methods based on the nature of the data. The data was analyzed by using both descriptive statistics. Descriptive statistics was analyzed by using frequency tables, percentages, and mean. The results were presented by using tables. Inferential statistical analysis including correlations and regression was used to determine the level of significance in the relationship between a dependent variable and the independent variable. Pearson Correlation is also used to establish the existence, nature, and strength of the relationships between a dependent variable and independent variables. The data analysis was conducted by using the SPSS version 30 as a tool.

The regression model was done in the form of: -

$Y_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \Sigma$ Where, Y=Firm performance α =Y intercept/constant

β_1 =the beta weight or regression coefficient of Innovation

β_2 =the beta weight or regression coefficient of Proactiveness

β_3 =the beta weight or regression coefficient of Risk taking

X_1 = Innovation

X_2 = Proactiveness

X_3 = Risk taking

Σ = sum of residuals error terms

3.8 Validity and Reliability

Validity

validity is the most critical criterion and indicates the degree to which an instrument measures what it is supposed to measure while reliability has to do with the accuracy and precision of a measurement procedure (a measuring instrument is reliable if it provides consistent results). Validity defined as the extent to which data collection method accurately measure what they were intended to measure (Saunders et. al., 2003). Validity was concerned with whether the findings were really about what they appear to be about. A number of different steps was taken to ensure the validity of the study. First data was collected from reliable sources and managers/employees of MSMEs with significant presence/ experience within the firm.

Reliability

Reliability is one of the major criteria for evaluating research instruments. Reliability measures the internal consistency of the model. In this research, Cronbach’s alpha is use to test the reliability of the measures.

Table 1. The Cronbach alpha result

Sn	Variables	Cronbach’ alpha	Decision on reliability
1	Innovation	0.954	Accepted
2	Proactiveness	0.902	Accepted
3	Risk taking	0.934	Accepted

Source: own survey computed, SPSS analysis 2025

The above table illustrates that the values all of the Cronbach alpha coefficients were above 0.9 indicating an excellent internal consistency reliability for the scale or set of items being measured.

3.9 Ethical Consideration

Ethical considerations in research were critical. Ethics are the norms or standards required to distinguish between good or bad and/or right and wrong act. Moreover, when it comes to the

research work, they play multiple roles. The purpose and benefit of the study's voluntary nature of participation were discussed with each study participant informed verbal consent is obtained.

The researcher was holding the view that ethical consideration was the most important element in the research process thus trying to guarantee confidentiality and preserve the anonymity of participants of the research.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1. Introduction

The results and discussion chapter deals with the results from the collected data that has been analyzed and interpreted. The first section focuses on response rate, descriptive analysis, and correlation analysis on variables of the study. The second section presents fulfillment and adherence to key assumptions, while the third section lays out the results of regression analysis, ANOVA, and Sobel test. The analysis is carried out in the order of how the questions appear in the surveys.

4.2. Response rate analysis

Table 2: Response rate frequency and percentage

Response Rate	Frequency	Percentage
Response	237	81
Non-Response	55	19
Total	292	100

Source: own survey computed, SPSS analysis

As indicated in Table 1, a total 292 questionnaires were distributed to selected MSMEs, of which 237 questionnaires were returned, resulting an approximately 81% response rate. According to pallant (2005), a response rate of 50% is adequate for analysis and reporting, a rate of 60% is good and a response rate of 70% and above is excellent; therefore, the response rate falls under the excellent category. After data collection, all the returned questionnaires were successfully processed for the analysis using SPSS version 30.

4.3. Profile of respondents

The questionnaire included a section on MSME profile to better understand the industry/sector, years of operation, employee size, average annual turnover, and ownership structure. The table

below summarizes the profile if the MSMEs involved in this research.

Table 3: Profile of respondents

Item	Demographics		Frequency	Percentage
i	Industry	Agriculture	133	56.1
		Construction	16	6.8
		Manufacturing	61	25.7
		Services	27	11.4
		Total	237	100
ii	Years of operation	Less than 1 year	31	13.1
		1-2 years	115	48.5
		2-5 years	83	35.0
		5-10 years	7	3.0
		10+ years	1	.4
		Total	237	100
iii	Number of employees	1-5 employees	111	46.8
		6-10 employees	104	43.9
		11-50 employees	22	9.3
		50+ employees	0	0
		Total	237	100
iv	Annual revenue	Less than 500,000 ETB	87	36.7
		500,000 - 1,000,000 ETB	70	29.5
		1,000,001 - 5,000,000 ETB	57	24.1
		5,000,001 - 10,000,000 ETB	21	8.9
		10,000,001 - 20,000,000 ETB	2	.8
		Total	237	100

Source: Own survey computed, SPSS analysis

As shown in Table 2, item i, the majority 56.1% of the respondents are agricultural MSMEs, followed by 25.7%, 11.4%, and 6.8% MSMEs engaged in the manufacturing, service, and construction industry respectively.

In the same Table 4.2, item ii, the years of operation of the MSMEs are shown. 48.5% of respondents have 1-2 years of operation followed by 35% of MSMEs having 2-5 years of operation.

Under item iii, the number of employees of MSMEs is presented, the finding shows that 46.8% and 43.9% of MSMEs have 1-5 employees and 6-10 employees respectively.

Under item iv, annual revenue of MSMEs is stated where the majority (36.7%) of MSMEs earn less than 500,000 ETB per annum followed by 29.5% and 24.1% of MSMEs earning between 500,000 to 1,000,000 ETB and 1,000,000 to 5,000,000 ETB respectively.

4.4. Descriptive statistics

The level of agreement among MSMEs on the effect of Entrepreneurial Orientation on Firm performance in Arbegona woreda, Sidama was evaluated. A 7-point Likert-scale type questionnaire was used to collect responses. Standard deviation is a widely used measurement of variability or diversity used in statistics and probability theory. It shows how much variation or dispersion there is from the average (mean or expected value). A low standard deviation indicates that the data points tend to be very close to the mean, whereas high standard deviation indicates that the data are spread out over a large range of values. The minimum and maximum value are also considered to show the exact answers of respondent of the questionnaire.

Table 4, Mean Comparison based mean range criteria

<u>No</u>	Mean range	Response Options
1	1.00 - 1.86	Significantly left oriented
2	1.87 - 2.72	Moderately left oriented
3	2.73 – 3.58	Somewhat left oriented
4	3.59 – 4.44	Neutral

5	4.45 – 5.30	Somewhat right oriented
6	5.31 – 6.16	Moderately right oriented
7	6.17 – 7.00	Significantly right oriented

Source: (Joshi et al. (2015))

Innovation

Table 5: mean & std. deviation for Innovation

Item	Statement	N	Min	Max	Mean	Std. Deviation
i	In general, my firm favors, A strong emphasis on the marketing of tried and proven products or services Vs a strong leadership on R&D, technological leadership, and innovation	237	1	7	3.46	2.009
ii	No new lines of products or services Vs Many new lines of products or services developed	237	1	7	3.38	1.924
iii	Changes in product/service lines have been mostly of a minor nature Vs Changes in product/service lines have usually been quite dramatic	237	1	7	3.23	1.964
Aggregate Mean					3.35	

Source: Own survey computed, SPSS analysis

The above table presents descriptive statistics for three items measuring innovation within a firm. All items received responses from 237 participants, with scores spanning the full-scale range (Min = 1, Max = 7).

For item i, the mean score is 3.46, indicating that firms slightly favor the marketing of tried and proven products or services as compared to a strong leadership on R&D, technological leadership,

and innovation.

For item ii, the mean score is 3.38, showing that firms very occasionally produce new lines of products or services as compared to producing many new lines of products or services

For item iii, the mean score is 3.23, presenting that the changes in product/service lines of most firms have mostly been of a minor nature.

Proactivity

Table 6, mean & std. deviation for Proactivity

Item	Statement	N	Min	Max	Mean	Std. Deviation
i	Typically responds to actions of our competitors Vs Typically initiate actions to which competitors respond	237	1	7	3.27	2.019
ii	Is very seldom the first firm to introduce new product/service, administrative techniques, operating technologies, etc. Vs Is very often the first firm to introduce new product/service, administrative techniques, operating technologies, etc.	237	1	7	3.38	2.180
iii	Typically seeks to avoid competitive clashes, preferring a “live-and- let live” approach Vs Typically adopts a very competitive, “beat the competitors” approach	237	1	7	3.33	2.144
Aggregate Mean					3.32	

Source: Own survey computed, SPSS analysis

Table 5 presents descriptive statistics for three items measuring the proactivity of MSMEs.

Item i, with a mean score of 3.27 shows that most MSMEs slightly prefer responding to actions of competitors as compared to initiating actions to which competitors respond.

Item ii, with a mean score of 3.38 indicates that most MSMEs are very seldomly the first to introduce new products/services, administrative techniques, operating technologies, etc.

Item iii, with a mean score of 3.33 presents that most MSMEs slightly prefer to avoid competitive clashes, preferring a “live-and-let live” approach compared to a very competitive “beat the competitors” approach.

Risk taking

Table 7, mean & std. deviation for Risk taking

Item	Statement	N	Min	Max	Mean	Std. Deviation
i	A strong tendency for low-risk projects (with normal and certain rates of return) Vs A strong tendency for high-risk projects (with chances of very high return)	237	1	7	3.43	2.107
ii	Owing to the nature of the environment, it is best to explore gradually via continuous, incremental behavior Vs Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm objectives	237	1	7	3.37	2.299
iii	Typically adopts a cautious, “wait and see” approach in order to minimize the probability of making costly decision Vs Typically adopts a bold, aggressive	237	1	7	3.33	2.013

	approach in order to maximize the probability of exploiting potential opportunities					
Aggregate Mean					3.37	

Source: Own survey computed, SPSS analysis

Table 6 presents descriptive statistics for three items measuring the risk-taking nature of MSMEs.

Item i, with a mean score of 3.43, shows that most MSMEs have a slight tendency for low-risk projects (with normal and certain rates of return) compared to high-risk projects with a high return rate.

Item ii, with a mean score of 3.37 indicates that that most MSMEs slightly prefer exploring gradually via continuous, incremental behavior compared to bold, wide-ranging acts.

Item iii, with a mean score of 3.33 presents that most MSMEs adopt a cautious, “wait and see” approach in order to minimize the probability of making costly decision compared to an aggressive approach to maximize the probability of exploiting potential opportunities.

Firm performance

Table 8, mean & std. deviation for Firm performance

Item	Statement	N	Min	Max	Mean	Std. Deviation
i	How does your firm compare to competitors regarding Firm performance	237	1.00	7.00	3.49	1.840

Source: Own survey computed, SPSS analysis 2025

Table 7 presents descriptive statistics for the firm performance of MSMEs, a mean score of 3.49, and shows that most MSMEs think that their firm performs slightly lower than competitors regarding firm performance.

Research and Development (R&D) performance

Table 9, mean & std. deviation for R&D performance

Item	Statement	N	Min	Max	Mean	Std. Deviation
i	How does your firm compare to competitors regarding, R&D performance	237	1.00	6.00	3.14	1.729

Source: Own survey computed, SPSS analysis

Table 9 is descriptive statistics for R&D performance of MSMEs. A mean score of 3.14 shows that most MSMEs think that their firm has a slightly lower R&D performance compared to competitors.

Descriptive statistics for antecedent variables

Summary descriptive statistics of the respondents' scores were computed, and analysis has been done by comparing these over mean scores and standard deviations among respondents. The interpretation of mean values is based on seven points Likert scale rule of thumb criterion.

Table 10 Mean and Standard deviations for antecedent variable

Item	Variables	N	Mean	Std. Deviation	Min	Max
I	Innovation	237	3.36	1.899	1	7
II	Proactivity	237	3.11	1.828	1	7
III	Risk-taking	237	3.46	2.053	1	7
IV	R&D performance	237	3.14	1.624	1	6
Aggregate mean			3.27			

Source: own survey computed, SPSS analysis 2025

Item I with a mean of 3.36 shows a slightly low tendency toward innovation, on average, MSMEs are slightly more inclined to rely on established products and services rather than developing new products/output. The relatively high standard deviation indicates considerable variation among firms — while some MSMEs strongly innovate, others remain traditional.

Item II, with a low mean value of 3.11 indicate that most firms tend to wait and respond to competitors rather than acting first. This suggests a generally reactive reaction. However, the wide spread in responses suggests that some of the MSMEs does exhibit proactive behaviors, such as initiating new actions before rivals.

Item III has a mean value of 3.46 which presents a slightly low risk-taking orientation, somewhat leaning towards caution. Many MSMEs prefer safer, low-risk strategies, though the very high standard deviation implies that some companies are willing to take bold, high-risk moves reflecting diverse strategic approaches adopted by the MSMEs.

Item IV shows a mean value of 3.14, this indicates that research and development is not a primary focus for most MSMEs. The narrower standard deviation (compared to other dimensions) implies a more consistent pattern of limited R&D investment.

4.5. Inferential analysis

Correlations Analysis

Pearson correlation coefficients reveal magnitude and direction of relationships (either positive or negative) and the intensity of the relationship (-1.0 to +1.0). The Pearson correlation test was used to determine the degree of correlation between the independent variables such as innovation, proactivity, and risk taking and the dependent variable firm performance.

Table 11, Pearson correlation coefficients criteria

No	correlation coefficients criteria	Response Options
1	.01 to .30	Weak
2	30 to .70	Moderate
3	.70 to .90	Strong
4	.90 to 1.00	Very strong

Source: Marczyk, Dematteo and Festinger, (2005)

Table 12 Correlation Analysis

Pearson's Correlation						
		Innovation	Proactive	Risk taking	R&D Perform.	Overall Perform.

Innovation	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	237				
Proactivity	Pearson Correlation	.739**	1			
	Sig. (2-tailed)	<0.001				
	N	237	237			
Risk taking	Pearson Correlation	.911**	.759**	1		
	Sig. (2-tailed)	<0.001	<0.001			
	N	237	237	237		
R&D performance	Pearson Correlation	.833**	.759**	.837**	1	
	Sig. (2-tailed)	<0.001	<0.001	<0.001		
	N	237	237	237	237	
Firm performance	Pearson Correlation	.843**	.713**	.854**	.845**	1
	Sig. (2-tailed)	<0.001	<0.001	<0.001	<0.001	
	N	237	237	237	237	237

Source: own survey computed, SPSS analysis

As shown in Table 12, there is a significant correlation among all the variables (innovation, proactiveness, risk-taking, R&D performance and firm performance)

The correlation test demonstrates that there was a statistically significant positive relationship between overall firm performance and innovation ($r=0.843$, $p<0.01$). This indicates that when innovation within a firm increases the overall firm performance increases significantly. Furthermore, MSMEs that emphasize innovation also tend to be risk-taking ($r=0.911$, $p<0.01$) and engaged in R&D ($r=0.833$, $p<0.01$).

The correlation test also demonstrates that there was a statistically significant positive relationship between overall firm performance and proactivity ($r=0.713$, $p<0.01$). Further proactivity is also correlated to risk taking and R&D ($r=0.759$, $p<0.01$).

The analysis shows that there was a statistically positive relationship between overall firm performance and risk taking ($r=0.854$, $p<0.01$), which is the most strongly correlated variable with firm performance.

The correlation analysis also showed that there is a very significant positive relationship between R&D performance and overall firm performance at ($r=0.845$, $p<0.01$)

In general, firm performance is positively and significantly associated with all four variables, especially risk-taking ($r=854$, $p<0.01$), R&D performance ($r=0.845$, $p<0.01$), and innovation ($r=843$, $p<0.01$). This suggests that firms that engage in bold, innovative and R&D investment are more likely to achieve higher firm performance.

4.6. Regression analysis

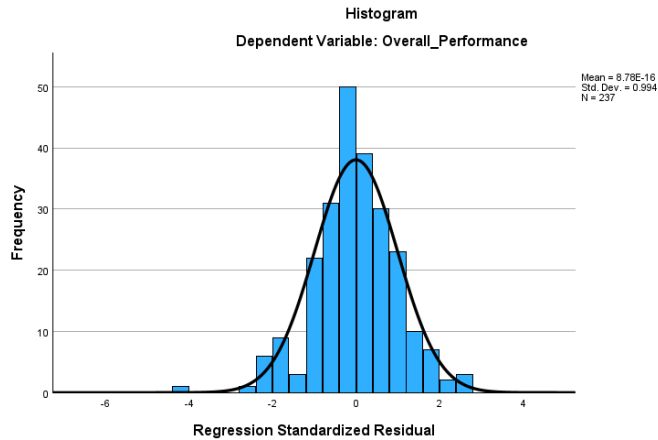
4.6.1. Test of regression assumptions

Before presenting and interpreting the regression results, the data was tested to check adherence to the basic assumptions of multiple linear regression analysis namely normality, linearity, multi collinearity, and autocorrelation.

4.6.1.1. Normality of the data

The assumption of normal distribution of the data was examined. To check the normality of variables which are incorporated in the multiple linear regression model, we use the histograms with a normal curve imposed. If the residuals are normally distributed, the histogram should be bell-shaped. Bryman, (1988). Therefore, from the below figure, most of entries fall within the bell shaped histogram; this implies that the residuals are normally distributed. Furthermore, Mood, A. M., Graybill, F. A., & Boes, D. C. (1974) developed the Central Limit Theorem (CLT) which states that regardless of the population's original distribution, the sampling distribution of the sample mean (or sum) will approximate a normal distribution as the sample size becomes sufficiently large (typically $n \geq 30$).

Figure 2: Frequency Distribution of Standardized Residual

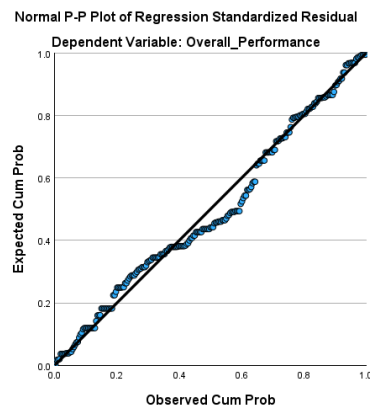


Source: Own Survey, computed in SPSS

4.6.1.2. Linearity

There must be a linear relationship between the dependent and independent variables. Linearity refers to the degree to which the change in the dependent variable is related to the change in the independent variables. This can be also verified via the p-plot presented below. The plots appeared to be in a straight line fulfilling the linearity assumption.

Figure 3: Normal Point Plot of Standardized Residual



Source: own survey computed, SPSS analysis

4.6.1.3. Multi-collinearity issues to the data

Multi-collinearity is checked using correlations between the variables in the model. Collinearity diagnostics on the variables as part of the multiple regression procedure is done using tolerance

and variance inflation factor (VIF). That is, if VIF is more than 10, then, it signifies that there is interdependence among independent variables.

Table 14: Multi collinearity assumption Test

Variables	Collinearity Statistics	
	Tolerance	VIF
Innovation	0.153	6.554
Proactivity	0.370	2.700
Risk taking	0.144	6.029
R&D performance	0.244	4.099

Source: own survey computed, SPSS analysis

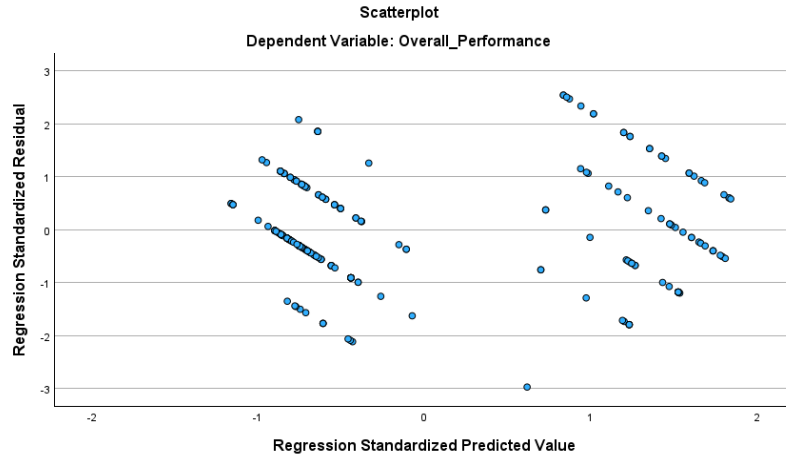
The multicollinearity table shows that proactivity (Tolerance = 0.370, VIF = 2.700) and R&D performance (Tolerance = 0.244, VIF = 4.099) show lower levels of multicollinearity, falling within generally acceptable ranges. However, innovation (Tolerance = 0.153, VIF = 6.554) and risk taking (Tolerance = 0.144, VIF = 6.029) exhibit moderate multicollinearity, as their VIFs exceed 5 but still fall below 10 indicating lack major multicollinearity issue.

4.6.1.4. Homoscedasticity

Homoscedasticity is a crucial assumption that refers to the consistency (uniformity) of the variance of the errors across all levels of the independent variables. The amount of a scatter of the data points around the regression line is roughly the same for all values of independent variables.

Figure 4 states that while the majority of the data points exhibit a random scatter, a small subset appears to deviate from this pattern. Given that these deviating points represent a very small percentage of the total data, their impact on the overall homoscedasticity assumption is likely minimal.

Figure 4: Scatter plot of regression for standardized predicted value against the residual,



Source: SPSS output 2025

4.6.2 Multiple regressions analysis

Table 15: Regression analysis model summary

Model summary				
Model	R	R square	Adjusted R square	Std. Error of the Estimate
1	.872 ^a	.760	.756	.90821
a. Predictors: (Constant), Risk taking, Proactivity, Innovation				
b. Dependent variable: Firm performance				
Model	R	R square	Adjusted R square	Std. Error of the Estimate
2	.845 ^a	.714	.713	.98603
a. Predictors: (Constant), R&D performance				
b. Dependent variable: Firm performance				
Model	R	R square	Adjusted R square	Std. Error of the Estimate
3	.870 ^a	.756	.753	.80770
a. Predictors: (Constant), Risk taking, Proactivity, Innovation				
b. Dependent variable: R&D performance				
Model	R	R square	Adjusted R square	Std. Error of the Estimate
4	.891 ^a	.794	.791	.84189
a. Predictors: (Constant), Risk taking, Proactivity, Innovation, R&D performance				
b. Dependent variable: Firm performance				

Model 1 analysis shows an R value of 0.872, indicating a strong collective effect of entrepreneurial orientation (innovation, proactiveness, and risk-taking) on overall firm performance. The R² value of 0.760 reveals that these three factors explain 76% of the variation in firm performance, while the remaining 24% is attributed to unmeasured variables. The adjusted R² (0.756) confirms the model's reliability, suggesting that entrepreneurial orientation is a critical driver of success. The low standard error (SE=0.908) suggest a robust predictive relationship. This aligns with prior research (e.g., Miller, 2011) showing that EO dimensions synergistically enhance firm performance

Model 2 indicates an R value of 0.845, which signifies a strong influence of R&D performance on firm performance. The R² of 0.714 indicates that 71.4% of firm performance is driven by this factor, with 28.6% unexplained, solidifying its role as a key enabler of firm performance.

Model 3 with an R value of 0.870 signifies a strong influence of entrepreneurial orientation (innovation, proactiveness, and risk-taking) on R&D performance. The R² of 0.756 indicates that 75.6% of R&D performance is driven by this factor, with 24.4% unexplained.

Model 4, with an R value of 0.891, indicates a very strong collective influence of innovation, proactiveness, risk-taking, and R&D performance on overall firm performance. The R² value of 0.794 reveals that these combined factors explain an impressive 79.4% of the variation in overall firm performance, leaving only 20.6% unexplained. The relatively low standard error (SE=0.84189) signifies a highly precise and reliable predictive relationship, underscoring the comprehensive power of these integrated factors in determining a firm's firm performance.

Table 16: ANOVA result

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	607.387	3	202.462	245.905	<.001 ^b
	Residual	191.837	233	.823		
	Total	799.224	236			
a. Dependent Variable: Firm performance						
b. Predictors: (Constant), Risk taking, Proactivity, Innovation						

Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	570.744	1	570.744	587.034	<.001 ^b
	Residual	228.479	235	.972		
	Total	799.224	236			
a. Dependent Variable: Firm performance						
b. Predictors: (Constant) R&D performance						
Model		Sum of Squares	df	Mean Square	F	Sig.
3	Regression	471.120	3	157.040	240.721	<.001 ^b
	Residual	152.003	233	.652		
	Total	623.122	236			
a. Dependent Variable: R&D performance						
b. Predictors: (Constant), Risk taking, Proactivity, Innovation						
Model		Sum of Squares	df	Mean Square	F	Sig.
4	Regression	634.789	4	158.697	223.905	<.001 ^b
	Residual	164.435	232	.709		
	Total	799.224	236			
a. Dependent Variable: Firm performance						
b. Predictors: (Constant), Risk taking, Proactivity, Innovation, R&D performance						

Model 1, the ANOVA results show a statistically significant model ($F(3,233)=245.905, p<0.001$), indicating that the combination of risk-taking, proactiveness, and innovation significantly predicts firm performance. The significantly high F-value confirms that these entrepreneurial orientation factors collectively explain a substantial portion of the variance in firm performance.

Model 2 demonstrates that R&D performance significantly predicts firm performance, yielding a very high F-statistic ($F=587.034, p<0.001$). The regression sum of squares (570.744) accounts for 71.4% of the total variance, confirming its strong explanatory power for overall firm performance. This highlights the key role R&D plays in driving overall firm performance.

Model 3 with significant F-statistic ($F = 240.721, p < 0.001$) indicates that innovation, proactiveness, and risk-taking collectively explain 75.6% of the variance in R&D outcomes This

aligns with the theoretical link between entrepreneurial behaviors and R&D investments (Wales et al., 2020)

Model 4 with significant F-statistic ($F = 223.905$, $p < 0.001$) shown that innovation, proactiveness, risk-taking, and R&D performance together explain the 79.4% of the variance in firm performance

Table 17: Regression coefficient analysis

Coefficient ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.600	.125		4.804	<.001
	Innovation	.339	.077	.350	4.431	<.001
	Proactivity	.113	.050	.112	2.232	0.27
	Risk taking	.404	.073	.451	5.513	<.001
a. Dependent Variable: Firm performance						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	.481	.140		3.436	<.001
	R&D performance	.957	.040	.845	24.229	<.001
a. Dependent Variable: Firm performance						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	.545	.111		4.906	<.001
	Innovation	.295	.068	.345	4.334	<.001
	Proactivity	.226	.045	.254	5.029	<.001
	Risk taking	.261	.065	.329	3.997	<.001
a. Dependent Variable: R&D Performance						

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta		
4	(Constant)	.368	.122		3.027	.003
	Innovation	.214	.074	.221	2.895	.004
	Proactivity	.017	.049	.017	0.339	.735
	Risk taking	.293	.070	.327	4.173	<0.001
	R&D	.425	.068	.375	6.218	<0.001
a. Dependent Variable: Firm performance						

Model 1 presents that EO (innovation, proactivity, and risk-taking) has significant positive effects on firm performance. Risk-taking ($\beta=0.451$, $p<0.001$) has the strongest impact, followed by innovation ($\beta=0.350$, $p<0.001$). proactivity ($\beta=0.112$, $p=0.027$) also contributes significantly. This supports the hypotheses that entrepreneurial orientation drives firm performance.

Model 2 indicates R&D performance has a very strong positive effect on firm performance ($\beta=0.845$, $p<0.001$). The magnitude of this standardized beta coefficient suggests a substantial influence of R&D performance on overall firm performance.

Model 3 shows that entrepreneurial orientation (innovation, proactivity, and risk-taking) have significant positive effects on R&D performance. Innovation ($\beta=0.345$, $p<0.001$) has the strongest impact followed by risk-taking ($\beta=0.329$, $p<0.001$). Proactivity ($\beta=0.254$, $p<0.001$) also contributes significantly.

Model 4 highlights the combined effect of R&D performance, innovation, proactivity, and risk-taking on firm performance. The results show that R&D performance has a strong and statistically significant positive effect ($\beta=0.375$, $p<0.001$). Risk-taking also maintains a significant positive contribution ($\beta=0.327$, $p<0.001$). Interestingly, while Innovation retains a significant positive effect ($\beta=0.221$, $p=0.004$), the direct effect of Proactivity becomes statistically non-significant ($\beta=0.017$, $p=0.735$) when R&D performance is included in the model, suggesting its influence on firm performance might be largely indirect, potentially mediated through R&D.

4.7. Mediation testing

Baron and Kenny's (1986) model for testing mediation was used as a guiding framework for the mediation test. Four conditions must be met in Baron and Kenny's (1986) mediation test paradigm for which a variable is to be classified as mediator. These are, the independent variable must have a significant influence over the dependent variable in model one, and in model two an independent variable must have a significant relation with the mediator, in model three, the mediator needs to have a significant relation with the dependent variable and finally in model four, the independent variable must not predict dependent variables more strongly than in model one (Baron and Kenny, 1986). These assumptions are examined and fulfilled showing that R&D performance has a mediating role between the relationship between independent variables and overall firm performance as per the below.

Mediating role on R&D

Table 18, Mediation, Baron and Kenny's (1986)

Variable	IV → DV	IV → MV	IV+MV → DV	MV → DV
Innovation	$\beta=0.350, p<0.001$	$\beta=0.345, p<0.001$	$\beta=0.221,$ $p=0.004$	
Proactivity	$\beta=0.112, p=0.027$	$\beta=0.254, p<0.001$	$\beta=0.017,$ $p=0.735$	
Risk-taking	$\beta=0.451, p<0.001$	$\beta=0.329, p<0.001$	$\beta=0.327,$ $p<0.001$	
R&D performance	-	-		$\beta=0.375,$ $p<0.001$
Check	Condition met	Condition met	Condition met	Condition met

Based on the Baron and Kenny's model, all four conditions are fulfilled. R&D performance significantly mediates the relationship between Entrepreneurial Orientation and Firm performance. Specifically, R&D fully mediates the effect of Proactivity, while partially mediating the effects of Innovation and Risk-taking on overall firm performance.

However, since the Baron and Kenny, 1986 technique does not really test the indirect impact of predictor variable on response variable through mediator variable, their method suffers from low statistical power. to fill the gap of Baron Kenny (1986) limitations the Sobel test was conducted to verify output.

Table 18: Results of Sobel test

Variables	Test Statistics	Std. Error	P-Value
Innovation	2.40626733	0.02623566	0.01611647
Proactivity	0.34611391	0.01110039	0.72925711
Risk-taking	2.98765077	0.02639138	0.00375969

Source: Online Sobel test calculator

The Sobel results confirm a significant indirect effect for innovation (Test Statistic = 2.406, $p=0.016$) and risk-taking (Test Statistic = 2.988, $p=0.004$), reinforcing the partial mediation observed for these entrepreneurial orientation dimensions through R&D performance. However, for Proactivity, the Sobel test indicates a non-significant indirect effect (Test Statistic = 0.346, $p=0.729$). This suggests that while Proactivity's direct effect on firm performance became non-significant in the presence of R&D performance (as noted in the Baron and Kenny Model 4), the indirect pathway through R&D performance itself is not statistically significant, therefore, full mediation for proactivity is not fully supported by this formal test of the indirect effect.

4.8. Hypothesis testing

H1. A firm's innovativeness has a positive effect on its firm performance. The findings of the research strongly support this hypothesis. The correlation analysis showed a very strong positive link between a firm's innovativeness and its firm performance. The regression analysis in Model 1 also support this, showing that innovation had a significant positive impact on overall firm performance ($\beta=0.350$, $p<0.001$) This means that as MSMEs become more innovative, their performance tends increase.

H2. A firm's proactiveness has a positive effect on its firm performance. This hypothesis was also validated by the study. The regression results from Model 1 showed that proactiveness had a significant positive impact on overall firm performance ($\beta=0.112$, $p=0.027$). This tells us that being proactive is important for MSMEs to increase their overall success.

H3. Risk-taking has a positive effect on its firm performance. The analysis showed a significant positive relationship. In the regression analysis (Model 1), risk-taking showed a significant positive effect on performance, with a beta coefficient of ($\beta=0.451$, $p<0.001$). Thus, its impact was the strongest among the entrepreneurial orientation dimensions, indicating a substantial contribution to firm performance.

H4. A firm's R&D performance has a positive effect on its firm performance. This hypothesis was significantly supported, showing R&D performance contributes to overall firm success. Model 2's regression analysis indicated that R&D performance has a very strong positive effect on firm performance ($\beta=0.845$, $p<0.001$). The model further show that R&D performance explains a massive 71.4% of the variation in overall firm performance.

H5. R&D performance mediates the positive relationship between innovation and firm performance. The study found strong evidence that R&D performance partially mediates the link between innovation and firm performance. When R&D performance was included in Model 4, the direct effect of innovation on firm performance was still statistically significant, but its impact was reduced ($\beta=0.221$, $p=0.004$) compared to its direct effect in Model 1 ($\beta=0.350$). The Sobel test further confirmed this mediation, showing a significant indirect effect (Test Statistic = 2.406, $p=0.016$). This indicates that while innovation directly contributes to performance, a significant portion of its positive effects are also channeled through effective R&D activities. Thus, investment in innovation and R&D often needs to go hand in hand.

H6. R&D performance mediates the positive relationship between proactivity and firm performance. This hypothesis was not fully supported by the mediation tests. While Model 4 showed that the direct effect of proactivity on firm performance became statistically non-significant (beta coefficient of $\beta=0.017$, $p=0.735$) when R&D performance was included, the Sobel test for the indirect effect revealed it was not statistically significant (Test Statistic = 0.346, $p=0.729$). This suggests that while R&D performance is a vital factor in firm performance, it does not serve as a significant statistical mediator for the relationship between proactivity and firm performance in this context.

H7. R&D performance mediates the positive relationship between risk-taking and firm performance. Results show that R&D performance partially mediates the relationship between risk-taking and overall firm performance. The Sobel test confirmed this mediation with a

significant indirect effect (Test Statistic = 2.988, $p=0.004$). In Model 4, the direct effect of risk-taking on firm performance remained significant ($\beta=0.327$, $p<0.001$) when R&D was included, although its magnitude was somewhat reduced compared to its direct effect in Model 1 ($\beta=0.451$). This indicates that while a portion of the positive impact of risk-taking on a firm's firm performance occurs through R&D activities, risk-taking also makes a substantial direct contribution to performance gains.

Table 19, Summary of the overall outcome of the research hypotheses

Hypothesis	Result	Reason
H 1. A firm's innovation has a positive effect on its firm performance	Accepted	$\beta=0.350$
H 2. A firm's proactiveness has a positive effect on its firm performance	Accepted	$\beta=0.112$
H 3. Risk taking has a positive effect on its firm performance	Accepted	$\beta=0.451$
H 4. A firm's R&D performance has a positive effect on its firm performance	Accepted	$\beta=0.845$
H5. R&D performance mediates the relationship between innovation and firm performance.	Accepted	$\beta=0.221$
H6. R&D performance mediates the relationship between proactivity and firm performance.	Not accepted	$\beta=0.017$
H7. R&D performance mediates the relationship between risk-taking and firm performance.	Accepted	$\beta=0.327$

Source: own survey computed, SPSS analysis 2025

4.9. Discussion of findings

The results of this study revealed a strong and statistically significant relationship between innovation and overall firm performance ($\beta = 0.350$, $p < 0.001$). This suggests that MSMEs in Sidama that emphasize the development of new products, services, or processes are more likely to outperform their competitors. These findings are consistent with prior studies which argue that innovation is a key driver of firm success. Lumpkin and Dess (1996) noted that innovative firms are more adaptable and better equipped to capture market opportunities. Similarly, Damanpour and Gopalakrishnan (2001) found a positive correlation between organizational innovation and

performance in both manufacturing and service sectors. Additionally, Rosenbusch, Brinckmann, and Bausch (2011) emphasized that small and medium-sized enterprises (SMEs) benefit more significantly from innovation compared to larger firms due to their flexibility and responsiveness.

Proactiveness was found to have a significant yet relatively smaller positive effect on firm performance ($\beta = 0.112, p = 0.027$). This indicates that while MSMEs that anticipate future market trends or act ahead of competitors do get performance benefits, the effect may not be as substantial in the Sidama context. This result supports the findings of Covin and Slevin (1989), who emphasized that proactive firms are more likely to respond effectively to environmental changes. More recently, Wang (2008) found that proactive strategic posture contributes to firm growth, especially when combined with high learning orientation.

Risk-taking showed the strongest direct effect on firm performance ($\beta = 0.451, p < 0.001$), suggesting that MSMEs willing to engage in uncertain or bold business decisions are more likely to succeed. This is in line with Wiklund and Shepherd (2005), who argued that strategic risk-taking enables firms to seize high-reward opportunities, particularly in uncertain environments. Similarly, Keh, Nguyen, and Ng (2007) found that risk-taking behavior among entrepreneurs positively impacts decision-making quality and venture performance.

The study found a very strong and statistically significant relationship between R&D performance and overall firm performance ($\beta = 0.845, p < 0.001$). This suggests that MSMEs that invest in research and development activities are more competitive and innovative, ultimately achieving better performance. This aligns with findings by Calantone, Cavusgil, and Zhao (2002), who argued that learning and innovation capabilities are crucial for sustained firm performance. In a similar vein, Ortega (2010) highlighted the role of internal knowledge generation through R&D in enhancing strategic adaptability and long-term success.

The data showed that R&D performance partially mediates the relationship between innovation and firm performance. The direct impact of innovation was reduced when R&D was introduced into the model (β reduced from 0.350 to 0.221), and the Sobel test confirmed a significant mediation effect ($p = 0.016$). This finding is consistent with the view of Zahra and Covin (1995), who emphasized that innovation translates into real business outcomes when supported by solid R&D systems. This reflects the practical importance of backing innovative ideas with structured development efforts.

Unlike the previous hypothesis, this one was not fully supported. The direct effect of proactiveness became non-significant when R&D was included in the model ($\beta = 0.017, p = 0.735$), and the Sobel test indicated no significant indirect effect ($p = 0.729$). This outcome diverges from the findings of Wales et al. (2020), who argued that proactive behavior contributes to firm performance through internal development mechanisms like R&D. In this study, it is possible that proactive efforts are not systematically channeled into R&D activities among MSMEs in Sidama.

The results indicated that R&D partially mediates the relationship between risk-taking and overall firm performance. Even after accounting for R&D, the direct effect of risk-taking remained significant ($\beta = 0.327, p < 0.001$), and the Sobel test supported a statistically significant indirect effect ($p = 0.004$). This finding complements those of Chen, Liu, and Peng (2019), who suggested that bold strategies produce better results when paired with R&D infrastructure. It suggests that high-risk strategies in MSMEs yield better outcomes when paired with follow-through investment in development.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Summary of findings

The findings of this study indicates that entrepreneurial orientation, especially innovation and risk-taking, plays an important role in improving the performance of MSMEs. Firms that engage in more innovative activities or take risks in their operations seems to benefit from better performance outcomes. These two elements were shown to have significant effects, both directly and indirectly, on firm performance. In particular, innovation appears to contribute not only through direct performance improvements but also by strengthening R&D, which then helps the firm grow more effectively.

What was also observed is that R&D performance emerged as a critical mediating factor in the relationship between entrepreneurial behaviours and firm performance. The analysis shows that R&D helps in converting innovation and risk-taking into real outcomes. However, in the case of proactiveness, the data did not provide enough evidence to support a strong direct or indirect effect on performance. This might be due to resource limitations or insufficient capability among firms to turn proactive strategies into structured development outcomes. So while proactiveness is still valuable, it may not always lead to performance gains unless it is well supported by R&D efforts.

Based on these results, it is important for MSMEs to not only be entrepreneurial, but also to make intentional investment into research and development. It's not enough to just take risks or act ahead of competitors; the firms need to support those actions with systems that can help refine, test, and apply their ideas in practical ways. This also means that government and policy makers should give more attention to support mechanisms that improve R&D capacity, especially for small firms. Supporting innovation with R&D infrastructure might help MSMEs to become more competitive and sustainable in the long run.

5.2 Conclusion

To conclude, this study offers strong evidence that entrepreneurial orientation comprising innovation, proactivity, and risk-taking plays a key role in driving the performance of MSMEs in Sidama. Each dimension of entrepreneurial orientation showed a strong, statistically significant

relationship with firm performance, strengthening the idea that having an entrepreneurial mindset is important for businesses to perform and grow. The research also shows R&D performance as a main driver of firm performance, even greater than the combined effect of entrepreneurial orientation factors. Entrepreneurial orientation also is as a foundational precursor to robust R&D performance. The finding also revealed a significant mediating role for R&D performance, especially on innovation. Innovation's positive influence on overall firm performance is almost fully mediated through effective R&D, meaning that R&D helps translate innovative ideas to business performance. Proactivity also benefits from R&D's mediating effect, but it maintains a direct, independent contribution to performance as well, suggesting a two way pathway for its impact on performance. Risk taking also contributes, though its direct and mediated effects are lower. These findings strongly show the interconnection of entrepreneurial orientation, R&D performance, and firm performance.

5.2 Recommendation

Based on the findings of this study, the following recommendations are advised for Micro, Small, and Medium Enterprises (MSMEs) in Sidama and policymakers.

For Micro, Small, and Medium Enterprises (MSMEs) in Sidama:

- MSMEs should participate in targeted entrepreneurship development training offered by local business development centers or NGOs such as the Sidama Region Small Enterprises Bureau.
- MSME leaders should allocate at least 5–10% of annual revenue towards R&D activities, such as customer surveys, prototype development, or adopting digital tools.
 - Engage with nearby universities (e.g., Hawassa University) for technical collaboration and access to research expertise.
- MSMEs should implement a formal risk assessment process (e.g., quarterly SWOT or PEST analyses) to identify and undertake calculated risks in areas such as product innovation or market expansion.
 - Partner with local consultants or use risk management templates provided online
- Assign team members to conduct monthly market trend analysis and competitor benchmarking and act on insights to preempt market shifts.

- MSMEs should integrate affordable digital tools (e.g., POS systems, inventory software, WhatsApp Business, or social media ads) to improve operations and customer engagement.
 - Request training or support from local ICT training centers or NGOs like Digital Opportunity Trust (DOT) Ethiopia.
- MSMEs, especially in the same sector, should form local cooperatives or business associations to share resources, access bulk purchasing discounts, and advocate collectively.
 - Encourage support from the Sidama Region Cooperative Bureau.
- MSMEs should pursue partnerships with microfinance institutions or Savings and Credit Cooperatives (SACCOs) and engage in basic financial training (e.g., bookkeeping, cash flow analysis).
 - Request support from banks (e.g., Cooperative Bank of Oromia) and local chambers of commerce.

For Policymakers

- The Sidama Regional Jobs and enterprise bureau should collaborate with universities and NGOs to run quarterly training workshops on innovation management, proactive business planning, and risk analysis.
 - Track MSME participation rates and performance improvements post-training.
- The Ministry of Innovation and Technology should launch a regional MSME R&D Grant Scheme offering up to ETB 500,000 per firm for innovative projects, with a special focus on agribusiness and value addition.
 - Provide technical assistance via extension officers or university labs.
- The Ministry of Trade and Regional Integration should publish quarterly digital toolkits and hold regional forums to share case studies and best practices on cost-effective production, marketing, and sales techniques.
 - Use radio, TV, social media, and local trade fairs for outreach.
- Regional policymakers should review and streamline regulations to reduce licensing delays and ease entry for new products.
 - Introduce a fast-track product registration process for MSMEs with validated prototypes or pilot customers.

- Enable quicker time-to-market for innovative solutions.
- Regional governments should prioritize improving roads, market access, reliable electricity, and internet in MSME clusters.
- The Ministry of Innovation and Technology in partnership with universities and donors should set up business incubators in Sidama to provide mentorship, workspace, and innovation support.
 - Model after Ethiopia's IceAddis or blueMoon incubator.
- The Ministry of Trade and Regional Integration should help MSMEs access national and regional markets by organizing trade fairs, B2B linkages, and pre-export training.

5.3 Direction for future research

This study provides a solid foundation for understanding the relationship between entrepreneurial orientation and firm performance in MSMEs in Sidama. However, further research can delve deeper into several areas:

- **Qualitative studies to understand the "Why":** While this study quantitatively identified relationships, future qualitative research could explore *why* certain entrepreneurial behaviors (e.g., preference for tried and proven products, reactive stance) are prevalent among MSMEs in Sidama. This could involve in-depth interviews to understand the underlying challenges, perceptions of risk, and cultural factors influencing entrepreneurial orientation.
- **Sector-specific research:** While the study covered various sectors, future research could conduct more in-depth, sector-specific analyses to identify unique challenges and opportunities for entrepreneurial orientation within each industry (e.g., agriculture, manufacturing, services).
- **Comparison with other similar regions:** Compare the findings from Sidama with MSMEs in other regions within Ethiopia or East Africa to identify regional similarities and differences in entrepreneurial orientation and its impact on firm performance.

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APPENDIX

Questionnaire



College Of Business and Economics

MBA - Management

Dear participant,

This survey questionnaire on *Entrepreneurship Orientation and Micro, Small, and Medium Enterprises Performance* aims to investigate the relationship between a firm's entrepreneurial orientation (EO)—specifically, its innovativeness, proactiveness, and risk-taking—and its subsequent performance within the Micro, Small, and Medium Enterprise (MSME) sector. The primary objective is to determine how and to what extent these entrepreneurial traits contribute to the success and growth of MSMEs.

To ensure the integrity and ethical conduct of this research, all data collected from participating MSME owners and managers will be treated with the utmost confidentiality. Respondents' identities will remain completely anonymous throughout the study. Individual responses will not be linked to specific participants in any reports or publications. The data gathered will be used

solely for the academic purpose of analyzing the impact of entrepreneurial orientation on MSME performance and will not be utilized for any commercial or non-academic activities.

Thank you in advance for your kind cooperation and contribution.

I. General Business/Firm Information

- 1) What is the primary industry your business operates in?
 - a. Agriculture
 - b. Manufacturing
 - c. Services
 - d. Construction
 - e. Others
- 2) If you choose “Others” on question 1, Please specify -----
- 3) How long has your business been operating?
 - a. Less than 1 year
 - b. 1-2 years
 - c. 2-5 years
 - d. 5-10 years
 - e. 10+ years
- 4) How many employees does the business have? ranges that align with your MSME definition - micro, small, medium, or allow for specific numbers.)
 - a. 1-5 employees
 - b. 6-10 employees
 - c. 11-50 employees
 - d. 50+ employees
- 5) In which region/location does your business primarily operate?

- 6) What is the approximate annual revenue/turnover of your business?
 - a. Less than 500,000 ETB

- b. 500,000 - 1,000,000 ETB
 - c. 1,000,001 - 5,000,000 ETB
 - d. 5,000,001 - 10,000,000 ETB
 - e. 10,000,001 - 20,000,000 ETB
- 7) What is the ownership structure of the business?
- a. Private Limited Company (PLC)
 - b. Share Company
 - c. Cooperative/SME
 - d. Family-owned business
 - e. Informal/Unregistered

II. Entrepreneurial Orientation

<i>In general, my firm favors-----</i>									
8)	A strong emphasis on the marketing of tried and proven products or services	1	2	3	4	5	6	7	A strong leadership on R&D, technological leadership, and innovation
<i>How many new lines of products or services has your firm marketed in the past 5-years?</i>									
9)	No new lines of products or services	1	2	3	4	5	6	7	Many new lines of products or services
10)	Changes in product/service lines have been mostly of a minor nature	1	2	3	4	5	6	7	Changes in product/service lines have usually been quite dramatic
<i>In dealing with competitors, my firm----</i>									
11)	Typically responds to actions of our competitors	1	2	3	4	5	6	7	Typically initiate actions to which competitors respond
12)	Is very seldom the first firm to introduce new product/service, administrative techniques, operating technologies, etc.	1	2	3	4	5	6	7	Is very often the first firm to introduce new product/service, administrative techniques, operating technologies, etc.

13)	Typically seeks to avoid competitive clashes, preferring a “live-and- let live” approach	1	2	3	4	5	6	7	Typically adopts a very competitive, “beat the competitors” approach
<i>In general, my firm has/believes that----</i>									
14)	A strong tendency for low-risk projects (with normal and certain rates of return)	1	2	3	4	5	6	7	A strong tendency for high-risk projects (with chances of very high return)
15)	Owing to the nature of the environment, it is best to explore gradually via continuous, incremental behavior	1	2	3	4	5	6	7	Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm objectives
<i>When confronted with decision-making situations involving uncertainty, my firm -----</i>									
16)	Typically adopts a cautious, “wait and see” approach in order to minimize the probability of making costly decision	1	2	3	4	5	6	7	Typically adopts a bold, aggressive approach in order to maximize the probability of exploiting potential opportunities

III. Performance

Firm performance									
17)	<i>How does your firm compare to competitors regarding the following aspects? Profitability and employment growth</i>	1	2	3	4	5	6	7	
Marketing and sales performance									
18)	<i>How does your firm compare to its competitors</i>	1	2	3	4	5	6	7	

	<p><i>with regards to the following aspects of marketing and sales?</i></p> <p>Average market share growth, Average sales volume (units) growth, Average turnover growth</p>								
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Production performance

19	<p><i>How does your firm compare to its competitors with regards to the following aspects of production?</i></p> <p>Percentage of defects, Cost per operation, Capacity utilization, Range of products and services, Utilization of economic order quantity</p>	1	2	3	4	5	6	7	
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Research and development performance

20	<p><i>How does your firm compare to its competitors with regard to the following aspects of Research and Development (R&D)?</i></p> <p>Customer satisfaction/market response, % of products succeeding in the market, Professional esteem to customers, Number of</p>	1	2	3	4	5	6	7	
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<p>products/projects completed, Speed, behavior of people involved in R&D activities, Creativity/innovation level, Profit due to R&D, Market share gained due to R&D</p>								
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