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**ANTECEDENTS OF INTRAPRENEURSHIP ON FIRM
PERFORMANCE**

Master's Thesis

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Tartu 2023

We have written this Research paper/Bachelor Thesis independently. Any ideas or data taken from other authors or other sources have been fully referenced.

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Abstract

This paper investigates the relationship between intrapreneurial antecedents, namely risk-taking, innovativeness, and proactiveness, on firm performance in the manufacturing and services sectors of Estonia and Pakistan, in both the private and public sectors. A questionnaire-based survey approach was employed in this study to obtain data from 101 individuals in Pakistan and Estonia. The survey was conducted online, with Google Forms as the medium. This study's participants were chosen via convenient sampling. Given the study's time and resource restrictions, this sampling methodology was chosen as the most practical and feasible way of data collection. After gathering the data, various statistical methods, such as descriptive statistics, correlation tests, and OLS regression analysis, were used to investigate the relationships among the variables. The research results indicate a significant positive relationship between the antecedents of intrapreneurship and the overall performance of the firm. Among these factors, proactiveness emerges as the most influential predictor. The findings underscore the significance of cultivating intrapreneurial characteristics within firms to improve their efficacy and competitiveness in the worldwide marketplace. The present research provides significant perspectives for individuals in managerial positions, policymakers, and scholars who aim to comprehend the significance of intrapreneurship in the success of firms as well as the elements that enhance firm performance.

Introduction

The present-day business landscape is characterized by dynamic changes, which pose significant challenges to organizations, including heightened competition and unpredictability. In order to maintain a competitive edge, corporations need to consistently engage in innovative practices and remain adaptable to evolving challenges. Promoting intrapreneurship is a viable approach to cultivating innovation and adaptability within organizations. Intrapreneurship involves the deliberate cultivation of entrepreneurial attitudes and behaviors within an existing organization. The concept of intrapreneurship has garnered noteworthy interest in the modern era owing to its capacity to propel organizational efficacy, expansion, and competitiveness. The cultivation of entrepreneurial behavior within established firms, known as intrapreneurship, has received considerable attention from both researchers and practitioners due to its potential benefits.

Bolton and Lane (2012) conducted a seminal study in this field, wherein they identified three antecedents of intrapreneurship, namely risk-taking, innovativeness, and proactiveness. The aforementioned dimensions are crucial in encapsulating the fundamental elements of entrepreneurial conduct. Fostering these dimensions within organizations has the potential to yield positive consequences.

Our study adheres to the model suggested by Bolton and Lane, which identifies Risk-taking, Innovativeness, and proactiveness as key dimensions to measure intrapreneurship. However, it is noteworthy that multiple researchers have identified additional dimensions of intrapreneurship, thereby highlighting the complicated and broad character of the construct. The aforementioned antecedents are crucial in cultivating a culture that espouses entrepreneurial activities, which ultimately results in enhanced organizational performance.

The construct of firm performance is intricate and encompasses a wide range of financial and non-financial aspects. The research conducted by Slater and Narver (1994) and Kivipõld and Vadi (2010, 2013) demonstrates the importance of understanding the factors that influence firm performance, such as leadership capability and market orientation. Through an extensive examination of these variables, organizations can formulate procedures to improve their efficacy and edge in the marketplace.

The literature on intrapreneurship and firm success has provided useful insights into the relationship between the two variables. However, most studies in this field have concentrated on developed nations and larger enterprises (Calantone et al., 2006).

Moreover, while some studies have examined the impact of intrapreneurship on firm performance, others have focused on the factors that affect intrapreneurship in companies operating in emerging economies. For example, Teeratansirikool et al. (2013) conducted a mail survey of listed companies in Thailand in 2009, but such multi-country studies are rare in the international marketing literature. For instance, the purpose of Shaukat, Nawaz, and Naz's (2013) study is to investigate the effects of different types of innovation, such as product, process, marketing, and organizational innovation, on various aspects of firm performance, such as innovative, production, marketing, and financial performance, in Pakistani manufacturing companies, without comparing the data to any other country. Therefore, the literature on the relationship between intrapreneurship and firm success in emerging market economies, such as Pakistan, and developed countries, like Estonia, needs further development. Furthermore, there is a dearth of quantitative studies that investigate the relationship between intrapreneurship and firm performance, especially between Pakistan and Estonia. While entrepreneurship theories have a strong emphasis on developed economies, their applicability to emerging economies is largely unknown. For instance, Johanna de Villiers-Scheepers (2012) aimed to illustrate how the antecedents of strategic corporate entrepreneurship influence the entrepreneurial intensity of emerging market firms in South Africa. Most studies have relied on qualitative data to investigate this association (Phan et al., 2015), which may limit the generalizability of their findings. Thus, this study seeks to address these gaps in the literature by conducting a quantitative investigation of the relationship between intrapreneurship and firm performance in Estonia and Pakistan.

The purpose of this study is to expand the current body of knowledge on intrapreneurship by directing attention toward two contexts, namely Estonia and Pakistan. This approach will help foster a more thorough comprehension of the phenomenon in diverse cultural and economic conditions. This research aims to fill a significant gap by investigating the relationship between intrapreneurial antecedents, specifically risk-taking, innovativeness, and proactiveness, and the performance of firms operating in the manufacturing and services

sectors in Estonia and Pakistan, both in the private and public sectors. While earlier research has investigated the relationship between intrapreneurship and performance, this relationship has yet to be analyzed using data from Estonia and Pakistan. Furthermore, past studies have primarily used qualitative research methods, but this study used a quantitative survey methodology. This study intends to provide significant perspectives for managers, policymakers, and scholars who are interested in understanding the role of intrapreneurship in the success of an organization and the elements that enhance firm performance by analyzing the effects of these antecedents on firm performance. The study intends to add to the existing body of information on intrapreneurship by focusing on two contexts: Estonia and Pakistan. This method will aid in a more full understanding of the phenomenon in a variety of cultural and economic contexts.

CERCS Code, S190 Management of Enterprise

The Objective of the Study:

The primary goal of this study is to investigate the relationship between intrapreneurial antecedents and firm performance. We aim to find out how risk-taking, innovativeness and proactiveness influence the formation of intrapreneurial activity within firms and its impact on firm performance.

Research Questions:

1. How does Intrapreneurship dimensions (innovativeness, proactiveness, and risk-taking) contribute to firm performance?
2. To what extent do the controlled variables (gender, education, firm categorization, and country of residence) impact the relationship between intrapreneurship and firm performance?

1. Literature Review

1.1 Intrapreneurship

Intrapreneurship is defined as the process through which employees within an organization engage in entrepreneurial activities, displaying behaviors such as innovation, proactiveness, and risk-taking (Bolton and Lane, 2012). Intrapreneurship involves the development and implementation of innovative ideas, products, or processes within the context of an existing organization. It is characterized by employees taking the initiative to identify and exploit opportunities, much like entrepreneurs in a startup setting. By fostering a culture of intrapreneurship, organizations can harness the creativity and innovative potential of their workforce, leading to improved competitiveness, growth, and overall success (Bolton and Lane, 2012). There is growing literature on intrapreneurship, and numerous researchers have investigated its antecedents and aspects. Table 1 shows the definition of Intrapreneurship defined by different authors.

Table 1
Definitions of Intrapreneurship

Author	Conceptual Definitions
Zahra, (1991)	“Intrapreneurship (corporate entrepreneurship) is the process of creating new business ventures within an existing organization, as well as promoting innovation and strategic renewal.”
Hornsby, Kuratko and Zahra, (2002)	“Intrapreneurship (corporate entrepreneurship) involves the development of new business ideas, innovations, and ventures within an existing organization.”
Antoncic, and Hisrich,(2001)	“Intrapreneurship is defined as a set of entrepreneurial activities undertaken within an existing organization, encompassing the development of new products, services, technologies, or processes.”

Kuratko, Montagno, and Hornsby, (1990)	“Intrapreneurship refers to the process of initiating and implementing innovative ideas, products, services, and processes within an existing organization.”
Bolton, and Lane,(2012)	“Intrapreneurship is defined as the act of initiating and implementing innovative ideas within a company, much like an entrepreneur would do in a startup.”

Source: prepared by the authors

Table 1 shows different definitions of Intrapreneurship, and as per the above-mentioned research, Zahra (1991) explores the link between intrapreneurship, often known as corporate entrepreneurship, and firm performance. The study emphasizes the need to create an entrepreneurial climate within firms to get a competitive advantage. The author discovers a positive connection between intrapreneurship and firm performance, meaning that companies can gain by implementing new initiatives, encouraging innovation, and pursuing internal strategic renewal.

Hornsby, Kuratko, and Zahra (2002) investigate the impact of organizational characteristics on intrapreneurship or corporate entrepreneurship. Their research reveals important intrapreneurial activity factors, including management support, autonomy, rewards, and resources. According to the study, firms should focus on these aspects to encourage intrapreneurial activities, leading to improved innovation and overall corporate success.

Antoncic and Hisrich (2001) concentrate on developing and validating a multidimensional scale for measuring intrapreneurship across diverse cultural contexts. The authors show that intrapreneurship is a universal notion and that businesses can support intrapreneurial activity regardless of their cultural environment. This study underlines the significance of intrapreneurship in generating innovation and growth in firms worldwide.

Kuratko, Montagno, and Hornsby (1990) investigate the importance of top management support in encouraging organizational intrapreneurship. Their research discovered that when middle managers receive encouragement and support from upper management, they are more likely to engage in intrapreneurial activities. This study emphasizes the importance of

leadership in fostering an environment appropriate for innovation and intrapreneurship.

Bolton and Lane (2012) create an instrument to assess individual entrepreneurial inclination and investigate its implications for intrapreneurial activities. The writers stress the importance of individual employees in developing and implementing creative ideas within a company, like what an entrepreneur would do in a startup. This study adds to our understanding of the elements that motivate individuals to engage in intrapreneurial activities and foster organizational innovation.

A common theme linking the studies by Zahra (1991), Hornsby et al. (2002), Antoncic and Hisrich (2001), Kuratko et al. (1990), and Bolton and Lane (2012) is the critical role of fostering an entrepreneurial environment within organizations to drive innovation, growth, and ultimately, enhance firm performance. These studies collectively investigate various aspects of intrapreneurship, such as organizational factors influencing intrapreneurial activities, the role of top management support, and the development of measurement scales for intrapreneurship. The research consistently demonstrates that intrapreneurship, or corporate entrepreneurship, can be a significant source of competitive advantage for companies, emphasizing the importance of understanding the conditions and factors that enable organizations to effectively promote intrapreneurial initiatives across diverse cultural contexts and industries.

1.2 Antecedents of Intrapreneurship

Several studies have looked into the factors that drive intrapreneurship, highlighting the importance of factors such as top management support, organizational culture and structure, individual and organizational factors, and environmental factors (Kuratko, Montagno, & Hornsby, 1990; Hornsby, Kuratko, & Zahra, 2002; Antoncic & Hisrich, 2001; Langkamp Bolton & Lane, 2012). These antecedents are critical in motivating employees to participate in intrapreneurial activities, leading to improved creativity and success for the company. Organizations may build an atmosphere conducive to intrapreneurship and capitalize on the benefits of internal innovation and entrepreneurial activities by recognizing and fostering these antecedents.

The study of Bolton and Lane focused on the individual entrepreneurial orientation construct and identified innovativeness, proactiveness, and risk-taking as the key dimensions of intrapreneurship. Their research contributes to our understanding of the factors that encourage employees to engage in intrapreneurial activities and drive innovation within organizations, emphasizing the importance of fostering an environment that supports individual entrepreneurial orientation.

Different researchers have used different studies to measure intrapreneurship. Kuratko & Montagno, 1990 have identified Top management support, organizational culture, and organizational structure as key dimensions of intrapreneurship; meanwhile, Kuratko, & Zahra, 2002 have highlighted management support, Autonomy, Rewards, and Resources as the key dimension that fosters intrapreneurial activities when focusing on corporate entrepreneurship. However, in our study, we are adopting the dimensions used by Bolton and Lane (2012), which include proactiveness, risk-taking, and innovativeness as a dimension of intrapreneurship.

Risk-taking

Bolton and Lane (2012) define Risk-taking as an organization's willingness to engage in risky ventures, make bold decisions, and assume uncertainty to achieve potential rewards. According to Bolton and Lane, Risk-taking is essential in promoting organizational growth and creating possibilities. They suggest that firms that accept uncertainty and make courageous moves can reap enormous benefits. This viewpoint is consistent with the idea that risk-taking is an essential component of intrapreneurship, which fosters innovation and business growth.

While Covin and Slevin (1991) define Risk-taking as an organization's propensity to take calculated risks, commit significant resources, and enter uncertain markets to attain competitive advantages. According to Covin and Slevin (1991), Risk-taking is essential in promoting organizational growth and creating possibilities. Their study suggests that organizations must take risks to succeed in dynamic and competitive contexts.

Lumpkin and Dess (1996) characterize Risk-taking as a firm's inclination to take bold actions and pursue opportunities with potentially high returns, despite the inherent risks and uncertainty. Their study emphasizes risk-taking as an important part of corporate entrepreneurship, arguing that organizations that take risky acts and seek high-return prospects will be more successful. Their study also highlights the significance of risk-taking in allowing organizations to capitalize on developing market trends and growth prospects.

Innovativeness

Bolton and Lane 2012, define Innovativeness as an organization's capacity to generate, adopt, and implement new ideas, processes, or products that lead to improved performance and market success. According to Bolton and Lane (2012), innovativeness is critical for organizational performance because it shows the ability to generate, adapt, and apply new ideas and processes. Their study emphasizes the significance of cultivating an innovative culture within firms, as it can lead to enhanced performance and market success.

Schumpeter (1934) defines Innovativeness as the introduction of new products or services, new methods of production, new markets, new sources of supply, and new forms of organization. Schumpeter (1934) gives a foundational perspective on innovation, emphasizing its significance in promoting economic growth and progress. Firms that provide new products, services, and organizational structures, according to Schumpeter, can disrupt existing markets and pave the way for new prospects. Their research emphasizes the transformative power of innovation in shaping industries and marketplaces (Schumpeter, 1934). When innovation occurs within an organization, it can lead to an increased level of innovativeness by reinforcing a culture of creativity and experimentation, demonstrating the value of innovation, and building capabilities and expertise (West & Farr, 1990).

Hurley and Hult (1998) define Innovativeness as an organization's orientation toward embracing and supporting creativity, experimentation, and the development of new ideas, products, or processes. Their study underlines the significance of an organization's innovation orientation, emphasizing that encouraging creativity and experimentation can lead to the development of new ideas, products, and processes. According to their findings, businesses that accept and foster innovation can increase their overall performance and competitiveness.

Proactiveness

Bolton and Lane (2012) define proactiveness as an organization's tendency to anticipate and act on future opportunities and changes in the market, there by gaining a competitive advantage According to their study, the authors highlight the fact that in order to prosper in today's changing business climate, it is critical to develop a forward-thinking mindset and capitalize on new market trends (Bolton & Lane, 2012).

Proactiveness is emphasized by Bateman and Crant (1993) as a vital component of

organizational behavior, implying that taking initiative and finding possibilities can lead to success. Their research highlights the importance of proactive action in allowing businesses to negotiate complicated business landscapes and capitalize on development possibilities (Bateman & Crant, 1993).

Lumpkin and Dess (1996) define proactiveness as a firm's forward-looking perspective, characterized by the pursuit of new opportunities and the readiness to seize emerging market trends. Their study emphasizes the importance of proactiveness in encouraging corporate entrepreneurship, stating that organizations that pursue new opportunities and remain ready to capitalize on developing market trends will be more successful.

1.3. Firm Performance

Firm performance refers to the overall effectiveness and efficiency with which a company achieves its strategic objectives and financial goals. It encompasses various dimensions such as profitability, revenue growth, market share, customer satisfaction, innovation, and operational efficiency. Firm performance is a critical indicator of a company's success and sustainability in the competitive business environment. According to Dess, Lumpkin, and Eisner (2017), "Firm performance refers to the relative success or failure of a firm when compared to its competitors and is typically assessed by examining a firm's financial and non-financial metrics"

Firm performance is a significant outcome variable that is influenced by a variety of factors, including the dimensions of intrapreneurship. According to research, intrapreneurial behavior is associated with firm performance (Liu, Wang, & Li, 2010). Furthermore, Intrapreneurial conduct can result in the creation of new products, services, or procedures that raise revenue and profits, improve customer happiness, and strengthen the company's competitive advantage.

Table 2

Definitions of Firm Performance

Author	Conceptual Definitions
Kivipõld, and Vadi,	“Firm performance in this study is defined as the effectiveness and efficiency of an organization in achieving its strategic goals, with a focus on the role of leadership capability in driving

(2010)	performance outcomes.”
Kivipöld, and Vadi, (2013)	“In this study, firm performance is conceptualized as the financial and non-financial outcomes resulting from an organization's market orientation and the influence of leadership capability on these outcomes”.
Kaplan, and Norton, (1996)	“Firm performance is defined through the balanced scorecard framework, which encompasses financial, customer, internal business process, and learning and growth perspectives to provide a comprehensive view of an organization's performance.”
Slater, and Narver, (1994)	“This study conceptualizes firm performance as the result of an organization's market orientation, focusing on creating superior customer value and the competitive advantage it generates”.
Huselid, (1995)	“Firm performance in this study is understood as the operational performance of an organization, with an emphasis on the role of human resource management practices in driving performance differences across countries and industries.”

Source: prepared by the authors

Table 2 shows different definitions of Firm Performance and as per the above mentioned researches elaborates, Kivipold and Vadi (2010) created a framework for assessing organizational leadership capability and its impact on firm performance. The study defines firm performance as an organization's efficacy and efficiency in attaining its strategic goals, with an emphasis on the role of leadership skills in generating performance outcomes. The authors emphasize the importance of effective leadership in influencing organizational performance and offer advice on assessing and enhancing leadership talents.

Kivipold and Vadi (2013) examine the link between market orientation, leadership capability, and company performance. The study defines firm performance as the financial and non-financial outcomes of an organization's market orientation, as well as the impact of leadership skills on these outcomes. The findings show that strong market orientation and effective leadership can increase company performance by better recognizing and satisfying consumer wants, resulting in a competitive advantage.

The balanced scorecard is introduced by Kaplan and Norton (1996) as a framework for the strategic management of information systems and corporate performance. The balanced scorecard framework provides a comprehensive view of an organization's performance by

incorporating financial, customer, internal business process, and learning and growth perspectives. This study emphasizes the significance of having a comprehensive approach to analyzing and managing firm performance, taking into account the numerous variables that contribute to total success.

Slater and Narver (1994) investigate the link between market orientation, customer value, and company performance. The research considers company performance to be the product of an organization's market orientation, with a focus on delivering greater customer value and the competitive advantage it creates. The authors contend that firms with a strong market orientation can outperform their competitors by detecting and meeting customer demands more effectively.

Huselid (1995) studies the impact of human resource management strategies on operational performance while accounting for variances between countries and industries. Firm performance is defined in the study as an organization's operating performance, with an emphasis on the importance of human resource management strategies in driving performance disparities between nations and industries. According to the findings, effective human resource management strategies can increase business performance by matching organizational objectives with employee competencies, motivation, and growth prospects.

1.3.1. Measuring Estonia and Pakistan's Firm Performance

Organizational success and competitiveness are heavily influenced by firm performance (Ahmad & Ali, 2016; Kuuluvainen & Sintonen, 2020). The achievement of organizational goals and objectives is frequently referred to as "firm performance," and it can be measured using a variety of approaches (Garca-Sánchez et al., 2019). These methods can be divided into financial and non-financial measures (Kivipold and Vadi, 2013). Profitability, return on investment, and sales growth are standard financial variables used to analyze corporate performance (Menguc et al., 2019). The current study used non-financial metrics such as customer happiness, employee engagement, and innovation output (Santos et al., 2019) to determine the association between innovation and firm performance. However, evaluating firm performance is complex due to issues related to data availability, comparability, and reliability (Ahmad & Ali, 2016).

Return on assets (ROA) and return on equity (ROE) are the most often used financial

indicators to evaluate firm performance in Estonia and Pakistan, respectively (Ameer et al., 2018; Kuuluvainen & Sintonen, 2020). In Estonia, other financial measurements employed include net profit margin and asset turnover (Kuuluvainen & Sintonen, 2020), but in Pakistan, sales growth and market share are also important indicators of performance (Ameer et al., 2018). Non-financial criteria, such as employee satisfaction, community participation, and ethical behavior, are being used to assess organizational sustainability (Tami, Anna, & Gaia, 2021).

For example, in technology-related businesses, a firm's innovation output or digital skills may be given greater weight than traditional financial indicators (Ministry of Economic Affairs and Communications, 2021, E-Estonia). In contrast to the Estonian market, Pakistan has a high unemployment rate that impacts both developed and developing countries. Using Pakistan as a case study, the research investigates the causes of unemployment, including population growth rate, inflation rate, foreign direct investment, and GDP growth rate. Between 1999 and 2010, data from the Pakistan Economic Survey and the IFS were analyzed using linear regression modeling. The article states that unemployment in Pakistan was high between 2000 and 2006 and identifies key variables driving the country's unemployment rates (Arslan, and Zaman (2014). We used non-financial measure data from Estonian and Pakistani infrastructures for the elements above for both Estonian and Pakistani technology or digital skills and employment rate. Our study polled the projected questionnaire on firm performance based on the studies of Kivipold and Vadi.

To summarize, evaluating firm performance is critical to organizational success and competitiveness. Although financial measurements such as return on assets and return on equity are widely employed in countries such as Estonia and Pakistan, non-financial variables such as customer satisfaction, staff engagement, and innovation output also play an essential part in evaluating firm performance. When assessing performance, it is critical to consider cultural and contextual elements such as the emphasis on relationships in Pakistan and the technology improvements in Estonia. This study aims to provide a comprehensive understanding of the factors that contribute to organizational success and competitiveness by focusing on Estonia and Pakistan together and using non-financial measures to assess firm performance while also emphasizing the importance of considering regional variations and context-specific factors.

1.4. Intrapreneurship and Firm Performance

Intrapreneurship is gaining prominence as a way for firms to stay competitive in a rapidly changing business environment. According to the above-mentioned studies, innovativeness, taking risks, and proactiveness increase the likelihood of becoming an entrepreneur while decreasing the likelihood of becoming an employee, highlighting the importance of these characteristics in stimulating innovation and new creations. As a result of the increased interest in examining the relationship between intrapreneurship and firm performance, intrapreneurship has been highlighted as a tool for businesses to encourage innovation and generate new revenue streams Knörr, Alvarez, and Urbano (2013). Tables 3 and 4 explore the studies by various authors that explore the relationship between intrapreneurship and firm performance, highlighting the key findings and analyses from these studies.

Table 3

Studies with a somewhat positive relationship between intrapreneurship and firm performance

Author	Conceptual Definitions
Antoncic and Hisrich (2001).	“Found a positive relationship between intrapreneurship and firm performance, highlighting the importance of intrapreneurial activities for organizational success in various industries”/
Zahra and Covin (1995)	“Established that manufacturing firms with higher levels of intrapreneurship experienced better performance, emphasizing the role of innovation and risk-taking in driving firm success”.
Kuratko, Montagno, and Hornsby, (1990)	“Identified that intrapreneurship positively influenced firm performance across diverse industries, reinforcing the idea that fostering an entrepreneurial culture can lead to better organizational outcomes”.
Bolton and Lane, (2012)	“Confirmed a positive relationship between intrapreneurship and firm performance, emphasizing the importance of proactiveness, risk-taking, and innovativeness as key dimensions of intrapreneurship”
Hayton, (2005)	“Showed that knowledge-intensive firms with higher levels of intrapreneurship had better performance, suggesting that intrapreneurial activities can drive competitive advantage in knowledge-based industries.”

Source:Preparedbyauthor

Table 3 shows some positive findings on firm performance and intrapreneurship and to further discuss, Antoncic and Hisrich (2001) investigated the association between intrapreneurship and firm performance in various industries in Slovenia. Their findings demonstrated a positive link, highlighting the significance of intrapreneurial efforts in firm's success. This study adds to our understanding of how cultivating an entrepreneurial culture within a company can lead to improved performance across all industries, underlining the importance of intrapreneurship in various circumstances.

Zahra and Covin (1995) investigated the impact of intrapreneurship on company performance in the US manufacturing industry. Their findings revealed that organizations with higher degrees of intrapreneurship performed better. This study underlines the importance of risk-taking and innovation in driving business success in the manufacturing industry, implying that intrapreneurship might be a significant strategic tool.

In the United States, Knight (1997) did a study on the relationship between intrapreneurship and firm success in high-tech industries. The findings revealed a positive link, demonstrating the importance of an entrepreneurial mindset for firm growth in technology-driven industries. This study emphasizes the importance of intrapreneurship in high-tech sectors, where ongoing innovation and flexibility are required to maintain a competitive edge.

Kuratko, Montagno, and Hornsby (1990) conducted a study in the United States to investigate the impact of intrapreneurship on business performance across several industries. Their findings demonstrated a positive link, supporting the notion that cultivating an entrepreneurial culture within a company can lead to improved organizational outcomes. This research contributes to a better understanding of intrapreneurship as a viable strategic option for businesses of all sizes and, demonstrates its potential to enhance performance.

Bolton and Lane (2012) measured individual entrepreneurial preference and investigated its relationship to firm performance. Their research found a link between intrapreneurship and a firm's success, emphasizing the need for proactiveness, risk-taking, and innovation as crucial aspects of intrapreneurship. This research adds to our understanding of how individual entrepreneurial orientation, manifested through intrapreneurial actions within a company, can generate organizational success. Bolton and Lane's dimensions give a complete frame-work for analyzing intrapreneurship that can be applied across industries and situations. Hayton (2005) investigated the impact of

intrapreneurship on firm performance in knowledge-intensive industries in the United Kingdom. The findings indicated that organizations with higher levels of intrapreneurship performed better, implying that intrapreneurial activities can promote competitive advantage in knowledge-based industries. This study emphasizes the significance of intrapreneurship in industries where knowledge and innovation are essential to success, emphasizing its ability to contribute to firm performance in these situations.

Table 4

Studies with a somewhat negative relationship between intrapreneurship and firm performance.

Author	Conceptual Definitions
Rauch et al.(2009)	“This meta-analysis reported mixed results, including some studies that found a negative relationship between certain dimensions of intrapreneurship and firm performance”
Covin and Slevin, (1991)	“This study found a negative relationship specifically between risk-taking, a dimension of intrapreneurship, and firm performance in high-tech industries”

Source: prepared by the authors

As Table 4 shows a negative relationship and Rauch et al. (2009) examined the association between intrapreneurship and firm performance through a meta-analysis of diverse studies. Their findings were inconsistent, with some research revealing a favorable relationship, others revealing a negative relationship, and still others revealing no relationship at all. The inconsistency of the findings could be due to the numerous elements of intrapreneurship studied in each study, as well as the individual sector and nation circumstances. This demonstrates the complexities of the relationship between intrapreneurship and company performance, implying that the influence of intrapreneurial actions may differ based on the unique context and characteristics under consideration.

Covin and Slevin (1991) investigated the relationship between intrapreneurship and firm performance in the United States’ high-tech industry. Their research discovered a negative association between one of the aspects of intrapreneurship, risk-taking, and firm performance. This finding shows that excessive risk-taking in high-tech industries may have a negative

impact on firm performance, as it can result in costly failures or unjustified investments. This conclusion emphasizes the necessity of balancing risk-taking with other aspects of intrapreneurship, like creativity and proactiveness, to positively impact business performance.

When all of these similarities are considered together, they show that intrapreneurship can be a valuable strategic tool for enterprises in a variety of industries and circumstances, provided that organizations promote an entrepreneurial culture that values innovation, risk-taking, and proactiveness.

While the majority of research revealed a positive association between intrapreneurship and company success, one study by Covin and Slevin (1991) discovered a negative relationship between risk-taking and firm performance in high-tech industries, highlighting the need of balancing risk-taking with other aspects of intrapreneurship. This emphasizes the importance of considering the interplay of multiple elements of intrapreneurship, as excessive risk-taking can have a negative impact on business performance, as demonstrated by Covin and Slevin's (1991) study. This indicates the importance of considering different methodological approaches to gain a more complete understanding of the complex relationship between intrapreneurship and firm performance.

1.4.1. Risk-Taking and Firm Performance

Directing our focus to the relationship of each key dimension of intrapreneurship with firm performance and starting with Risk-taking. It is consistently associated with intrapreneurship (Mitra & Jenkins, 2019). Employees willing to take risks are likelier to develop novel ideas and participate in entrepreneurial and innovative activities Venketsamy and Lew,(2022). Some research, however, has discovered that excessive risk-taking can contribute to poor firm performance if it results in failure or financial losses (Bull & Willard, 1993).

The aforementioned studies have highlighted that employees that are willing to take risks in the workplace are more likely to generate and implement innovative ideas that can result in new products or services, increased efficiency, and enhanced organizational performance. It is crucial to highlight, however, that taking risks must be balanced with prudence and concern for potential negative results.

Table 5 combines various studies that have highlighted the relationship of risk-taking with firm performance, it includes studies that demonstrate the positive and negative

relationship of Risk-taking with performance.

Table 5

Risk-taking and Firm Performance Relationship.

Studies Suggesting Risk-Taking Has Positive Effect	Studies Suggesting Risk-Taking Has Negative Effect
Bolton, & Lane, (2012) study shows the relationship between risk-taking and firm performance is complex and may be influenced by various factors such as organizational culture, industry, and market conditions.	Covin, & Slevin, (1991) study found a negative relationship between risk-taking and firm performance in high-tech industries in the United States. The study suggests that excessive risk-taking may have detrimental effects on firm performance, as it can lead to costly failures or unwise investments.
Employees that are willing to take risks are more likely to come up with creative concepts and get involved in entrepreneurial and innovative activities Venkatesamy, and Lew, (2022).	Zhang, & Aumeboonsuke, (2022) illustrates the relationship between technical innovation, risk-taking, and firm performance in Chinese firms. It highlights the importance of technical innovation in establishing core competitiveness and enhancing economic performance but stresses that taking excessive risks may result in a loss of performance.
Miller, (1983), Risk-taking positively influences firm performance by fostering innovation and enabling firms to capitalize on new opportunities. However, the relationship between risk-taking and performance may vary depending on the firm's strategic orientation and industry context.	Van Wesep, & Wang, (2014) study shows Executives with poor prior performance are inclined to take excessive risk in the hope of meeting performance targets. The study has shown that severance can induce managers to take positive NPV risks, we show that it can also keep them from taking negative NPV risks.

Source: Prepared by authors

Bolton and Lane (2012) created a measurement instrument for individual entrepreneurial orientation (IEO) in their study, which incorporates risk-taking as one of its aspects. The study's primary goal was to establish this measurement tool rather than to investigate the direct association between risk-taking and firm performance. The authors do acknowledge, however, that the relationship between risk-taking and firm success is complicated since it can be influenced by a variety of factors such as organizational culture, industry, and market conditions. The study underlines the need for risk-taking actions inside businesses being managed in order for them to contribute to enhanced firm performance.

Covin and Slevin's (1991) research focuses on the relationship between risk-taking and a firm's performance in the United States high-tech industry. Their findings show a negative association between risk-taking and firm performance, implying that excessive risk-taking might be detrimental to a firm's performance. This could be due to costly failures or rash investments caused by excessive risk-taking. To attain optimal firm performance, the study emphasizes on the significance of balancing risk-taking and other entrepreneurial drive elements.

Miller's 1993 research developed an entrepreneurial orientation model that includes risk-taking as a crucial factor. According to the study, risk-taking improves corporate performance by encouraging innovation and allowing organizations to capitalize on new opportunities. However, the link between risk-taking and performance may differ depending on the firm's strategic orientation and the industrial setting. Miller's research emphasizes the importance of managing and balancing risk-taking with other aspects of entrepreneurial orientation, such as proactiveness and innovation, to achieve optimum results for a firm's success.

The study conducted by Van and Wang (2014) suggests that executives with poor prior performance may be more likely to take excessive risks in order to meet performance targets. Additionally, the study indicates that severance, or the threat of losing their job, may influence managers to take positive net present value (NPV) risks but also deter them from taking negative NPV risks. This finding implies that severance can have a dual effect on managerial risk-taking behavior, depending on the type of risks involved. Further examination of the study's methodology, sample size, and other relevant factors would be necessary to fully assess the validity and reliability of these findings.

Zhang & Aumeboonsuke (2022) support the argument and shows the relationship between technical innovation, risk-taking, and company performance in Chinese firms. It emphasizes the importance of technological innovation in achieving core competitiveness and boosting economic performance but adds that taking excessive risks may result in a loss in performance. The article also explores the complicated relationship between creativity and performance, with some experts discovering a negative association. Zhang's study highlights the antagonistic relationship between Risk-taking, technological innovation, and firm performance but also suggests improving modern enterprise systems by reducing market and

technical Risk to improve performance growth. Finally, the study underlines the importance of firms prioritizing the conversion rate of innovation successes in order to achieve sustainable development.

Analyzing the above mentioned studies on Risk-taking, all the research supporting the positive impact of Risk-taking on firm performance implies that taking risks can improve firm performance. They emphasize the importance of taking risks in creating innovation, allowing businesses to capitalize on new opportunities, and encouraging entrepreneurial and inventive activity. Furthermore, all studies accept that the relationship between risk-taking and firm performance is complex and that it can be influenced by a variety of factors, including organizational culture, industry, and market conditions. They underline the importance of considering the organization's strategic orientation as well as the industry backdrop when measuring the influence of risk-taking on firm performance. Overall, these studies indicate that risk-taking can be a helpful tool for organizations seeking long-term success, but it must be balanced with a thorough analysis of the potential risks and rewards.

While the studies that analyzed the potential negative effects of excessive risk-taking on firm performance differ in their specific focus, such as high-tech sectors in the US (Covin & Slevin, 1991), Chinese enterprises (Zhang & Aumeboonsuke, 2022), and executive decision-making (Van Wesep & Wang, 2014), they collectively emphasize the complexities and potential risks associated with excessive risk-taking. While risk-taking can foster innovation and entrepreneurship, these studies caution that taking on too much risk can lead to costly failures, injudicious investments, and a loss of performance. Organizations should carefully consider the balance between risk-taking and risk management in order to optimize their performance and achieve sustainable success.

1.4.2. Innovativeness and Firm Performance

Akgün et al. (2007) study discovers that the firm's learning capability is composed of system perspective, openness and managerial commitment highly depends on the firm's level of emotional capability which includes displaying freedom and reconciliation. Indicating that a firm's emotional capability influences its product innovativeness.

Table 6

Key Findings on Innovativeness and Firm Performance

Author	Conceptual Definitions
Hurley and Hult (1998)	“Found that innovativeness has a positive relationship with firm performance. The study highlights the importance of an innovative culture within organizations to enhance adaptability, responsiveness, and ultimately, better firm performance”.
Rosenbusch et al. (2011)	“Conducted a meta-analysis of the relationship between innovativeness and firm performance, showing that the relationship is generally positive. However, the strength of this relationship depends on the firm size, industry, and level of environmental turbulence”.
Calantone et al. (2002)	“Found that a firm's innovative capability significantly influences its performance, especially in dynamic and uncertain market environments. The study emphasizes that firms with strong innovative capabilities are better equipped to handle market uncertainties”
Bolton and Lane (2012)	“The study suggests that individual entrepreneurial orientation, including innovativeness, has a positive relationship with firm performance. The authors argue that fostering intrapreneurial behaviors, such as innovation, within a firm can contribute to better performance”

Source: Prepared by authors

Table 6 highlights studies of various authors that have analyzed the relationship between Innovativeness and Firm Performance. In their study, Hurley and Hult (1998) discovered a favorable association between innovativeness and firm performance. They stressed the significance of developing an innovative culture within organizations to improve adaptability, responsiveness, and firm performance. According to the authors, companies that support innovation are more likely to create new goods, services, or processes, which add to their competitive advantage and overall success. According to their study, firms must invest in creating an atmosphere that supports and stimulates innovation to achieve corporate success.

Rosenbusch et al.(2011) did a meta-analysis of the association between innovativeness and firm performance, incorporating information gathered from industries, nations, and circumstances. Their findings revealed a positive association between innovativeness and a

firm's performance. However, the intensity of this link is determined by factors such as business size, industry, and the level of environmental volatility. For example, smaller organizations and those working in more volatile contexts have a more significant positive association between innovativeness and performance. This study emphasizes the importance of organizations considering their unique setting when investing in and managing their creative initiatives (Rosenbusch, Brinckmann, & Bausch, 2011).

Calantone (2002), explored the relationship between a firm's innovative capability and efficiency, particularly in rapidly evolving and uncertain market settings. Their findings suggest that organizations with highly innovative capabilities are better positioned to deal with market uncertainty and achieve excellent performance. According to the authors, innovative capability provides a competitive advantage by allowing enterprises to adapt to changing market conditions, capitalize on new possibilities, and outperform their competitors. This study emphasizes the need for firms to build and maintain a strong innovation capability to drive success in uncertain and fast-moving markets (Calantone, Cavusgil, & Zhao, 2002).

In their research, Bolton and Lane explored the relationship between individual entrepreneurial mindsets, including innovativeness, and firm performance. Their findings indicate a positive link between the two variables. According to the authors, organizations can improve performance by encouraging intrapreneurial activities such as innovation. The research emphasizes the significance of enabling employees to participate in innovative and entrepreneurial activities within the firm. Firms can improve their ability to adapt to changes, capitalize on opportunities, and achieve excellent performance by cultivating an atmosphere encouraging intrapreneurship (Bolton & Lane, 2012).

The studies conducted by Hurley and Hult (1998), Rosenbusch et al. (2011), Calantone (2002), and Bolton and Lane collectively highlight the positive association between innovativeness and firm performance. These studies highlight that in order to improve adaptability, responsiveness, and overall performance, firms need to foster innovativeness and comprehend its importance in the ever-changing business environment. Companies that invest in creating an environment that supports and stimulates innovation are more likely to achieve a competitive advantage and corporate success.

1.4.3. Proactiveness and Firm Performance

Xue et al., (2017) investigate how management incentives may motivate enterprises to take a proactive strategic stance to incorporate more information technology (IT) than competitors. As a basis of alliance management capacity, alliance proactiveness enables organizations to respond faster to emerging opportunities and obtain first-mover benefits. (Kiss et al., 2021) know little about how anticipatory activity and outcome-oriented solid components, such as proactiveness, impact company innovation, and success. (Kiss et al., 2021) investigate the link between CEO proactiveness, three aspects of organizational innovation, and the impact on firm performance.

Table 7 *Relationship between Proactiveness and Firm Performance*

Author	Conceptual Definitions
Lumpkin and Dess (1996)	“Found a positive relationship between proactiveness and firm performance. Proactive firms that anticipate and act on future market opportunities tend to outperform their competitors in terms of growth, profitability, and market share”.
Wiklund and Shepherd (2005)	“Showed that proactiveness positively influences firm performance, especially in dynamic and competitive environments. The study emphasizes the importance of firms being proactive to seize opportunities and gain a competitive advantage.”
Kreiser et al. (2002)	“Found a positive relationship between proactiveness and firm performance. Proactive firms are more likely to create and exploit opportunities, leading to higher growth and profitability compared to their less proactive counterparts”
Bolton and Lane (2012)	“The study suggests that individual entrepreneurial orientation, including proactiveness, has a positive relationship with firm performance. The authors argue that fostering intrapreneurial behaviors, such as proactiveness, within a firm can contribute to better performance”.
Bateman and Crant (1993)	“Proactive individuals perform better in their jobs and achieve higher levels of career success, implying that proactive behavior can positively impact performance outcomes”.

Source: prepared by the authors

Table 7 focuses on the key findings of authors that have highlighted the relationship between Proactiveness and Firm Performance. As Bolton and Lane (2012) investigated the relationship between individual entrepreneurial orientation, including proactiveness, and firm performance. Their findings suggest that there is a positive relationship between the two variables. According to the authors, firms can improve their overall performance when they foster intrapreneurial behaviors such as proactiveness. The study highlights the importance of encouraging employees to engage in proactive and entrepreneurial activities within the organization. By nurturing an environment that supports intrapreneurship, organizations can enhance their ability to adapt to changes, capitalize on opportunities, and ultimately, achieve better performance (Bolton & Lane, 2012).

In their study, Lumpkin and Dess investigated the relationship between proactiveness and firm performance. They discovered a positive correlation with proactive enterprises that anticipate and capitalize on future market opportunities outperforming their competitors in growth, profitability, and market share. The study emphasizes the relevance of proactiveness as an essential part of entrepreneurial orientation, which contributes to the increased firm performance by helping firms to adapt to market demands and capture opportunities (Lumpkin & Dess, 1996).

Wiklund and Shepherd's (2005) research found that proactiveness had a favorable impact on firm performance, particularly in rapidly changing, highly competitive environments. They stressed the need for enterprises to take proactive steps to capitalize on possibilities and achieve a competitive advantage. According to their research, firms that foster proactiveness as part of their entrepreneurial orientation are better suited to manage complicated market conditions and achieve exceptional performance.

Kreiser et al (2002) identified a favorable association between proactiveness and company success. They determined that proactive firms are likelier than less militant organizations to create and exploit opportunities, resulting in higher growth and profitability. This study supports the idea that proactiveness is essential to entrepreneurial orientation, allowing businesses to recognize and explore possibilities that lead to higher performance (Kreiser et al., 2002).

Bateman and Crant (1993) studied the effect of proactivity on individual work performance and career achievement. While their research focused on individual proactiveness

rather than organizational proactiveness, they discovered that proactive persons were likelier to perform better in their employment, earn promotions, and achieve higher levels of professional success. Their study suggests that proactive behavior can have a favorable impact on performance results, which could be extended to organizations with an entrepreneurial orientation that is proactive.

The studies by Lumpkin and Dess (1996), Wiklund and Shepherd (2005), Kreiser et al. (2002), Bolton and Lane (2012), and Bateman and Crant (1993) collectively highlight the positive relationship between proactiveness and firm performance. Their findings highlight that individuals and firms who display proactiveness tend to outperform their competitors or their work fellows in terms of growth, profitability, and market share, and are more likely to create and exploit opportunities. The findings indicate the importance of fostering proactiveness within firms to achieve better firm performance.

2. Methodology

2.1 Sample description

The study sample was conducted in Estonia and Pakistan to explore the relationship between Antecedents of Intrapreneurship (Risk-taking, Innovativeness, and Proactiveness) with Firm Performance. The data collection focused on employees working in the manufacturing and services sector, these sectors are further divided into public and private firms. The convenient sampling technique was used, and the sample consists of 101 respondents. The sampling study used a survey research design questionnaire to gather the data from Pakistan and Estonia. Table 8 shows the characterization of the respondents based on the parameters shown below.

Table 8

Participants' characteristics and their information

Characteristic	Percentage
Manufacturing Industry	87.4%
Services Industry	12.6%
Country of Residence	Estonia 50.5%, Pakistan 41.7%
Public Sector Firms	27.2%

Private Sector Firms	72.8%
Work Experience	0-2 years 34%, 2-5 years 30.1%, 5-7 years 15.5%, More than 7 years 20.4%
Education	High school 11.7%, Bachelor's 40.8%, Master's 44.7%, Ph.D. 1.9%
Gender	53.9% male, 46.1% female.

Source: Prepared by authors

Table 8 outlines the participants' characteristics in the study, showing that the majority (87.4%) were from the manufacturing industry, while 12.6% were from the services industry. The respondents were primarily from Estonia (50.5%) and Pakistan (41.7%) and included employees from both public (27.2%) and private (72.8%) sector firms. The work experience of participants was distributed across four categories: 0-2 years (34%), 2-5 years (30.1%), 5-7 years (15.5%), and more than 7 years (20.4%). In terms of education, the majority held Bachelor's (40.8%) or Master's degrees (44.7%), with a smaller percentage having a high school education (11.7%) or Ph.D. (1.9%). The sample comprised 53.9% males and 46.1% females.

2.2 Procedure for data collection and Measures

The data was collected over a period of 30 days focusing on participants from Estonia and Pakistan. The respondents were approached through email and online social platforms including LinkedIn. The study participants responded to a survey about their innovativeness, proactiveness, risk-taking, and firm performance. In total, we used four measuring tools for the questionnaire and used the 5-point scale, where respondents are asked to rate their level of agreement or disagreement with a statement on a scale of 1 to 5, with 1 representing "strongly agree", 2 representing "agree", 3 representing "neutral", 4 representing "disagree" and 5 representing "strongly disagree" for Risk-taking, Innovativeness, and Proactiveness (Bolton and Lane 2012) and Firm Performance (Kivipõld, and Vadi, 2013).

Intrapreneurship Antecedents consist of three measures: Risk-taking (3 questions), Innovativeness (4 questions), and Proactiveness (questions). While Firm performance measure consists of 6 questions. In total 16 questions are used to gather the responses.

Cronbach's alpha was used to assess the internal consistency of the survey items (multiple questions) within each variable. Cronbach's alpha, a generally established indication of internal consistency and scale reliability, is used in our study to examine the reliability of the measurement scales. The table below shows Cronbach's alpha values and sufficient reliability levels, with all variables exceeding the frequently recommended criterion of 0.70 (Nunnally, 1978). This ensures that our findings are valid and robust. All of the variables have Cronbach's alpha equal to or greater than 0.7 (Table 9).

Table 9

Shows Cronbach's alpha for Independent variables (Innovativeness, Risk-taking, Proactiveness) and dependent variable (Firm Performance).

Variable	Cronbach's alpha
Risk-taking	0.70
Innovativeness	0.70
Proactiveness	0.73
Firm performance	0.84

Source: Prepared by authors

The first measure, Risk-taking has a Cronbach's alpha value of 0.70 which has questions related to Boldness, Investment, and Risk-embracing. The second measure, Innovativeness has a Cronbach's alpha of 0.70, which has questions related to Unconventional, Originality, and Experimentation. The third measure, Proactiveness, has a Cronbach's alpha value of 0.73, which has questions related to Anticipation, Planning, and Initiative. The dependent variable, Firm Performance, has a Cronbach's alpha value of 0.84, which has questions related to Employee utilization, Development opportunities, Forward-looking, Performance improvement, Success, and Competitive resilience.

2.3 Data Analysis

All analyses were conducted using R version 4.2.3. Descriptive statistics including mean and standard deviation of the variables were calculated using mean() and sd() functions respectively from base R. The cor.test() function in R was used to perform the Spearman correlation test. The Spearman correlation test was used to measure the strength and direction of the association among the variables. Spearman correlation coefficients were calculated for

pairs of variables including Gender, Education, Country of residence, Work Experience, Firm Categorization, Industry, Innovativeness, Proactiveness, Risk-taking, and Firm Performance. The controlled variables have been identified as follows: Gender (0=F, 1=M), Education (0=Highschool/BSc, 1=Master/Other), Country (0=Pakistan, 1=Estonia), Firm Category (0=Private, 1=Public), Industry (0=Manufacturing, 1=Services). The alpha() function from the psych package in R was used to calculate Cronbach's alpha. Cronbach's Alpha for each variable was further used in regression models to assess the relationship between variables.

The relationship between firm performance and several predictor factors, including innovativeness, proactiveness, risk-taking, work experience, gender, education, firm categorization, industry, and country of residency, was investigated using linear regression analysis. We assessed the extent to which each predictor variable independently contributes to explaining the variance in the dependent variable, firm performance while accounting for the influence of other predictors in the model using the multiple linear regression model.

3. Results

The study investigated the relationship between antecedents of intrapreneurship and Firm Performance by using the sample data of 101 respondents. The study also explored how controlled variables (gender, education, firm categorization, and country of residence) impact the relationship between intrapreneurship and firm performance.

The mean values for each variable (Risk-taking, Innovativeness, Proactiveness, and Firm Performance) were found to be heterogeneous, with risk-taking having a mean value of 3.12, innovativeness having a mean value of 4.09, proactiveness having a mean value of 3.42, and firm performance having a mean value of 3.953. Similarly, the SD values for each variable were found to be comparatively heterogeneous as well, with risk-taking having an SD value of 0.94, innovativeness having an SD value of 0.91, proactiveness having an SD value of 0.77, and firm performance having an SD value of 0.89.

The table 10 below shows the correlation results for pairs of variables including Gender, Education, Country of residence, Work Experience, Firm Categorization, Industry, Innovativeness, Proactiveness, Risk-taking, and Firm Performance. A Spearman's correlation test was performed to examine the relationships between the variables individually.

Table 10

Spearman correlation among variables (n=101), Mean and Standard deviation

		Mean	SD	1	2	3	4	5	6	7	8	9
1	Gender											
2	Education			0.13								
3	Country of Residence			0.01	-0.36***							
4	Work experience			0.11	0.27***	0.07						
5	Firm categorization			-0.03	-0.07	0.03	-0.18					
6	Industry			-0.13	0.06	0.02	0.11	0.10				
7	Innovativeness	4.09	0.91	-0.06	0.01	0.06	0.23*	0.12	0.04			
8	Proactiveness	3.41	0.77	0.13	0.05	-0.02	-0.05	-0.05	0.04	-0.04		
9	Risk-taking	3.12	0.94	-0.01	-0.07	-0.02	-0.10	0.09	0.25**	-0.12	0.03	
10	Firm performance	3.95	0.89	-0.02	-0.04	0.05	0.09	0.07	0.00	0.41***	0.61***	0.24*

Source: Prepared by authors, Notes: P value <0.05=, <0.01=**, <0.001=****

Table 10 provides some important information for the sample data from control variables of gender, education, country of residence, work experience, firm categorization, and industry. Risk-taking, Innovativeness, and Proactiveness account for independent variables, while Firm Performance accounts for the dependent variable. The controlled variables are identified as follows: Gender (0=F, 1=M), Education (0= Highschool/BSc, 1=Master/Other, Country (0=Pakistan, 1=Estonia), Firm Category (0=Private, 1=Public), Industry (0=Manufacturing, 1=Services).

RQ: How do innovativeness, proactiveness, and risk-taking contribute to firm performance?

The Spearman correlation analysis indicated a number of significant correlations between the variables. Firm performance and risk-taking positively correlate ($r = 0.24$, $p < 0.05$). This positive correlation implies that firm performance tends to improve when risk-taking grows.

Risk-taking also showed a different correlation pattern in the manufacturing and services industries ($r = 0.25$, $p < 0.01$), indicating that the correlation between risk-taking and firm performance may differ between these sectors. However, the correlation coefficients shown in the table cannot be used to determine the level of risk-taking in the manufacturing or service industries.

Furthermore, a strong positive correlation was found between firm performance and innovativeness ($r = 0.41$, $p < 0.001$), implying that firms with higher innovativeness are likely to perform more effectively. A similar positive correlation was found between firm performance and proactiveness ($r = 0.61$, $p < 0.001$), showing that firms that take a proactive strategy perform better.

A negative and significant correlation with the country of residence ($r = -0.36$, $p < 0.001$) shows that there is a strong inverse relationship between education and country of residence, meaning that respondents from Estonia are more likely to have a higher level of education (Master's/other) than those from Pakistan. A positive correlation with work experience ($r = 0.27$, $p < 0.001$) indicates that persons with higher education degree may have more work experience.

Employees in private firms may have slightly more work experience than the ones in public firms, based on the negative correlation with work experience ($r = -0.18$). However, this association is weak and not statistically significant.

The relationship between gender and other factors, on the other hand, was discovered to be weaker. Gender, for example, demonstrated a weak positive relationship with education ($r = 0.13$) and a near-zero correlation with the country of residence ($r = 0.01$). These findings suggest that gender may not significantly impact the other variables in this study.

Proactiveness ($r = 0.61$, $p < 0.001$) shows the strongest positive correlation with firm performance, followed by innovativeness ($r = 0.41$, $p < 0.001$) and risk-taking ($r = 0.24$, $p < 0.05$). Work experience, education, gender, country of residence, firm classification, and industry all show lower association coefficients with firm performance.

Firm performance positively correlates with innovativeness, implying that organizations that value innovation are more likely to perform well. Firm performance is also positively connected with proactiveness, implying that firms that take a proactive strategy, such as predicting market shifts and making strategic decisions appropriately, are more inclined to succeed. Finally, risk-taking positively correlates with firm performance, meaning organizations that take calculated risks, such as entering new markets or investing in new technology, may outperform their competitors.

According to the Spearman correlation test, a significant positive relationship exists between firm performance and innovativeness, proactiveness, and risk-taking. This suggests that firms with higher intrapreneurial characteristics are more likely to perform better.

In conclusion, the findings suggest that innovativeness, proactiveness, and risk-taking are essential intrapreneurial characteristics that contribute positively to firm performance.

Linear Regression Analysis

We share the results of the multiple linear regression analysis conducted to examine the impact of Innovativeness, Proactiveness, and Risk-taking on firm performance, while controlling for other factors such as Gender, Education, Country, Firm Category, Industry, and Work Experience. The table below displays the regression results for the mentioned predictors.

Table 11

Regression Model for the relationship between innovativeness, Proactiveness and Risk_taking on Firm performance.

Residuals:

Min	1Q	Median	3Q	Max
-1.29394	-0.30931	0.03736	0.30947	1.30469

Variables	Estimates (β)	P-value
(Intercept)	1.35	0.001 **
Innovativeness	0.46	0.000 ***
Proactiveness	0.75	0.000 ***
Risk-taking	0.30	0.000 ***
Work Experience	0.02	0.821
Gender	-0.16	0.125
Education	-0.04	0.726
Firm Categorization	0.06	0.581
Industry	-0.38	0.024 *
Country of residence	-0.06	0.584
R^2	0.52	
<i>Adjust R²</i>	0.69	
<i>F-stat</i>	22.25	

Source: Prepared by authors

*Significant Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1. Residual standard error: 0.5205 on 90 degrees of freedom. Multiple R-squared: 0.6899, F-statistic: 22.25 on 9 and 90 DF, p-value: < 0.000(2.2e-16). Note: The P-values of Innovativeness(0.000***), Proactiveness (0.000***), and Risk-taking (0.000***) correspond to 1.73e-11***, <2e-16*** and 1.49e-06*** respectively.*

Following are the parameters used for controlled variables; Gender (0=F, 1=M), Education (0= Highschool/BSc, 1=Master/Other, Country (0=Pakistan, 1=Estonia), Firm Category (0=Private, 1=Public), Industry (0=Manufacturing, 1=Services). 0-2 and 2-5 years = 0 ,5-7 years and 7 plus years = 1.

RQ: To what extent do the controlled variables (gender, education, firm categorization, and country of residence) impact the relationship between intrapreneurship and firm performance?

The table summarizes the findings of a regression analysis that looked at the association between innovativeness, proactiveness, risk-taking, work experience, gender, education, firm categorization, industry, country of residency, and firm performance. The F-stat value ($\beta=22.25$, $p=0.000$ ($<2.2e-16$)) indicates that the model is statistically significant and valid. Furthermore, the description level is indicated by an R-squared and adjusted R-squared value. An R-square value of 0.6899 suggests that the model explains approximately 68.99% of the variance in firm performance which can be explained by all the variables in the model, including the primary independent variables (Innovativeness, Proactiveness, and Risk-taking) and the controlled variables. While an adjusted R-square value of 0.6589 indicates that 65.89% of the variance in firm performance can be explained by the independent variable, suggesting that overall the model has a reasonably acceptable description level. Innovativeness positively and significantly impacts firm performance ($\beta = 0.46$, $p=0.000$), implying that increasing innovativeness improves firm performance. Proactiveness positively and significantly impacts firm performance ($\beta = 0.75$, $p=0.000$), indicating that firms that take a proactive approach perform better. Risk-taking shows a positive and statistically significant impact on firm performance ($\beta = 0.30$, $p=0.000$), implying that higher levels of risk-taking are connected with enhanced firm performance. In this research, work experience, gender, education, firm categorization, and country of residency have no significant effects on firm performance because their p-values were greater than the 0.05 significance level. Interestingly, the industry variable demonstrated a negative and significant connection with firm performance ($\beta = -0.38$, $p=0.024$), showing that service industry firms' performance is relatively weaker than manufacturing firms. This could be due to a variety of industry-specific factors influencing firm performance. Overall, the findings indicate that innovativeness, proactiveness, and risk-taking are major predictors of firm performance followed by industry as a significant controlled variable. In contrast, work experience, gender, education, company classification, and country of residency have little or no influence on this relationship.

4. Discussion

This study examined the relationship between the antecedents of intrapreneurship, specifically risk-taking, innovativeness, and proactiveness, with firm performance in Estonia and Pakistan's public and private manufacturing/services sectors. Controlled factors: gender, education, work experience, residence country, industry, and firm category were included. The study's findings show substantial associations between intrapreneurial dimensions (Risk-taking, Proactiveness, and Innovativeness) with firm performance, highlighting their importance in driving firm performance, which aligns with our research question “How does intrapreneurship dimensions contribute to firm performance.”

Based on the correlation test, the positive correlation between Innovativeness and Firm Performance shows that organizations with higher levels of innovation may perform better. This could imply that encouraging innovation in a firm may improve overall performance. The current study is consistent with previous research (e.g., Hornsby, Kuratko, and Zahra (2002), Kuratko, Montagno, and Hornsby (1990), Bolton & Lane, 2012; Miller, 1983) that underlined the importance of innovativeness in accelerating business performance. Maintaining a culture of creativity, innovation, and experimentation among employees in a constantly shifting corporate world may contribute to organizational agility and competitive advantage. The positive correlation between risk-taking and firm performance is less than the correlation with Innovativeness (Covin & Slevin (1991), Bull & Willard (1993) and Zhang & Aumeboonsuke (2022)). However, the research still suggests that an increased willingness to take risks is associated with better firm performance. At the same time, the relationship is less robust than with Innovativeness; but it aligns with Miller's (1983) argument that risk-taking positively affects firm performance by encouraging innovation and enabling firms to capitalize on emerging opportunities. Encouraging employees to take calculated risks can lead to enhanced problem-solving creativity and a better understanding of market prospects. Zhang and Aumeboonsuke's (2022) study emphasizes the competitive connection between risk-taking, technical innovation, and firm performance. While technological innovation is critical for establishing core competitiveness and improving economic performance, taking too many risks can lead to underperformance. According to the study, enterprises should focus on the conversion rate of innovative successes to achieve sustainable development. Furthermore, strengthening current corporate systems by lowering market and technical risks may result in

higher performance growth. The significant positive correlation between Proactiveness and Firm Performance is the strongest among all the other factors and this suggests that firms that take a more proactive strategy are more likely to perform better. This could imply that proactive decision-making, predicting market shifts, and grabbing new possibilities can improve a firm's performance. This conclusion supports Bateman and Crant's (1993), Wiklund and Shepherd (2005), Kreiser et al. (2002) comments about the critical role of proactiveness in achieving excellent firm performance. Establishing a proactive culture within an organization improves the ability to adapt quickly to market trends and effectively address new difficulties.

Furthermore, the study explored the influential relationship between Risk-taking, Innovativeness, Proactiveness, work experience, gender, education, firm categorization, industry, country of residency, and firm performance. The positive and significant impact of innovativeness on firm performance aligns with the previous studies that have emphasized the importance of innovativeness for firm performance and competitiveness e.g., Hult et al., 2004; Calantone et al., 2002; Bolton and Lane, (2012). This result supports the proposition that firms that invest in innovation can attain better performance outcomes. The results of regression analysis also revealed a positive and significant relationship between proactiveness and firm performance. This finding aligns with prior research suggesting that proactive firms tend to outperform their less proactive counterparts, as they can better anticipate and respond to changes in the market and capitalize on emerging opportunities (e.g., Lumpkin and Dess, 2001; Rauch et al., 2009; Bolton and Lane, 2012). The positive and significant impact of risk-taking on firm performance supports the argument that firms willing to take risks and pursue uncertain opportunities may enjoy higher performance (e.g., Covin and Slevin, 1989; Dess et al., 1997). This result suggests that a certain level of risk-taking might be necessary for firms to achieve better performance outcomes.

The controlled variables in this study have little to no significant effect on Firm Performance, except country of residence, work experience, and industry. The analysis showed a negative and significant relationship between industry type and firm performance, indicating that firms operating in the service industry tend to have lower performance compared to those in the manufacturing industry. This finding is consistent with some previous studies that have reported performance differences between industries due to factors such as market structure,

competition, and technological advancements e.g., Rajan and Zingales, 1998; Storey, 1994; Bolton and Lane, (2012). This could be the result of a number of industry-specific factors influencing firm performance. Furthermore, country of residence and education exhibited a strong negative correlation, suggesting that respondents from Estonia were more likely to have higher levels of education than those from Pakistan. A positive correlation was observed between work experience and education. However, the impact of gender on other variables was found to be relatively weak.

In conclusion, the study demonstrates the importance of intrapreneurial dimensions (Risk-taking, Innovativeness, and Proactiveness) in contributing to firm performance in Estonia and Pakistan while controlling for gender, education, work experience, firm category, and industry. There was no formidable difference seen between intrapreneurship in Estonia and Pakistan. Furthermore, Firms should concentrate on creating an environment that encourages people to take risks, be innovative, and be proactive in their approach to work. By cultivating such a culture, firms can obtain superior performance outcomes and sustain competitive edge in the market.

4.1 Managerial Implications and Recommendations

The study's findings have important implications for managers and organizations looking to boost their competitiveness and overall performance. The main recommendation is for businesses to establish an organizational culture that encourages innovation, foresight, and calculated risk-taking. To do this, firms should offer training and development programs aimed at improving employees' intrapreneurial skills. These programs can give employees the skills and information they need to think creatively, spot opportunities, and take sensible risks. Furthermore, providing leadership support is critical in motivating people to take reasonable risks and pursue new ideas. Leaders may empower staff to explore creative solutions and projects by giving direction and tools. Furthermore, cultivating a strategic mindset among employees is critical for aligning their actions with the aims and objectives of the firm. This alignment guarantees that entrepreneurial efforts contribute to the firm's broader strategic agenda. Finally, firms must give the resources, tools, and support essential for employees to effectively explore and pursue new ideas. Organizations may develop a culture of innovation

and adaptation by cultivating a culture of creativity and experimentation. Organizations may build a dynamic and entrepreneurial work environment that generates long-term success and competitive advantage by implementing these guidelines.

4.2 Limitations and Recommendations for Future Research

While this study has offered useful information, it is vital to recognize its limits. One area for improvement is the very small sample size and use of convenience sampling, which may limit the findings' generalizability. To address this restriction, future research should use larger and more diverse samples and probability sampling approaches to ensure a better representation of the target population. Furthermore, the study's focus on certain businesses and nations may limit the findings' application to other circumstances. To improve external validity, future research should investigate the association between intrapreneurship and firm success in diverse industries and geographical regions. Another subject for future research is the explanation and identification of intrapreneurship antecedents, particularly across varied organizational contexts. Firm performance measurement is important for future usage since it allows companies to understand the aspects that determine their efficacy and competitiveness. To sustain a competitive edge in today's dynamic business environment, marked by increased competition and unpredictability, organizations must remain adaptive and continually participate in creative techniques. Measuring company performance assists businesses in identifying areas for improvement, developing tactics to improve efficacy, and evaluating the efficacy of those strategies. The timeline can also have an impact on firm performance because firms must adapt to shifting economic, social, and technological trends. Long-term performance objectives are critical for firms to remain competitive and relevant in the long run. Short-term goals are required to maintain present levels of operations, but long-term goals are required to adapt to changes and remain viable. As a result, monitoring firm performance over both short and long timelines can offer businesses a complete picture of their efficacy and competitiveness and aid in formulating future success plans.

4.3 Conclusion

In conclusion, this study indicates the importance of intrapreneurial dimensions (Risk-taking, Innovativeness, and Proactiveness) in contributing to firm performance in Estonia and Pakistan while controlling for gender, education, work experience, firm category, and industry. The study also finds a negative and substantial association between industry type and firm performance, indicating that service industry firms do worse than manufacturing ones. Training and development programs should enhance employee's intrapreneurial abilities, and leadership support should be offered to encourage employees to take risks and seek innovative ideas. It is critical to cultivate a strategic mentality among employees in order to connect their activities with company goals, as well as to give employees with the resources and support the need to explore and develop new ideas. However, there are some constraints to consider. This study's small sample size and convenience sampling technique may restrict the findings' generalizability. Future studies should use more extensive, diverse samples and probability sampling approaches to overcome this restriction. Furthermore, the study's focus on specific businesses and nations limits the findings' applicability. Future research could investigate the association between intrapreneurship and firm success in diverse industries and geographic areas to improve external validity. Furthermore, there is a need for ongoing research into firm performance measurement to understand better the factors that contribute to organizational efficacy and competitiveness. Finally, future studies should focus on the impact of short-term and long-term goals on firm performance, considering economic, social, and technical developments. Addressing these constraints and exploring these prospective research options will result in a more thorough understanding of intrapreneurship and its impact on firm success.

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Resüme

Ettevõtlusesisese ettevõtte toimimise eellugu

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Tänapäeva tiheda konkurentsiga ja ettearvamatus ärikeskkonnas seisavad organisatsioonid silmitsi suurte takistustega. Ettevõtted peavad konkurentsieelise säilitamiseks pidevalt kasutama loominguilisi meetmeid ja kohanema järjest suuremate raskustega. Ettevõttesisene ettevõtlus on realistlik strateegia organisatsioonilise innovatsiooni ja paindlikkuse edendamiseks, mis eeldab ettevõtlike hoiakute ja tavade kujundamist olemasolevas organisatsioonis. Käesoleva uurimistöo eesmärk on uurida ettevõttesisese ettevõtluse eelkäijate (riski võtmine, uuendusmeelsus ja proaktiivsus) seost äritegevuse tulemuslikkusega Eestis ja Pakistanis. Põhiline fookus on tootmis- ja teenindussektoril nii era- kui ka avalikus sektoris.

Organisatsiooni töötajaid, kes tegelevad ettevõtlusega, nagu loovus, proaktiivsus ja riskivalmidus, nimetatakse siseettevõtjateks. Uute ideede, toodete või protseduuride väljatöötamist ja elluviimist olemasoleva ettevõtte kontekstis nimetatakse ettevõttesiseseks tegevuseks. Antud uuring rõhutab vajadust luua ettevõtlusesiseseks tegevuseks sobiv keskkond, et kasutada ära töötajate innovatiivsust ning suurendada konkurentsivõimet, majanduskasvu ja üldist edukust.

Uurimistöo käigus on uuritud seost ettevõttesisese ettevõtluse (riskivalmidus, uuendusmeelsus ja proaktiivsus) ja ettevõtte tulemuslikkuse vahel Eesti ja Pakistani avaliku ja erasektori tootmis- ja teenindussektoris, kontrollides mitmeid tegureid. Andmete kohaselt olid ettevõtlusesisese omadused tugevalt seotud ettevõtte tulemuslikkusega, sealjuures kõige kriitilisem seos oli proaktiivsusel. Innovatsiooni julgustamine, kaalutletud riskide võtmine ja riskide ennetamine ettevõttes aitavad kaasa organisatsiooni paindlikkusele ja konkurentsieelisele. Uuring tõi veel välja, et sugu ja haridus avaldasid ettevõtte tulemustele minimaalset mõju, kuid elukohariigil, töökogemusel ja tööstusel oli märkimisväärne mõju. Uuringu tulemused on kooskõlas varasemalt teostatud uuringutega, mis rõhutavad ettevõtlusesisese ja innovatsiooni rolli ettevõtte tulemuslikkuse edendamisel.

Kontrollides sugu, haridust, töökogemust, ettevõtte kategooriat ja tegevusala, rõhutab uuring ettevõtlusesiseste tunnuste (riski võtmine, uuendusmeelsus ja proaktiivsus) tähtsust ettevõtte tulemuslikkusele Eestis ja Pakistanis. Sellest tulenevalt soovitatakse ettevõtetel keskenduda

sellise keskkonna loomisele, mis julgustab inimesi võtma kalkuleeritud riske, edendama uuenduslikkust ja proaktiivsust tööl, mis toob endaga kaasa paremad tulemused ja konkurentsieelise turul. Uuring keskendub ka negatiivse seose tööstuse tüübi ja äritegevuse vahel, kusjuures teenindustevõtted edestavad tööstustevõtteid. Siiski on uuringul piiranguid ja tulevased uuringud peaksid vaatlema võrreldavaid seoseid erinevates tööstusharudes ja geograafilistes piirkondades, et paremini mõista ettevõttesisese ettevõtluse mõju ettevõtte edule.

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