

The Nexus Between Strategic Entrepreneurship and Firm Performance, Using Advanced Balanced Scorecard

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Abstract

ICT companies are currently grappling with a myriad of challenges that are impacting their performance. It's clear that they require urgent strategies and plans that are in tune with market competition across various product lines. This research aims to delve into the effects of strategic entrepreneurship (SE) on firm performance, utilizing an advanced Balanced Scorecard approach. Structural equation modeling, facilitated by the Smart PLS program, was employed to scrutinize hypotheses and gauge the study model's accuracy. The findings illustrated direct impacts among all variables under examination, specifically focusing on ICT companies situated in the King Hussein Business Park, comprising 50 companies. Furthermore, the study extends a set of recommendations tailored to augment overall performance for these companies. These findings serve as valuable insights for senior management, offering pathways to enhance performance and secure a competitive edge, thereby fostering sustainability in the market. It is suggested that companies introduce enhancements to their strategies, incorporating strategic entrepreneurship dimensions into their future operations and processes.

Keywords: Strategic Entrepreneurship, Firm Performance, Advanced Balanced Scorecard.

Introduction

Information and communication technology (ICT) companies face many challenges and difficulties that affect their performance, which leads them to search for methods and studies that enable them to develop and grow their performance to achieve success, especially in light of the intense competition they face from the external environment. In addition, and in light of the importance of these companies to the economy and sustainable development of the country, this study seeks to add scientific value by helping to understand and study the factors that affect their performance growth.

Strategic entrepreneurship is important nowadays, especially in information and communication technology (ICT) companies, which have become a major research area for researchers. These companies are seeking growth, development, and sustainability in the

long term. Therefore, this study seeks to understand the beneficial impact of strategic entrepreneurship on these companies.

From the perspective of strategic entrepreneurship, this study adds dimensions that have not been used in other studies. These dimensions include entrepreneurial mindset, entrepreneurial alertness, entrepreneurial culture, entrepreneurial leadership, and strategic resource management. There is still a research gap in the dimensions of strategic entrepreneurship in particular.

As for the performance of companies, this study adds the fifth dimension of the balanced scorecard, which is the sustainable environmental dimension as an independent dimension from the other main dimensions, which are the financial dimension, the customer dimension, the growth and learning dimension, and the internal operations dimension.

Returning to the origin of the concept of strategic entrepreneurship, the concept of entrepreneurship emerged in the 1980s, focusing on the ability to achieve market success through the implementation of innovative and effective strategies. Michael Eugene Porter, a leading professor at Harvard Business School, was one of the first to write about strategic entrepreneurship. In his book "Competitive Strategy," published in 1980, Porter presented his famous theory of the five forces of competition, which focuses on the importance of analyzing the industry and identifying the key factors that affect the success of companies (Porter, 1980).

On the other hand, performance is defined as the actual outcomes or outputs of activities, or the ability to achieve outcomes, or how an activity is implemented (Lönngqvist, 2004). Performance can be described as the achievement of desired results for the company's stakeholders (Atkinson, 2012). Performance is a process in which employers are responsible for ensuring that employee activities and productivity are aligned with organizational goals (Ill & Noel, 2009). The balanced scorecard is considered a modern approach to evaluating the performance of companies by focusing on several dimensions, including financial, customer, growth and learning, internal processes, and sustainable environmental. It came to remove the criticisms that were directed to the traditional performance measurement based on financial profit only in measuring and evaluating the company's performance.

The balanced scorecard entered management studies as a model for measuring corporate performance in an article published by Kaplan and Norton entitled "The Balanced Scorecard Measures That Drive Performance" in 1992. In 1996, it emerged as a model for measuring strategic performance under the title "Using the Balanced Scorecard as a Strategic Management System" (Kaplan & Norton, 1996).

Despite the many studies that have used strategic entrepreneurship and its impact on corporate performance, there is a difference of opinion in some studies through the dimensions that include strategic entrepreneurship or corporate performance.

The study of Hitt et al. (2011) included the following dimensions of strategic entrepreneurship: (entrepreneurial leadership, flexibility, values and beliefs, and strategic resource management). The study of Atef (2018) included the following dimensions: (entrepreneurial mindset, strategic resource management, entrepreneurial culture, and risk taking). The study of Farida et al. (2022) included the following: (entrepreneurial mindset, entrepreneurial leadership, and creation of entrepreneurial value). Finally, the study of Gökçe et al. (2023) included the following dimensions: (entrepreneurial culture, entrepreneurial leadership, entrepreneurial mindset, and strategic resource management).

Looking back at the literature, the concept of strategic entrepreneurship has been developed over the years by many researchers. Among these researchers, Kotter (1996) pointed out that

strategic entrepreneurship requires the ability to turn ideas into new processes and products. Davidson (1982) also pointed out that strategic entrepreneurship requires the ability to innovate and adapt to changes in the market. Fuchs (2011) pointed out that strategic entrepreneurship requires the ability to achieve excellence and outperform competitors. Strategic entrepreneurship has been defined as "the simultaneous handling of the twin challenges of exploiting current competitive advantage (from the perspective of strategic management) while exploring opportunities (from the perspective of entrepreneurship) that allow firms to subsequently develop future competitive advantage and use these competitive advantages to create value and wealth" (Ketchen et al., 2007, 372). Strategic entrepreneurship encompasses the entrepreneurial behaviors of opportunity seeking and the strategic management behaviors of advantage seeking, as it is relevant to all organizations. Strategic entrepreneurship focuses on the search for opportunities and advantages that create value for individuals, organizations, and society as a whole. This means that strategic entrepreneurship encompasses all the actions necessary to exploit current opportunities and advantages while also exploring new opportunities that maintain the organization's ability to create sustainable value" (Hitt et al., 2011, 57).

Literature Review

Building on previous studies on strategic entrepreneurship and firm performance, the study by Ziyae and Sadeghi (2020) examined the mediating effect of strategic entrepreneurship in the relationship between corporate entrepreneurship and firm performance. The results showed that corporate entrepreneurship and strategic entrepreneurship are positively associated with firm performance, and that strategic entrepreneurship has a mediating effect in the relationship between corporate entrepreneurship and firm performance. The study suggested that financial technology firms should adopt and implement institutional entrepreneurship and strategic entrepreneurship to achieve sustained performance.

The study by Adam et al (2022) aimed to investigate the impact of entrepreneurial orientation and organizational performance of online businesses and the mediating role of knowledge management in Malaysia. The results of the study showed that entrepreneurial orientation has a positive effect on knowledge management, which in turn has a positive effect on the organizational performance of firms. The study recommended that further research should be conducted to investigate the factors that contribute to organizational performance using a more holistic approach that incorporates other factors. Based on the recommendations of the study by Adam et al., the current study adds additional dimensions to strategic entrepreneurship to examine its impact on firm performance in a more comprehensive and inclusive way.

Another study by Ardianus & Tyas (2022) investigated strategic entrepreneurship related to entrepreneurial mindset as an independent variable, entrepreneurial leadership as a mediating variable, and entrepreneurial value creation as a dependent variable in Indonesia. The study highlighted the positive effect of the study variables on small and medium-sized enterprises by providing extensive scientific insights related to strategic entrepreneurship theory. The study recommended that small and medium-sized enterprises can create entrepreneurial value through the presence of entrepreneurial mindsets among individuals, institutions, and the social environment, which contributes to progress and sustainability, helps the economy in Indonesia, and provides decision-makers and managers with more information.

In contrast to the study by Ardianus and Tyas, the current study differs by adding the mediating variable of entrepreneurial leadership as one of the dimensions of the independent variable of strategic entrepreneurship by measuring its impact on the performance of information and communication technology firms in Jordan.

Based on other studies, the study by Bartnicka (2014) explored how companies apply strategic entrepreneurship in dealing with opportunities. The results of the study showed that companies benefit from environmental dynamism and complexity if they implement strategic entrepreneurship, which is reflected in the performance of companies. The study also showed that companies work to align their strategic entrepreneurship with the different characteristics of the industry environment, and therefore reach high levels of performance. The study also showed that companies that implement the appropriate strategic entrepreneurship in a given environment are able to convert opportunities into high levels of performance.

Relied on this, the current study aims to fill the gap in identifying the impact of strategic entrepreneurship on the performance of companies by applying it to information and communication technology (ICT) companies in Jordan. The study also adds dimensions that have not been used in other studies as a comprehensive set.

On the other hand, the study by Sarigül et al (2021) pointed to the successful application of the balanced scorecard as a strategic approach to performance measurement by applying it in detail and realistically in a multinational bank in Turkey. The results showed that the multinational bank that uses the balanced scorecard succeeded in achieving its strategic objectives by raising its ranking in the banking sector from 24th place in 2010 to 10th place in 2020.

The study by Tonelli et al (2020), which aimed to apply the balanced scorecard (BSC) in the strategic planning processes of information technology companies to ensure its contribution to performance measurement, found that the use of the balanced scorecard directly contributes to addressing the challenges of strategic IT planning. The study also found that future work should be expanded to extend the proposed method to organizations with the goal of applying the balanced scorecard in information and communication technology companies. In addition, future researchers can adopt a quantitative approach to identify and test hypotheses about the application of BSC to information technology companies.

Finally, the study by Adityawan and Fontana (2019) aimed to test the impact of strategic entrepreneurship with dynamic capability on organizational performance. The study applied to financial companies in the financial institutions sector in Indonesia. The study suggested the factors that can drive financial companies to be able to continue to have a competitive advantage and sustainable performance in a more competitive business environment. The results of the study highlighted that there is a positive relationship between strategic entrepreneurship, dynamic capability, and business environment, which in turn leads to a competitive advantage to lead companies to superior sustainable performance.

The current study adds several contributions from several aspects. First, it is one of the few studies that examines the impact of strategic entrepreneurship on firm performance through the advanced balanced scorecard. Second, it is distinguished in terms of the variables it will investigate, as there is a scarcity of studies that combine the variables of this study. Third, a new dimension will be added to organizational performance, which is the environmental perspective or dimension, due to the novelty of this dimension and the few studies that have addressed it.

It is clear from previous studies that have investigated the study's variables (strategic entrepreneurship and firm performance) that most studies have been applied in different environments, each with its own characteristics and interests. Therefore, it can be said that this study will be conducted in an appropriate Jordanian environment for this study, by applying it to the information and communication technology (ICT) sector, which is witnessing rapid and continuous developments.

Strategic entrepreneurship and Firm performance:

Many studies have reported the impact of strategic entrepreneurship on corporate performance. Strategic entrepreneurship helps shape corporate culture by promoting creativity, experimentation, and the willingness to take calculated risks, which creates a positive work environment to attract the best talent and improve employee retention (Covin & Lumpkin, 2011, 133). Strategic entrepreneurship contributes to job creation and economic development by encouraging new ventures and promoting the growth of existing organizations, as well as having a positive impact on local and national economies, encouraging innovation, and achieving long-term goals and long-term growth (Wennekers & Thurik, 1999, 44).

Grant (2005) also mentioned that the importance of strategic entrepreneurship lies in its ability to define the direction for the company and identify the goals and plans necessary to achieve them, provide the company with a vision and identify how it can achieve success in the market.

Strategic entrepreneurship also helps to identify competitors and identify opportunities and challenges that can affect the company. Strategic entrepreneurship helps to improve organizational efficiency and improve innovation and creativity in the organization. Strategic entrepreneurship includes the effective management of resources, including human, financial, and technological assets, in order to achieve desired organizational goals. By leveraging these resources, companies can better identify and exploit opportunities within the company for the surrounding environment (Hitt et al., 2007, 529).

In recent years, the importance of strategic entrepreneurship has increased. As companies face increasing pressures such as globalization and rapid technological advances, it has become essential to adopt entrepreneurial and strategic management practices. This will enable companies to survive, face threats, thrive, achieve long-term growth, and contribute to economic development (Wennekers & Thurik, 1999, 27-56).

One of the essential aspects of strategic entrepreneurship is the ability to identify and respond to environmental changes, such as emerging market trends, changing customer preferences, and technological advances. By being proactive and adaptable, organizations can gain a competitive advantage in the market (Kuratko, 2013, 19). Strategic entrepreneurship is represented by all the processes through which the organization can make future decisions and also identify the best human and financial resources to achieve its goals and thus satisfy its customers (Nezekolizibe & Gogo, 2019, 77).

The balanced scorecard is a comprehensive management tool used to define strategic goals and measure the organization performance. The balanced scorecard has four main dimensions: financial, customer, internal processes, and learning and growth (Kaplan & Norton, 1992). The balanced scorecard provides specific actions that must be taken to translate organizational goals into actionable activities that can reveal the relationship between those actions and the goals (Quesado et al., 2018).

The balanced scorecard allows managers to link important goals with the overall strategic goal. One of the main ideologies of the balanced scorecard is that non-financial matters must be successfully achieved before achieving success in major financial matters (Terziev et al., 2020).

Using the balanced scorecard approach helps managers to identify key performance indicators associated with success in selected financial measures. In addition, Meena (2009, 396) sees the balanced scorecard as "a way to describe the organization's activities through a number of measures for each of the four perspectives of the balanced scorecard".

Dimensions of Strategic Entrepreneurship

Researchers have different perspectives on the dimensions of strategic entrepreneurship. Some studies define it in terms of four dimensions, while others define it in terms of five dimensions.

In this study, we will focus on the following dimensions of strategic entrepreneurship: (entrepreneurial mindset, entrepreneurial alertness, entrepreneurial culture, entrepreneurial leadership, and strategic resource management). This is because these which have been mentioned and agreed upon in most studies, such as Gökce et al (2023); Gelard & Ghazi (2014, 35); Atif (2018, 256); Hitt, (2012, 57); Bratnicka (2014), and they serve the purposes of the study.

1. Entrepreneurial Mindset

The entrepreneurial mindset is defined as the set of beliefs, attitudes, and values that support entrepreneurial behavior. It is characterized by a willingness to take risks, a focus on innovation, and a commitment to creating new value (Nystrom, 2012).

Barringer et al (2016) defined entrepreneurial mindset as "the ability to think creatively and analytically, make bold decisions, and tolerate high levels of risk." As he stated that entrepreneurial mindset requires entrepreneurs to have a variety of skills and qualities, such as creativity, critical thinking, analytical thinking, rapid learning, high risk tolerance, effective communication, and the ability to manage time and resources.

Entrepreneurial mindset is growth-oriented by focusing individuals on innovation, flexibility, and creativity. Therefore, entrepreneurial mindset is capable of diagnosing opportunities and exploiting them in the context of complex environmental conditions and uncertainty due to the skills, knowledge, and capabilities they possess, which they provide solutions for different ambiguous and unclear conditions (Ireland et al., 2003, 968).

2. Entrepreneurial Alertness:

Entrepreneurial alertness is defined as the "effort and time to allocate and provide an important part of the time for exploration and deliberation on available opportunities and exploiting them to achieve benefits" (Mosakoski, 1998, 628).

It is also defined as "the anticipation of opportunities through which the organization achieves satisfaction of the needs and desires of customers and continues to invest in these opportunities" (Gray & Wert, 2012, 185). Entrepreneurial alertness includes scanning and searching, pairing and connecting, and evaluation and judgment (Tang et al., 2012).

Siegman (2013) pointed out that entrepreneurial alertness refers to the ability to think positively and innovatively, identify opportunities, and perceive risks. Entrepreneurial alertness is considered one of the essential factors for success in business.

Tang et al. (2012) presented a conceptualization of entrepreneurial alertness in his research, stating that entrepreneurial alertness has three behavioral components: the tendency to scan and search for new information; the ability to connect disparate information; and the tendency to evaluate whether new information represents an opportunity or not. Scanning and searching for information refers to the continuous scanning of the surrounding environment and checking for new information, changes, and transformations that others ignore.

3. Entrepreneurial Culture

Entrepreneurial culture is a state in which new ideas, innovation, and creativity are expected, risk-taking and learning are encouraged, continuous focus on product and process innovation is maintained, and continuous change is accepted by all members of the organization.

Entrepreneurial culture is associated with entrepreneurial orientation and the different variables at the organizational level that drive the organization and its capabilities to engage in the discovery and exploitation of opportunities for wealth creation (Foss & Lyngsie, 2011).

Entrepreneurial culture includes the skills of risk-taking, dealing with uncertainty, pursuing opportunities, flexibility, adaptability, living and managing in a chaotic environment. The culture in which these skills live naturally makes the entrepreneurial drive strong. Because being an entrepreneur teaches you how to exploit opportunities in a timely and accurate way, and it also shows you how to deal with uncertainty and weaknesses (Ireland et al., 2003; Tantau et al., 2011).

4. Entrepreneurial Leadership

Entrepreneurial leadership is defined as the function of encouraging an entrepreneurial culture, encouraging innovation and risk-taking, in order to create strategic entrepreneurship within the organization (Fontana & Musa, 2017).

Entrepreneurial leadership revolves around aligning resources and demonstrating how the organization should behave towards the goal. Especially considering the sustainability of strategy as a long-term process, developing skills and discovering new talents for companies is a masterstroke of the entrepreneurial leadership process; this also applies to human resources management and aligning employees with the environment (Ireland et al., 2003; Tantau et al., 2011).

Entrepreneurship leadership is also defined as a process through which a entrepreneurial vision can be created for the organization or team. It consists of three factors: initiative, which refers to the ability to influence others and motivate them to be creative; risk-taking in projects and businesses, by predicting risks and changes that may occur in the future; and creativity, which refers to the ability to innovate, develop, and improve ideas in a way that is beneficial to the organization (Hasan moradi & Ghahramani, 2008).

Siegmán and Martin (2013) define entrepreneurship leadership as the ability to think and act in the age of change. They point out that entrepreneurship leadership requires the ability to change.

5. Strategic Resource Management

Strategic entrepreneurship is the strategic management of resources. In the process of strategic management, one of the specific objectives is how to use the company's resources to become competitive in the long term. This includes not only aligning resources with the

environment but also how to use all the resources used to achieve the sustainability of the company (Ireland et al., 2003; Tantau et al., 2011).

Entrepreneurial firms first identify opportunities and then exploit these opportunities that competitors have not noticed or have not exploited properly. Therefore, organizations need a suitable set of resources to identify entrepreneurial opportunities with the greatest return and to use a structured approach to exploit these opportunities (McGrath & MacMillan, 2000). Therefore, resource-based views are considered applicable to all projects, whether commercial or service-based. Thus, the business and strategy associated with wealth creation and formation are a result of the company's resources (Hitt et al., 2001).

Resources were developed to become a strategic resource by Barney in 1991, where he mentioned that the characteristics of resources are focused on value, rarity, durability, and organization through the acronym VRIO in order to develop strategic management between organizations.

According to Priem and Butler (2001), the characteristics of value and rarity of resources are better associated with the efficiency and productivity of the organization, while the characteristics of durability with the organizational characteristics of resources within the company lead to a long-term competitive advantage, as the four characteristics of resources cannot provide a competitive advantage without the others.

Dimensions of Firm performance based on the balanced scorecard

This study will adopt five main dimensions to measure firm performance through the balanced scorecard, as follows: (financial dimension, customer dimension, growth and learning dimension, internal processes dimension, and sustainable environmental dimension). These dimensions have been adopted by many studies, such as (Sarigül & Ahmet, 2021; Xiaobo et al., 2019; Kaplan & Norton, 2000; HaPM, 2020; Zahraa & Ghazi, 2021; Wheelen et al., 2017; Sardi et al., 2020), and they serve the purposes of the study.

The Financial Dimension

The balanced scorecard approach through the financial perspective is used to evaluate the financial performance of companies in the past. It determines whether the company's strategy, practices, and activities contribute to the development of the company's performance (Kaplan & Norton, 2003,33).

Mabrouki (2023) stated that the balanced scorecard is an important and effective tool for measuring financial performance. It enables the organization to identify shortcomings in the organization's financial strategy. The scorecard provides accurate and important data and information about the organization's financial performance by providing the necessary corrective actions. Therefore, applying the balanced scorecard in the organization allows it to develop its capabilities, promote it, and lead it to create value and maximize shareholder wealth.

Key performance indicators (KPIs) in the financial perspective can vary depending on the organization's sector, environment, and strategies. However, because the organization's main goal is to achieve its planned objectives in this dimension, the KPIs and performance goals in the other perspectives must be aligned in a way that contributes to achieving one or more goals in the financial perspective. The financial perspective seeks to use these financial goals related to profit, return on assets, both tangible and intangible, new investments, reducing costs related to its activities, and growth in the revenues generated from them (Kaplan & Norton, 1999, 60-79; Sarigul & Savar, 2018, 135).

Customer Dimension

This dimension provides a view of how customers perceive the organization. Therefore, the customer must be considered a central basis in any strategy by providing a unique mix of products or services, price, and value that the company offers to its customers. In the customer perspective, the organization must also work on how to distinguish itself from other competitors by attracting, retaining, and maintaining long-term relationships with its customers (Abdurizzag, 2017).

Studies have shown that success and achieving goals are not limited to financial performance only; but it is necessary to focus on customers by expecting to achieve their satisfaction in areas such as customer delivery time, production excellence, and new product development (Sarigül et al., 2021).

The customer perspective is associated with initiatives related to customer relationships and satisfaction (Frederico et al., 2021). In addition, a number of studies have investigated the links between customer satisfaction and financial performance. The findings suggest that high customer satisfaction leads to lower marketing costs, lower price elasticity, and higher customer loyalty, which in turn leads to better financial performance (Banker & Mashruwala, 2007).

Growth and Learning Dimension

The measures used in the growth and learning dimension are generally associated with employee retention, employee productivity, skills, satisfaction, and the availability of information in the organization (Niven, 2002, 16; Ensari, 2005, 60). The goal of the growth and learning perspective is to help organizations identify the infrastructure to achieve specific strategic goals. The objectives in this dimension are the initiatives and activities that will ultimately achieve excellent results and create value for the organization (Kaplan & Norton, 1999, 153).

According to Rafiq et al. (2018), the growth and learning perspective measures the level of employee education and skills, on-the-job training for employees, and the promotion of research and development to design products and services.

Research and development is considered an investment in the company's future security and non-obsolescence, and a response to outdated ideas, the production process, new and better ways to provide services, acquiring new skills, new machines and how to operate them, and product research and development (Treinta et al., 2020). As the foundation for any strategy, the growth and learning perspective focuses on the organization's intangible assets, primarily the skills and internal capabilities required to support internal processes to create value (Johnsen, 2001).

Internal Processes Dimension

Internal processes are the internal ways in which the organization ensures that it meets the expectations of its stakeholders regarding financial performance, value, and the image that is presented to customers in the target market (Kaplan & Norton, 1999, 181).

The internal perspective focuses on the analysis of operational processes that aim to create value in the short and long term. This perspective is linked to the organization's productivity and efficiency (Kaplan & Norton, 1996; Oliveira et al., 2021).

The importance of the balanced scorecard also comes from the strong relationship between business processes and customers. Quality, cost, and timing issues are all very important when it comes to serving customer satisfaction. This perspective focuses on all the key

activities and processes required for the organization to excel in providing the value expected by customers with efficiency and productivity (Johnsen, 2001).

Sustainable Environmental Dimension

The environmental dimension contains the environmental conditions that the organization faces, such as political, economic, social, or technological conditions. Therefore, the organization aims to shape and control its behavior and the behavior of individuals to deal with these conditions.

The environment is considered a mixture of past, present, and future (Wheelen et al., 2017). The environmental dimension is considered the core of the organization's performance, so the performance of the organization cannot be measured or judged without taking into account the internal and external factors. Organizational performance is considered an integrated system of the organization's results and objectives through its interaction with the external and internal environment. Therefore, organizations must pay attention to their environmental responsibilities through recycling, using limited and scarce resources, and the safety ratio in its operations and activities (Sardi et al., 2020).

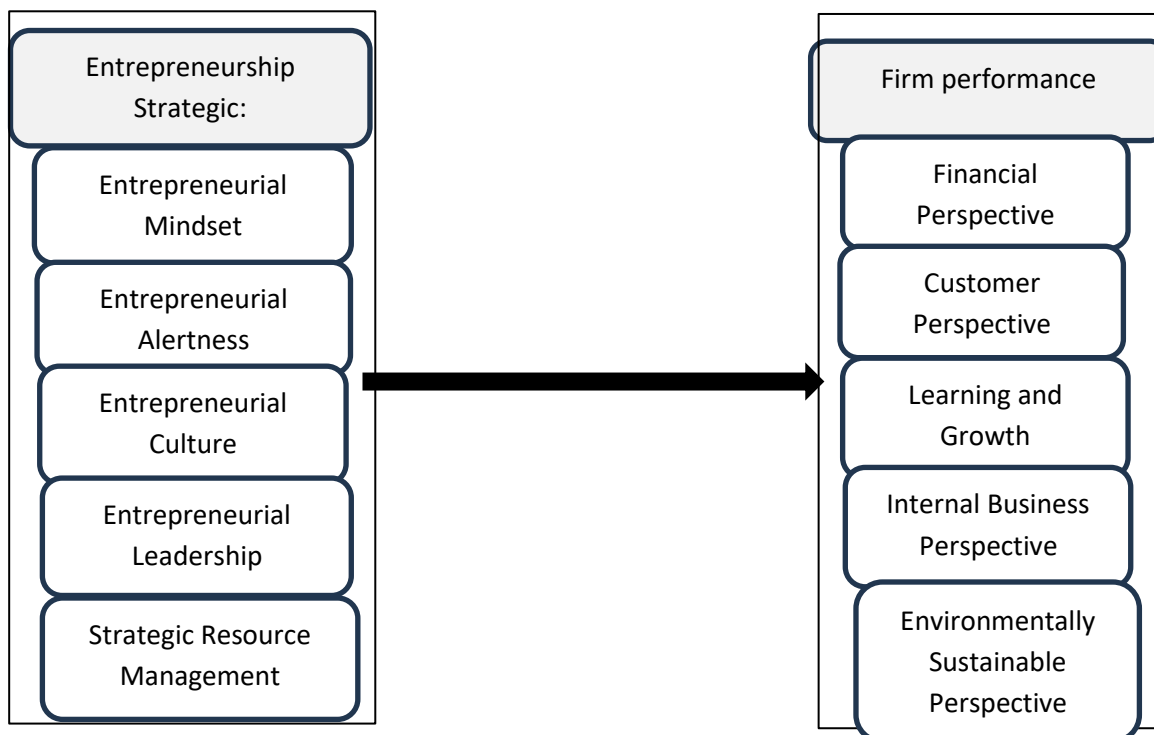
Jiangtao and Pin (2010) sought to identify how to incorporate the sustainable environmental dimension into the balanced scorecard in evaluation and investment decisions. They conducted a study to examine whether the environmental data integrated into the balanced scorecard would change investment decisions, and why these factors lead to different results. The sustainability results indicated that participants chose the most environmentally friendly investment option when adding the environmental dimension as a fifth perspective (Jiangtao & Pin, 2010). Similarly, Alewine & Stone investigated the most impactful type of sustainable balanced scorecard that would affect investment decision-making. They found in their experimental study that investments implemented to achieve the environmental dimension goals were better aligned with the other four perspectives as participants spent less time on them (Alewine & Stone, 2013).

Study Problem

The problem of the current study lies in the performance of Jordanian information and communication technology (ICT) companies, which are currently facing a complex and highly competitive environment, in addition to the rapid technological developments that have contributed to a state of environmental uncertainty.

Despite the research efforts in strategic entrepreneurship and corporate performance, there is a research gap in this relationship. Therefore, the problem of the study consists in the following main question: *What is the impact of strategic entrepreneurship, with its dimensions (entrepreneurial mindset, entrepreneurial alertness, entrepreneurial culture, entrepreneurial leadership, and strategic resource management), on Firm performance, with its dimensions (financial dimension, internal operations dimension, customer dimension, growth and learning dimension, and sustainable environmental dimension), in Jordanian ICT companies?*

Research model and Hypothesis



Resources:

- (Gökce et al., 2023; Gelard & Ghazi, 2014,35; Atif, 2018, 256; Hitt, 2012, 57; Bratnicka, 2014).
- (Sarigül & Ahmet; 2021; Xiaobo et al., 2019; Kaplan & Norton, 2000; HaPM, 2020; Zahraa & Ghazi, 2021; Wheelen et al , 2017; Sardi et al, 2020).

Hypotheses

H1: *There is no positive effect of strategic entrepreneurship and its dimensions (entrepreneurial mindset, entrepreneurial alertness, entrepreneurial culture, entrepreneurial leadership, and strategic resource management) on firm performance and its dimensions (financial performance, customer dimension, growth and learning dimension, internal operations dimension, and sustainable environmental dimension).*

Study Methodology

This study utilized a comprehensive survey method by targeting all Information and Communication Technology (ICT) companies within the King Hussein Business Park, totaling 50 companies, based on the management criteria of the park. The questionnaire consisting of 50 questions was distributed to these companies between 7/2023 and 8/2023, with an average of four questionnaires per company and a total of 200 questionnaires distributed.

The analysis unit was the top and middle management of these companies as they are responsible for most of the business activities they manage. The process involved distributing questionnaires directly to the management of the companies under study.

The process of developing the survey tool involved adopting indicators of items from variables previously conducted by researchers and adapting them to the context of this study. The questionnaire was measured on a Likert scale from 1 to 5 (1 = Agree very low degree, 2 = Agree low degree, 3 = Agree medium degree, 4 = Agree high degree, 5 = Agree very high degree.).

Data analysis was conducted using Structural Equation Modeling (SEM) with SmartPLS software based on variance. Structural Equation Modeling was implemented using external model analysis, internal model analysis, and testing the research hypothesis.

The study population consists of managers who work in the senior management of Jordanian information technology and communication companies, a total of 50 companies, according to the management of the King Hussein Business Park in Jordan.

- We will use in this article a questionnaire to collect information using a stratified random sample to represent the study population (Sekaran & Bougie 2016). The sample representing the study population will be 200 managers in the senior management of Jordanian information technology and communication companies, with four questionnaires being distributed to each company, for a total of 200 questionnaires for 50 companies. The data will be tested using the following statistical measures:

1. Cronbach's alpha coefficient: to verify the internal consistency of the scales used in the study.
2. Pearson correlation coefficient: to try to ensure that there is no high self-correlation between the dimensions of the independent variable.
3. Skewness and kurtosis test: to ensure the equal distribution of the data for this study.
4. Structural equation modeling (SEM) using Smart PLS: to show the direct and indirect effects of the study variables as stated in the hypotheses and model of the study.

Data Analysis

Table 2

Analysis of personal variables

Variable	Items	Percentage	Count
Gender	Male	59.46 %	88
	Female	40.54 %	60
Age	Less than 30 years	42.57	63
	30 Under 40 years old	25.68	38
	40 less than 50 years old	22.30	33
	50 years and above	9.46	14
Qualification	Intermediate Diploma	8.11	12
	Bachelor	65.54	97
	Master	18.92	28
	Doctorate	7.43	11
Number of years of work experience	Less than 5 years	21.62	32
	5 years – less than 10 years	26.35	39
	10 years – less than 15 years	14.19	21
	20 years and above	37.84	56

Table 2 demonstrates that the number of males is greater than the number of females, where the male count reached 88 individuals, constituting a percentage of 46.59%. On the other hand, the female count was 60 individuals, representing a percentage of 40.54%. This higher proportion of males can be attributed to the nature of work in information technology companies, which often demand significant commitment in terms of effort or time.

Table 2 indicates that the age group under 30 years old is the highest among other groups in this study, with a count of 63 individuals, constituting a percentage of 42.57%. This suggests

that information technology and communication companies focus on integrating younger individuals into middle and senior management positions. Conversely, the smallest age group in the companies was the 50 years old and above category, with a count of 14 individuals, representing a percentage of 9.46% of the total study sample.

Table 2 illustrates that the highest count and percentage were for the bachelor's degree holders, with a count of 97 individuals, constituting 65.54% of the total. Conversely, the results show that the lowest count was for the doctoral degree holders, with a count of 11 individuals, representing 8.11% of the total study sample. This outcome could be explained by the emphasis of information technology and communication companies on professional experience rather than academic qualifications.

The table also demonstrates that the highest count for the variable of years of practical experience was for the 20 years and above category, with 56 managers and a percentage of 37.84% of the total study sample. Conversely, the lowest count was for the category of less than 10 years of experience, with 21 individuals and a percentage of 14.19% of the study sample. This indicates the requirement of information technology and communication companies for extensive years of experience, reflecting their focus on filling senior and middle management positions with practical experience aligned with the job requirements.

Description of the dimensions of the study variables

Table 3

The arithmetic mean, standard deviation, rank, and relative importance of individuals' answers to the strategic entrepreneurship variable and its dimensions:

	Dimensions	Mean	Standard deviation	Rank	Results
1	Entrepreneurial mindset	4.423	0.728	1	High
2	Entrepreneurial Vigilance	4.382	0.713	3	High
3	Entrepreneurial Culture	4.399	0.730	2	High
4	Entrepreneurial Leadership	4.320	0.756	5	High
5	Manage resources strategically	4.381	0.717	4	High
<i>General rate</i>		<i>4.381</i>			<i>High</i>

Source: Prepared by the researcher based on the results of the Smart PLS

The results presented in Table 3 indicate that the level of relative importance of strategic entrepreneurship in information technology and communication companies overall was high. The overall mean for strategic entrepreneurship was 4.381, with the mean scores for the dimensions of strategic entrepreneurial ranging between 4.320 and 4.423. The dimension of "entrepreneurial mindset" ranked highest with a mean score of 4.423 and a standard deviation of 0.728, while the dimension of "leadership" ranked lowest with a mean score of 4.320 and a standard deviation of 0.756. This demonstrates that the high relative importance of all dimensions of strategic Entrepreneurship reflects the focus of information technology and communication companies on fostering a creative thinking approach, possessing a proactive mindset, and relying on innovative solutions to address continuous changes.

Analysis of the results of the dimensions of the dependent variable "Firm performance"

Table 4

The arithmetic mean, standard deviation, rank, and relative importance of individuals' answers to the dependent variable, firm performance and its dimensions.

	Dimensions	Mean	Standard deviation	Rank	Results
1	Financial performance	4.623	0.691	1	High
2	Customers Dimension	4.441	0.711	3	High
3	Internal operations dimension	4.466	0.821	2	High
4	Growth and learning dimension	4.246	0.802	5	High
5	Sustainable Environmental Dimension	4.295	0.728	4	High
<i>General rate</i>		<i>4.414</i>			<i>High</i>

Source: Prepared by the researcher based on the results of the Smart PLS

The results depicted in Table 4 revealed that the level of relative importance of Firm performance in information technology and communication companies overall was high. The overall mean for Firm performance was 4.414, with the mean scores for the dimensions of Firm performance ranging between 4.623 and 4.246. The "financial" dimension ranked highest with a mean score of 4.623 and a standard deviation of 0.616, while the "growth and learning" dimension ranked lowest with a mean score of 4.246 and a standard deviation of 0.821. This indicates that the high relative importance of all dimensions of firm performance reflects the focus of information technology and communication companies on enhancing their performance, not only financially but also in all aspects of balanced performance, towards achieving distinguished and sustainable firm performance.

Measurement Model Assessment

There are two types of measurement models related to Structural Equation Modeling (SEM): Structural Equation Formative Models, which are as follows:

Formative Models: In Formative Models, indicators are the cause of the formation of the construct being studied. The arrow in the model points from the indicators towards the construct.
Reflective Models: In Reflective Models, the indicators reflect the construct. The arrow in the model points from the construct towards the indicators (Hair et al, 2014 (This study relied on the Reflective Model for measurement, which is based on the Classical Test Theory. This model is called reflective because it is based on the principal assumption that the different indicators being measured reflect the latent constructs that influence them. In this model, the influence flows from the latent variable to the indicators, rather than the other way around as in formative models (Hair et al., 2022, 51-52).

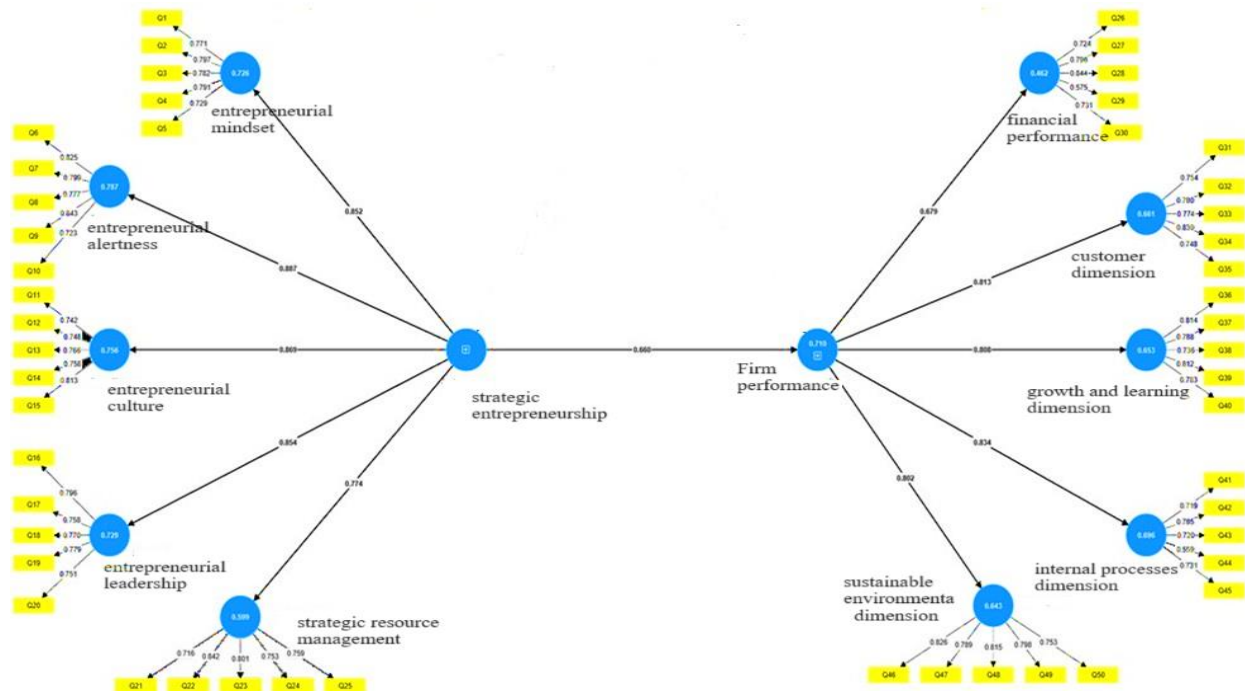
Convergent Validity

This indicator demonstrates the convergence of items in the study instrument (questionnaire) for measuring variables and their dimensions. It also illustrates the strength of the correlation between the items used to measure the variable and its dimensions (Hair et al., 2019).

Table.5 illustrates indicators of convergent validity, measured through Factor Loading, Cronbach's alpha, Composite Reliability, and Average Variance Extracted.

Factor Loading

Table.5 displays the values of the factor loading. Hair et al. (2022, 23) indicated that the items in the study instrument should have values greater than 0.7. Table 16.5 indicates that all factor loading values exceeded the minimum threshold, thus exceeding 0.7. Figure 1.5 illustrates this.



Source: Prepared by the researcher based on the results of the Smart PLS.

Table 5
 Convergent Validity Indicator

variable	Dimensions	Items	Loading 0.70≤	Cronbach's Alpha 0.70≤	CR 0.70≤	Extracted contrast rate AVE 0.50≤			
Strategic Entrepreneurship	Entrepreneurial mindset	Q1	0.771	0.833	0.882	0.600			
		Q2	0.668						
		Q3	0.782						
		Q4	0.791						
		Q5	0.729						
	Entrepreneurial Vigilance	Q6	0.825				0.853	0.895	0.631
		Q7	0.799						
		Q8	0.777						
		Q9	0.843						
	Entrepreneurial Culture	Q10	0.723				0.823	0.876	0.587
		Q11	0.742						
		Q12	0.748						
		Q13	0.766						

		Q14	0.758			
		Q15	0.813			
	Entrepreneurial Leadership	Q16	0.796	0.829	0.880	0.594
		Q17	0.758			
		Q18	0.770			
		Q19	0.779			
		Q20	0.751			
	Manage resources strategically	Q21	0.716	0.833	0.882	0.601
		Q22	0.842			
		Q23	0.801			
		Q24	0.753			
		Q25	0.759			
Firm performance	Financial dimension	Q26	0.720	0.790	0.856	0.547
		Q27	0.823			
		Q28	0.874			
		Q29	0.526			
		Q30	0.715			
	Customers	Q31	0.753	0.837	0.884	0.605
		Q32	0.781			
		Q33	0.775			
		Q34	0.831			
		Q35	0.747			
	internal operations	Q36	0.814	0.747	0.832	0.500
		Q37	0.789			
		Q38	0.733			
		Q39	0.812			
		Q40	0.784			
	growth and learning	Q41	0.771	0.846	0.890	0.619
		Q42	0.826			
		Q43	0.586			
		Q44	0.711			
		Q45	0.702			
	Sustainable Environmental Dimension	46	0.826	0.856	0.897	0.635
		Q47	0.788			
		Q48	0.814			
		Q49	0.799			
		Q50	0.755			

Source: Prepared by the researcher based on the results of the Smart PLS

Heterotrait-Monotrait Ratio of Correlations (HTMT)

If the HTMT value is less than 0.9, this is considered positive evidence that there is a causal structure between the variables. Therefore, it can be inferred that the different variables are reasonably related to the given single variable (Henseler et al., 2015, 115-135)

Table 6
Discriminant Validity using HTMT

Dimension	E. mindset	E. Vigilance	E. Culture	E. Leadership	Manage resources strategically	Financial dimension	Customer's Dimension	internal operations Dimension	growth and learning	Sustainable Environmental Dimension
Entrepreneurial mindset	0.729									
Entrepreneurial Vigilance	0.705	0.884								
Entrepreneurial Culture	0.612	0.759	0.700							
Entrepreneurial Leadership	0.703	0.799	0.632	0.711						
Manage resources strategically	0.704	0.764	0.697	0.698	0.828					
Financial Customers	0.642	0.817	0.697	0.699	0.869	0.960				
	0.708	0.848	0.762	0.723	0.820	0.978	0.835			
internal operations growth and learning	0.636	0.814	0.466	0.576	0.669	0.666	0.545	0.593		
Sustainable Environmental	0.448	0.919	0.649	0.516	0.577	0.614	0.496	0.590	0.650	
	0.696	1.002	0.776	0.730	0.776	0.846	0.790	0.729	0.810	0.707

Source: Prepared by the researcher based on the results of the Smart PLS

Coefficient of Determination *R*² and Adjusted Coefficient of Determination *R*²

The coefficient *R*² represents the proportion of variance explained and ranges from 0 to 1, where higher values closer to 1 indicate higher explanatory power and predictive strength within the sample.

Table 7
*Coefficient of Determination *R*²*

	<i>R</i> ²	Adjusted <i>R</i> ²	Results
performanceFirm	0.710	0.706	High

Source: Prepared by the researcher based on the results of the analysis

Table 7 displays the values of the coefficient of determination *R*² and the adjusted coefficient of determination *R*². The adjusted *R*² is a more conservative measure compared to the traditional measure, taking into account the number of explanatory variables relative to the size of the dataset (Hair et al., 2021, p. 119). Following guidelines in hierarchical item model analysis, which consists of two tiers, values of sub-dimensions (lower-order variables) should not be considered, and only values of higher-order variables should be considered (Sarstedt et al., 2020). The analysis results showed approximate agreement between the values of *R*² and adjusted *R*², confirming the model's suitability for the data and the absence of variables that do not significantly contribute to explaining the dependent variable. The *R*² value for firm performance was 0.710, considered high, as strategic entrepreneurship explained 71.0% of the variance in firm performance.

Predictive Model Strength Assessment

Table 8

Summary Prediction of PLS Path Model for Latent Variables (LV)

Variable	Q2	RMSE	MAE
Firm Performance	0.681	0.579	0.453

Source: Prepared by the researcher based on the results of the analysis

From Table (8), it is evident that all predict^{Q2} values for the indicators of the internal variables (strategic entrepreneurship) in the study model are greater than zero. This indicates that the PLS path model is superior to the simple benchmark in predictive strength, as most predictive errors for the PLS path model are lower than those for the simple benchmark (Hair et al., 2022, 201).

Hypothesis Testing

H01: *There is no positive effect of strategic entrepreneurship and its dimensions (entrepreneurial mindset, entrepreneurial alertness, entrepreneurial culture, entrepreneurial leadership, and strategic resource management) on firm performance and its dimensions (financial performance, customer dimension, growth and learning dimension, internal operations dimension, and sustainable environmental dimension).*

Table 9

Test of Significance for the Path Coefficients of the First Main Hypothesis

	Path Coefficient t (β)	R ²	t statistics (O/STDEV)	p value	Confidenc e Intervals (%95)	Moral Significanc e (p < 0.05)
Strategic entrepreneurshi p Firm performance - >	0.665	0.710	7.423	0.000	[0.820- 0.480]	Supported

Source: Prepared by the researcher based on the results of the analysis

The results in Table 9 indicate a statistically significant effect of strategic entrepreneurship on Firm performance, with a β value of 0.665 at a significance level of ($p=0.000$). This value is lower than the assumed significance level of 0.05, indicating statistical significance. Furthermore, the t-value of 7.423 exceeds the critical value of 1.96, with a confidence interval of [0.820-0.480], demonstrating the stability of the path coefficient estimates. This also suggests a positive effect of strategic entrepreneurship on Firm performance, indicating that strategic entrepreneurship contributes positively by 74.23% to Firm performance. Assuming other variables remain constant (Paribus Ceteris), a one-unit increase in strategic entrepreneurship will lead to a 74.23% increase in firm performance for information and communication technology companies. Additionally, the coefficient of determination (R^2) for firm performance is 0.710, indicating that strategic entrepreneurship, while 29% of the variance may be explained by other variables not included in the model. This high explanatory power demonstrates the quality of the model in explaining the study phenomenon. Therefore, we reject the null hypothesis and accept the alternative hypothesis stating that there is a statistically significant effect of strategic entrepreneurship dimensions

(entrepreneurial mindset, entrepreneurial alertness, entrepreneurial culture, entrepreneurial leadership, and strategic resource management) on Firm performance dimensions (financial performance, customer dimension, growth and learning dimension, internal processes dimension, and sustainable environmental dimension) in information and communication technology companies at the King Hussein Business Park in Jordan.

Conclusion

Information and communication technology (ICT) companies face numerous challenges and increasing competition continuously. Consequently, these companies need to develop their strategies and make them more intelligently pioneering for the various products or services offered. The objective of this research is to test the impact of strategic entrepreneurship (SE) through its entrepreneurial mental dimensions, entrepreneurial alertness, entrepreneurial foresight, entrepreneurial entrepreneurship, and strategic resource management, on companies' performance using the advanced balanced scorecard. In this paper, structural equation modeling was utilized using Smart PLS. A questionnaire was employed as a study tool, distributing 160 questionnaires to senior and middle management levels, retrieving 148 valid responses for analysis. The results indicate a direct and positive effect of strategic entrepreneurship with its dimensions on companies' performance. Furthermore, these findings can support companies in enhancing their capabilities in the field of strategic entrepreneurship to achieve higher and distinguished levels of performance.

Strategic entrepreneurship in ICT companies is of great importance in the modern market, as it contributes in achieving competitive excellence and enhancing company performance. Through this research, an important theoretical and practical contribution is made to this the field. First, the research provides a deeper understanding of the dimensions of strategic leadership that influence the performance of IT firms and communications, such as entrepreneurial mindset, entrepreneurial alertness, entrepreneurial culture, entrepreneurial leadership, and strategic resource management. In addition, the research highlights the relationship between strategic entrepreneurship and financial and non-financial performance of companies in this sector, providing valuable guidance to executives and policy makers to improve companies' performance and enhance their sustainability in the market.

Contextually, this research fulfills a crucial role in supporting the development and sustainable growth of the IT industry and communications. By better understanding the factors that influence the performance of these companies, leaders in this sector can improve Their strategies and make the most effective decisions to succeed in a rapidly changing business environment. In addition, this research can to contribute to directing investments and political trends in the technology and communications sector, which supports economic development and creating job opportunities in this field. Overall, this research contributes to enhancing our understanding of the relationship between strategic entrepreneurship and performance ICT companies and provides a foundation for future development and growth in this vital sector.

Recommendations

Through the results of the study, some recommendations can be mentioned for ICT companies, which are the importance of applying the concept of strategic entrepreneurship to its ability to determine the direction of the company and determine its goals and plans necessary to achieve a high level of organizational performance. By applying the concept of strategic entrepreneurship, it is possible to provide the company with a vision and determine

how it can achieve success. In the market through the presence of an entrepreneurial mentality that enables the company to develop pioneering ideas that achieve great success in the market.

Strategic entrepreneurship can also help identify competitors, identify opportunities and challenges that could affect the company, and effectively manage resources, including human, financial, and technological assets, in order to achieve desired organizational goals through entrepreneurial alertness and strategic management of resources. Also, applying strategic entrepreneurship in ICT companies can improve organizational efficiency and improve innovation and creativity in the organization through the presence of an entrepreneurial culture in companies. Therefore, the importance of strategic entrepreneurship is increasing, as companies face increasing pressures such as globalization and rapid technological progress, it has become necessary to adopt entrepreneurship and strategic management practices. It will enable companies to survive, face threats, thrive, achieve long-term growth, contribute to economic development, and improve their performance not only financially, but also at the level of customer satisfaction, growth, learning, and at the level of internal operations, and improving their environmental practices.

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