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(YÜKSEK LİSANS TEZİ)

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TEZ ONAY SAYFASI

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Yukarıda başlığı gösterilen tez çalışmamın a) Kapak sayfası, b) Giriş, c) Ana bölümler ve d) Sonuç kısımlarından oluşan toplam 147 sayfalık kısmına ilişkin, 12/07/2023 tarihinde şahsım tarafından *TURNİTİN* adlı intihal tespit programından (Turnitin)* aşağıda belirtilen filtrelemeler uygulanarak alınmış olan özgünlük raporuna göre, tezimin benzerlik oranı %10 'dır.

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COVID 19 pandemisi kapsamında bir kurtarma stratejisi olarak inovasyonun KOBİ'lerin finansal performansına etkisi

Bu çalışmanın temel amacı, COVID-19 salgınının yarattığı tehditlerin üstesinden gelmek için uyarlanmış bir kurtarma stratejisi olarak (ürün inovasyonu, süreç inovasyonu, organizasyonel inovasyon ve pazarlama inovasyonu) temelli inovasyon ile şirketlerin finansal performansı arasındaki ilişkiyi araştırmaktır. Araştırmanın amacını gerçekleştirebilmek için araştırma hipotezleri mevcut literatürdeki açığı gidermeye yönelik olarak tasarlanmıştır. İnovasyon türlerinin firma finansal performansı ile istatistiksel olarak anlamlı ve pozitif bir ilişkiye sahip olacağı tahmin edilmektedir. Geri dönüşlerin hızlı ve yüksek oranda olması için araştırma verileri anket yöntemi kullanılarak toplanmıştır. Araştırma örneklemini Güney Yukarı Mısır bölgesinde bulunan KOBİ'ler oluşturmaktadır. Güney Yukarı Mısır'daki orta ve küçük işletmeler, bu tür çok sayıda projenin varlığı ve Mısır'ın güney valiliklerinin (Asvan, Qena, Luxor, ve Sohag) vatandaşlarının iş fırsatları yaratmak için bu tür işletmelere büyük ölçüde güvenmeleri nedeniyle seçilmektedir.

Anahtar Sözcükler:

İnovasyon, KOBİ, Finansal Performansı, COVID 19

ABSTRACT

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The impact of innovation as a recovery strategy on the financial performance of SMEs within the scope of the COVID-19 pandemic

The main purpose of this study is to investigate the relationship between innovation based on (product innovation, process innovation, organizational innovation, and marketing innovation) as a recovery strategy adapted to overcome the threats posed by the COVID-19 pandemic and the financial performances of companies within the theoretical framework that guides this study. To study these goals, the research hypotheses are designed to fill the gap in the literature. It is predicted that the innovation types will have a statistically significant and positive relationship with the firm financial performance. Research data were collected using the survey method to obtain a fast and high response rate. The research sample is SMEs located in South Upper Egypt. Medium and small enterprises in South Upper Egypt are chosen as the research target population due to the presence of a large number of such projects and the fact that citizens of Egypt's southern governorates (Aswan, Qena, Luxor, and Sohag) rely heavily on these types of enterprises to create job opportunities.

Keywords:

Innovation, SMEs, Financial Performance, COVID 19

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ANOVA	Analysis of variance
CAPMAS	Central Agency for Public Mobilization & Statistics
COVID-19	Coronavirus disease of 19
EU	European Union
EVA	Economic Value Added
FSA	Financial Statement Analysis
GDP	Gross Domestic Product
H_1N_1	Swine Flu
ICT	Information and Communication Technology
IFRS	International Financial Reporting Standards
MOF	The Ministry of Finance
MOHER	The Ministry of Higher Education and Research
MOI	The Ministry of Investment
MOTI	The Ministry of Trade and Industry
OECD	Organization for Economic Cooperation and Development
R&D	Research and Development
SARS	Severe Acute Respiratory Syndrome
SBA	The Small Business Administration
SFD	The Ministry of Social Fund for Development
SMEs	Small and Medium-Sized Enterprises
SPSS	Statistical Package for the Social Sciences
WHO	World Health Organization

INTRODUCTION

The outbreak of COVID in late 2019, which began in China, has spread all over the world by April 2020. And negatively affected both the human health and the economies of all countries (Morales & Omar, 2021). The COVID-19 crisis was an unforeseen, low-probability, and unexpected event (Ratten & Jones, 2021). In response to this crisis governments around the world, imposed restrictions to limit the spread of the virus. Among these restrictions are social distancing, movement control orders, travel bans, and the closure of public places (Saez et al., 2020). As a consequence, these actions have hampered import and export operations and slowed the economic flow across all economic sectors and enterprises including small and medium enterprises (SMEs). Governments, societies, and small and medium enterprises all across the world have been confronted by the COVID-19 epidemic (Breier et al., 2021). As it is known, small and medium-sized enterprises constitute the backbone of any economy. This kind of enterprise is viewed as one of the main aspects that add to economic growth and back the expanding Gross Domestic Product of numerous nations. It broadens trade opportunities and also assists in the creation of new jobs (Sun et al., 2021). But at the same time, small and medium enterprises face the liability of smallness which implies that these enterprises control fewer resources, and as a result, small and medium enterprises are seen to be more defenseless against internal and external events like important employees quitting work, the decline in demand because of a new rival entering the market, or as in the case of this thesis, an emergency hitting the worldwide economy (Eggers, 2020). In addition, small and medium enterprises are dealing with significant economic burdens and uncertainty and they also are suffering from the absence of formal planning, managerial and technical skills, and restricted economic resources which ultimately make them more prone to failure (Morales & Omar, 2021).

In light of the fact that small and medium enterprises already have limited resources, the COVID-19 pandemic has had a deeper effect on small and medium enterprises as it led to a lack of manpower and disruption of production inputs. As a result, many small and medium enterprises are predicted to disappear as a response to the “new normality” which would necessitate adjustments in business and infrastructure management. Under this scenario, it

is clear that the COVID-19 pandemic has caused a shift in the business environment, posing numerous challenges (Van Auken et al., 2021). Therefore, innovation has been regarded as a critical aspect of small and medium enterprises' business recovery in order to repair the damage done to the enterprises and ensure their survival during this challenging period as COVID-19 has tested the public health system, the recovery from COVID-19 is now testing the world economic systems (Chesbrough, 2020).

The term innovation refers to an organization's adoption of new technology or management practices to accomplish a desired improvement in its operations (OECD, 2005). The main aim of innovation commonly is to; create distinctive new products or processes that can serve the needs of the business customers more competitively than the ones that already exist, increase the business market share through adding enhanced products, and enter new promising markets (Zahra et al., 1999). All of these practices are supposed to reduce costs, improve productivity, and increase sales growth (Gunday et al., 2011). There are different types of innovation discussed in the literature. (Schumpeter, 1911) distinguished five types of innovation which can be classified as process innovation, product innovation, organizational innovation, marketing innovation, and technical innovation (Joseph A Schumpeter et al., 2013). Process innovation refers to the implementation of a new enhanced production method using new techniques, mechanisms, or procedures to reduce cost or improve quality (Gunday et al., 2011). Product innovation refers to the use of new knowledge or technologies in order to introduce new or modified products to enhance the competitive advantage of the enterprise (OECD, 2005; Gunday et al., 2011). Marketing innovation implies using new marketing ideas that lead to major modifications in the products' features, product distribution channels, or pricing approaches in order to improve customer satisfaction (Gunday et al., 2011; OECD, 2005). Organizational innovation refers to the implementation of new administrative methods and procedures in the business practices of the firm in order to reduce administrative costs and improve employee satisfaction which aims to increase the overall performance of the firm (Gunday et al., 2011; OECD, 2005).

This thesis aims to investigate whether innovation based on (product innovation, process innovation, organizational innovation, and marketing innovation) _ as a recovery strategy adopted by small and medium-sized enterprises in Egypt in their attempt to overcome the threats posed by the COVID-19 pandemic has a positive impact on the Financial performance of these enterprises. Based on the literature, each variable in the study is designed by a specified definition and measurement. In this thesis, financial performance will be applied as the researchers argued that financial performance is the best way in expressing the impact of in-firm innovation. The financial performance of the Egyptian SMEs will be assessed using four criteria which are General profitability of the firm, Return on Assets (Net Income/Total Assets), Return on Sales (Net Income/Total Sales), and Cash Flow excluding investments.

In the first part of the research, the risk management concept has been explained, then the definitions of innovation used in various studies, the historical development of innovation concept, the significance of innovation, types of innovation, barriers to innovation, sources of innovation, and the relationship between innovation and risk management have been explained and a conceptual framework has been created on the subject.

In the second part, the SMEs concept has been presented, and different definitions of SMEs, key characteristics of SMEs, Strengths & weaknesses of SMEs, the Current Status of SMEs in Egypt, the significance of SMEs, and the challenges facing SMEs have been explained. Also, financial performance concepts and financial performance measurement methods have been presented.

In the third part of the thesis; the literature review has been presented in three sections; research studies conducted in Egypt, research studies in the World, and finally research studies about innovation and financial performance in times of crisis.

Then in the fourth part; the purpose, scope, model, and hypotheses of the research are explained. The findings obtained as a result of the methods and analyses followed during

the research process such as the sample of the research, data collection procedure, measurement tools, and statistical techniques used for data analysis are stated.

In the conclusion part of the thesis; the findings of the research are discussed by comparing the findings determined as a result of the analysis with the findings in the literature, the limitations of the research, and suggestions for future research are stated.

CHAPTER ONE

RISK MANAGEMENT & INNOVATION

1. RISK MANAGEMENT IN DISASTER AND EMERGENCY SITUATIONS

Disaster is the result of natural, technological, or human-based events that cause physical, economic, and social losses for people, interrupt normal life and human activities, and require external assistance. The processes of preventing disasters, reducing their damage, planning, directing, and coordinating the response and rescue efforts to organize the available resources for the purpose of ensuring effective and efficient practices in facing danger are called disaster management (Kadıoğlu, 2008:9).

The internationally recognized modern disaster management cycle mainly consists of two titles; Risk management, and Crisis management. The risk management phase includes prevention-oriented processes before the occurrence of the disaster such as preparedness, mitigation, and prevention. The crisis management phase consists of response, recovery, and development phases which cover the processes after the disaster. It is important to be recognized that the success of each stage affects the success of the next stage (Carter, 2008).

Figure 1: The conventional disaster management cycle

1.1. Disaster Risk Management

The first step in handling risk is represented in recognizing risk as a significant socio-economic and environmental issue. In this context, risk management refers to the process of identifying and evaluating the possibility and impact of harmful consequences arising from potential risk events (Powell et al., 2016). Disaster risk management, on the other hand, is defined as the systematic development of tasks, strategies, and policies to enhance our understanding of disaster risk, implement processes to reduce the impact of disasters, and encourage ongoing improvement in disaster preparedness, mitigation, and recovery efforts across society and the environment (Mojtahedi & Oo, 2017).

According to another definition; risk is the combination of the probability of a disaster occurring at a specific time and with specific negative consequences. In this context, disaster risk reduction is; the social, technological, and political processes created to prevent new risks and reduce existing ones. Risk management also includes a series of measures and activities carried out to develop administrative, operational, and organizational skills and increase capacities for the implementation of disaster risk reduction policies (Nikolić et al., 2020).

The formula used for calculating disaster risk is as follows: Disaster Risk = Hazard x Vulnerability. In this equation; risk is the product of two components; hazard, and vulnerability. Hazards are extreme events that are likely to have negative consequences. Vulnerability, on the other hand, is the condition in which protection against the negative effects of an event is insufficient (Garatwa, 2002). Thus, we can conclude that the goal of disaster risk management is to reduce and remove the economic, material, and social impacts resulting from the occurrence of the disaster.

1.2. Disaster Risk Management Stages

The need for societies to analyze risks and take precautions against disasters has led to the approach that there are manageable processes before and after disasters as a whole. Therefore, the fundamental elements of disaster risk management are divided into two phases: pre-disaster actions and post-disaster actions. The pre-disaster phase includes risk

identification, risk mitigation, and risk preparedness. The post-disaster phase is divided into emergency response, rehabilitation, and development (Mojtahedi & Oo, 2017).

1.2.1. Pre- Disaster stage

It constitutes the first stage of "Pre-Disaster" risk management activities, in which various actions are taken to reduce the loss of life and property and to overcome them with the least amount of damage possible before the occurrence of any disaster that may interrupt the daily life flow of societies. Actions conducted at this level are called preparedness and mitigation measures (Nikolić et al., 2020). These processes are divided into the following sub-headings:

Risk Identification: This process includes estimating the probability of occurrence and possible intensity of the expected hazard. In this context, determining the risk necessitates first assessing the risk. In risk assessment, many data are needed including past disaster data, regional hazard maps, and the number of vulnerable groups in the population. Furthermore, the risk must be defined, its scope must be dimensioned, and it must be articulated in an understandable manner in order to correctly respond to the risk (Garatwa, 2002).

Risk Reduction (mitigation): The objective of risk management is mainly to reduce risk. Generally, this process includes the implementation of structural and non-structural mitigation measures. It can be defined as the act of anticipating potentially dangerous physical events in order to prevent or reduce their economic, social, and environmental consequences. Briefly, it is the process of preventing the negative effects of the hazard in order to minimize the disaster risk and the vulnerability of societies. Prevention of danger occurs through the formulation and implementation of policies, strategies, and corrective interventions (Cardona, 2011).

Risk Preparedness: It is the process of developing emergency procedures for the anticipated risks so that societies are ready to respond effectively to disasters. It has three main components; the process of forecasting and alerting events, the process of taking

action in response to alerts, and the process of strengthening the capacity for an effective timely response. A proactive high-level response to disasters helps to reduce losses (Mojtahedi & Oo, 2017). The main objective at this stage is to respond effectively and appropriately when a risk arises, as it is impossible to prevent the consequences of risky events.

1.2.2. Post Disaster stage

The post-disaster phase includes the implementation of recovery measures as well as the elimination of disaster-related consequences. This phase is defined as the process of combining measures to prepare for and minimize the effects of the next disaster (Nikolić et al., 2020).

Emergency Response: This phase includes the measures and life-saving activities which are implemented immediately after a disaster. These measures are aimed at reducing the loss of lives and protecting property, as well as coping with and eliminating the immediate consequences caused by the disaster (Carter, 2008).

Recovery: The recovery phase involves rehabilitation and reconstruction activities which are aimed at reducing vulnerability and returning life to normal. Recovery from disasters provides a chance to reduce disaster risk and improve adaptive capability (Mojtahedi & Oo, 2017). In the reconstruction phase the reasons and effects of the previous occurrence, as well as potential changes in risk, are analyzed. After that, the findings are taken to determine the essential precautionary steps for prevention and preparedness. The goal is to keep the calamity from happening again (Garatwa, 2002). Also, developing infrastructure that will be valuable after the emergency is over is considered an opportunity to promote positive socio-economic change.

All the stages of disaster risk management processes are linked together and interconnected. There is no beginning or end to these stages. The format of the disaster risk management cycle should not convey the idea that each activity segment is clear and precisely separated from adjacent ones. On the contrary, it is critical to recognize that segments frequently overlap and merge. This format is purely schematic. It cannot and does

not indicate the length of the parts or their relative importance. For example, the real recovery time varies greatly depending on the disaster. Or, depending on the circumstances, the relevance, priority, and effort devoted to prevention may be insignificant in comparison to, say, preparedness (Carter, 2008).

1.3. COVID-19 as a biological disaster

Disasters are natural and man-made according to their sources; developing suddenly and slowly according to the rate of occurrence. Man-made disasters involve warfare and socio-technical disasters. Natural disasters can be divided into three groups; hydro-meteorological disasters, geophysical, and biological disasters. Natural disasters are catastrophic events caused by natural causes, while man-made disasters are catastrophic events caused by human decisions (Sawalha, 2020).

Many examples of biological threats have plagued humanity throughout history, resulting in terrible outbreaks, and eventually pandemics. The demographic, political, and economic consequences of these biological dangers, as well as the deaths of millions of individuals, have had a significant impact on society. The bird flu, H1N1 virus, or, more recently, SARS-CoV-2 are all examples of pandemics that threatens a broad region, continent, or perhaps the entire world. A biological disaster is a natural occurrence that causes widespread disease, or death among humans, animals, and plants. It can be described as natural, unintentional, or intentional. Millions of people have died as a result of the disasters, and hundreds of millions more have been injured. The creation of systems for the appropriate identification of biological outbreaks is the most important issue involving the main defense against serious diseases of biological outbreaks (Artik et al., 2021).

1.3.1. COVID 19 pandemic

Coronavirus is one of the most contagious infections, and it usually occurs after a person has been infected with severe acute respiratory syndrome. Because of its widespread occurrence across several countries, the disease has evolved as a pandemic public health issue. As a result of this pandemic, governments have imposed stricter restrictions on both

individuals and corporations (Hasanat et al., 2020). Throughout history, many people have died as a result of infectious diseases. The Covid-19 pandemic, which began in the Chinese city of Wuhan in late December 2019, began in a specific region but then has spread throughout the world. In this context, on January 30, 2020, the World Health Organization (WHO) announced the Covid-19 outbreak as a Public Health Emergency of International Importance, and on March 11, WHO announced that the outbreak had reached a pandemic level (Ratten & Jones, 2021). COVID-19 has harmed human health as well as the economies of all countries. Governments found themselves dealing with multidimensional pandemic-related issues, including direct effects on public health systems, as well as indirect socio-economic effects such as economic disruption and mass unemployment. In response to this pandemic, governments around the world imposed restrictions to limit the spread of the virus. Among these restrictions are social distancing, movement control orders, travel bans, and the closure of public places (Saez et al., 2020).

As of 22 May 2022, when the most recent WHO report is examined, the impact of COVID-19 on human life is revealed. When Figure 2 is examined, more than 522 million Covid-19 cases have been confirmed and more than 6 million death reports have been reported globally. At the regional level, the number of new weekly cases grew in the Americas Region (+13%) and the Western Pacific Region (+6%), while the remaining four areas experienced declining trends. The number of new weekly deaths grew by 30% in the Eastern Mediterranean, remained constant in the Western Pacific and the Americas (both <1%), and decreased in the other regions (WHO, 2022).

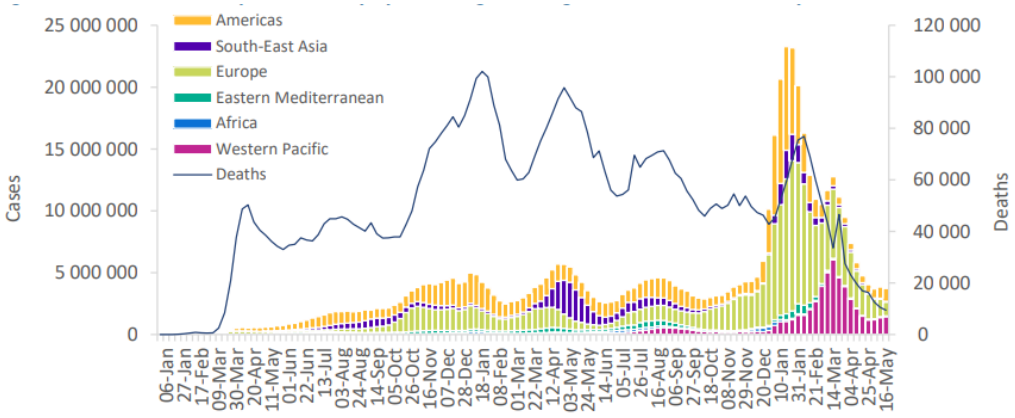

Figure 2: COVID-19 cases reported weekly by WHO, as of 22 May 2022

As discussed, COVID-19 has badly affected the world and forced governments to take restrictive actions. As a consequence, these actions have hampered import and export operations and slowed the economic flow across all economic sectors. Governments, societies, and small and medium enterprises all across the world have been confronted by the COVID-19 epidemic (Breier et al., 2021).

As it is known, small and medium-sized enterprises constitute the backbone of every economy. Small and medium enterprises are viewed as one of the main perspectives that add to economic growth and back the expanding Gross Domestic Product of numerous nations. But at the same time, these enterprises face the liability of smallness as small and medium enterprises control fewer resources, and by extension, they are seen to be more defenseless against internal and external events such as an important representative quitting his work, the decline of demand because of a new rival entering the market, or as in the case of this thesis, an emergency hitting the worldwide economy (Eggers, 2020). In addition, small and medium enterprises are dealing with significant economic burdens and uncertainty and they also are suffering from the absence of formal planning, managerial and technical skills, and restricted economic resources which ultimately make them more prone to failure (Morales & Omar, 2021).

In light of these facts, the COVID-19 pandemic is expected to have a deeper effect on small and medium enterprises as it led to a lack of manpower and disruption of production inputs. As a result, many small and medium enterprises are predicted to disappear as a response to the "new normality" which would necessitate adjustments in business and infrastructure management. Under this scenario, it is clear that the COVID-19 pandemic has caused a shift in the business environment, posing numerous challenges (Van Auken et al., 2021). Therefore, innovation has been regarded as a critical aspect of small and medium enterprises' business recovery in order to repair the damage done to the enterprises and ensure their survival during this challenging period (Chesbrough, 2020).

"Innovate or die." – Drucker 1999.

2. INNOVATION CONCEPT

The concept of innovation has become a standout expression and among the words that appear to be used in our daily life. Innovation is a broad term and is seen to be one of the main drivers of economic growth, decisions making processes, and the creation of new or improved products or processes (Kogabayev & Maziliauskas, 2017). It's important to be realized that innovation is not a one-time phenomenon, but rather, a protracted and aggregated process involving several hierarchical steps spanning from the generation of new ideas to their execution resulting in dynamic growth, value addition, and pure profit generation for the innovative business enterprise (Urabe et al., 1988). Recently the pace of innovation has accelerated and innovation nowadays is more than just the generation of something new; it is also seen as a panacea for solving various problems (Kotsemir et al., 2013). However, while choosing and implementing the necessary tools and strategies concerns about “when”, “where”, and “how” to undertake innovation are critical as the major dimensions of innovation can imply significant costs and risks, and the present COVID-19 epidemic has expanded both, seriously having a significant impact on the performance of all enterprises and especially the small and medium ones (Morales & Omar, 2021).

“In an economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge” (Nonaka, 1991).

2.1. The development of the innovation concept from the historical perspective

Humans have been innovating since the dawn of civilization. Prior to the nineteenth century, scientific breakthroughs, advanced technology, and revolutionary new products were often the result of the painstaking efforts of individual innovators rather than the coordinated efforts of major organizations (Berkhout et al., 2007).

Pre 19th century

Novation is a legal term that appeared in the thirteenth century and meant "the renewal of an obligation by changing the contract for a new debtor". This term was not commonly used in other sciences until the twentieth century (Taylor, 2017). (Godin, 2008) argues that

it was thought that there was no relationship between innovation and creativity during this period, as innovation was recognized as change rather than creativity. And also because of the strength of the Church in this era, innovation faced obvious resistance and was regarded as introducing something bad and depraved in political affairs and the church; consequently, innovation was viewed as heresy. Also, innovators were regarded as heretics, suspicious, and untrustworthy persons, which made them a subject of ridicule. According to (Godin, 2008) the reasons for this contempt and negative perception of innovation and innovators were:-

- In many cases, only innovators were aware and could explain the benefits that society can gain from their innovations.
- The insufficient development of science besides poor management and fraud.

The second half of the 19th century – first half of the 20th century

During this period, it became clear that there was a gradual shift toward looking at innovation in a positive way. The theories of innovation began to appear in various fields, as a result of the prevailing tendency to explain the changes that occur in various areas of life through innovation (Kotsemir et al., 2013).

At the end of the nineteenth century, new theories for understanding novelty emerged, most of which were social in nature. The first such theories emerged in the field of anthropology and innovation was studied as "culture change". In the late nineteenth century, Gabriel Tarde developed the first theory of innovation in sociology. Tarde was concerned with explaining the “social change” in terms of language, religion, law, and economic regime. As a result of Tarde’s efforts, the concept of innovation appeared to be widely used as a synonym for novelty, but without a precise definition of the concept. However, sociological literature is distinguished by its description of innovation as a process. The concept continued to spread and was used by many sociologists such as Stern (1927) and Chapin (1928) who preferred to use the term “technological change”. Until 1941, the term innovation was not used until it first appeared in a paper written by Ogburn. Innovation, in the hands of Ogburn and his contemporaries, meant many things. One of

them was simply "novelty". The second meaning is "social change". The third meaning is the use of technological inventions – and their social implications. The fourth meaning is "technological invention" as it is commercialized by industry. Also among anthropologists, there was H. G. Barnett who created a theory of innovation and defined innovation as any new thought, activity, or thing that is distinct from current forms. According to Barnett, everyone is innovative, but he could not find an accurate description of how innovation happens in the literature (Godin, 2008).

In summary, we can say that sociologists and anthropologists have viewed innovation as a phenomenon and a broad model concept. As a result, they adopted the "macro-level" or the "society-level" perspective on innovation. Their analysis was more descriptive than highly calculable mathematically (Kotsemir et al., 2013).

Economists, on the other hand, had a different perspective on innovation. They were more interested in the technical aspects of innovation. Economists considered innovation as a process and viewed it as a tool for gaining a competitive advantage, or a method for increasing productivity and developing new products. The pioneer here was Joseph Schumpeter, the father of the innovation theory, one of the first economists to employ the concept of innovation in his studies of the economy (Kogabayev & Maziliauskas, 2017). Schumpeter identified five different types of innovation;

1) introduction of a new product; 2) introduction of a new production method; 3) opening of a new market; 4) development of new sources of supply for raw materials; 5) implementation of a new organizational structure (Scerri, 2018).

The Cobb-Douglas production function, which is an equation that links the quantity of output to the quantity of input, is interpreted as representing the first mathematical model of technological change. In the late 1930s, the US Works Projects Administration began using the term technological change on a regular basis to analyze the contribution of technology usage and its relationship to changes in employment, productivity, and economic growth. In the early 1940s, Maclaurin gave the term a new meaning that focused on developing and commercialization of new products instead of using technical processes in production. By the early 1950s, Maclaurin was using both the terms technological change and

technological innovation. But because of World War II, the trend in innovation studies was severely disrupted (Godin, 2008).

Through this analysis of the evolution of the concept of innovation, it is obvious that the basis for the concept and studies of innovation was established in the first half of the twentieth century.

1960s – 1990s

At the beginning of the 1960s, innovation statistics, and methodological developments started to be discussed at an international level, and innovation became widely regarded as the main tool of competitive struggle in business and among nations as well. The latter half of the 1960s was a period of rapid business expansion. To stay ahead of the competition, businesses were broadening their product offers. Marketing as a strategy was becoming increasingly important. During this time, studies on innovation emphasized the importance of the market in the process. The innovation process was perceived as being driven by customer needs (Neely & Hii, 1998). This resulted in the establishment of leading think tanks in innovation studies; such as the Science and Technology Policy Research Unit, the Centre for Science Research and Statistics, and the International Science and Technology Center. In this era, discussions about technological innovation were the most dominant, while interest in non-technological innovations slowly began to emerge. Several significant concepts and models, such as the technological innovation system, financial innovation concept, user innovation concept, technological paradigms model, techno-economic paradigms model, application of evolutionary models in innovation studies, social innovation concept, and national innovation system models, were established (Meissner et al., 2017).

The OECD also released the first edition, which was later transformed into a series of "Innovation Studies Manuals"(Kotsemir et al., 2013). The term innovation has become intertwined with progress, social change, technical change, and development across a wide range of fields by the late twentieth century (Taylor, 2017).

The 2000s and further

Turbulence, accelerated technology development, and globalized access to information have become the main features characterizing the innovation environment in the 21st century, which seems to be a radical shift in the innovation environment. This shift from an industrial to an information age has reduced entrance barriers to the global economy and forced businesses to adapt more efficiently and quickly. However, innovation became more and more of a buzzword and a slogan. Any change in any aspect of life is today considered an innovation, even though it lacks a scientific rationale in many circumstances. Innovation is no more a purely scientific term, but rather a catchphrase for recruiting investors, a handy word for top management to comprehend company success and failures, and a lovely slogan for charming wording used in consumer goods advertising campaigns as well political campaigns. But the basic innovation theories like the national innovation system model have continued to evolve and are constantly evolving. Complementary concepts emerge as well, such as financial innovation, eco-innovation, user innovation, social innovation, and collaborative innovation (Kotsemir et al., 2013).

In this time, the term innovation has come to refer to a myriad of meanings and concepts, affected by a variety of circumstances over the centuries, some of these definitions will be displayed in the following section.

2.2. Definition of Innovation

There is no universally accepted view of innovation as the concept of innovation is seen to be complicated, sophisticated, and multifaceted as a result there is no single, standard accepted definition of innovation. The literature on innovation is copious, massive, and numerous as innovation has been conceptualized, described, comprehended, and defined in a variety of ways throughout history (Taylor, 2017; Kogabayev & Maziliauskas, 2017). For the research being conducted, it is critical to establish an appropriate definition of innovation. Therefore, numerous and various definitions from the literature have been reviewed in order to develop a better framework for understanding what makes up the concept of innovation. To examine the literature related to the innovation concept, a summary of some of the key elements of different definitions is provided in the table below

(Table 1). Next to each definition, a note is written to justify the reason for its inclusion in the table. These definitions help to understand the evolution of the innovation concept and to broaden the scope of the literature review. The focus of the research is on firm-level innovation. Specific issues relating to an industry or economy-level innovation, which may include different issues and techniques, are not addressed.

Table 1: A sample of existing innovation definitions in the scientific literature

Reference	Definition	Justification
(Robertson, 1967)	Innovation is a process by which a new idea, behavior, or thing, that is qualitatively distinct from existing forms, is implemented and applied in reality.	This definition includes behaviors as well as ideas.
(Myers & Marquis, 1969)	Innovation is a collection of cumulative sub-processes, not a single activity. It's not merely the realization of a new idea, the invention of modern equipment, or the growth of a new market. All of these components work together to create the process.	This definition considers innovation as a series of cumulative processes.
(OECD, 1981)	*"…all those scientific, technical, commercial and financial steps necessary*	This definition focuses on the steps of innovation.

	for the successful development and marketing of new or improved manufactured products, the commercial use of new or improved processes or equipment or the introduction of a new approach to a social service"	
(Joseph Alois Schumpeter, 1983)	Innovation is defined as the commercial or industrial implementation of something new—a new product, process, or production method, a new market, or a new supply source.	This definition confirms that innovation is the act of implementing an invention.
(Ven, 1986)	*"Innovation is defined as the development and implementation of new ideas by people who over time engage in transactions with others within an institutional order."*	This definition focuses on four basic factors (new ideas, people, transactions, and institutional context).
(Urabe et al., 1988)	innovation consists of the generation of a new idea and its implementation into a new product, process, or	This definition views innovation as a tool for generating pure profits.

	service, resulting in the dynamic growth of the national economy, increased employment, and the creation of pure profit for the innovative business enterprise.	
(Afuah & Utterback, 1997)	Innovation is new knowledge incorporated into products, processes, and services.	This definition views innovation as new knowledge.
(M. Rogers, 1998)	Innovation can be defined as the implementation of new ideas in the form of products, processes, or any other aspect of the business's activities.	This definition views innovation as something that adds value.
(Heunks, 1998)	According to Heunks (1992), innovation is to be defined as the successful implementation of a creation.	This definition appears to enhance growth, profits, and success.
(Mulgary & Albury, 2003)	"*Innovation is the creation and implementation of new processes, products, services, and delivery methods which result in significant improvements*	A widening and broader definition.

	in outcomes efficiency, effectiveness or quality".	
(E. M. Rogers, 2003)	*" Innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption."*	This definition focuses on the newness of the idea for the individual.
(NESTA, 2012)	innovation is the process by which new ideas are transformed into practical new products, services, or methods of doing things.	This definition focuses on the implementation of ideas.
(Trott, 2017)	Innovation refers to the management of all actions engaged in the process of generating ideas, developing technology, and producing a new (or improved) product or manufacturing process.	This definition considers innovation as a management process and distinguishes between the innovation process and the output of the innovation process.

Table 1 displays different definitions of innovation and shows as well some convergence of ideas and perspectives regarding innovation. From these definitions, it is clear that the presence of the novelty element is the main feature of innovation and that innovation definitions are connected not only with newness but also with change and efficiency (Kotsemir et al., 2013). These fundamental elements are combined by the Organization for Economic Cooperation and Development (OECD) in a series of manuals to provide a composite definition of innovation. The latest revision of these manuals is the

Oslo Manual which defines innovation as *"the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations"* (OECD, 2005).

The concepts of innovation and invention are often used interchangeably. But according to many studies, it is possible to differentiate between the two concepts by emphasizing that innovation is concerned with the practical and commercial implementation of ideas, whereas invention is concerned with the conceptualization of the idea. So, innovation is broader than invention as innovation includes the commercial applications of a new technology, method, or process. In short, we can say that innovation relies on inventions, but inventions need first to be applied to commercial activities before they can contribute to the company's growth (Trott, 2017).

2.3. Significance of Innovation

It has been cited by many researchers that innovation is important for businesses in recent years. If we consider that countries have given importance to innovation performance measurement recently, it is seen that countries also attach importance to innovation. In this context, it can be concluded that innovation is important for the country's economy on a macro basis and for businesses on a micro basis. In addition to these, it is also important for customers who are directly or indirectly affected by innovations. In today's challenging competitive arena, it is imperative for small and large companies to turn to innovation in order to respond quickly to the rapidly changing consumers' needs, maintain survival, and stay ahead of rival companies. In this context, the concept of innovation to be explained here is not only introducing new, updated, and different products but also introducing new products and services that will generate economic returns for the company (Işık & Keskin, 2013).

Innovations frequently result in new methods of doing things, as well as new goods and processes that add to wealth. When we conceive a company as a collection of resources and skills, the impact of innovation is transforming the company's internal capacities, making it more adaptable, better able to learn, and better able to capitalize on new ideas.

This improved adaptability is critical in facing the shifting market conditions (Neely & Hii, 1998). For this reason, innovation is critical to economic progress, increasing employment, and improving living standards for countries. It plays a crucial role in a company's ability to respond to a changing business environment. Responsiveness can take the form of coming up with new methods for manufacturing routine operations. It is important to be recognized that innovation is not the responsibility of a single team or department, but rather the responsibility of the entire organization, as evidenced by management planning, attitude, and external orientation. The literature review indicates that the firm's innovative behavior promotes long-term growth, maximizes employee happiness, and competitiveness, and gives the business the chance to stay at the forefront with a sustainable position in their industry (Srivastava et al., 2017). Innovation is financially advantageous, provides a competitive advantage, and can improve corporate performance. SME business strategies and operations should involve innovation, despite the fact that they face more challenges than large corporations, such as a lack of economies of scale, limited resources, a smaller market size, and greater vulnerability to market shifts and environmental shocks. SMEs, on the other hand, benefit from their entrepreneurial characteristics and flexible structures, which make it simpler for them to develop innovations via strategic networks or value-chain activities (Al-Ansari et al., 2013).

The development and promotion of an innovation mentality is the only way to ensure that the power of innovation will continue to produce success and maximize the company's risk/return posture. Successfully innovative companies have realized that senior management involvement improves innovation initiatives and efforts (Davis, 1997). The importance of innovation is demonstrated in the figure developed by Scott and Moe.

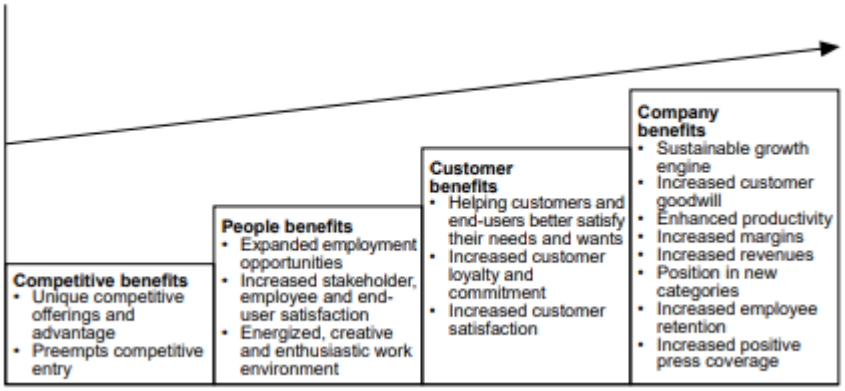

Figure 3: Power of Innovation

Whether the company is in a completely new field or an industry with centuries of history, innovation will play a major role in its future. As new technology has a tremendous impact even on all industries, the pace of change will surely continue to accelerate, creating many new opportunities and threats in both old and new industries alike.

2.4. Barriers to Innovation

Considering the importance of innovation, there could be a variety of variables that obstruct innovation efforts. In general, it was concluded that one of the main reasons why SMEs oppose innovation is the lack of managerial commitment and support, which can be a symptom that indicates that the organizational culture hinders innovation. Also, financial exposure and the cost of innovation can be considered key restraints for innovation as SMEs' limited resources obstruct their ability to innovate (Madrid-Guijarro et al., 2009).

These factors may slow innovation activities or act as a deterrent to getting started. The literature suggests that these barriers might be categorized in several ways, as they can be internal or external to the firm (Neely & Hii, 1998). Internal barriers are further subdivided into resource-based barriers, such as cost, lack of skilled personnel, shortage of internal funding, organizational culture, systems-related barriers, and human nature-related barriers (Hadjimanolis, 1999). External barriers can also include difficulties in gaining access to technological information, difficulties in finding cooperation partners, domestic or

international market constraints, and lack of government support (Krause, 2016). These barriers to innovation can be abbreviated in the following figure:-

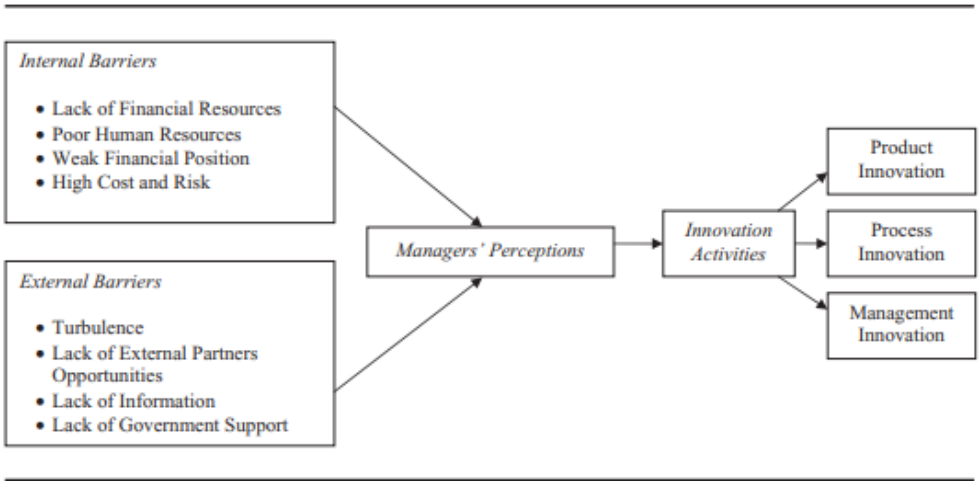

Figure 4: Barriers to innovation (Madrid-Guijarro et al., 2009)

These barriers may be specific to one type of innovation or they may apply to all types. In general, cost factors are associated with process innovations while market factors are associated with marketing innovations but in fact, it is impossible for the companies to isolate those factors because they are intertwined.

2.5. Types of Innovation

The development of the concept of innovation has led to the appearance of different types of innovation. As a result, recent studies have started to focus attention on explaining these different types of innovation and emphasizing that each type of innovation, whether a product, process, organizational, or marketing, is distinguished by different goals and necessitates different resources and methods to be developed, which reflect the complexity of the innovation process. Studies have also emphasized the importance of integration between technological (product and process) and non-technological (organizational and marketing) innovations, as they help increase the productivity and growth of the company (Bruni et al., 2019). This classification of the types of innovation, which was proposed by the Organization for Economic Cooperation and Development Oslo Manual (2005), is the primary international basis of guidelines for identifying and measuring innovation activities

as well as for the compilation and use of relevant data, has been taken as the fundamental reference source to define, identify, and classify innovations at the firm level in this study.

2.5.1. Product Innovation

According to the Oslo Manual (OECD, 2005, P.48), product innovation is the implementation of a new or improved good or service with innovative change. This involves improvements in terms of technical characteristics, components, materials, embedded software, user-friendliness, durability, or other functional features (OECD, 2005). This indicates that a new product can be developed by recombining and applying existing technologies in a different way or by developing completely new technologies.

Tübitak (2006) argues that product innovation and technology are linked and that technology contributes to increasing the level of production, and product specifications while lowering product costs (Karabulut, 2015). The study of Osei (2016a) emphasized that the three dimensions of product innovation as identified by the Oslo Manual— introduction of a new product, development of a new product, and improvement of a current product _ have a significant positive impact on the performance of SMEs' sales, growth, and increase in the number of employees (Osei et al., 2016a). Therefore, it is acceptable to assume that companies make product innovations in order to increase efficiency.

2.5.2. Process Innovation

According to various studies, it has been observed that product innovations are frequently followed by process innovations in what is known as the industry innovation cycle (Trott, 2017). To accomplish process innovation, the company may adopt new technology, purchase new machinery, train its employees, and reorganize its processes. Oslo Manual (OECD, 2005, P.49) defines process innovation as the introduction of new or enhanced methods of production or delivery. This type of innovation in most cases is accompanied by a reduction in unit production cost, or improvements in the product’s quality (Tajvidi & Karami, 2015). Process innovation covers improvements in manufacturing techniques, equipment, and software used in core activities as well as those used in the support activities such as accounting, purchasing, and maintenance (OECD,

2005). Briefly, process innovation refers to major changes in the way or method products are produced or delivered (Bockova & Zizlavsky, 2016).

The findings of Osei's 2016 study revealed that process innovation in the form of implementing a new and improved distribution strategy has a positive impact on small and medium-sized companies' growth in terms of cost reduction and increased customer satisfaction (Osei et al., 2016b). Similarly, the study of Varis (2010) disclosed that considering the relationship between company performance and innovation, it was found that implementing process innovation practices allows companies to achieve higher growth (Varis & Littunen, 2010).

2.5.3. Marketing Innovation

Innovation and marketing are two distinct concepts that complement each other. As a discipline, marketing innovation can be thought of as a tool for combining marketing activities into the innovation process (YuSheng & Ibrahim, 2020). Marketing innovations aim to better satisfy customer needs, open up new markets, or position a company's new product on the market in order to maintain more growth in the company's sales (Gunday et al., 2011).

A marketing innovation as defined by Oslo Manual is the introduction of a new marketing method with considerable changes in the combination of the product's 4 P's (packaging and design, promotion, placement, or pricing) for both new and current products. Changes in product design refer to changes in the product's shape, appearance, or packaging without causing any change in the functional characteristics of the product. Innovation in product promotion represents using new concepts to promote a company's products. For example, the first use of a new media or technique is called a marketing innovation. Marketing innovation in product placement mainly includes the usage of new channels for sales such as launching a franchising system or product licensing. Innovations in pricing refer to the implementation of new pricing strategies to promote the company's products (OECD, 2005). Marketing innovation generates additional profit for the company as market innovation has been found to have a significant positive impact on SMEs' growth in terms of sales (Oduro, 2019).

2.5.4. Organizational Innovation

Organizational innovation expresses the degree of implementing change in the company's management style. Oslo Manual (OECD, 2005, P.51) defines organizational innovation as the introduction of new organizational methods such as changes in business practices, in the organization of the workplace, or in the company's external relations (OECD, 2005).

Organizational innovation can be associated with the use of new work techniques, the organization of work procedures, the development of new models to encourage employees' participation in decision-making processes, the improvement of worker retention, and the integration of various business activities (Avermaete et al., 2003). As a result, the company's capabilities and vision will be broadened, employee satisfaction will be improved, and organizational transformation will occur. So it can be argued that organizational innovation, through facilitating the collaboration of a business's functions, generates economic benefits for the innovative company (Karabulut, 2015). Thus, organizational innovation can positively impact the performance of the company by lowering administrative and transaction costs, increasing labor productivity, and facilitating access to no tradable assets (OECD, 2005: 51). In general, the relationship between the types of innovation can be explained as in the following figure:-

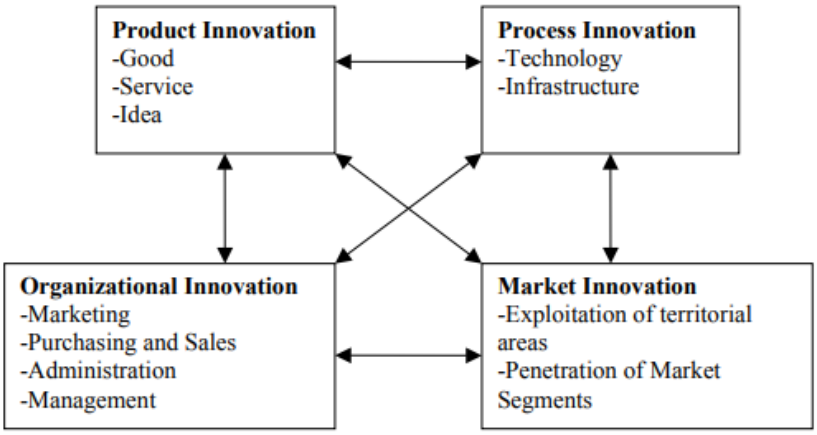

Figure 5: Domains of innovations (Avermaete et al., 2003)

2.6. Sources of Innovation

The term “sources of innovation” refers to an impulse that leads to implementing innovative activities (Skibiński & Sipa, 2015). İt is critical to define the source of innovation as it determines the needed capabilities that a company must possess to implement the necessary, indispensable innovation and achieve market success (Yam et al., 2011). Innovative ideas originate from different sources. These sources of innovation can be classified into emerging sources as a consequence of significant internal efforts from within the company, and those that are external ones. The worth of each source is determined by the company's current knowledge stock and its ability to absorb and exploit new ideas (Bommer & Jalajas, 2004).

Peter F. Drucker, in his book “Innovation and Entrepreneurship”, indicates the sources of innovative opportunities under seven headings. In his study, Drucker stated that the order of the seven sources is not an arbitrary order, but the sources of innovation are listed in descending order according to their "degree of reliability and predictability". According to Drucker, the first four sources of innovation (unexpected developments, Incongruities, process needs, changes in the industry or market structure) are within the company itself or the market segment. The remaining three sources of innovation (demographic changes, changes in perception, and new knowledge) are changes outside the company's own structure (Skibiński & Sipa, 2015). But it is important to be realized that no source is fundamentally more considerable than another. Just as great innovations are likely to emerge from the analysis of change symptoms (such as the unexpected success of what was considered an insignificant change in product or pricing), they are also likely to emerge from the widespread application of new knowledge arising from a scientific breakthrough (Drucker, 1985: 36).

2.6.1. Internal Innovation Sources

Internal sources of innovation are the sources of innovation that lie within the company or in the market segment in which it operates. Drucker deals with internal sources of innovation under four headings.

2.6.1.1. Unexpected Developments/ Occurrences

The unexpected developments include three subheadings which are; the unexpected success, the unexpected failure, and the unexpected outside event. These sub-headings will be covered in detail.

- **The Unexpected Success**

Unexpected success offers great opportunities for successful innovation and the innovative opportunities on offer are always less risky than in any other area. Despite this, managers often tend to ignore and sometimes aggressively reject unexpected success. In the early 1930s, IBM was at its lowest point as it had spent its available funds on designing the first accounting machine for banks. But unfortunately, because of the depression, the banks refuse to purchase the equipment. According to Thomas Watson, founder of IBM, it was an unexpected success that saved the business. The New York Public Library was looking to buy the machine. Unlike banks, the libraries of that period had a serious amount of government funds. In this way, Watson sold his machine to more than a hundred libraries. Also in the early 1950s, Toshiba and Hitachi were the market leaders who have the best electronic sets in the market, unlike Matsushita (better known by its brand name Panasonic) which was a modest and unremarkable company. Matsushita, like every other Japanese company at that time, believed that television in Japan would not rise quickly. Matsushita, however, was intelligent enough to recognize that the Japanese farmers were unaware that they were so poor to buy a television. Matsushita took advantage of the available opportunity and went door-to-door to sell its televisions to farmers, something no one had ever done before in Japan. This run with unexpected success was one of the main reasons for Matsushita to become a leader in the electronic industry, a position it has maintained to this day (Drucker, 1985: 44).

The unexpected success may not be seen, and sometimes no one pays attention to it, and as a result, the competitor deals with it and reaps the benefits. Therefore, unexpected success can be annoying and requires seriousness and support from the management. It also requires the provision of a team capable of dealing with this opportunity (Drucker, 2002).

– **The Unexpected Failure**

Unlike successes, failures are difficult to be dismissed and rarely go unnoticed. Failure is often the result of incompetence in design or execution or foolish decisions. But when something fails despite good design and implementation, this failure often indicates the presence of change and should be regarded as a symptom of an innovative opportunity (Drucker, 1985: 46).

Perhaps the clearest example of this is the failure of the Ford Company, which is the largest failure in automotive history. The company has carefully planned and conducted market research for the production of its Edsel in order to provide the company with a distinguished advantage in competing with General Motors. But when the car was released to the market, it failed, and here Ford realized that something was going on in the automobile market that contradicted the basic assumptions that companies rely on when designing and marketing their cars. After reinvestigating the market, Ford discovered that the market was no longer essentially segmented by income groups, but rather by what we now refer to as 'lifestyles'. Ford's response was the Mustang, a car that helped the company to be one of the biggest competitors in the automotive market and established it as a leader in this field. Edsel's failure was the basis for most of the company's subsequent success (Drucker, 1985: 51).

– **The Unexpected Event**

The unexpected outside event refers to events that take place independent of what the enterprise is working on (Drucker, 1985: 52). Economic shocks, technology breakthroughs, political changes, shifts in customer tastes, and disasters like “COVID or Forest Fires” can all dramatically affect product and service markets. And instead of bemoaning its fate, companies' focus should be on identifying what opportunity these changes create. For example, when a new fad kicks in and a company sees the chance to cash in on the opportunity, this is the unexpected outside event. The unexpected event often necessitates innovation in products and distribution channels.

An unexpected event is a situation that presents the greatest opportunity while also posing the least risk. It is the area where expertise counts the most, and the ability to quickly mobilize significant resources makes the greatest difference (Drucker, 1985: 55).

2.6.1.2. Incongruities

Incongruity refers to a difference between what actually exists and what everyone assumes it to be. However, because the cases of incongruities are qualitative, not quantitative, they often do not show up in the reports that managers receive and pay attention to. And often the reason for its happening is unpredictable. But incongruities are important indicators of change and, as a result, demand innovation. Cases of incongruity can be classified as follows (Drucker, 1985: 57):

- An incongruity between the economic realities of the industry;
- An incongruity between the reality of industry and assumptions about it;
- The incongruity between the efforts of an industry and the values and expectations of its customers;
- Internal incongruity within the rhythm or logic of a process.

Wal-Mart has pioneered many supply chain innovations that have evolved into a new business model in the mass retail market. First, the company defied traditional thinking by demonstrating that department stores can thrive in rural America. The company then made major investments in an innovative distribution model that lead to reducing transportation and warehousing costs, but instead of capturing these lower costs as higher profits, it lowered its prices, thus creating a generation of loyal customers. As a result of all these business model innovations, Wal-Mart has become the leading American retailer and then the largest in the world (Morris, 2006: 33).

2.6.1.3. Process Needs

Opportunity is the source of innovation, but as the old proverb says, "Necessity is the mother of invention", so need is also seen as an important source of innovation. In fact, process need, unlike other sources of innovation, does not begin with an incident in the environment. It concentrates on the task at hand rather than the surrounding circumstances.

It improves an existing process, replaces a weak link, and redesigns an out-of-date process using the newly available knowledge (Drucker, 1985: 69).

Dell offers technological items, but its innovations, however, are not in the field of technology. In fact, competitors have criticized the company for its lack of investment in R&D and product development. Dell's business model has allowed the company to rise to the top of the computer industry. The primary distinction of the business model can be found in two aspects. The first is relations with customers, and the second is the manufacturing supply chain management. Despite the fact that each computer is custom-built to the buyer's specifications, the company has been able to keep product prices low by almost eliminating stock. It's the customization and pricing, not the technology, that sets a Dell computer distinguished. The company has now outperformed its two former primary competitors, IBM and Compaq, by managing these two factors (Morris, 2006: 150).

2.6.1.4. Industry and Market Changes

Although managers assume industrial structures are rigid and unchanging, these structures can change quite quickly and often are. Such a shift opens up enormous opportunities for innovation (Drucker, 2002). In reality, market and industry structures are extremely fragile and can be collapsed quickly with even a slight jolt. When such a situation occurs, everyone in the industry must take action. Continuing to do business as usual will almost certainly result in disaster. In this process, the company will at least lose its leading position which is very difficult to be regained after it has been lost. However, a change in the market or industrial structure, on the other hand, offers exceptional opportunities for innovation (Drucker, 1985: 76).

2.6.2. External Innovation Sources

Due to the increasing complexity of the knowledge required for innovation, large and small companies alike can no longer rely entirely on internal knowledge and capabilities in their innovation processes, as companies confront challenges in developing all of the necessary knowledge internally. As a result, it has become necessary for them to seek information from external sources, and thus, external sources of innovation have become a crucial complement to the company's internal capabilities (Baark et al., 2011).

The sources of innovation described above manifest themselves in a business, industry, or market. They actually could be signs of external changes in the environment, economy, or knowledge, but they emerge internally. The sources of innovation that will be explained below; demographic changes, perceptual changes, and new knowledge creation can be counted among the external sources of innovation. These changes occur in social, philosophical, political, and intellectual environments (Drucker, 1985: 88).

2.6.2.1. Demographic Changes

Demographic changes are defined as changes in the number, income, age distribution, geographic location, and educational status of the population. Among all of the external sources of innovation, changes in demographics are the most obvious, with the most predictable consequences (Drucker, 1985: 88). The Japanese are world leaders in robotic technology because they have paid attention to demographic shifts. In the 1970s, everyone in the developed countries recognized there was a population boom as well as an education boom; 50% or more of the youth were in high school. As a result, the number of available workforces for traditional blue-collar jobs in manufacturing began to decline and eventually became insufficient by 1990. Although everyone was aware of this demographic shift, only the Japanese took action, and as a consequence, they are now world leaders in robotics (Drucker, 2002).

2.6.2.2. Perceptual Changes

Despite, “The glass is half full” and “The glass is half empty” are two distinct ways of describing the same phenomenon yet their meanings are completely different. Changing a manager's perception of the glass from half full to half empty can create significant innovation opportunities. Facts are unaffected by a shift in perception, however, their meanings change very quickly. For example, in less than two years, the computer evolved from being viewed as a threat and something only major businesses would use to being something people buy to pay income tax. Such a change is much related to the mood. Mood, not facts, influences whether individuals regard a glass as being half full or half empty. However, such a change in perception is tangible, definable, and observable, and can be exploited to generate innovative opportunities (Drucker, 2002).

Adidas was definitely the world leader in sports shoes when Nike was launched in the 1960s. Phil Knight, a runner, and Stanford MBA student who would later become one of Nike's founders, came up with the idea for the company in a 1962 research paper. Knight argued that high-quality Japanese sports shoes might compete with the more expensive Adidas, and he and his former track coach quickly devised a new business model, transforming the sports shoe and clothing industry. The distinction discovered was straightforward. While Adidas learned how to manufacture amazing shoes for athletes, Nike learned how to make wonderful shoes for superstars and the audience who loves and strives to be superstars, and allowed individuals who are fans of athletes like Michael Jordan the opportunity to wear the same shoes. This was a unique marketing message. As a result of this positioning soon put Adidas in second place and Nike thus turned sportswear into a lifestyle choice (Morris, 2006: 154).

2.6.2.3. New Knowledge

Innovations based on new knowledge, whether scientific or technical rank high. While not all of these innovations are significant, when people talk about innovations, they often mean new knowledge-based innovations. These innovations are regarded as entrepreneurship superstars and bring publicity and money to businesses. Knowledge-based innovations are distinct from other types of innovations in terms of how long they take, their loss rates, and how predictable they are, as well as the difficulties they present to entrepreneurs. They are the most time-consuming of all innovations. There is a long time between the new knowledge's appearance and its adaptation to be usable. It also takes a long time for this new technology to manifest itself as products, processes, or services on the market (Drucker, 2002).

The distinctions between all these seven sources of innovation; whether internal or external sources; are unclear, and there is a lot of overlap between them. It's similar to having seven windows located on various sides of the same structure. Each one of these windows displays some details that are likewise visible from the window on the other side. However, the perspective from the center of each, though, is different and unique. Therefore, each of these seven sources necessitates being analyzed separately due to its

own unique characteristics. However, no region is fundamentally more significant or more productive than another (Drucker, 1985: 36).

2.7. Innovation and Risk Management

The COVID-19 disaster was a low-probability, unpredictable, and unexpected situation. All over the world, the COVID-19 pandemic has posed problems for governments, societies, and SMEs. While some SMEs (such as those in the food sector) only experienced minor effects, many of them practically went out of business for months. As a consequence, all types of businesses experienced significantly decreased economic flow. The lockdown time is thought to have reduced GDP by 3.0%, even in nations with strong economies like the United Kingdom. The lockdown also increased unemployment and resulted in some business closures (Van Auken et al., 2021).

Regarding the indicated title, it ought to be said that any crisis, whether it results from natural or man-made causes, has the potential to cause a significant amount of harm to a business in terms of reducing the trust level that exists between the latter and its target market. Additionally, it can be said that this particular crisis, namely Covid-19, not only affects the consumer's trust in the enterprise but also puts pressure on the management of small and medium enterprises, as they are thought to be limited in terms of their ability to execute any changes in short time appropriately. It can be claimed that these variables may cause businesses to fail because they make it challenging for them to offer their customers the required goods or services (Sun et al., 2021).

During the crisis periods, it is highly unlikely that businesses will succeed only by cutting costs much early and more than competitors, making much more investments than competitors, or entering the recession as the growth leader. Innovative businesses, however, have historically enjoyed the highest levels of profitability during troubled times (Ucaktürk et al., 2011). Innovation has been recognized as an effective catalyst for small- and medium-sized business organizational resilience and economic growth in both the service and manufacturing sectors in times of crisis (Forsman, 2011). As the COVID-19 pandemic has caused a changing environment that presents numerous challenges and calls for creative solutions, altering the landscape of innovation (Van Auken et al., 2021).

The following are the key survival measures recommendations for SMEs to survive the COVID-19 pandemic based on (Kuckertz, Brandle, Gaudig, Hinderer, et al., 2020):-

i. Use resources to come up with solutions to new problems by creatively combining current technology and human capital.
ii. Activate network resources which include flexible staffing and payment options.
iii. Focus on allocating resources to recently viable and value-generating activities.
iv. Reduce the scope of non-essential activities temporarily.
v. Seek out potential new opportunities that may appear at the end of the crisis such as developing digital work solutions.
vi. Proactively investigate greater opportunities that might emerge following the crisis such as a rise in digitization or a change in trends and behavior.

2.7.1. Innovation as a Response to the COVID-19 Crisis

Since patient zero, the coronavirus has sparked massive and unprecedented economic and societal change. The "theory of black swan" is frequently used in the literature to describe the current pandemic situation. The black swan idea states that occasionally events take place that was thought to be impossible before they really occurred. In the field of economic sciences, a black swan is a term that is used to describe an unanticipated event that (nearly) no one could have predicted. These occurrences frequently have a negative impact on society and the economy worldwide (Gorzelany-dziadkowiec, 2021).

Because they are so complicated, crises have long-lasting impacts that are felt both right away and for a very long time. Crises effects may be mitigated by SMEs through innovative activities (Van Auken et al., 2021). Generally, innovation still provides a survival advantage during crisis times. Even when the financial structure of a business is taken into account, businesses that introduce any type of innovation continue to have higher chances of surviving crises than non-innovating ones (Cefis et al., 2020). Innovation can be seen in this context as a means of resolving crises and as a tool that improves the performance and competitiveness of SMEs.

This is especially true in light of the COVID-19 pandemic, given that innovation has frequently been cited as one of the best strategic solutions for crises. However, innovating in times of crisis can be challenging because it frequently calls for taking immediate, decisive action with limited resources (Wenzel et al., 2021). At times of crisis, like the COVID-19 epidemic, businesses need rapid access to such resources, so they can develop important innovations before it becomes too late (Chesbrough, 2020).

Global innovation has been accelerated by the outbreak of COVID-19. This shift has already been noticed in regions where the virus initially appeared (like China), where major corporations like Huawei have raised their spending on R&D initiatives. This pattern also has a basis in the fact that businesses that made investments during the 2008 financial crisis (as opposed to just making cost reductions) grew quickly. Since the 1990s, analysts have noted that well-known SMEs and established market structures are frequently severely disrupted by emerging technology. Producing highly effective goods or services that are cost-effective, simpler to use, and more widely accessible than existing ones causes this disruption (Galanakis et al., 2021).

Briefly, it can be said that; due to the outbreak of COVID-19, SMEs were forced to innovate, processes had to be changed quickly, and entrepreneurs had to work remotely. Therefore, innovation is crucial for empowering and advancing SMEs. In the competitive market climate, especially in light of the present COVID-19 epidemic, innovation is crucial for organizational survival and success. Because of the present pandemic issue, many organizations are now taking innovation considerably more seriously, which for example; has led to changes in SME goals and product repurposing. Organizations must create dynamic skills based on agility, flexibility, resilience, and speed to compete successfully in this unsteady environment. As a result, innovation is now an important priority for all types of businesses, including SMEs, governmental agencies, and nonprofits. According to researchers, a positive relationship exists between economic conditions and innovation. Economic uncertainty generates circumstances that encourage SMEs to integrate innovation into their business strategy in order to maintain their competitiveness (Van Auken et al., 2021).

CHAPTER TWO

THE SMES' FINANCIAL PERFORMANCE

3. SMES CONCEPT

The analyses conducted to avoid experiencing similar economic turbulence and the lessons learned from past crises around the world demonstrate that small and medium-sized businesses have a greater impact on the growth of a nation's economy than do large-scale businesses. SMEs serve as the economic pillars that carry the economy through challenging times. (Al-Mahrouq, 2010) asserts that SMEs represent the global private sector's backbone. They contribute to the economy and achieve the social goals of the nations in which they function. They also generate a sizable amount of jobs and attract outside capital.

Small and Medium-Sized Enterprises (SMEs) are believed to be businesses that, by virtue of their size and nature, occupy an important position in the economy. Despite this, in all academic fields, there is no universally recognized definition of SMEs. As the definitions are based on several measurements, some of which are quantitative and others of which are qualitative. Additionally, unclear and contradictory definitions are offered by various researchers and authorities. It is demonstrated in the literature that the concept does not have a coherent internal structure as one of the justifications for this (Maseko & Manyani, 2011).

3.1. Definition of SMEs

Small and medium-sized businesses differ from large businesses owing to a variety of factors. A number of criteria appearing in economic life necessitate a definition for small and medium-sized businesses in this regard. In the reviewed research, there are numerous definitions of SMEs because they vary by country due to economic and social conditions. Definitions of small and medium-sized businesses are basically divided into two categories: those based on qualitative criteria and those based on quantitative ones (Nguyen, 2001).

According to the EU's definition, which was implemented on 1 January 2005 _ the "independence" criterion was incorporated with the requirements of annual turnover and employee number in defining the SMEs (OECD, 2005). In the EU's definition, an independent SME is one where "25 percent or more of the firm's capital (or equity) is not undertaken by an enterprise or that its capital is not owned by enterprises that are not regarded as SMEs" (Yurttadur & Kaya, 2012).

The quantitative measurements that decide whether a company is an SME or not for the enterprises that meet the independence criterion are the number of employees, annual sales turnover, or the value of assets (balance sheet total), as shown in Table 2.

Table 2: SMEs definition in EU

	Staff headcount	Annual turnover	Annual balance sheet
Micro enterprises	less than 10	Less than or equal to € 2 million	Less than or equal to € 2 million
Small enterprises	less than 50	Less than or equal to € 10 million	Less than or equal to € 10 million
Medium-sized enterprises	less than 250	Less than or equal to € 50 million	Less than or equal to € 43 million

Source: European Commission, 2003 (https://single-market-economy.ec.europa.eu/smes/sme-definition_en).

In the US a somewhat different approach to the concept of SMEs from that of other countries is taken, where the word small business is used instead of small and medium-sized enterprise. The Small Business Administration (SBA) establishes the guidelines for small enterprises. The SBA's definition of small business includes both qualitative and quantitative characteristics which is similar to the EU's SME classification. The Small Business Administration defines a small business as one that is independently owned and operated, established for profit, and is not dominant in its sector. In the United States, the

quantitative measurements to determine small business eligibility include size, assessed in terms of employee number and sales volume, but these measurements vary by industry (Yurttadur & Kaya, 2012).

In Turkey until 2005, different institutions accepted various SME definitions, and each institution implemented policies based on its own SME definition. Turkey gained an official and common SME definition on November 18, 2005, with the Council of Ministers' Decision published in the Official Gazette (Timurçin, 2010). The most recent modifications relating to "Regulation on the Definition, Qualifications, and Classification of Small and Medium-Sized Enterprises," was published in the Official Gazette on March 18, 2022, and numbered 5315, determine the principles governing the definition, qualifications, categorization, and classification of small and medium-sized enterprises, and using these principles and definitions as a base for all institutions and organizations' practices. According to the regulation, SMEs are classified as independent, joint, and affiliated enterprises based on their capital or voting rights relationships with other enterprises. With the amendment of the regulation, economic units or enterprises that employ less than 250 people annually and whose annual net sales revenue or financial balance sheet does not exceed 250 million Turkish Liras and which are classified as micro-enterprises, small enterprises, and medium-sized enterprises are defined as SMEs. The criteria for SMEs definition in Turkey is according to the scales as shown in Table 3.

Table 3: SMEs definition in Turkey

	No. of employees	Annual turnover	Annual balance sheet
Micro enterprises	< 10	≤ 5 million	≤ 5 million
Small enterprises	10 – 49	≤ 50 million	≤ 50 million
Medium-sized enterprises	50 – 249	≤ 250 million	≤ 250 million

Source: (Official, 2022)

According to the criteria of the Central Bank of Egypt, enterprises are classified as micro when they have fewer than 10 employees, small and medium when they have between ten and 200 employees, and large when they have more than 200 employees. In Egypt according to the latest Law No. 152 of 2020 related to medium, small, and micro-enterprises that was issued on the fifteenth of July 2020, and according to this law, a government agency was established under the name of the Small, Medium, and Micro Enterprises Development Agency. The law also determined the definition of micro, small, and medium companies, which is as follows:-

Micro-enterprises: each project whose annual turnover is less than one million L.E.

Small enterprises: each project whose annual turnover is one million L.E. and less than 50 million L.E.

Medium-sized enterprises: each project has an annual turnover of 50 million L.E. and does not exceed 200 million L.E.

Table 4: SMEs definition in Egypt

	No. of employees	Annual turnover
Micro enterprises	< 10	< 1 million
Small enterprises	10 – 49	1 million < 50 million
Medium-sized enterprises	50 – 200	50 million < 200 million

Source: (Official Gazette, 2020)

All in all, there is no commonly accepted definition of the SME term in the literature. The definition of a small and medium-sized enterprise (SME) differs across countries and industries (Rezk et al., 2016). Despite the fact that the definition and categorization of SMEs differ, the importance of SMEs in the economy is realized on a global scale and cannot be denied.

3.2. Key Characteristics for SMEs

It has not been possible to agree on a common point in the definition of SME and to make a standard definition. Therefore, the role of different criteria, which can be divided into qualitative and quantitative, is important in the definition of SME.

3.2.1. Qualitative criteria

The qualitative characteristics of SMEs that differ from large enterprises can be summarized as follows; having a relatively small share of the business in which it operates, ownership of all or most of the working capital, division of labor and degree of specialization, actual employment of the entrepreneur in the business as in SMEs, the employer, the manager, and the entrepreneur is usually the same person, inability to apply modern management techniques, also the employer undertakes all the risks associated with the business due to the fact that the employer is also in a managerial position (Bilen & Solmaz, 2014).

3.2.2. Quantitative criteria

The criteria of SMEs that can be measured with numerical data are quantitative ones. Elements such as the number of personnel, capital, machinery, turnover, profit, total assets, energy consumption, production capacity, fixed investment amount, market share, usable area, volume, and the number of facilities can be listed as quantitative characteristics (Bilen & Solmaz, 2014). Generally, quantitative criteria are taken into account during general definitions. In the evaluation of the quantitative characteristics of SMEs in the European Union (EU) and Egypt for example, the number of employees, financial balance sheet, net sales amount, and independence criteria are considered. Evaluation of an enterprise as an SME is determined according to the situation of meeting the numerical values determined in these criteria.

3.3. The Current Status of SMEs in Egypt

The concept of SME is a new concept for the world and Egypt. Small businesses have always been present in the economy, though not to the extent that they are today. In Egypt, there are more than 3 million SMEs (including microenterprises), which account for 99% of

all private non-agricultural projects, 80% of the GDP, 90% of capital formation, and about 75% of job opportunities. Additionally, 39,000 new projects are added to the production sector each year. Egypt has recently grown more and more persuaded of the significance of SMEs' contributions to employment, as well as their role in improving value-add, supporting major national industries, and improving competition-based efficiency, innovation, and productivity. The Egyptian economy is heavily reliant on its small and medium-sized firms (SMEs), which constitute the economy's backbone (Mansour et al., 2018).

Believing in the critical role that the SME sector plays in achieving economic growth, Egyptian ministries establish specialized institutions to be able to assist the SME sector. The Ministry of Higher Education and Research (MOHER), the Ministry of Trade and Industry (MOTI), the Ministry of Investment (MOI), the Ministry of Finance (MOF), and the Ministry of Social Fund for Development (SFD) are among the main bodies (MENA-OECD, 2010).

Ministry	Institution / Agency	SME Policy Priority	Strategy	Main activities
Inter-Ministerial	Social Fund for Development (SFD) established in 1991 SFD Incubators Small Enterprise Development Organisation (SEDO)	Micro small enterprises (MSEs) under Law 141 of 2004	National Strategy for MSE Development 2008-2012 National Strategy for Micro-Finance	**Poverty reduction through provision of financial and business support services** **Facilitation of administrative procedures** **Company registration**
Ministry of Trade and Industry	Industrial Modernisation Centre ETTIC Industrial Development Authority (IDA) established in 2005	Industrial SMEs	Industrial Development Strategy 2005-2025 Industrial Modernisatio-n Programme	**Expansion of export and upgrading of quality in seven existing sectors**[9] **Investment in technology and upgrading of skills in six areas of niche development**[10] **Allocation and equipment of areas for industrial activities**

Ministry of Investment	General Authority for Investment (GAFI)	Small and medium-sized investments (SMEI) as defined by GAFI	SMI Strategy 2009	**Facilitate company registration, offer services, assist investors and promote Egyptian investment opportunities**
Ministry of Finance	SME Development Unit	SMEs	Micro, Small and Medium-sized Enterprise Strategy 2004	**Research and co-ordination**
Ministry of Higher Education and Research	RDI Programme (see 1.3.2)	R&D and innovation in SMEs, high-tech orientation	No SME-specific strategy.	**Science and Technology orientation** **Funding innovation**

Figure 6: Institutional Framework for SME Policy in Egypt (MENA-OECD, 2010).

3.4. Strengths and weaknesses of SMEs

SMEs are economic institutions that require less capital in terms of production and goods compared to large enterprises. Business owners consist of one or more persons who also undertake the task of management. In this respect, production and management in SMEs progress rapidly, problems can be overcome more easily, and targets can be met in less time. Determining the strengths and weaknesses of SMEs, which play a vital role in economic development and increasing competitiveness, is regarded as critical in terms of developing SMEs' future strategies. It is claimed that the advantages of SMEs are more than large-scale enterprises. It is seen that many studies have been conducted on these advantages in various sources.

3.4.1. Strengths of SMEs

SMEs are the most essential economic and social units of countries when considered from various perspectives. It is possible to list the strengths of SMEs as follows (Koç, 2008).

- Despite their low investment, SMEs have the capacity to generate a wide range of products.
- It is feasible for SMEs to develop closer relationships with customers and personnel.
- Despite the fact that their investment costs are minimal, the employment rates they generate are substantial.
- SMEs use labor-intensive technologies and, in general, contribute to lower unemployment rates by employing low-skilled workers.
- Because of their flexible structure, they are less affected by economic fluctuations.
- Small and medium-sized enterprises (SMEs) adapt quickly to technological developments.
- They can also provide adequate supply to the market in areas where there is minimal demand and it is easy for them to adapt to market demands and changes.
- SMEs are playing a supporting and complementary role for large industrial enterprises. They also promote entrepreneurship and individual savings.

3.4.2. Weaknesses of SMEs

Weaknesses of small and medium-sized enterprises can be identified as follow (Bayülken, 2017):-

- SMEs generally manufacture without knowing the market demand for their product, their competitors, their market share, and the trend of the demand over the years as there is no sufficient market and sector information.
- In general, there is insufficient technical information so the traditional structure and technical level restrict the production of high-quality products. In these companies, the manager is also the owner of the company. Employees are not qualified, and they lack technical knowledge.

- One of the most serious issues in SMEs is management weakness. The manager (or company owner) has difficulty making decisions in many areas and cannot keep up with the changes in the sector and the market. In family businesses or businesses with traditional structures, problems within the family can have a direct impact on the business.
- One of the biggest problems for SMEs is "cost-quality" optimization. Low costs bring an important advantage in marketing, but low quality reverses this advantage.
- When businesses do not have sufficient capital during their establishment and operating period, the need for external resources increases. However, due to the insufficient official records of the enterprises, these enterprises may experience the problem of being unable to acquire financing.

In case of increased competition, although SMEs adapt to market conditions more quickly due to their flexible structures, factors such as capital shortage and low-profit margins may cause businesses to exit the market.

3.5. Significance and Challenges of SMEs

SMEs account for 98% of total businesses in Egypt and contribute about 80% of the gross domestic product (GDP), and 75% of total employment. It is known that SMEs experience many problems in addition to their qualifications. These findings show how important is the role of SMEs in the Egyptian economy. However, it can be stated that they have problems that can be expressed in the financial difficulties they experience in obtaining loans and the lack of equity. In addition, production, management, structural problems, adaptation to new technologies, working with low capacity, marketing, and competition, bureaucratic obstacles, inadequacy in legal regulations, compliance with the Customs Union, inability to make new investments, etc. (Maden, 2012).

3.5.1. Significance of SMEs

SMEs have an important place in national economies in terms of their numbers, their share in industrial production, and their contribution to national income. These important

roles of SMEs in economic and social development can be listed as follows (Torlak & Uçkun, 2005), (Mansour et al., 2018);

- SMEs become a balancing factor in the income distribution in the country.
- SMEs are an important source of new ideas and innovations and play an important role in providing the required flexibility in the industry.
- SMEs play a role in the diversification of the country's economy.
- SMEs have low management and operating costs due to their flexibility in decision-making.
- SMEs contribute to the increase in the level of welfare in the country.
- SMEs have high employment creation effects in national economies.
- SMEs ensure that family savings and small savings are brought directly into the economy.
- Due to the close relations between employers and workers in SMEs, social unrest in the business environment is less common.
- While large enterprises suffer in economic crises, SMEs can continue to meet the needs of society because they can continue their production despite the crisis.

Table 5: The Role of SMEs in the Egyptian Economy

	Amount	**Ratio (%)**
Number of SMEs	3.4 Million	98
Number of Personnel Employed	9.7 Million	75
Added value provided	804 Billion	32

Source: Central Agency for Public Mobilization and Statistics (CAPMAS, 2020)

The figures in Table 5 clearly show the important role of SMEs in the Egyptian economy. In Egypt, SMEs have always preserved their economic, social, and political importance and have had an important place in determining the policies and strategies in the country. Today, all countries are aware of the importance of SMEs and their

contribution to economic growth, social cohesion, employment, and regional and local development. The importance of SMEs, which form the basis of the Egyptian economy today, has begun to be understood in recent years. It is observed that developed countries that want to create new jobs and employment opportunities take measures to encourage entrepreneurs and to develop and establish SMEs. In developing countries, the economic dynamism of SMEs has a very important place because of their flexible structure that is prone to technology, their ability to respond to economic changes more quickly than large enterprises, and their contribution to the easy introduction of new products to the market. SMEs, which have the ability to adapt quickly to the changing conditions and innovations of our age, play an important role in the emergence of the productive potential of society. SMEs generally are businesses that integrate with their employees, incorporate the power of entrepreneurship, contribute to production and employment, adapt to cyclical changes, save costs, and prevent the increase of economic and social problems, especially in times of crisis (Bilen & Solmaz, 2014).

It is noticeable the existence of three distinct streams in innovation research: economic, organizational, and project-oriented. According to studies in the economic-oriented stream, small businesses are a major driver of innovation and they are just as innovative as large enterprises. The organization-oriented research stream looks into the elements that contribute to SME success as well as the factors that influence SME innovation. These findings imply SME innovation is supported by networking, regional assistance, business planning, and strategies. Organizational structure optimization also helps to manage innovation effectively and efficiently. Customers are emphasized as an essential source of SME innovation in the project-oriented research stream. Recent studies have found that the external environment, structural factors, and firm-specific characteristics all have an impact on SMEs' ability to innovate (Laforet, 2011).

3.5.2. Challenges facing SMEs

Both in developing economies and developed economies, developmental and supporting policies undertaken on international and local scales, do not protect SMEs from facing a

variety of problems. While some of these issues are structural in nature, others can be related to changes in the environmental contexts in which SMEs operate.

The challenges faced by SMEs, which play a vital role in the country's economy, can be categorized into two groups. In the first group, there are challenges arising from their routine work and operations as a result of their internal structure, whereas in the second group, the challenges that they face as a result of the economy and social life. For SMEs, which focus on profitability and growth, to achieve their goals and improve the quality of their products, the challenges that arise both within and outside of their own operations must be eliminated (Bilen & Solmaz, 2014). The problems that SMEs face can be grouped as follows (Akgemci, 2001) :

3.5.2.1. Financial related challenges

One of the most serious issues facing SMEs is the lack of financial resources. Dealing with financial problems and being able to obtain financing to overcome problems is the most critical factor for SMEs to innovate, grow and continue their operations. Financing problems arise during the investment period of the enterprises and continue during the operation period (Hacievliyagil, 2016).

In studies on the problems of SMEs in Egypt, financial problems can be at the top of the list. The ability of SMEs to obtain appropriate and sufficient sources of finance has consistently been regarded as a fundamental challenge facing many SMEs in Egypt. Additionally, the share of loans used by SMEs from the banking system in total loans is not very high as it appears that SMEs are underutilizing financial services because only 50% of them interact with banks and benefit from easier access to financing. It is important to note that, from the perspective of supply, the majority of banks are becoming less willing to take risks with regard to SMEs. This is particularly due to the pervasive belief that financing SMEs is dangerous and that doing business with them entails significant transaction costs, which makes them financially less successful than larger businesses (El-said et al., 2013). Experts recommend the establishment of private, public, and semi-public financial institutions to offer SMEs medium and long-term loans at reasonable interest rates under flexible guarantee agreements. It is extremely important to provide low-cost credit

opportunities to SMEs in the industrial sector. It should be ensured that Egyptian SMEs have access to the necessary credit facilities at a low enough cost. The greater responsibility in this regard falls on the state (Abel Bary, 2019).

3.5.2.2. The enterprise capacity-related challenges

The weak internal capabilities of small and medium-sized enterprises are primarily caused by the lack of experience of business owners, a lack of labor market expertise in the local area, and the weakness of the available export possibilities. suppliers and customers, and their willingness to interact with their external environment, particularly with regard to the creation of alliances and partnerships with large corporations, as well as the limitations imposed by the enterprise's capabilities, the low efficiency of the entrepreneurs, where it is estimated that only 5% of employees in these enterprises got training courses before launching their businesses. All these factors represent challenges for SMEs. It is crucial to concentrate on strengthening the enterprises that are training the employees in order to improve employee efficiency. Also, the initiator must acquire a number of required skills including planning, finance, accounting, and marketing, as well as production skills (Mansour et al., 2018).

3.5.2.3. Technology management-related challenges

Despite recent significant development, investment in information and communication technology (ICT) in Egypt remains low. Second, due to a lack of government funding, the required support policies for SMEs' technological development were unavailable. Furthermore, SMEs' technological growth was hindered by an unfavorable economic climate and a reduction in domestic demand after the economic crisis. According to a previous World Bank study, a lack of technology is associated with a low level of innovation (OECD, 2004).

A significant majority of Egyptian SMEs, particularly those located outside of urban areas, produce for either national or local markets. Their product design is sometimes outdated, and they are frequently made using inefficient processes and obsolete tools. To

compete with the increased openness of Egypt, these enterprises will require assistance in the fields of technology transfer, design, management, and education (OECD, 2004).

3.5.2.4. Marketing related challenges

Markets all around the world are becoming more competitive and competition is increasing as a result of globalization. In this context, enterprise marketing techniques have begun to gain significance. In this process, SMEs, on the other hand, are inefficient in developing a marketing strategy and defining target markets. This is primarily because they rely on their observations rather than conducting market research (Akgemci, 2001).

It is recognized that SMEs have a significantly larger number of marketing challenges in many disciplines than finance problems. When we first look at marketing difficulties, it can be observed that the issues of innovating in the face of changing customer preferences and demand, generating new products, or differentiating existing products have acquired importance. At this point, it is possible to assert that the issues that SMEs have with suppliers and intermediaries are also effective. Also, it is obvious that SMEs' severe financial resource constraints are a crucial factor affecting their ability to innovate and create new products (Torlak & Uçkun, 2005).

The sharp variations in raw material costs caused by market factors, which result in higher production costs and the inability to compete on price, the abundance of commercial intermediaries, the intense rivalry among large businesses, the lack of competitiveness of these projects, and the lack of capital required to promote and take part in exhibitions are additional problems that face these enterprises (Mansour et al., 2018).

3.5.2.5. R & D-related challenges

Large enterprises generally can examine, analyze and interpret all their functions from an economic point of view, and in this way, they can reveal some economic results. In a narrower sense, large enterprises can carry out systematic and informed studies to discover new commodities and production processes. However, these phenomena are very limited for small and medium enterprises. Observing the developing industrial structures, global

competition, changing consumer tastes and habits, and similar developments in relation to small and medium enterprises create many difficulties (Akgemci, 2001).

The importance of innovation in terms of today's businesses can be expressed meaningfully in the following analogy "Business is rowing in the opposite direction of a downstream river. It is like pulling, the moment you stop, you regress" (Akgemci, 2001).

3.5.2.6. Branding related challenges

Since SMEs generally tend to make order-based production, they have difficulties in creating their own brands and marketing their products. Branding challenges hinder the growth of SMEs. In case the businesses cannot create their own brands and produce quality products, they will not be able to gain a competitive advantage (Ay & Talaşlı, 2007).

The goal of most businesses is to be a brand. In this way, it can be ensured that the company is positioned differently and that it can gain a competitive advantage. Branding is a difficult process that requires sharp turns. This requires a long-term strategy to be followed and the presence of a team that can implement it. However, the fact that SMEs have difficulties accessing resources creates difficulties in brand promotion and hinders the growth of SMEs and keeping them in competition with large firms (Ay & Talaşlı, 2007).

3.5.2.7. Human resources-related challenges

In today's world, where experience gains great importance, the need for multi-faceted employees is another challenge that SMEs face. According to studies, Egypt's SMEs lack skilled labor. The majority of employees in Egypt's SMEs have only obtained apprenticeship training. And this results in reducing SMEs' productivity.

As a result of the difficulties in defining and classifying SMEs and the inability to make a common definition, various organizations, and institutions have generally taken the number of employees as a basis. For this reason, Human Resources Management is of great importance for SMEs. The main characteristics of SMEs regarding the personnel working in the enterprise can be determined as follows (Akgemci, 2001):-

- The human factor is more important in SMEs than in large enterprises. This phenomenon is a natural consequence of the importance of labor-intensive technologies in SMEs.
- Small and Medium Sized Enterprises do not have the financial power to employ specialists in various business functions such as finance, marketing, accounting, and R&D.
- There is a direct relationship between management and personnel in SMEs.
- The wage level of the staff is generally higher in large enterprises than in SMEs.

3.5.2.8. Production related challenges

Procurement, technology, product design, product development, standardization, and qualified personnel are among the very important factors that play a role in obtaining high quality in production. Procurement is related to the purchasing of raw materials used in production and is intertwined with production. In the supply of raw materials, there may be some problems arising from quality, quantity, availability when needed, and price.

Another problem encountered in production stems from technology. The increase in the effectiveness of information processing technology in the fields of management, production, and distribution, the introduction of new organizational arrangements, and the flexible structure of production systems in the face of changing consumer demand are the most fundamental features of this transformation. Consumer demand and preferences are now shifting toward distinct products with higher quality and superior design (Akgemci, 2001).

3.5.2.9. Other challenges

Factors such as financial problems experienced by SMEs, lack of equity, lack of raw materials and resources, the inadequacy of loans, high costs, and inflation affect their competitiveness and productivity negatively. Businesses cannot adapt to the competition in the sector due to the problems they experience. Competition-related challenges are a major obstacle to the growth of SMEs (Akgemci, 2001).

SMEs have an important place in the socio-economic structure and are the enterprises that contribute to industrialization efforts. These businesses, which face various problems, especially financing, need to be supported in overcoming the difficulties. The reasons such as the lack of scientific work methods specific to SMEs and the lack of education play an important role in the emergence of difficulties. In order to ensure the growth of SMEs, and to increase their profitability and product/service quality, strategies aim to eliminate the difficulties facing SMEs.

4. FINANCIAL PERFORMANCE CONCEPT & IMPORTANCE

In general, performance is the evaluation of any situation of a person or institution by comparing it according to predetermined criteria (Helvacı, 2002). The purpose of performance evaluation is to help employers measure the performance of their employees in the private or public sector, to allow them the opportunity to make a critical assessment in order to determine whether the employees are working at the desired level and to determine whether the enterprises reach the desired efficiency (Iplik, 2004). Financial performance, which expresses the operating results of the business in monetary terms, reveals the level of use of assets to generate income and the financial position of the business in a certain period (investopedia.com/terms/f/financial performance). Financial performance has been frequently used as a concept that meets business performance alone until the early 1990s, but in recent years, parallel to the acceleration of the transition to the information economy, it has begun to be regarded as a sub-dimension of business performance together with non-financial performance.

Businesses operate in an economic system where it is known that scarce resources should be used effectively. In order to use scarce resources effectively, financial performance indicators have an important role in determining the performance of the business. When it comes to financial performance, the profitability of the enterprise comes to the fore among these indicators. Profitability is the ratio of the profit obtained in a certain period to the capital in the relevant period (Göktaş, 2004). The measurement variables evaluated and constantly used in this performance type are total asset profitability, sales

amount, return on equity, market share, profitability level, turnover profitability, return on investments, income before tax, net income, etc. Information on the specified values can be obtained from more than one manager working in the same enterprise. Thus, the internal consistency of the scale used as an evaluation tool and the participants in the evaluation process are different, and the reliability of measurement is strengthened by revealing the consistency between them (BULUT et al., 2009).

4.1. Measuring Financial Performance

Financial performance, which constitutes and expresses business performance together with non-financial performance, is not sufficient to explain business performance alone, but it still maintains its feature of being the main component of performance today. It is necessary to measure financial performance in order to determine where the business is financially and to make decisions about future financial management. Financial performance indicators, which are subject to different calculations, are used to measure and evaluate the results of the activities carried out in order to achieve the financial performance targets and to reveal the financial performance. Financial indicators, which are tools of financial management in businesses; assist in the use of financial resources in a way that supports the overall objectives of the business in the context of the efficient and effective execution of the finance function. While financial indicators provide information about whether the targeted financial performance level, which is among the main objectives of the enterprise, has been achieved, it also operates the control mechanism by expressing the inputs and outputs in financial terms (Otley, 2002:3-4).

Financial performance measurement; It provides information in decision-making processes related to profitability, pricing, budgeting, cost management, fixed asset purchase, and strategic planning through financial performance indicators. Financial performance measurement is carried out within the framework of financial analysis; In addition to managers, creditors, and current/potential investors, it is frequently used for comparison purposes by companies operating in the same sector in the 21st century competitive economic systems.

4.2. Financial Performance Measurement Methods

The survival and growth of a business depend on its ability to cope with its competitors, that is, its competitiveness. To be able to determine the competitiveness of the enterprise in a healthy way also requires the measurement and analysis of the financial performance of the enterprise.

Effective decision-making, planning, and control functions in businesses are inevitable. For this reason, among the most important responsibilities of business managers is to carry out financial analysis at regular intervals to measure and analyze financial performance (Acar, 2003).

The main tool in financial analysis is the transfer of information to decision-makers about the financial situation and development of the enterprise. Financial analyses help managers to make future management and investment decisions, determine the creditworthiness of the business in question, and evaluate the investment preferences of investors regarding the business. Therefore, the results of financial analysis concern not only businesses but also a wide audience such as partners, employees, and creditors (Sekreter et al., 2004).

There are two main approaches for evaluating financial performance: Financial Statement Analysis (FSA) and Economic Value Added:-

4.2.1. Financial Statement Analysis

Financial statements are reports that represent an entity's financial activities over a certain period. The entity prepares these statements in accordance with specified regulations, rules, and laws. Financial statements in Turkey can be reported in accordance with both Tax Procedure Law and International Financial Reporting Standards (IFRS). In most countries, IFRS are comprehensive and widely accepted financial reporting standards. Companies prepare their financial statements in accordance with the International Financial Reporting Standards (IFRS) so that management, owners, and investors can compare them to other companies from various countries.

Companies generate four main financial reports: the Balance Sheet, the Income Statement, the Cash-Flow Statement, and the Statement of Shareholders' Equity. Each financial statement provides distinct and specific information to the interested group(s), and thus none of these statements lonely can give information about everything in the company (Kline, 2007).

A balance sheet is a financial statement that shows a company's assets, liabilities, and shareholders' equity at a certain point in time. A balance sheet summarizes the company's financial situation. The income statement summarizes a company's earnings and expenses over a certain period. The cash-flow statement displays how much money a company makes and spends over a given time period. The statement of shareholders' equity depicts the changes in the balance sheet's equity section over a given period.

Financial statement analysis is the process of evaluating and analyzing the enterprise's financial statements in order to make decisions. Analysis of financial statements comprises vertical, ratio, and horizontal analysis.

4.2.1.1. Vertical Analysis

The vertical analysis method is a simple but very useful type of analysis that measures the weight of the financial statement items. In this analysis technique, the share of each item in the financial statements is expressed as a percentage of another item (Wells, 2011).

For illustration, total assets are assigned 100% when performing vertical analysis on a balance sheet, and all other assets are expressed as a percentage of total assets. Total liabilities and stockholders' equity are also assigned 100%, and then each item under those categories is expressed as a percentage of it. Total sales are assigned as 100% when performing a vertical analysis for an income statement, and the other elements are expressed as a percentage of net sales (Warren et al., 2008).

4.2.1.2. Horizontal Analysis

Horizontal analysis is the examination and evaluation of the changes in the items in the financial statements prepared on different dates. In other words, this analysis is made with the help of the ratios obtained by dividing the items in the newly announced financial

statements by the financial statement items in the earlier period (Warren et al., 2008). Horizontal analysis techniques can help users in identifying increases and decreases in the items of the financial statements over time. This type of analysis, for example, can be used to identify trends over time; such as increases or decreases in sales, net income, cost of goods sold, or expenses of any kind, etc. The formula for calculating a horizontal analysis ratio is:-

$$Horizontal\ Ratio = \frac{\text{Current Amount} - \text{Prior Amount}}{\text{Prior Amount}}$$

4.2.1.3. Ratio Analysis

Ratio analysis is the mathematical evaluation of the numerical data of the items in the financial statements of companies by dividing them into each other. Ratios help us to make the data disclosed in the financial statements both easy to interpret and comparable. For example, knowing the profit of a company may not mean much, and when we want to compare this data with the profit of another company, we may not get a healthy result. However, when we know the capital of these companies and calculate the earnings per share, we can make more descriptive comments about the profitability of the company thanks to this ratio and we have the opportunity to compare it with other companies in the same sector (Weygandt et al., 2009: 654-655).

Financial ratios can be classified according to the information they provide into 4 categories which are; liquidity ratios, solvency ratios, profitability ratios, and market ratios.

- **Liquidity Ratios**

Liquidity ratios provide information about an enterprise's ability to meet its short-term financial obligations and to meet unexpected cash needs. Liquidity ratios are of particular interest to those extending short-term credit to the firm such as trade creditors, bank overdrafts, and any other amounts that must be paid within the next twelve months. The three most widely utilized liquidity ratios are the current ratio (working capital ratio), the quick ratio (acid ratio), and the cash ratio (Weygandt et al., 2009: 655).

- **Solvency Ratios**

The term "solvency" describes a company's ability to repay its long-term debt. An extensive examination of the elements of a company's financial structure is typically part of the process of determining whether it will be able to meet its long-term obligations. Solvency ratios indicate the proportion of debt in a company's capital structure as well as the extent to which earnings and cash flow are sufficient to pay interest costs and other fixed charges as they become due. The usage of debt by a corporation is a topic that analysts investigate for a number of key reasons. The amount of debt in a company's capital structure is crucial for determining the risk and return characteristics of the organization, particularly its level of financial leverage (Robinson et al., 2015).

- **Profitability Ratios**

The absolute level of profits provides an indication of the size of the business, but on its own, it says very little about the business's performance. So, profits must be compared to other aspects of the business. Profitability ratios refer to the ability of a business to earn a profit as a return on capital invested also profitability ratios show the business's competitive position and the quality of the management. It displays the company's success or failure. Examples of profitability ratios are as follows: Return on equity, Return on assets, earnings per share, gross profit margin, and net profit ratio (Durrah et al., 2016).

- **Market Value Ratios**

Market value ratios relate a publicly traded company’s stock price to its earnings and book value per share. These ratios show management how investors feel about a company's previous success and projected future performance. The market value ratios will be high and the stock price can be anticipated to be as high as possible if a firm performs effectively (Karasinski & Zdunczak, 2021). Market value ratios include Price-Earnings (P-E) Ratio, Market-to-book Ratio, and Dividend Yield Ratio.

4.2.2. Economic Value Added

In recent years, instead of accounting-based methods that leave many questions about company value unanswered and cannot cope with the increase in efficiency in the capital

markets. Methods aimed at profit and added values instead of accounting-based methods are preferred. One of the most important of these methods is EVA. Economic value added (EVA) is a measure of a company's profitability that was designed to assess the output of a company. It was first suggested by G. Bennet Steward in 1991. EVA is computed by deducting the opportunity cost of capital from the company's profits. It largely concentrates on the efficient utilization of capital. The primary benefit of EVA is that it explains the potential cost of the capital that a company has spent (Sharma, 2010).

Steward (1991) asserts that a company's primary goal should be to enhance EVA. EVA implementation could be quite expensive for organizations. EVA calculations are complicated, therefore building and measuring an EVA system is quite expensive. In addition to its high cost, managers require additional training to comprehend this metric. Despite its drawbacks and implementation challenges, EVA has been used as a management tool by numerous businesses (Lovata & Costigan, 2002).

CHAPTER THREE

THE RELATIONSHIP BETWEEN SMES FINANCIAL PERFORMANCE & INNOVATION

5. LITERATURE REVIEW

The relationship between the firms' innovation performance and their financial performance has been the subject of numerous theoretical and empirical investigations in the literature. The following is a list of some research investigations that have been done in Egypt and around the world.

5.1. Research Studies conducted in Egypt

The general conclusions of research studies conducted in Egypt indicate that there is a strong positive relationship between innovation or R&D activities and the financial performance of enterprises.

The following is a list of some research investigations that have been done in Egypt.

Table 6: **An overview of research studies' literature reviews conducted in Egypt**

Author(s)	DATA	METHODOLOGY	VARIABLES	RESULTS
(AbouTaleb et al., 2007)	150 tourism and hospitality firms	The survey, Structural Equation Model	Innovation, Organizational learning, Personal traits, Firms' performance	The results reveal that organizational innovation influences firms' performance positively.
(Salem, 2014)	113 five-star	The survey, correlation analysis,	Knowledge management,	Findings indicate that

	chain hotels	Mann–Whitney, and Kruskal–Wallis tests	Innovation, Performance	there is a strong positive relationship between knowledge management, innovation & performance.
(R. S. Hassan & Hart, 2016)	406 Egyptian firms across different sectors	The survey, Multiple regression analysis	Exporting, Innovation, Growth	The findings show a positive significant effect of exporting and innovation activities on SMEs' growth.
(Rezk et al., 2016)	3000 SMEs firms with different manufacturing activities during the period 2012 - 2014	personal interviews, Survey	Innovation, Performance of SMEs	The findings show that 35.5% of Egyptian SMEs have at least one type of innovation (product or process). The innovation activities increase with increasing the

				size of companies in terms of the number of employees
(Goedhuys et al., 2016)	firm-level data from the World Bank Enterprise Survey consisting of 2897 firms from Egypt	Conditional recursive mixed-process model (CMP)	Corruption, Innovation, Firm growth	The results show that corruption has a direct negative effect on the firm performance and the likelihood that a firm is an innovator
(Zayed & Alawad, 2017)	35 manufacturing and service sector Egyptian SMEs	The survey, Correlation analysis, Regression analysis	Market / Learning Orientation, Innovation, Culture, Performance	Findings reveal that there is a significant change in innovation due to market orientation, and it was confirmed that there is a significant role of culture as a moderator

				between Innovation and Performance.
(Elshamy, 2020)	Manufacturing SMEs during the period 2010- 2012	The survey, logit model, ordered logit model	Sources of innovation, Performance, Innovation activity, Firm size	The paper conducts that there is a positive relationship between innovation firm size and performance.
(Nasution & Setiawan, 2021)	158 companies	Simple random sampling technique, Structural equation modeling	Transglobal Leadership, Innovative Work Environment, Firm Performance	The results show that innovative work environments increase firm performance, and innovative work environment has a role in mediating the effect of transglobal leadership on firm performance.

(Mohamed et al., 2022)	55 five-star hotels	Survey, Correlation Analysis	innovative marketing, marketing performance	The results show that innovative marketing makes the organization distinct from its competitors and the first to offer new services in the market. As well as improving the quality of services provided and enhancing the competitiveness and performance of the enterprise.
(Elnaggar & Elsayed, 2023)	426 micro and small enterprises	The survey, Smart PLS	Business model innovation, Social capital, Market orientation, business	The results show that business model innovation mediates the relationship between

			performance	business ties and business performance.

In light of the results of the previous studies that dealt with the impact or relationship between innovation and the performance of enterprises in Egypt, several conclusions were reached that can be clarified in the following points:-

- There is an agreement in the results of previous studies, as they concluded that there is an effect or a positive relationship between innovation or R & D activities and the performance of enterprises.
- There is a difference in the research community, as some of which dealt with hotel establishments(Mohamed et al., 2022; Salem, 2014), while others dealt with companies operating in the health field(Abou Taleb et al., 2007), where the other dealt with small and medium enterprises in the service or industrial field(e.g. Elnaggar & Elsayed, 2023; Elshamy, 2020; Rezk et al., 2016), which means the enrichment and diversity of the research community to which this type of studies is applied.
- In addition to the above-mentioned conclusions, the researcher noticed that most of the studies that were conducted focused on the relationship between innovation and the performance of the organization as a whole, which indicates that dealing with the impact of innovation on the financial performance specifically is a new matter that adds to the scientific balance of the Arab library.

5.2. Research Studies in the World

Table 7: An overview of some research studies conducted in the world

Author(s)	DATA	METHODOLOGY	VARIABLES	RESULTS
(Geroski et al.,	721 large UK	Regression	Innovation,	It is conducted

1993)	manufacturing companies		Profitability	that the number of innovations has a positive effect on the operating profit margin. Also, innovative firms generate profit more than noninnovative firms
(Deshpandé et al., 1993)	50 firms traded on the Nikkei stock exchange in Tokyo	The survey, Quadrat Analysis	Corporate Culture, Customer Orientation, Innovativeness, Business performance	The degree of innovation has a positive effect on business performance.
(Baldwin & Johnson, 1996)	Firms operating in Canada	The survey, Principal Component Analysis	Innovation, human resources, Marketing, Production efficiencies, government program, financing	More innovative firms place a greater emphasis on financing. Also, more innovative firms are more successful than less-innovative firms.

(Roper, 1997)	Germany, UK and Ireland small firms, 1991-1993	Survey	Product Innovation, Growth	Product innovation has a positive effect on the performance of the firm.
(Roberts, 1999)	U.S. pharmaceutical industry firms, 1977-1993	Regression, Correlation	Innovation, Competition, Profitability	Long-run profit rates are positively related to a firm innovative propensity.
(Calantone et al., 2002)	400 R&D vice presidents working in Technology Companies	The survey, Path analysis	innovativeness, Firm performance, Commitment to learning, Openmindedness, intra-organizational knowledge sharing, Organization age	Firm innovativeness is positively related to firm performance.
(Yavuz, 2010)	Çanakkale Seramik Company, 2005- 2009	Longitudinal case study	Innovation, production performance, marketing performance, financial	There is a significant positive relationship between businesses'

			performance	tendency to innovate and increasing the business' financial performance.
(Rhee et al., 2010)	333 technology-innovative small firms in South Korea	Structural model, Survey	Innovativeness, Number of R&D staff, firm age, Performance	Innovativeness has a significant effect on firm performance.
(Artz et al., 2010)	272 firms in 35 industries	Multiple regression model, Three-stage least squares (3SLS) analysis.	ROA, sales growth, R&D, Patents, and Product innovation.	There is a negative relationship between innovation and financial performance.
(Dunk, 2011)	119 managers from the manufacturing sector in Australia	Survey, Factor analysis	Product innovation, Budgetary control, Financial performance	Product innovation positively affects financial performance.
(Gunday et al., 2011)	184 manufacturing firms	The survey, T-test, Structural equation modeling	Innovation, production performance, market	The results reveal the positive effects of innovations

			performance, and financial performance	on firm performance.
(Erdem et al., 2011)	44 Five-Star hotels situated in Antalya	The survey, Simple Regression, Factor Analysis, T-test	Innovation, Business performance	A significant and positive relationship has been identified between innovation and business performance.
(Wang & Wang, 2012)	89 high technology firms in China	The survey, Confirmatory factor analysis	Knowledge sharing, Innovation, Firm Performance	It is found that explicit knowledge sharing has significant effects on innovation speed and financial performance.
(Çiçek & Onat, 2012)	9 Technology and Information firms	Data envelopment analysis	Percentage Change of Intangible Asset, Share of Intangible Assets in Total Assets, Research & Development expenses, the	In proportion to firm size, intangible assets, and R&D expenses have been found to have a positive effect on firm

			Percentage change in return on assets (ROA), Percentage change on sales	performance.
(Choi & Williams, 2013)	897 firms in Korea and China, 2000-2003	Panel Data Analysis	Innovation, Scope of innovation, Financial performance	Financial performance has been found to be strongly predicted by innovation.
(Atalay et al., 2013)	113 firms operating in the automotive supplier industry	The survey, Regression analysis, Factor analysis, Bartlett test	Product innovation, Process innovation, Organizational innovation, Marketing innovation, Firm performance	The analysis demonstrated that technological innovation (product and process innovation) has a significant positive impact on firm performance, but no evidence was found for a significant and positive relationship between non-

				technological innovation (organizational and marketing innovation) and firm performance.
(M. Hassan et al., 2013)	150 manufacturing companies in Pakistan	The survey, Correlation analysis, Regression analysis	Product Innovation, Process Innovation, Marketing Innovation, Organizational Innovation, Firm performance	The results reveal the positive effects of innovation types on different aspects of firm performance including financial performance
(Erdem et al., 2013)	40 Four and Five Star Hotels in Ankara	Questionnaire technique, Factor analysis, correlation analysis, Simple linear regression analysis	Market orientation, Innovation orientation, and Firm performance	It was revealed that the relationship between market orientation, innovation orientation, and firm performance is positively oriented.

(Uzkurt et al., 2013)	154 branches of ten prominent banks	The survey, Factor analysis, Regression analysis	Organizational culture, innovation, firm performance	In the banking sector, organizational culture and innovation have a direct and positive effect on the firm performance dimensions.
(Ayaydın & Karaaslan, 2014)	145 manufacturing firms	Panel data analysis, GMM System	R&D, Return on assets (ROA), Asset turnover, Firm size, Financial leverage, Liquidity	There is a positive relationship between firm research and development investment and firm financial performance.
(Kocamış & Güngör, 2014)	16 technology Companies listed on Borsa Istanbul, 2009 - 2013 period	Correlation Analysis	R&D expenditures, Operating profits/ Loss, Profits/ Losses before tax, Net profit/ Loss	It is concluded that there is a positive significant correlation between R&D expenditure and a company's profitability.
(Karabulut,	12500	A questionnaire,	Product	Product

2015)	manufacturing firms	Factor analysis, Multiple regression analysis	innovation, process innovation, marketing innovation, organizational innovation, financial performance, customer performance, business processes performance	innovation, process innovation and organizational innovation, and marketing innovation have positive impacts on financial performance, customer performance, and internal business processes performance.
(B. Doğan et al., 2016)	25394 firms that have been active in the Turkish manufacturing industry, 2005- 2011	Heckman Sample Selection Model	Firm Growth, Survival, Age, Number of employees, Innovation, R&D	It is concluded that R&D activities have positive significant effects on the performance of the manufacturing firms
(Demir & Alpaslan, 2016)	The world's top 20 R&D spender firms	ANOVA, Correlation Analysis, T-test,	R&D expenses, No. of employees, ROA, ROE	According to the results, there is no meaningful

	and the world's top 20 innovative firms, 2008 – 2012	Fisher's exact test		relationship between R&D expenses and productivity.
(Kaygın et al., 2016)	Companies operating in Metal, Furniture, Machinery, and Equipment sectors in BIST, 2010-2015	Multiple regression analysis, Correlation analysis	R&D expenses, intangible fixed assets, the ratio of R&D expenses to operating expenses, the ratio of intangible fixed assets to total assets, ROE, ROA, gross profit to net sales ratio, operating profit to net sales ratio, net sales income, domestic sales income, foreign sales income, net profit	There is a significant positive relationship between R&D variables and financial performance variables.
(Kıracı et al., 2016)	46 publicly traded manufacturing firms on the Borsa Istanbul,	Panel Error Correction Models	R&D expenditures, Net profit, Operating profit, Gross real operating profit	R&D expenses have a significantly positive and strong effect on long-term

	1998 - 2012 from			profitability.
(Paksoy & Ersoy, 2016)	40 Four and Five Star Hotels in Antalya	The survey, Kruskal Wallis- H test, Spearman Correlation Analysis	Innovation, Business Performance	There is a low but positive and significant relationship between innovation and business performance sub-dimensions.
(Şişmanoğlu & Akçalı, 2016)	7 information and technology companies, 2005-2014	Panel data analysis (Swamy's random coefficients model)	R&D expenditures, Net sales, Total assets	R&D expenditures of 2 companies have a positive impact on sales.
(Demirhan & Aracıoğlu, 2017)	Firms listed in BIST Technology Index	TOPSIS	Intangible Assets/Total Assets, R&D Expenses/Sales Revenues, TOPSIS Score, ROA, ROE	There is a significant and medium-level relationship between return on assets and R&D expenses.
(Gürkan & Gürkan, 2017)	20 companies listed in the Istanbul Stock Exchange	Content analysis, Panel data analysis, F-Test	Return on assets, Innovation	The study indicated the existence of a statistically significant linear

	Corporate Governance Index, 2012-2016			relationship between innovation and financial performance.
(Raza & Tang, 2018)	Chinese Security and Market Research Database, 2008 to 2016	Correlation analysis, Regression	Innovation, Firm Performance, ROA, ROE	Innovation activities have a positive and significant effect on firm performance.
(Aytekin & Özçalık, 2018)	7 companies listed in Borsa Istanbul Technology and Information Technology Indices, 2011:Q1 - 2018:Q1	Panel data analysis, Correlation Matrix	EBIT, ROIC (Return on Invested Capital), Net Sales, R&D Expenditures, R&D/Net Sales, R&D/Total Operating Expenses	A positive relationship was found between EBIT and R&D Expenditures, and a negative relationship between R&D/Total Operating Expenses.
(Ilarslan & Bıyıklı, 2018)	One of Turkey's largest pharmaceutical companies, 1994-2016	Almon model	Gross profit margin, R&D spending intensity	It is found that the gross profit margin has been positively influenced by the R&D spending

				intensity.
(M. Doğan & Doğan, 2020)	150 high-technology companies	The survey, Regression analysis, Correlation analysis	Explicit Knowledge Sharing, Tacit Knowledge Sharing, Innovation Speed, Innovation Quality, Operational Performance, Financial Performance	Innovation speed and quality affect both the operational and financial performance of firms. In other words, as innovation speed and quality increase, so does the operational and financial performance of firms.
(Kılıç, 2020)	7 companies traded in Borsa Istanbul (BIST) Informatics Index	Panel data analysis	R&D intensity, R&D activities, ROA, ROE, earnings on stock	It is concluded that the effect of the R&D intensity ratio on financial performance indicators is statistically significant and positive.
(Sandal &	9 fırms in the manufacturing	Panel data analysis, Pooled test	R&D expenditures,	It was found that R&D

Gacar, 2021)	sector in Borsa Istanbul and operating in the automotive field, 2016Q1-2020Q4	squares-POLS	ROA, ROE, Leverage ratio	expenditures had a significant and positive impact on the return on assets (ROA) and return on equity (ROE) and it was concluded that the profitability of enterprises spending on R&D increased.
(Koyluoğlu & Doğan, 2021)	346 companies using high technology	Exploratory factor analysis, confirmatory factor analysis, Pearson correlation, Regression analysis	innovation strategies, product performance, employee-based performance, customer-based performance, financial performance, and process performance	The result determined that innovation strategies are effective on business performance. And innovation strategies affect customer-based performance and the financial performance of companies more.

Considering the studies examining the relationship between innovation and financial performance; for example, Ayaydın & Karaaslan (2014) found that R&D expenditures and patenting positively affect the financial performance of firms. It was determined by Yavuz (2010) that there is a significant positive relationship between businesses' tendency to innovate and increasing the business' financial performance. Artz et al. (2010), on the other hand, found that contrary to expectations, there is a negative relationship between innovation and financial performance. Also, a negative correlation was found by (McGee et al., 1995; Meyer & Roberts, 1986; Danneels & Kleinschmidt, 2001). Additionally, according to the results reached by Demir & Alpaslan (2016), there is no meaningful relationship found between R&D expenditure and business performance.

On the other hand, considering the national studies on the subject; as a result of studies conducted by researchers such as Salem (2014), R. S. Hassan & Hart (2016), and Elshamy (2020) and others, it has been determined that there is a positive relationship between innovation and financial performance and it has been determined that R&D expenditures have a positive effect on profitability.

Such a broad variety of impacts refers to the main issue. The relationship between innovation and business performance is more complex than it might initially appear. Therefore, this paper aims to investigate the impact of innovation on business financial performance.

5.3. Innovation and Financial Performance in Times of Crisis

Table 8: An overview of some research studies conducted regarding innovation in times of crisis

Author(s)	DATA	METHODOLOGY	VARIABLES	RESULTS
(Cefis et al., 2020)	6542 Italian manufacturing firm	Cox Proportional Hazard mode, The log-rank test	Innovation, Firms' survival, Financial	The results indicate innovation still grants a survival

			constraints	premium during recession times. Firms introducing any kind of innovation and, in particular process innovations, still have a higher probability than non-innovators to survive the crises even when their financial structure is taken into consideration.
(Chaarani et al., 2021)	426 Lebanese SMEs	Principle component analysis, Multiple regression	Organizational innovation, Marketing innovation, Product innovation, Process innovation,	The results confirm the existence of a positive impact of marketing innovation and process innovation on

			Financial performance	the financial performance of SMEs during the COVID-19 pandemic.
(Gorzelany-dziadkowiec, 2021)	2000 firms in different sectors	The survey questionnaire, close-ended questions, CAWI technique,	innovation during COVID-19; business during COVID-19	The primary conclusion was that businesses disturbed by the COVID-19 pandemic were more able to innovate in terms of products and management than those that remained unaffected.
(Van Auken et al., 2021)	185 SMEs in Iran	Multivariate regression analysis	Process innovation, Product innovation, Small and medium-sized enterprises	The results showed that during the COVID-19 pandemic, government efforts to encourage SMEs to create new products

				helped them to withstand the crisis. The study suggests that, during a time of crisis, embracing innovation as a core organizational value helped SMEs to remain competitive.
(Sun et al., 2021)	330 SMEs in China	The survey questionnaire, SEM model, Confirmatory factor analysis	COVID-19, Business norms, Business performance	The findings have revealed the significant impact of COVID-19 on innovative operational procedures, profitability, and remote work.
(Valdez-Juárez et al., 2022)	498 SMEs in Mexico	Survey, Partial Least Square technique	Business Strategy, Innovation Management,	The findings reveal that innovation has positive and

			Corporate performance, Economic Impact	significant effects on the economic indicators and business performance of SMEs.

In light of the results of the above studies, it can be concluded that innovations seem to have a positive impact on the financial performance of enterprises. Also, the results indicate that innovation still grants a survival premium during recession times as firms introducing any type of innovation still have higher probabilities than non-innovators to survive the crises even when their financial structure is taken into consideration.

CHAPTER FOUR

THE IMPACT OF INNOVATION ON THE SMES FINANCIAL PERFORMANCE

In this chapter; first, the purpose of the research, the research model, and the hypotheses are explained, then the method followed to conduct the research, sample selection, data collection, and statistical techniques used in the research are explained, and finally, the findings obtained as a result of the research are given.

6. METHODOLOGY

This section covers the aim of the research and also presents the suggested research model and introduces the hypotheses that will be tested in order to analyze the relationships between the dependent and independent variables. The research design is then thoroughly explained, including details on data collection, sampling, and the questionnaire used as the research instrument.

6.1. The aim and importance of the research

In the rapidly changing world, innovation has become one of the essential factors that help nations and businesses achieve their macroeconomic and microeconomic growth goals. Businesses that want to survive have to reduce their costs and increase their sales and relatively their profitability to ensure sustainability. In all these processes, it is very important to gain a competitive advantage and to be able to accurately determine the determinants of factors that can be referred to as performance indicators. At this point, even if R&D expenditures are included as part of the operating expenses of the enterprises, R&D provides great opportunities for businesses to increase their market shares (Aytekin & Özçalık, 2018).

In recent years, innovation has been viewed as a crucial tool for businesses and nations to stay competitive. This is reflected in the fact that one of the subjects that spark interest and are studied in the literature is the impact of innovative activities on the performance of businesses. Innovation is seen to play a significant part in improving

business performance and, as a result, the welfare of the nation through improving the local economy where businesses are located. Thus there are now a sizable number of studies demonstrating a statistically meaningful relationship between innovation and economic performance (Demirhan & Aracıoğlu, 2017).

As the primary goal of enterprises is maximizing the firm value through better financial performance, the degree of financial performance attained in relation to innovation performance is one of the areas worthy of study. For this reason, the impact of innovation types on the financial performance of small and medium-sized enterprises is researched.

6.2. Scope of the study

This study aims to investigate whether innovation based on (product innovation, process innovation, organizational innovation, and marketing innovation) as a recovery strategy adopted by small and medium-sized enterprises in their attempt to overcome the threats posed by the COVID-19 pandemic has a positive impact on the financial performance of these enterprises or not. The sample of this study is SMEs located in the South Upper Egypt region. Medium and small enterprises in South Upper Egypt are chosen as the research target population due to the presence of a large number of such projects and the fact that citizens of Egypt's southern governorates (Aswan, Luxor, Qena, and Sohag) rely heavily on these types of enterprises to create job opportunities.

6.3. Research Model and Hypotheses

In order to complete the aim of the study, the hypotheses of the research have been designed considering the existing literature, and the hypotheses developed for the purpose of the research are as follows:

Hypothesis 1: There is a positive relation between innovation types and financial performance.

H1a: *Organizational innovation has a positive impact on Financial Performance.*

H1b: *Marketing innovation has a positive impact on Financial Performance.*

H1c: *Process innovation has a positive impact on Financial Performance.*

H1d: *Product innovation has a positive impact on Financial Performance.*

The hypothetical model developed to be tested within the scope of the research is represented in Figure 7.

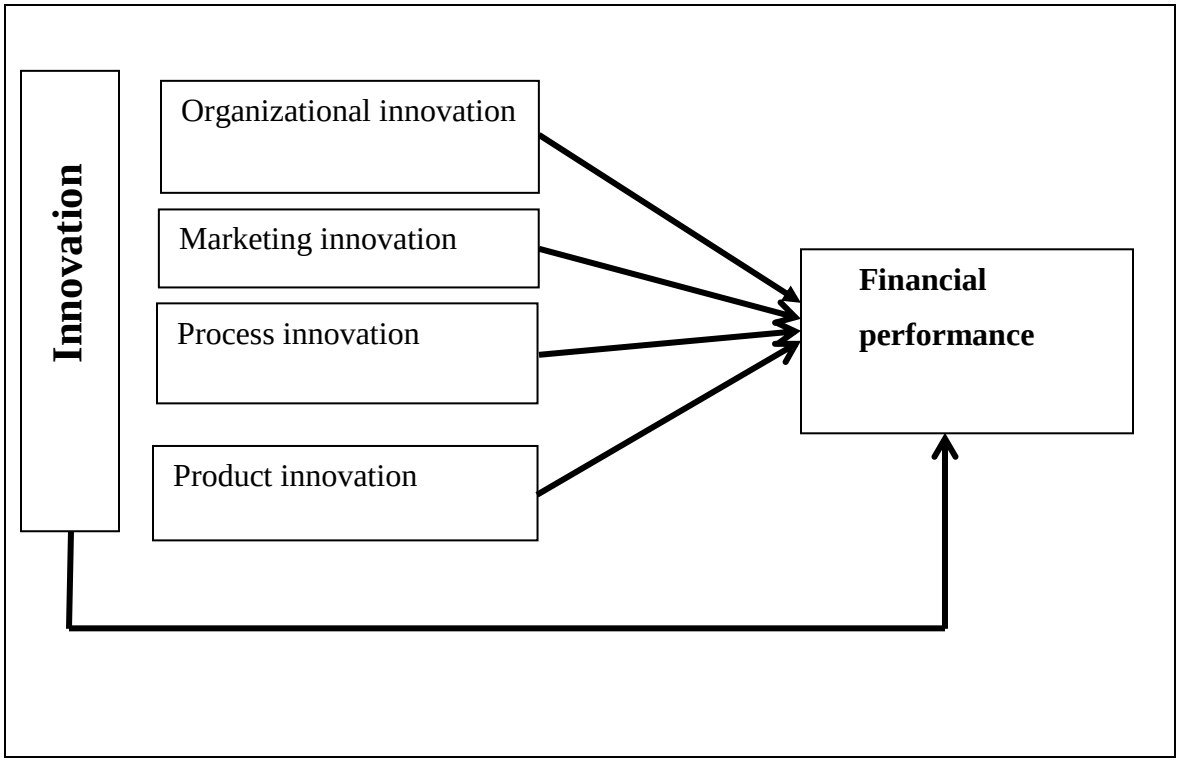

Figure 7: Research model

6.4. Analytical Model

A multiple linear regression model will also be applied to assess the financial performance-related dependent variable and the independent variables, which stand in for the various types of innovations. The analytical model mentioned below will be used to investigate the relationship between the dependent and independent variables:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$$

Where:

Y represents the value of SMEs' financial performance

Bo represents constant, e = error

B1 represents the co-efficient of organizational innovations

B2 represents the co-efficient of marketing innovations

B3 represents the co-efficient of process innovations

B4 represents the co-efficient of product innovations

X1 is the value of organizational innovation

X2 is the value of marketing innovation

X3 is the value of process innovation

X4 is the value of product innovation

6.5. Test of Significant

Regression Analysis will be employed as the significance test in this study. The relationship between the independent variable which is the different types of innovations and the dependent variable which is the SMEs' financial performance will be shown by the linear regression analysis. The degree of causality between the implementation of innovations and the financial performance of SMEs in South Upper Egypt will be illustrated by the correlation coefficient R and the coefficient of determination R^2. If there is a significant association between the variables under consideration, it will be indicated by the results of the linear multiple regression equation $Y=b_0+b_1X_1+b_2X_2+b_3X_3+b_4X_4+e$ and the conclusions will then be applied to the target population. In order to determine the statistical significance of the variance among the grouped data for investigating the influence of the independent variables on the dependent variable in a regression analysis, a test of significance at a 5% significant level was conducted on the various study variables using the coefficient of determination (R^2), correlation coefficient (R), F-test and ANOVA table.

6.6. Research Sample and Data Collection Procedure

6.6.1. Research Population

The target population of this study, which has been carried out to investigate the impact of organizational innovation, product innovation, process innovation, and marketing innovation on the financial performance of SMEs, is the owners/ managers of small and

medium-sized enterprises operating in the southern Upper Egypt region, which are 305,491 enterprises. One questionnaire was distributed to each enterprise. Small and medium-sized enterprises in South Upper Egypt are chosen as the research target population due to the presence of a large number of such projects and the fact that citizens of Egypt's southern governorates rely heavily on these projects to create job opportunities. Despite the importance of these projects, there is a scarcity of studies that have been conducted on the enterprises in this region. The following table shows the research population.

South Upper Egypt region	Population
Aswan	48,461
Luxor	41,150
Qena	86,572
Sohag	129,308
TOTAL	**305,491**

Source: prepared by the researcher based on the data issued by the Central Agency for Public Mobilization and Statistics.

6.6.2. Research Sample

The sample was selected from that population using the stratified random sampling method that represents the research community. The sample size is 384 with a confidence level of 95% and a 5% of error estimate. The size of that sample was determined through the statistical tables of Krejcie & Morgan, (1970) and the researcher proposes the following table for the size of the sample and its distribution among the research population:-

South Upper Egypt region	Population	Ratio	Sample size
Aswan	48,461	15.9 %	61
Luxor	41,150	13.5 %	52

Qena	86,572	28.3 %	109
Sohag	129,308	42.3 %	162
TOTAL	**305,491**	**100 %**	**384**

6.6.3. Data Collection Procedure

In this study, the survey approach was used due to the quick and high rate of returns. The survey method is often used to collect data from a larger population. Each participant in this method is asked to answer the same questions. Before preparing the questionnaire, a literature review was conducted to better understand the topic. Then, a structured questionnaire form was created as the data collection method. The respondents received guarantees of confidentiality regarding the use of their names and responses, that the responses would not be handled by a third party, and that they would only be used for academic research. The questionnaire used in the research consists of 6 parts and 34 questions. At the beginning of the questionnaire, an introductory section describing the purpose and content of the study was prepared.

Some telephone numbers of enterprises' owners/ managers were obtained from the records of the General Investment Authority, and a telephone call was made to request data collection, after which the questionnaire was sent electronically, and some other enterprises were visited during working hours and in the offices of the participants to request participation in answering the questionnaire.

Almost 600 questionnaires were distributed and collected from owners/managers of SMEs in South Upper Egypt in the governorates of Aswan, Qena, Luxor, and Sohag. 335 surveys were returned by the owners or managers of the SMEs, but it was found that there were 8 incomplete questionnaires, so they were excluded. As a consequence, only a total of 327 questionnaires were used as a sample for the research.

6.7. Research Variables and Measures

In the research, the survey method was applied in order to give more reliable results and to collect the data objectively. The survey questions were prepared with reference to the article "Effects of Innovation Types on Firm Performance" by (Gunday et al., 2011) and the OECD studies. In this article on which the study was based, the internal consistency and reliability (content validity) between the elements were investigated through the use of Cronbach's α and one-dimensional tests. The results of Gunday et al. (2011) reflect the following reliabilities: financial performance (4 items, alpha 0.930), process innovation (5 items, alpha 0.819), product innovation (5 items, alpha 0.758), organizational innovation (9 items, alpha 0.896), and marketing innovation (5 items, alpha 0.833). Cronbach α values for the underlying factors (innovation and financial performance) range from 0.93 to 0.76 showing satisfactory levels of construction reliability, since the scale is considered reliable when Cronbach α values are greater than 0.70. The discriminatory validity of the innovation constructs was also assessed and validated by the extracted mean-variance (AVE) test.

The questionnaire form consists of six parts. In the first part of the questionnaire, there is information regarding the demographic information of the enterprises such as the field of activity of the business, how long have the business been operating, and the number of employees which reflects the size of the enterprise. In the following sections of the questionnaire questions about organizational innovation, marketing innovation, process innovation, product innovation, and finally questions about financial performance are asked.

In the research, a 5-point Likert scale was used to measure various types of innovation and fınancıal performance. For innovation types; five-point scales ranging from "never implemented (1), rarely implemented (2), moderately implemented (3), often implemented (4), and continuously implemented (5)" were used. While for financial performance scales ranging from "very unsuccessful (1), unsuccessful (2), somewhat successful (3), successful (4), and very successful (5)" were used.

The scales used in the measurement of all the variables in the study and all the items in the scales are explained below.

6.7.1. Organizational Innovation Scale

Organizational Innovation is the first dimension of innovation and was measured using questions related to the renewal of total quality management systems (TQM), human resource management systems (HRM), supply chain management systems (SCS), administrative procedures and processes (APP), and management information systems (MIS).

The reliability and validity of the scale were carried out by M. Hassan et al. (2013). (α=0.829) Table 9 below contains all the questions about the organizational innovation Scale.

Table 9: Organizational Innovation Scale

FACTOR
1. Renew the routines, procedures, and processes employed to execute firm activities in an innovative manner.
2. Renewing the supply chain management system.
3. Renewing the production and quality management systems.
4. Renewing the human resources management system.
5. Renewing the in-firm management information system and information sharing practice.
6. Renewing the organization structure to facilitate teamwork.
7. Renewing the organization structure to facilitate coordination between different functions such as marketing and manufacturing.
8. Renewing the organization structure to facilitate project-type organization.
9. Renew the organizational structure to facilitate strategic partnerships and long-term

business collaborations.

6.7.2. Marketing Innovation Scale

Marketing innovation is the second dimension of innovation. This dimension was assessed using four criteria which are product appearance and characteristics renewal (PAC), product pricing (PP), distribution channels, including new technology (DC), and promotion techniques (PT).

The reliability and validity of the marketing innovation scale used in the research were carried out by Han et al. (2017). (α=0.835) Table 10 below contains all the questions about the marketing innovation scale.

Table 10: Marketing Innovation Scale

FACTOR
1. Renewing the design of the current and/or new products through changes such as appearance, packaging, shape, and volume without changing their basic technical and functional features.
2. Renewing the distribution channels (direct sales, online sales..etc) without changing the logistics processes related to the delivery of the product.
3. Renewing the product promotion techniques employed for the promotion of the current and/or new products/services.
4. Renewing the product pricing techniques employed for the pricing of the current and/or new products/services.
5. A new market strategy to target a new consumer group or a new market (eg a new advertisement, the first use of a new media or technique for product positioning, the introduction of a new brand symbol…).

6.7.3. Process Innovation Scale

The third dimension of innovation is process innovation. Process innovation can be measured through five questions related to the renewal of logistics and speed of delivery, manufacturing and services techniques, elimination of non-value processes and finally adding new techniques in order to reduce the cost and improve the production processes.

The reliability and validity of the process innovation scale used in the research were carried out by Gunday et al. (2011) (α= 0.819), and Karabulut (2015). (α=0.802) Table 11 below contains all the questions about the process innovation scale.

Table 11: Process Innovation Scale

FACTOR
1. Determining and eliminating non-value-adding activities in production processes.
2. Decreasing variable cost components in manufacturing processes, techniques, machinery, and software.
3. Increasing output quality in manufacturing processes, techniques, machinery, and software.
4. Determining and eliminating non-value-adding activities in delivery-related processes.
5. Decreasing variable costs and/or increasing delivery speed in delivery-related logistics processes.

6.7.4. Product Innovation Scale

The final dimension of innovation is Product Innovation. Product innovation is centered on customer satisfaction, as evidenced by three criteria: the development of a new product that is completely different from the traditional one, new specifications of the existing product, and finally, the quality of the current product's components.

The reliability and validity of the product innovation scale used in the research were carried out by Tariq et al. (2021). (α=0.704) Table 12 below contains all the questions about the product innovation scale.

Table 12: Product Innovation Scale

FACTOR
1. Increasing manufacturing quality in components and materials of current products.
2. Decreasing manufacturing cost in components and materials of current products.
3. Developing newness for current products leading to improved ease of use for customers and improved customer satisfaction.
4. Developing new products with technical specifications and functionalities totally differing from the current ones.
5. Developing new products with components and materials totally differing from the current ones.

6.7.5. Financial Performance Scale

The dependent variable in this study, financial performance was applied based on the approach of Gunday et al. (2011) as the researchers had argued that financial performance is the best way in expressing the impact of in-firm innovation. The reliability and validity of the financial performance scale used in the research were carried out by Gunday et al. (2011) (α= 0.930).

In the research, a 5-point Likert scale was used to measure the financıal performance. The scales used ranged from "very unsuccessful (1), unsuccessful (2), somewhat successful (3), successful (4), and very successful (5)". The use of such a subjective scale is necessary since enterprises are apprehensive to share specific performance records and managers are unwilling to provide objective performance statistics (Gunday et al., 2011).

The questions aimed to rate the level of achievement of the following financial performance items in the enterprises which represent the research sample after the implementation or lack of implementation of any of the above innovations during the last three years (COVID-19 period). The financial performance of Egyptian SMEs was assessed using the following criteria:-

Table 13: Financial Performance Scale

FACTOR
1. General profitability of the firm.
2. Return on sales (Net income/total sales).
3. Return on assets (Net income/total assets).
4. Cash flow excluding investments.

6.8. Statistical Techniques Used in Research

Analysis of the data was carried out using SPSS 22 program. During the analysis, firstly, descriptive statistics were obtained, and then correlation analysis was performed to see the relationship between the variables used in the study. Then, a reliability analysis was carried out in order to see the structural validity and reliability of the question groups. Finally, regression analysis was performed to see the relationship between the independent variables of the study and the dependent variable.

7. FINDINGS OF THE RESEARCH

The findings of this study are as follows; findings on demographic characteristics, descriptive statistics on scales, reliability analysis, correlations between research variables, and hypothesis testing.

7.1. Findings on Demographic Characteristics

In terms of the age group of enterprises, responses indicated that 74 of the 327 enterprises surveyed are young enterprises between the ages of 1 and 10 years which

represent 22.6%, 119 enterprises are in the range of 11-20 representing 36.4%, 71 enterprises are in the age range of 21- 30 representing 21.7%. Finally, there were 63 enterprises in the age range of 31 and above representing 19.3% of the sample size. According to the participant's responses to the question "What is the industry you work in?" "Manufacturing" with n=60 which represents18.3%, "Commercial and Trade" with n=146 which represents 44.6%, and "Service" with n=121which represents 37% of the sample size. Finally, regarding the question about the number of employees, participants indicated by n=124 which represents 37.9% that there are 1-9 employees in the enterprise, and n=171 owners answer that they have 10-49 employees which represents 52.3%, and n=32 indicated that they have 50-249 employees with a percentage of 9.8% of the sample size.

7.2. Reliability Analysis Results

Before testing the hypothesis, exploratory reliability and validity analyses were carried out for each scale over the research sample. Reliability refers to the degree to which the results can be repeated by another researcher. In this study, the Cronbach Alpha method is used to conduct the reliability analysis. The Cronbach alpha value indicates the total reliability score of a factor or if the scale's individual items are measuring the same concept and are therefore highly correlated. Cronbach's alpha has a range of 0 to 1. Scores between 0 and 0.6 imply a poor level of reliability for the instrument, whereas scores of 0.7 and higher denote a high level of internal consistency and reliability for the instrument.

The survey list was tested on a sample of 30 individuals from the owners/managers of small and medium enterprises under study in order to ensure the correct understanding of the terms used in the list.

The reliability coefficients for the variables used in this study are given below for each scale.

Table 14: Reliability Coefficients

Scale	Cronbach's Alpha	Number of Items
Organizational innovation	0.90	9
Marketing innovation	0.918	5
Process innovation	0.849	5
Product innovation	0.825	5

Source: Research Findings

Table 14 indicates that product innovation was the least reliable (α =0.825), followed by process innovation (α =0.849), organizational innovation (α =0.90), and finally marketing innovation which has the highest reliability (α =0.918). This shows that each of the four scales was reliable because their reliability values were higher than the required thresholds of 0.7.

7.3. Organizational Innovation

The respondents were asked to specify the degree to which the mentioned organizational innovation items have been applied within their company over the previous three years. Table 15 summarizes the results.

Table 15: Organizational Innovation Implementation

Descriptive Statistics					
Organizational innovations	**N**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Renewing the routines, procedures, and processes employed to execute firm activities in an innovative manner.	327	1	5	3.90	1.021
Renewing the supply chain management system.	327	1	5	3.49	.993

Renewing the production and quality management system.	327	1	5	3.78	.997
Renewing the human resources management systems.	327	1	5	3.75	.958
Renewing the in-firm management information system and information sharing practice.	327	1	5	3.78	1.040
Renewing the organization structure to facilitate teamwork.	327	1	5	3.65	.879
Renewing the organization structure to facilitate coordination between different functions such as marketing and manufacturing.	327	1	5	3.58	.987
Renewing the organizational structure to facilitate project-type organization.	327	1	5	2.21	.842
Renewing the organizational structure to facilitate strategic partnerships and long-term business collaborations.	327	1	5	3.03	1.036
Valid N (list-wise)	327				

Source: Research Findings

Respondents indicated by a mean of 3.90 that there were improvements through renewing the routines, procedures, and processes employed to execute firm activities in an innovative manner. Also, respondents indicated that there were renewing of the production and quality management system and renewing in-firm management information system and

information sharing practices, which were indicated by a mean of 3.78. Also, there was renewing of the human resources management systems by a mean of 3.75. Also as indicated by a mean of 3.65, there was renewing in the organization structure to facilitate teamwork.

Respondents also, indicated by a mean of 3.58 that there was a renewing of the organizational structure to facilitate coordination between different functions such as marketing and manufacturing. Further, the research found out that the respondents indicated by a mean of 3.49 that there was renewing of the supply chain management system. The research also found that there was renewing in the organizational structure to facilitate strategic partnerships and long-term business collaborations by a mean of 3.03. Finally, respondents indicated by a mean of 2.21 that there was renewing in the organizational structure to facilitate project-type organization.

7.4. Marketing Innovation

The researcher asked the respondents to identify the degree to which the listed marketing innovation items have been implemented within their organization in the last three years. Table 16 summarizes the results.

Table 16: Marketing Innovation Implementation

Marketing innovation implementations					
Marketing innovations	**N**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Renewing the design of the current and/or new products through changes such as appearance, packaging, shape, and volume without changing their basic technical and functional features.	327	1	5	3.88	1.009

Renewing the distribution channels (direct sales, online sales, etc.) without changing the logistics processes related to the delivery of the product.	327	1	5	4.15	.965
Renewing the product promotion techniques employed for the promotion of the current and/or new products/services.	327	1	5	3.78	1.060
Renewing the product pricing techniques employed for the pricing of the current and/or new products/services.	327	1	5	3.29	1.001
A new market strategy to target a new consumer group or a new market (e.g. a new advertisement, the first use of a new media or technique for product positioning, the introduction of a new brand symbol...)	327	1	5	3.30	1.181
Valid N (list-wise)	327				

Source: Research Findings

Respondents indicated by a mean of 4.15 that there was renewing the distribution channels without changing the logistics processes related to the delivery of the product. Also, respondents indicated that there had been renewing in the design of the current and/or new products through changes such as in appearance, packaging, shape, and volume without changing their basic technical and functional features which were indicated by a mean of 3.88.

Respondents also indicated that there had been a renewal in the product promotion techniques employed for the promotion of the current and/or new products as was indicated by a mean of 3.78. Further, the research found out that there had been a new market strategy to target a new consumer group or a new market (e.g. a new advertisement, the first use of a new media or technique for product positioning, the introduction of a new brand symbol...) employed as was indicated by a mean of 3.30. Additionally, the respondents indicated that there had been renewing of the product pricing techniques employed for the pricing of current and/or new products by a mean of 3.29.

These findings concur with those of Oduro (2019) when he conducted that marketing innovation generates additional profit for the company as market innovation has been found to have a significant positive impact on SMEs' growth in terms of sales.

7.5. Process Innovation

The researcher requested the respondents to indicate the extent to which the listed items of process innovations were implemented in their organization in the last three years used. The findings were presented in Table 17.

Table 17: Process Innovation Implementation

Descriptive Statistics					
Process innovations	**N**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Determining and eliminating non-value-adding activities in the production process.	327	1	5	3.36	1.151
Decreasing variable cost components in manufacturing processes, techniques, machinery, and software.	327	1	5	2.03	.924
Increasing output quality in manufacturing processes, techniques, machinery, and software.	327	1	5	2.87	.886

Determining and eliminating non-value-adding activities in delivery-related processes.	327	1	5	3.36	.964
Decreasing variable costs and/or increasing delivery speed in delivery-related logistics processes.	327	1	5	3.10	.877
Valid N (list-wise)	327				

Source: Research Findings

Respondents indicated that there were determining and eliminating non-value-adding activities in delivery-related processes; in addition, there were determining and eliminating non-value-adding activities in delivery-related processes indicated by a mean of 3.36. In addition, the research found that there was a decreasing variable cost and/or increasing delivery speed in delivery-related logistic processes, this was indicated by a mean of 3.10.

Further respondents indicated that there was increasing output quality in manufacturing processes, techniques, machinery, and software by a mean of 2.87. Finally, the research found that there was a decreasing variable cost component in manufacturing processes, techniques, machinery, and software which was indicated by a mean of 2.03.

The findings concur with the study of Varis (2010) which disclosed that considering the relationship between company performance and innovation, it was found that implementing process innovation practices allows companies to achieve higher growth.

7.6. Product Innovation

The respondents were asked to specify the degree to which the mentioned product innovation items have been applied within their company over the previous three years. Table 18 summarizes the results.

Table 18: Product Innovation Implementation

Descriptive Statistics					
Product innovation	**N**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**

Increasing manufacturing quality in components and materials of current products.	327	1	5	2.83	.919
Decreasing manufacturing costs in components and materials of current products.	327	1	4	2.45	.789
Developing newness for current products leads to improved ease of use for customers and improved customer satisfaction.	327	1	5	3.01	.831
Developing new products with technical specifications and functionalities totally differing from the current ones.	327	1	5	1.93	.735
Developing new products with components and materials totally differing from the current ones.	327	1	4	2.14	.838
Valid N (list-wise)	327				

Source: Research Findings

As was indicated a mean of 3.01 respondents indicated that there was developing newness for current products leading to improved ease of use for customers and improved customer satisfaction. Also, respondents indicated that there was increasing manufacturing quality in components and materials of current products by a mean of 2.83.

Respondents also indicated that there was decreasing manufacturing cost in components and materials of current products by a mean of 2.45. Further, the research found out that there were developing new products with components and materials totally differing from the current ones by a mean of 2.14. Additionally, the respondents indicated with a mean of 1.93 that through the current products being improved there was development of new products with technical specifications and functionalities totally differing from the current ones.

7.7. Financial Performance

The researcher asked the respondents to assess the extent to which the stated financial performance items had been achieved in their company after implementing or not implementing any of the above innovation types.

Table 19: Financial Performance Measures

Descriptive Statistics					
Financial performance	**N**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
General Profitability of the firm.	327	1	5	3.06	.789
Return on sales (Net income/ Total sales).	327	1	5	2.68	.928
Return on assets (Net income/ Total assets).	327	1	4	2.32	.810
Cash flow excluding investments.	327	1	4	2.13	.832
Valid N (list-wise)	327				

Source: Research Findings

Respondents indicated that both the general profitability of the firm and return on sales (Net income/Total sales) would be successful in each case with a mean of 3.06 and 2.68 respectively. Respondents also indicated that return on assets (Net income/Total assets) would also be successful as was indicated by a mean of 2.32. Additionally, respondents indicated by a mean of 2.13 that cash flow excluding investments would be successful.

7.8. Correlation Analysis Results

It is essential to demonstrate the correlations that must be investigated in the research before going on to the models and necessary analyses that will evaluate the hypotheses in this research. The Pearson correlation coefficient is an analysis method that aims to determine the severity of the relationship between two variables. In addition to showing substantial correlations between almost all variables, correlation analysis also reveals a complicated web of associations.

Correlations of the variables used in the study with each other were examined. These variables are respectively; organizational innovation, marketing innovation, process innovation, product innovation, and the financial performance of SMEs. The correlation coefficients between the variables used in the research are given in Table 20.

Table 20: Descriptive Statistics and Correlation Analysis

	Mean	S.D.	Organizational innovation	Marketing innovation	Process innovation	Product innovation	Financial performance
Organizational innovation	3.4635	.72046	1				
Marketing innovation	3.6801	.87533	0.837**	1			
Process innovation	2.9450	.72816	.491**	.465**	1		
Product innovation	2.4697	.59034	.421**	.419**	.546**	1	
Financial performance	2.5466	.69004	.728**	.713**	.529**	.528**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Research Findings

From the above table, it is clear that:

- All the research variables recorded an arithmetic mean greater than or approximately near to the degree (3), which represents the middle of the scale, and this indicates an increase in the level of the variables. The scale reached its maximum in the two variables of marketing innovation and organizational innovation and lowest in the variable of product innovation.
- The standard deviation scores for the study variables appear to be less than one, which indicates a high degree of consensus among the sample members about the

study variables. The agreement reached its maximum in the product innovation variable and the lowest in the marketing innovation variable.

R= 0.00 – 0.30 means there is a weak correlation between the variables, R = 0.30 – 0.70 a medium level, and R = 0.70 – 1.00 a high-level relationship. Therefore; as seen in Table 20;

- There is a statistically significant correlation between organizational innovation and other types of innovation. The correlation between organizational innovation and marketing innovation is seen to be the strongest as it is indicated by 0.837. There also seems to be a medium level of correlation between organizational innovation and both process and product innovations by 0.491 and 0.421 respectively.
- Also, correlation coefficients indicate that there is a medium positive correlation between marketing innovation and both process innovation and product innovation. The values of the correlation coefficients are 0.465 and 0.419 respectively.
- And a medium positive significant correlation exists between process innovation and product innovation with a correlation coefficient of 0.546.
- Additionally, there are statistically significant correlations between financial performance (dependent variable) and innovation (independent variable). As the values of correlation between organizational innovations, marketing innovation, process innovation, product innovation, and the dependent variable financial performance are 0.728, 0.713, 0.529, and 0.528 respectively.

Given the previous studies, it was observed that the values of the correlation coefficients between the types of innovation and financial performance are very high. This can be attributed to the sample size, as a sample of 327 individuals is statistically acceptable, but its results may not accept generalization. Thus, we can conclude that the high rate of correlation coefficients between the variables may be a dummy rate.

Therefore, an additional analysis was done, which is the analysis of the partial correlation between the variables of the study, where the type of industry in which the

sample enterprises operate was used as a controllable variable. The following table shows the partial correlation values:-

Table 21: Partial Correlation Analysis

Correlations

Control Variables		Organizational innovation	Marketing innovation	Process innovation	Product innovation	Financial performance
Industry	Organizational innovation	1				
	Marketing innovation	.552**	1			
	Process innovation	.331**	.296**	1		
	Product innovation	.281**	.302**	.482**	1	
	Financial performance	.497**	.432**	.400**	.439**	1

**. Correlation is significant at 0.01 levels (2-tailed).

Source: Research Findings

7.9. Regression Analysis Results

The findings, which are summarized in Table 22 below, aimed to determine whether there is a relationship between organizational innovation, marketing innovation, process innovation, and product innovation and the financial performance of SMEs. The positive correlation coefficient (R) = 0.789 and coefficient of determination (R^2) = 0.623 and adjusted r of 0.619 as given in Table 22 below, respectively, represent the degree to which organizational innovation, marketing innovation, process innovation, and product innovation are related to financial performance.

According to the results (R^2), variations in organizational, marketing, process and product innovation explain 62.3% of the variation in SMEs' financial performance. Also, the Adjusted R-square which is a coefficient of determination indicates the variation in the dependent variable as a result of changes in the independent variable demonstrating that

variations in organizational, marketing, process, and product innovation explain 61.9% (Adj R-square = 0.619) of the variance in the financial performance of SMEs. In the stage of testing the sub-hypotheses, it was regarded that organizational innovation, marketing innovation, process innovation, and product innovation respectively explain 52.9%, 50.7%, 27.7%, and 27.6% of the 61.9% variance in the financial performance of SMEs

Table 22: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.789[a]	.623	.619	.42617
Dependent Variable: SMEs' financial performance				

Source: Research Findings

7.10. Analysis of Variances (ANOVA)

Analysis of variance was used to test the regression model's significance with regard to differences in the means of the dependent and independent variables. The ANOVA test produced an F-value of 133.16 which is significant at p=0.000. The results are shown in Table 23 below. The regression model is statistically significant in predicting how organizational innovation, marketing innovation, process innovation, and product innovation impact SMEs' financial performance.

Table 23: ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	96.743	4	24.186	133.164	.000[b]
	Residual	58.483	322	.182		
	Total	155.226	326			
a. Dependent Variable: Financial performance						

Source: Research Findings

The findings in Table 24 below are based on this regression model:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$$

Where:

Y = SMEs' financial performance

X1 = organizational innovation

X2 = marketing innovation

X3 = process innovation

X4 = product innovation

Bo= constant

B1- B4= coefficient of the variables

e = error

The research sought to determine the extent to which the financial performance (FP) of SMEs is predicted by organizational innovation (OI), marketing innovation (MI), process innovation (PRI), and Product Innovation (PI).

Consequently, the regression model can be explained in the following form:

$FP= Bo + b_1OI+ b_2 MI+ b_3PRI+b_4PI +e$

According to the research, the results are:

FP = -.335 + .338 OI+.221 MI +.111 PRI + .231 PI+ e

Thus, as shown in Table 24 below, organizational innovation, marketing innovation, process innovation, and product innovation all have positive coefficients, illustrating that these independent variables are effective predictors of SMEs' financial performance. In light of this, every unit increase in organizational innovation, marketing innovation, process innovation, and product innovation will, respectively, result in 0.338, 0.221, 0.11, and 0.231 unit increases in the financial performance of SMEs.

Table 24: Coefficients

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.335-	.131		-2.558-	.011
	Organizational innovation	.338	.061	.353	5.516	.000
	Marketing innovation	.221	.050	.280	4.427	.000
	Process innovation	.111	.041	.117	2.681	.008
	Product innovation	.231	.049	.198	4.716	.000
a. Dependent Variable: Financial performance						

Source: Research Findings

This demonstrates clearly that organizational innovation, marketing innovation, process innovation, and product innovation all contribute positively to SMEs' financial performance. The study additionally indicated that all of the independent variables' P-values were less than 5%, indicating that they were all statistically significant and, therefore, in a position to support the study's conclusions.

7.11. Hypotheses Testing Results

This part presents the findings of the study with regard to testing the validity of the main and sub-study hypotheses, and the results that were reached as a result of using the previously mentioned statistical methods will be presented.

7.11.1. The Main Hypothesis Test Results:

This hypothesis states that "there is a significant positive correlation between the innovation types and the financial performance of small and medium enterprises."

This hypothesis was confirmed by using regression analysis, as previously shown in Tables 22 to 24.

7.11.1.1. Results of testing the validity of the first sub-hypothesis:

H1a: "*Organizational innovation has a positive impact on Financial Performance.”*

To test the validity of this hypothesis, a simple regression method was used, as shown in Table 25.

Table 25: The results of the analysis of the first sub-hypothesis test

Variable	**Beta**	**B**	**T**	**Sig. t**
Organizational innovation	0.728	0.698	19.163	0.000
Constant	0.131			
Correlation R	0.728			
Coefficient of determination R^2	0.530			
Adjusted R^2	0.529			
F value	367.212			
Sig. F	0.000			
P<0.01				

Source: Research Findings

By reviewing the results of the previous table, it becomes clear that:

- The impact of organizational innovation on the financial performance of small and medium-sized enterprises has a significant positive trend.
- The values of the correlation coefficients indicate that there is a significant positive correlation between organizational innovation and financial performance with a value of (0.728).
- The ability of organizational innovation to predict the financial performance of small and medium enterprises, where the value of F (367.212) was significant at (0.000).
- The value of R^2 shows that the organizational innovation variable explained about 53% of the variance in the financial performance variable of small and medium enterprises.

Thus, it is possible to accept the validity of the first sub-hypothesis that there is a significant positive correlation between organizational innovation and the financial performance of small and medium enterprises.

7.11.1.2. Results of testing the validity of the second sub-hypothesis:

H1b: "*Marketing innovation has a positive impact on Financial Performance."*

To test the validity of this hypothesis, a simple regression method was used, as shown in Table 26.

Table 26: The results of the analysis of the second sub-hypothesis test

Variable	**Beta**	**B**	**T**	**Sig. t**
Marketing innovation	0.713	0.562	18.341	0.000
Constant	0.478			
Correlation R	0.713			
Coefficient of determination R^2	0.509			
Adjusted R^2	0.507			
F value	336.388			
Sig. F	0.000			
P<0.01				

Source: Research Findings

By reviewing the results of the previous table, it becomes clear that:

- The impact of marketing innovation on the financial performance of small and medium-sized enterprises has a significant positive trend.
- The values of the correlation coefficients indicate that there is a significant positive correlation between marketing innovation and financial performance with a value of (0.713).
- The ability of marketing innovation to predict the financial performance of small and medium enterprises, where the value of F (336.388) was significant at (0.000).
- The value of R^2 shows that the organizational innovation variable explained about 50.9% of the variance in the financial performance variable of small and medium enterprises.

Thus, it is possible to accept the validity of the second sub-hypothesis that there is a significant positive correlation between marketing innovation and the financial performance of small and medium enterprises.

7.11.1.3. Results of testing the validity of the third sub-hypothesis:

H1c: "*Process innovation has a positive impact on Financial Performance."*

To test the validity of this hypothesis, a simple regression method was used, as shown in Table 27.

Table 27: The results of the analysis of the third sub-hypothesis test

Variable	**Beta**	**B**	**T**	**Sig. t**
Process innovation	0.529	0.501	11.227	0.000
Constant	1.071			
Correlation R	0.529			
Coefficient of determination R^2	0.279			
Adjusted R^2	0.277			
F value	126.042			
Sig. F	0.000			
P<0.01				

Source: Research Findings

By reviewing the results of the previous table, it becomes clear that:

- The impact of process innovation on the financial performance of small and medium-sized enterprises has a significant positive trend.
- The values of the correlation coefficients indicate that there is a significant positive correlation between process innovation and financial performance with a value of (0.529).
- The ability of process innovation to predict the financial performance of small and medium enterprises, where the value of F (126.042) was significant at (0.000).
- The value of R^2 shows that the process innovation variable explained about 27.9% of the variance in the financial performance variable of small and medium enterprises.

Thus, it is possible to accept the validity of the third sub-hypothesis that there is a significant positive correlation between process innovation and the financial performance of small and medium enterprises.

7.11.1.4. Results of testing the validity of the fourth sub-hypothesis:

H1d: "*Product innovation has a positive impact on Financial Performance."*

To test the validity of this hypothesis, a simple regression method was used, as shown in Table 28.

Table 28: The results of the analysis of the fourth sub-hypothesis test

Variable	**Beta**	**B**	**T**	**Sig. t**
Product innovation	0.528	0.617	11.202	0.000
Constant	1.023			
Correlation R	0.528			
Coefficient of determination R^2	0.279			
Adjusted R^2	0.276			
F value	125.476			
Sig. F	0.000			
P<0.01				

Source: Research Findings

By reviewing the results of the previous table, it becomes clear that:

- The impact of product innovation on the financial performance of small and medium-sized enterprises has a significant positive trend.
- The values of the correlation coefficients indicate that there is a significant positive correlation between product innovation and financial performance with a value of (0.528).
- The ability of product innovation to predict the financial performance of small and medium enterprises, where the value of F (125.476) was significant at (0.000).
- The value of R^2 shows that the product innovation variable explained about 27.9% of the variance in the financial performance variable of small and medium enterprises.

Thus, it is possible to accept the validity of the fourth sub-hypothesis that there is a significant positive correlation between product innovation and the financial performance of small and medium enterprises.

CHAPTER FIVE

CONCLUSION

This chapter deals with the discussion and interpretation of the results that have been reached regarding the hypotheses that the study aimed to test, and an indication of the extent to which the results of the study are compatible with the findings of previous research in this field.

The chapter also included a presentation of the most important recommendations of the thesis and aspects of benefiting from them, and in the end, recommendations for practice and further research work are presented, as follows:

The data analysis approach for this study aimed to verify the type and degree of the relationship between types of innovation (as an independent variable) and financial performance (as a dependent variable) as a recovery strategy for small and medium enterprises from the effects of the COVID-19 pandemic by sampling 384 SMEs operating in the South Upper Egypt region. Regression and correlation analysis were employed in the data analysis.

The results of the simple regression analysis showed that there is a statistically significant positive relationship between innovation in its three dimensions and the financial performance of small and medium companies.

In prior research exploring the relationship between innovation types and financial success, especially in times of crisis innovation has been found to have an important role to play in recovering from the effects of pandemics as innovation positively impacts financial performance. The findings of this study, which show a statistically significant relationship between the financial performance of SMEs and innovation types, are in line with those of earlier empirical research on the topic (Yavuz, 2010) (Kuckertz, Brandle, Gaudig, Reyes, et al., 2020) (Cefis et al., 2020) (Gunday et al., 2011) (Chesbrough, 2020) (Zaazou & Abdou, 2022).

These results support our conceptual model and provide some management ramifications. As enterprise owners/managers should focus more on innovations because

they are critical tools for improving financial performance. The favorable consequences of innovation on financial performance, however, might take some time to order to be observed.

In addition to the finding that each innovation type is significantly and more or less positively correlated with the financial performance of the SMEs, the researcher also noticed that organizational innovations, as compared to other innovation types, explained the largest proportion of the financial performance (33.8%), followed by product, marketing and process innovation (23.1%, 22.1% & 11.1%) respectively, play an important role in stimulating other types of innovation. This finding is in accordance with the results reached by previous researchers. Camisón & Villar-lópez (2014) confirmed that organizational innovation can lead to superior firm performance. Also, M. Hassan et al. (2013) concluded that organizational innovation accounted for a greater share of performance explanation compared to other types of innovation. Similarly, Gunday et al. (2011) found that organizational innovations not only provide an environment that is conducive to other innovation types but also significantly and directly affect innovative performance. Thus, it is acceptable to assume that managers need to pay closer attention to organizational innovations because they are essential for the development of innovative capabilities.

Also, from the researcher's observations, it became clear that innovation was more obvious in firms working in the field of tourism and hospitality. Additionally, it is recommended that the Egyptian government should also focus on assisting micro-enterprises and SMEs to create jobs, particularly for women, young people, and informal workers.

LIMITATIONS OF THE RESEARCH:

Due to time and financial limitations, the Southern Upper Egypt region was chosen as the study's target population since the study could not have included SMEs operating in all regions of Egypt. Targeted SMEs can be viewed as the representation of all SMEs in Egypt due to the abundance, diversity, and presence of a large number of such projects and the fact that citizens of Egypt's southern governorates rely heavily on these projects to create

job opportunities. Although the Southern Egypt region can be viewed as home to most SMEs, variations in the managerial approaches and degrees of expertise of SME owners and managers might affect how financial management in businesses is carried out.

Another limitation of the research is related to the data collection method. Objective indicators of financial performance were unavailable for the research due to the absence of an official database including financial information on SMEs in the Southern Upper Egypt region. Because of this, this study uses subjective financial performance measures, as advised by the literature.

To ensure that the data could be handled, the research solely used questionnaires that depended on self-report responses. However, the issue with using such questionnaires is that they rely on the assumption that participants responded to the questions honestly and accurately. On the other hand, it is not always the case that respondents provide truthful answers. This is due to the fact that respondents frequently provide responses they consider to be preferable.

IMPLICATIONS FOR FUTURE RESEARCH:

This research aimed to investigate the relationships between different innovation types and the financial performance of SMEs as a recovery strategy from the impacts of COVID-19, with empirical evidence from Egypt. Thus, the above-mentioned limitations that have been already discussed in the current research can be used to identify some potential areas for further future research.

- Small and medium enterprises from different geographic regions of the country can be chosen for data collection in future research, thus expanding the data pool.
- To investigate any possible variances, empirical results from large organizations can be compared to those from small and medium-sized firms.
- Future research is required to broaden the scope of the investigation by including more study variables.

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APPENDIX I- QUESTIONNAIRE

BURSA ULUDAĞ ÜNİVERSİTESİ

SOSYAL BILIMLER ENSTİTÜSÜ

The impact of innovation as a recovery strategy on the financial performance of SMEs within the scope of the COVID-19 pandemic

Dear Respondent,

I am a student at Bursa Uludağ University, Department of Business Administration, pursuing a Master of Business Administration degree in Management and Organization. I am conducting research to reveal the effects of innovation applied in SMEs in Egypt on the financial performance of SMEs.

I kindly request you spend a few minutes of your time completing the attached questionnaire. Your response is highly valuable to assist me gather data from you for the completion of this project. Participation in the research is on a voluntary basis. For this reason, you have the right to stop answering at any point in the research without giving reasons. It will take approximately 8 - 10 minutes to answer the questionnaire. The results obtained will only be evaluated by researchers and used in scientific research and publications. The questions you are going to answer do not have any correct answers. For each question, you are expected to choose the most appropriate statement for you.

If you have any questions about the research, you can contact the researcher at 701920011@ogr.uludag.edu.tr e-mail address.

Thank you in advance for your valuable time and for participating in our survey.

Kind regards

Samar MOHAMED

QUESTIONNAIRE FORM

SECTION A: BACKGROUND INFORMATION

1. What is your gender?	Male ( ) Female ( )
2. Field of activity of your business	Manufacturing ( ) Commercial and Trade ( ) Service ( ) Other .....
3. Age of the respondent	Below 30 years ( ) 30 – 39 years ( ) 40 – 49 years ( ) 50 years and above ( )
4. What is your highest level of education?	Masters ( ) Bachelor ( ) Certificate/Diploma ( ) Other ( )
5. For how long have you been operating?	1-10 years ( ) 11-20 years ( ) 21-30 years ( ) 31 years and above ( )
6. How many employees do you have?	1 - 9 employees ( ) 10 - 49 employees ( ) 50 - 249 employees ( )

SECTION B: Organizational Innovation

7. To what extent were the following organizational innovation items implemented in your organization in the last three years? (Five-point scales ranging from 1= “never implemented”, 2= “rarely implemented”, 3= “moderately implemented” 4= “often implemented”, and 5= “continuously implemented”)

FACTORS	1	2	3	4	5
Renewing the routines, procedures, and processes employed to execute firm activities in an innovative manner.					
Renewing the supply chain management system.					
Renewing the production and quality management systems.					
Renewing the human resources management system.					
Renewing the in-firm management information system and information sharing practice.					
Renewing the organization structure to facilitate teamwork.					
Renewing the organization structure to facilitate coordination between different functions such as marketing and manufacturing.					
Renewing the organization structure to facilitate project-type organization.					
Renewing the organizational structure to facilitate strategic partnerships and long-term business collaborations.					

Section C: Marketing Innovation

8. To what extent were the following kinds of market innovations implemented in your organization in the last three years? (Five-point scales ranging from 1= "never implemented", 2= "rarely implemented", 3= "moderately implemented" 4= "often implemented", and 5= "continuously implemented")

FACTORS	1	2	3	4	5
Renewing the design of the current and/or new products through changes such as appearance, packaging, shape, and volume without changing their basic technical and functional features.					
Renewing the distribution channels (direct sales, online sales..etc) without changing the logistics processes related to the delivery of the product.					
Renewing the product promotion techniques employed for the promotion of the current and/or new products.					

Renewing the product pricing techniques employed for the pricing of the current and/or new products.					
A new market strategy to target a new consumer group or a new market (eg a new advertisement, the first use of a new media or technique for product positioning, the introduction of a new brand symbol…).					

Section D: Process Innovation

9. To what extent were the following kinds of process innovations implemented in your organization in the last three years? (Five-point scales ranging from 1= "never implemented", 2= "rarely implemented", 3= "moderately implemented" 4= "often implemented", and 5= "continuously implemented")

FACTORS	**1**	**2**	**3**	**4**	**5**
Determining and eliminating non-value-adding activities in production processes.					
Decreasing variable cost components in manufacturing processes, techniques, machinery, and software.					
Increasing output quality in manufacturing processes, techniques, machinery, and software.					
Determining and eliminating non-value-adding activities in delivery-related processes.					
Decreasing variable costs and/or increasing delivery speed in delivery-related logistics processes.					

Section E: Product Innovation

10. To what extent were the product innovations implemented in your organization in the last three years related to the following kinds of activities? (Five-point scales ranging from 1= "never implemented", 2= "rarely implemented", 3= "moderately implemented" 4= "often implemented", and 5= "continuously implemented")

FACTORS	**1**	**2**	**3**	**4**	**5**
Increasing manufacturing quality in components and materials					

of current products					
Decreasing manufacturing costs in components and materials of current products					
Developing newness for current products leads to improved ease of use for customers and improved customer satisfaction.					
Developing new products with technical specifications and functionalities totally differing from the current ones.					
Developing new products with components and materials totally differing from the current ones.					

Section F: Financial Performance Measures

11. How would you rate the level of achievement of the following financial performance items in your organization after the implementation or lack of implementation of any of the above innovations? (Five-point scales ranging from 1= "very unsuccessful", 2= "unsuccessful" 3= "somehow successful", 4= "successful", 5= "very successful")

FACTORS	**1**	**2**	**3**	**4**	**5**
General profitability of the firm.					
Return on sales (profit/total sales).					
Return on assets (profit/total assets).					
Cash flow excluding investments.					

Thank you for your valuable time.