Current Science International
Volume: 12 | Issue: 04| Oct. – Dec.| 2023

EISSN:2706-7920 ISSN: 2077-4435
DOI: 10.36632/csi/2023.12.4.35
Journal homepage: www.curresweb.com
Pages: 476-494

Examination of ESG Integration in Sustaining SMEs Growth in Egypt

Hussein Seoudy [1] and Maysoun Nabil [2]

[1]Professor of Strategic Finance at Graduate School of Business, Arab Academy for Science, Technology and Maritime Transport (AASTMT), Egypt.
[2]PhD Student at Arab Academy for Science, Technology and Maritime Transport (AASTMT), Egypt.

Received: 10 August 2023 **Accepted:** 23 Sept. 2023 **Published:** 15 Oct. 2023

ABSTRACT

The primary objective of this study article is to analyze the effects of incorporating environmental, social, and governance (ESG) principles on the sustainable development of small and medium companies (SMEs) in Egypt. This study employs qualitative research methods to address research inquiries by conducting interviews and surveys with a sample size of 240 enterprises. The objective is to examine and moderate the association between the sustainability growth of small and medium-sized enterprises (SMEs) and their adoption of sustainability practices. This is achieved by integrating environmental, social, and governance (ESG) principles into their operational strategies, with the aim of enhancing the overall performance of the enterprises. The findings suggest that small and medium-sized enterprises (SMEs) in Egypt demonstrate a limited understanding of environmental, social, and governance (ESG) practices and innovation. Consequently, they may not fully recognize the significance of these practices in relation to achieving sustainability performance. The research findings have significant practical implications for various stakeholders, both internal and external. These stakeholders include managers, consultants, investors, credit agencies, lenders, policymakers, government entities, and the broader community. The implications pertain specifically to the potential impacts of environmental, social, and governance (ESG) practices on small and medium-sized enterprises (SMEs).

Keywords: small and medium enterprises; ESG Principles; sustainability Practices.

1. Introduction

1.1. Research Gaps:

Small and medium-sized firms (SMEs) play a significant role in fostering global economic growth and generating employment opportunities. In high-income nations, SMEs contribute approximately 33% to the Gross Domestic Product (GDP) and employ around 45% of the workforce. In developing economies, these enterprises account for over 60% of the GDP and provide employment to approximately 70% of the workforce (Oxford Business Group, 2019). Small and Medium Enterprises (SMEs) play a crucial role in fostering sustainable growth within Egypt's industrial sector. The emergence and growth of small and medium-sized enterprises (SMEs) have played a crucial role in promoting economic diversification and enhancing resilience, particularly in countries that heavily rely on commodities.

Sean Markey (2010) shows that while many businesses have included sustainable development in their vision statements, few have been able to put their goals into actionable programs. Business has become more devoted to sustainability and better at applying its ideas. SMEs deviate. Sustainable development may be advantageous for businesses, and stakeholders and authorities are pressuring them to implement and evaluate their sustainability policies (Sy, 2016). The improvement is encouraging but slow. Sustainable development may be advantageous for businesses, and stakeholders and authorities are pressuring them to implement and evaluate their sustainability policies (Sy, 2016). SMEs make up 99% of all enterprises globally (UN, 2018); therefore, even if improvement has been

Corresponding Author: Maysoun Nabil, PhD Student at Arab Academy for Science, Technology and Maritime Transport (AASTMT), Egypt. E-mail: maysounali2@gmail.com

positive, it has not been fast enough (ACCA, 2019). According to a World Bank brief (2015), SMEs find it easier to adopt new practices due to their unique qualities.

SME contributions to sustainable development in the economic, social, and environmental dimensions are debated (Rishi *et al.,* 2015). Many developed and developing countries have policies to encourage and promote SMEs because they contribute to economic growth, poverty reduction, and job creation. SMEs strategically boost economic progress in impoverished areas (Du Toit *et al.,* 2010) and are the backbone of most African economies (Asamoah, 2014). Thus, sustainability is essential for SMEs (Masocha and Fatoki, 2018).

Egypt recognizes the important role SMEs may play in achieving the Sustainable Development Goals (SDGs) on a national and international level. Innovative environmental and social practices assist SMEs in achieving sustainable development's economic goals (Kardosa, 2012). In 2016, Egypt released "Egypt's Vision 2030," its first sustainable development policy. The SDS is unique in scope and national relevance. It addresses all three aspects of sustainable development and outlines Egypt's development goals. Since the SDS 2030 was adopted with the economic reform and stabilization program, Egypt has worked to achieve socially inclusive and environmentally friendly economic growth.

Egypt recognizes the important role SMEs may play in achieving the Sustainable Development Goals (SDGs) on a national and international level. Innovative environmental and social practices assist SMEs in achieving sustainable development's economic goals (Kardosa, 2012). SMEs have also been praised for democratizing the labor market and encouraging inclusive economic growth by creating jobs for women, migrants, youth, and minorities. In biotech and renewable energy, SMEs have been at the forefront of innovation, using their smaller size and agility to react faster to technological or economic opportunities.

However, unfair tax burdens, talent shortages, and trade and financial barriers continue to hinder SMEs' growth and long-term survival. Thus, SMEs are especially susceptible to market conditions. In 2018, governments worldwide changed laws, increased information exchange, and created funding channels to fix these structural issues and unleash SMEs' growth potential.

SMEs now prioritize sustainability. Due to environmental concerns, economic decline, and social responsibility. SMEs are reconsidering their goods and operations and embracing environmentally friendly management strategies. because they prioritize waste avoidance, resource quality, and meeting consumer needs at the lowest cost. SMEs must satisfy stakeholders (Hallam & Contreras, 2016).

SME's are rethinking their products and processes while implementing environmentally responsible management practices, emphasizing waste avoidance, resource quality, and addressing consumer demands at the lowest possible cost. The combination of the above highlights the need to better understand the context of SMEs in Egypt, help SMEs in integrating ESG principles, and examine the impact of ESG integration on SMEs' growth in Egypt.

1.2. Research Objective

The main objectives of this research paper are consistent with the interpretivism approach that has been taken, and they place an emphasis on the "why" and "how" in the following ways:

1. Evaluate the strategies used by small and medium-sized businesses (SMEs) to choose business sustainability practices that successfully make it viable for sustaining SME’s.
2. Recognize the factors that influence SMEs' decision to choose one strategy over another and how this affects their capacity for long-term financial viability.
3. investigate and integrate ESG principles on SME’s growth development.

1.3. Research Questions

This research paper is driven by a set of research questions that have informed the background research and the literature review, as well as the design of the research methodology. There are key questions that are the foundation of this research study:

- Question 1: How do SMEs in Egypt approach sustainability?

- Question 2: What effects do management expertise, resources, and innovation have on the viability of SMEs in Egypt?
- Question 3: To what extent is the idea of sustainable finance understood by Egypt's SME sector?
- Question 4: How closely does the functioning of SMEs in Egypt resemble the idea of sustainability? Which of the three ESG principles are SMEs most likely to put into practice?

1.4. Research Significance

This paper contributes new perspectives to the existing corpus of research on the management of small and medium-sized enterprises (SMEs). It emphasizes the significance of sustainable business practices for small and medium-sized enterprises (SMEs) of varying sizes, types, and industries, as well as how SMEs can employ sustainable business practices to achieve growth and obtain a competitive advantage.

The findings of this research paper can be used by business practitioners, start-ups, decision makers, governmental authorities, and researchers to gain a deeper understanding of the immense possibility and potential of SMEs to play a significant role in advancing sustainability practices.

This emphasizes their importance for achieving global sustainable development objectives. Considering their strategic roles in promoting economic growth (OECD, 2017), business practitioners, start-ups, decision makers, and government authorities can utilize the findings of this research paper.

Small and Medium-Sized Enterprises (SMEs) have a substantial impact on the economics of many countries, particularly those in the developing world. Small and medium-sized enterprises (SMEs) constitute a substantial proportion of businesses around the globe and play a crucial role in fostering employment generation and fostering economic growth at a global level. Small and medium-sized firms (SMEs) constitute over 90% of enterprises globally and contribute to more than 50% of the total employment. In the year 2020, the World Bank published research which revealed that small and medium-sized businesses (SMBs) of a formal nature make a substantial contribution of up to 40% to the overall national income, often known as the Gross Domestic Product (GDP), in emerging nations. When informal small and medium-sized enterprises (SMEs) are taken into account, the aforementioned figures exhibit a notable increase. Based on our projections, it is anticipated that the worldwide labor force would necessitate the creation of around 600 million employment opportunities by the year 2030. Consequently, numerous governments over the world have identified the advancement of small and medium-sized firms (SMEs) as a paramount objective. In emerging economies, it can be observed that small and medium-sized firms (SMEs) are responsible for generating approximately 70% of the formal job employment. Nevertheless, the lack of financial resources poses a substantial impediment to the growth of small and medium-sized enterprises (SMEs). In fact, it is the second most commonly mentioned challenge hindering the expansion of SMEs in emerging economies and developing countries.

2. Literature Review

2.1. SMEs Sustainability Factors

The researchers identify the most significant factors affecting business sustainability. These factors can either aid or hinder the success of a business. For example, supply chain integration or collaboration may assist a small to medium-sized enterprise (SME) in remaining profitable. It may lose sustainability if this is not accomplished. Consider the fact that certain components are frequently found together, which suggests a connection between them.

Gunasekaran *et al.,* (2011) posit that the competitiveness of small and medium-sized enterprises (SMEs) is contingent upon various factors, including organizational structure, personnel management, technological utilization, agility, capital generation, information acquisition, networking capabilities, supply chain integration and adaptability, market intelligence, production quality, marketing and distribution strategies, and the ability to reassess its position within the supply chain. In order to uphold consumer uniqueness, ensure supply chain integration, foster adaptation, and facilitate networking, certain measures were deemed essential. The promotion of product and service reliance has facilitated the survival of small and medium-sized firms (SMEs).

This study identified numerous authors and papers on SME ESG integration and how it contributes to global economic growth. The authors analyzed the impact of small and medium-sized

businesses on the global economy. The topic of this research paper is currently significant to academics and industry professionals. However, the majority of the literature focuses on concepts of sustainable management or large organizations. Recent research has demonstrated that this approach to sustainability may be inadequate, highlighting its significance in the contemporary world and the need for a more comprehensive strategy.

Similarly, to the global situation (Ciemleja and Lace, 2011; Medel-González *et al.,* 2011; Liebetruth, 2017), the vast majority of Egyptian corporate sustainability studies concentrate on the sustainability practices of large and multinational corporations, as well as individual sustainability concepts and aspects. Few studies have examined the sustainable practices and capacity of Egypt's SMEs to achieve sustainable development objectives. This research gap necessitates more specialized studies in this area, particularly given the importance of small and medium-sized enterprises to the growth of economies like Egypt's.

The absence of a distinct definition of small and medium-sized enterprises (SMEs) makes research on them challenging, despite the fact that they drive the global economy. Variations in SME definitions and characteristics make international comparisons challenging. Since enterprise scale is the only criterion shared by all comparisons, it is often simplified.

Storey (1994) and Bolton (1971) define SMEs as non-subsidiary, autonomous businesses with fewer than a certain number of employees. Whether they are family businesses, sole proprietorships, cooperatives, or formal or informal organizations, the definition of a SME varies by country and region. One or more of the following characteristics define SMEs: number of employees, annual revenue, and total assets. Countries use these standards for policymaking.

In the United States and Europe, SMEs are classified based on their employee quantity. Less than 250 Europeans and 500 Americans are employed. Over 85 percent of American businesses and 90 percent of European businesses are small and medium-sized enterprises (SMEs). The United Kingdom has 99.3 percent SMBs (FSB, 2020).

Small and medium-sized enterprises (SMEs), which are universally defined as enterprises with a workforce of fewer than 250 individuals according to the Organization for Economic Co-operation and Development (OECD, July 21, 2005), constitute a significant proportion of private sector businesses and economic operations in both developed and developing nations. Furthermore, these enterprises serve as key employers, contributing to the employment of a substantial number of individuals. Small and medium-sized enterprises (SMEs) play a significant role in generating job opportunities on a global scale. According to ACCA (2010), in low-income countries where the majority of small and medium enterprises (SMEs) operate in an informal manner, their contribution to the gross domestic product (GDP) amounts to 16%. Conversely, in high-income nations where the majority of SMEs operate in a formal manner, their contribution to the GDP is reported to be 51%.

Based on a comprehensive analysis of the existing scholarly literature pertaining to the subject matter, it is evident that there exists a significant divergence of viewpoints among academics, particularly with regard to identifying a comprehensive and conclusive determinant or combination of determinants that may elucidate the mechanisms by which small and medium enterprises (SMEs) attain sustainable business practices. Various perspectives were presented regarding the factors contributing to or hindering the attainment of sustainability by small and medium-sized enterprises (SMEs). Upon conducting a more extensive review of the relevant literature, the subsequent seven elements have emerged as significant contributors: supply chain integration, innovation and technology, knowledge, strategy, flexibility, communication, and cost reduction.

The significance of these seven characteristics lies in their frequent inclusion in the publications reviewed throughout the literature analysis, as well as their correlation with the sustainability of small and medium-sized enterprises (SMEs).

The selected essential elements were afterwards incorporated into the study questions utilized in the survey procedure and will be delineated as follows:

The first factor, Supply Chain Integration or Collaboration refers to the cooperative efforts of two or more firms aimed at achieving a competitive advantage (Derrouiche *et al.,* 2008, p. 426). The collaboration of vendor-managed inventory (VMI), consignment stocking, and product customization facilitates the creation of synergies and fosters a strong customer-supplier reliance. In order to maintain strong relationships between customers and suppliers, certain publications have suggested

the implementation of strategies such as Vendor Management Inventory (VMI), customization of products and services, establishment of network linkages, and fostering collaboration. In the Vendor-Managed Inventory (VMI) system, suppliers exercise control over the inventory of items at client sites. In order to alleviate the administrative burden on customers, it is proposed to eliminate the need for purchase orders and warehouse supplies, hence reducing inventory carrying costs. Additionally, this measure aims to enhance material availability and lead times. The integration of vendor-managed inventory (VMI) supply chains can be facilitated by the utilization of flexibility, information exchange, and technology. This application effectively mitigates shipping and logistics expenses, a feature that is highly valued by clients. The inclusion of consigned inventory in business operations has been identified as a means to decrease the amount of working capital required by customers.

The second factor, referred to as Innovation, can be characterized as a notable alteration, preferably an enhancement, in an actual product, method, or service when compared to past accomplishments (Bos-Brouwers, 2010, p. 418). The utilization of innovation, whether through technological advancements or process enhancements, has the potential to enable small and medium-sized enterprises (SMEs) to establish a competitive edge over other SMEs that are situated in regions with lower production costs. The use of technological advancements or process enhancements has the potential to effectively mitigate labor expenses, hence diminishing the perceived benefits associated with conducting operations in emerging markets and countries characterized by cheap costs. The term "innovation" has frequently been used synonymously with "technology" in many contexts. Frequently, it was alluded to as a strategy for surpassing the competition. Furthermore, it was seen a contributing aspect that enhances the efficacy of enterprises and was commonly referred to as a prerequisite for attaining resilience (Taylor and Branicki, 2011).

According to DiPasquale and McInerney (2010), the third factor, Knowledge, can be described as a dynamic combination of framed experience, values, contextual information, and expert insight. This amalgamation serves as a foundation for assessing and assimilating novel experiences and information (p. 342). The possession of knowledge, which encompasses the skills and capacities of a business's human resources, has the potential to confer a competitive edge to the enterprise in the context of customer-supplier interactions. The lack of information will also impede the sustainability of small and medium-sized enterprises (SMEs).

The fourth factor, Strategy, pertains to the manner in which an organization delineates its potential products and markets, establishes long-term objectives, and formulates policies to achieve these objectives (Gunasekaran *et al.,* 2011, p. 5492). The aforementioned component, characterized by a preference for long-term perspectives as opposed to short-term ones, has the potential to enhance operational efficiency and foster enduring partnerships. The literature consistently emphasizes the importance of strategy, flexibility, and cost reduction as key determinants of success and sustainability for small and medium-sized enterprises (SMEs). The absence of strategic planning was frequently linked to the decision-making of small and medium-sized enterprise (SME) owners or managers, which can be attributed to their tendency to prioritize short-term objectives, as observed in the management of SMEs (Ates and Bititci, 2011). This inclination may be driven by their immediate concern to sustain the firm. In their article, Vargo and Seville (2011) commence by highlighting the deficiency in strategic thinking among business owners and managers, emphasizing its adverse consequences on the long-term viability of organizations. They also note the scarcity of comprehensive guidance on enhancing effectiveness in this domain (Vargo and Seville, 2011, p. 5619). The primary emphasis of the writers lies in the realm of crisis management and strategic planning, with the aim of establishing a correlation between these two methodologies in order to foster resilience within small and medium-sized enterprises (SMEs).

According to Hu (2007), the fifth factor, Flexibility, can be described as the capacity to swiftly transition from one process or product configuration to another, as well as the ability to quickly increase or decrease output quantities in the short term (p. 289). Flexibility exemplifies an organization's capacity to effectively address a surge in client demand within a limited timeframe. According to Ismail *et al.,* (2011), the proposition was made that the incorporation of agility and flexibility into small and medium-sized enterprises (SMEs) might enhance their competitive capabilities in the marketplace and foster stronger customer relationships. The level of intimacy appears to be a crucial determinant impacting the capacity of small and medium-sized enterprises (SMEs) to establish and maintain sustainability. Nevertheless, similar to the findings of Kumar *et al.,*

(2011), the authors highlight the limitations faced by small and medium-sized enterprises (SMEs) in achieving agility, which can be attributed to insufficient resources and capabilities (Ismail *et al.,* 2011, p. 5470).

The sixth factor, denoted as Communication, encompasses the exchange of information both within and outside an organization. The exchange of information between enterprises enables firms to synchronize their resources in order to fulfill market demands. The existing body of literature suggests that the act of exchanging information and integrating processes has a positive impact on enhancing communication. Examining these characteristics in case studies is crucial as it enables small and medium enterprises (SMEs) to establish a strong and enduring bond with their customers. According to Holt *et al.,* (2007, p. 52), the integration of information and communication technology in small and medium-sized enterprises (SMEs) has been suggested as a strategy that facilitates business growth.

The seventh factor, referred to as Cost Reduction, encompasses various expenses such as material costs, labor costs, logistics costs, overhead costs, and other operational costs. The use of cost effectiveness measures not only contributes to the long-term business sustainability of small and medium-sized enterprises (SMEs), but also mitigates the potential risks faced by their customers' businesses. This element may also contribute to the ability of the small and medium-sized enterprise (SME) to maintain competitive pricing in the marketplace. According to Genaidy and Karwonski (2008, p. 71), small and medium-sized enterprises (SMEs) operating in the manufacturing industry are facing growing difficulties due to the rapid advancements in technology, shifting client preferences, and the substantial expenses associated with production. Consequently, these challenges have compelled some SMEs to outsource certain aspects of their business operations to offshore suppliers.

The authors propose that additional research is necessary to investigate a system that can augment the competitiveness of small and medium-sized enterprises (SMEs) in order to effectively compete in global markets. Kumar *et al.,* (2011) emphasize the need of acknowledging the distinct characteristics of small and medium-sized firms (SMEs) in contrast to larger enterprises. It is crucial to take these differences into account when developing programs aimed at enhancing cost-effectiveness for SMEs. The authors also acknowledge the significance of implementing a systematic change management approach in small and medium-sized enterprises (SMEs) in order to optimize resource allocation (Kumar *et al.,* 2011, p. 5450). According to Tate *et al.,* (2013, p. 382), several factors have been identified as influential in the trend of reshoring or near shoring. These factors include the total cost of ownership, quality considerations, availability of materials and services, intellectual property risk, enhanced flexibility, improved speed, ease of conducting business, working capital management, and fostering innovation.

2.2. Environmental Sustainability Practices

According to the UN World Commission on Environment and Development, environmental sustainability can be defined as the endeavor to secure an adequate supply of natural resources for future generations, so enabling them to lead a lifestyle characterized by equality and fairness. The definition of the United Nations has undergone expansion to encompass the inclusion of human needs and well-being. According to the International Union for Conservation of Nature (IUCN), environmental sustainability can be defined as the ability to enhance the overall well-being of humanity while operating within the ecological limits of the Earth's sustaining ecosystems. According to Hawken (1993), the concept of environmental sustainability entails the stabilization of the intricate relationship between human culture and the biological world, which are recognized as the two most disruptive systems on Earth.

The concept of environmental sustainability encompasses the preservation of renewable resources while simultaneously decreasing non-renewable resources. Resources are not sustainable if they cannot last forever (Daly, 1990). The environmental impact of a corporation encompasses various aspects such as land, air, water, and ecosystems. The evaluation assesses the effects on both input and output. The study examines the energy and water inputs, emissions, and waste outputs associated with the process under investigation. According to Dyllick and Hockerts (2002, p. 133), it is imperative to exclusively utilize natural resources that are consumed at a rate lower than their natural reproduction or the pace at which substitutes are developed, while also ensuring the absence of pollution.

The concept of sustainability is becoming prevalent in contemporary society. According to Pogutz *et al.,* (2011), it indicates that a corporation can efficiently handle its environmental footprint. The implementation of corporate environmental sustainability practices serves to mitigate the deterioration and exploitation of natural resources, while also promoting the preservation of the environment in the long run. Environmental sustainability is a crucial concept that aims to meet current societal demands while ensuring that the requirements of future generations are not compromised.

Calculating environmental sustainability activities, like resource conservation, can provide challenges for organizations. The practice of resource conservation entails the ethical utilization of water, energy, and raw resources. Enterprises are unable to incorporate "operating expenses" into their standard decision-making processes without the utilization of a costing technique. In recent times, scholars have developed several strategies, concepts, methodologies, and principles aimed at mitigating the adverse environmental impact of businesses and offering assessment instruments to aid managers in making sustainable business choices. These frameworks encompass the concepts of carbon footprint, triple bottom line, eco-efficiency, eco-effectiveness, and cradle-to-cradle design.

In spite of the extensive body of literature examining the concept of environmental sustainability (Green *et al.,* 2012; Robinson, 2004; Stubbs & Cocklin, 2008), there has been a notable dearth of study investigating the practical aspects of strategy implementation and the integration of sustainability principles within organizational operations (Seuring & Gold, 2013). The ideology of environmentalism has undergone transformations throughout history. The management perspective regards environmental sustainability practices as a means of achieving resource efficiency (Carrillo-Hermosilla *et al.,* 2010; Frondel *et al.,* 2008; Potts, 2010). However, from a strategic standpoint, these practices are advocated to enhance competitive advantages while simultaneously conserving natural resources (Anderson, 2010; Nidumolu, 2009). The aforementioned research viewpoints propose that the incorporation of sustainability into business operations has the potential to enhance sales, cultivate new markets, enhance corporate image, and augment return on investment (Azzone *et al.,* 1997; Fraj-Andres, 2008; Pujari, 2003; Amini & Bienstock, 2014).

2.3. Sustainability Practices Impact on SME's growth

Numerous scholarly investigations within the realm of sustainable development have endeavored to identify the elements that exert an impact on the adoption and implementation of sustainability measures. The research conducted by Roberts (1992) and Moore (2001) both yielded noteworthy and statistically significant findings about the influence of company age, size, and kind of activity on the adoption of corporate sustainability measures. According to Roberts (1992, p. 604), there is evidence suggesting that characteristics such as the age, size, and kind of organization play a significant role in determining certain aspects of corporate social responsibility (CSR) and the related environmental activities. According to Moore (2001, p. 308), the findings of his study indicate a robust positive association between the size, age, and nature of enterprise activities and its implementation of social sustainability practices. Additionally, the study reveals that there is a statistically significant relationship between the size, age, and nature of enterprise activities and the environmental aspects of corporate social responsibility (CSR).

The research findings indicate that the size of a company has a more pronounced impact compared to its age on the adoption of sustainability practices. However, it is important to note that both parameters exhibit beneficial benefits on the implementation of such policies. The findings of both research provide empirical evidence supporting a statistically significant relationship between age, size, and kind of activity as independent variables, and corporate social responsibility (CSR) and its associated environmental actions as the dependent variable. The findings of Roberts (1992) and Moore (2001) align with the findings of Reverte (2009) and Gallo and Christensen (2011). The results shown in the study conducted by Godos-Díez *et al.,* (2011, p. 540) provide more evidence to support the notion that there exists a meaningful and favorable correlation between the age of an organization and its adoption of social sustainability measures.

2.4. Access to finance

The process of expanding a business presents inherent difficulties (Schwass, 2005). However, the expansion of small and medium-sized enterprises (SMEs) in transition economies and emerging

markets is contingent upon a multitude of circumstances. Demirguc-Kunt and Maksimovic (2002) contended that the growth of firms is significantly impacted by impediments present in countries with weak legal systems and a high prevalence of corruption. This assertion was substantiated by Govori (2013), who highlighted that the growth of small and medium-sized enterprises (SMEs) is intricately linked to various issues, including government rules, policies, corruption, competition, and access to funding.

The issue of insufficient financial resources has been widely recognized by numerous studies and research endeavors as a significant barrier faced by small and medium-sized enterprises (SMEs), particularly in developing nations. In contrast to other sectors of the economy, small and medium-sized enterprises (SMEs) often face significant constraints arising from banks' limited understanding of strategies for expanding access to financial resources, concerns regarding the risks involved in lending to SMEs, inadequate availability of information, and unfavorable financial policies (Ganbold, 2008).

According to Cook and Nixson (2000), the availability of financial resources is a critical determinant for the growth and long-term viability of small and medium-sized enterprises (SMEs). While it is true that smaller firms have greater transaction expenses compared to larger enterprises when seeking financial resources, their ability to secure funding is further impeded by inadequate business practices and management protocols. According to the research conducted by Becchetti and Tarovato (2002), it was contended that the growth and progress of small and medium-sized enterprises (SMEs) is contingent upon their ability to obtain access to a combination of financial resources. The assertion made by Fatoki and Garwa (2010) emphasized that the lack of financial resources seems to be the predominant factor contributing to business failure.

According to the study conducted by Beek, Demirgtic-Kunt, Maksimovic, and Laeven (2003), it was observed that small firms face more significant challenges in obtaining financing compared to medium-sized enterprises. Furthermore, both small and medium-sized enterprises encounter greater difficulties in securing finance when compared to large enterprises.

Several other authors have similarly reached the conclusion that small and medium-sized enterprises (SMEs) face frequent challenges due to market insufficiencies, which consequently lead to difficulties when seeking funding from banks. This phenomenon primarily manifests during the early phase of firm operations. In a study conducted by Lee (2014), a dataset comprising of 4858 UK SMEs was utilized to examine the challenges faced by firms during periods of significant expansion, as well as enterprises with prospective opportunities for growth. Based on the results, it was observed that high-growth enterprises primarily encountered limitations in the areas of finance, recruitment, government regulations, premises, and management.

3. Research Methodology

3.1. Data Collection

The research objective guides survey design and population selection. Research objectives determine target population requirements. This helps define the geographic and temporal characteristics of the target population to meet survey selection requirements. This tpaper will employ online surveys to choose IDA-listed enterprises as the target population. The lack of a precise standard definition of SME and a reliable SME directory makes categorizing them challenging. The article draws conclusions concerning SMEs. This study paper's population employs fewer than 200 people, has a work volume (in Egyptian Pound) of less than 200 million, and has a capital of no more than 15 million if industrial and 5 million if trade or service. The research article only covers these companies. Based on population geography and time, Egypt has seven planning zones with twenty-seven governorates. Egypt has 4,120,963 establishments, of which 389,568 active SMEs are non-governmental, 3,771,240 are private sector enterprises, and 3,769,544 are micro, small, and medium enterprises (MSMEs). 99.9% of Egyptian private sector firms and 91.5% of all establishments are MSMEs. Between 2012 and 2017, the number of non-governmental organizations climbed by 60%, with many being microbusinesses. The numbers also show that 97% of non-governmental organizations are micro, 2.8% are tiny, and 1% are medium- to large-sized firms. 33% of SMEs provide services, 12% manufacture, 3% produce, and 50% supply and sell, employing 38%, 17%, 4%, and 41%, respectively. 46% of SMEs are in nine governorates in Lower Egypt, 30% in Upper Egypt, 22% in four urban governorates, including the Greater Cairo area, and 2% in five border and marginal

governorates. Small firms employ 21% of the workforce, whereas medium and large businesses employ fewer than 7%.

Thus, Greater Cairo will be surveyed using an online questionnaire. The following facts justify this decision: 1) SMEs are heavily concentrated in Greater Cairo, and 2) the country's infrastructure investment map has favored the sustainable use of technologies and utilities in key governorates (Cairo, Giza, Qalubia, and Alexandria).

The process of data collection is broken up into two parts: the primary data collection, and the secondary data collection. The secondary data offers a comprehensive overview of the subject from both a national and an international perspective. The "Literature Review" chapter of this research paper devotes considerable space to discussing it at length. It is a reference to the collection of scholarly writings that are at disposal. This encompasses things like books, reports, journals, articles published online, studies, dissertations, and conference research papers.

The primary data offers first-hand and precise information that is the most relevant to the topic of the paper, which is focused on small and medium-sized enterprises (SMEs) in Egypt. An online survey is used to acquire the primary data for this study. The purpose of the survey is to provide businesses with a tool that can aid the SMEs in integration of sustainability standards into practice.

The survey is divided into two distinct parts: the first is dedicated to general data and focuses on defining the features of the organization, and the second is devoted to sustainability dimensions and includes the factors that are to be measured. Since it was published, the survey has been validated and utilized by a number of different studies.

The questionnaire examines how ESG integration supports SME growth in Egypt. SMEs now priorities sustainability. Concerns about natural resource depletion, economic decline, and social responsibility. SME's are reconsidering their products and processes and integrating sustainability. because of their shared focus on waste avoidance, resource efficiency, and low-cost consumer demand fulfilment. The above highlights the necessity to understand Egypt's SMEs, help them integrate ESG principles, and study how ESG integration influences SMEs' growth. The three sustainability pillars (Environmental, Social and Governance) evaluated over Likert scale grading of five categories. The questionnaire consisted of a total of 6 general questions, each of which was divided into one of two distinct sections. In addition to 46 questions regarding the following dependent variables: Environmental Pillar, Social Pillar & Governance Pillar.

3.2. Techniques of Data Analysis

This study employed the Structural Equation Modeling (SEM) approach with Partial Least Squares as an analytical tool (PLS). PLS studies psychometric traits and provides evidence for the existence or absence of associations (Fornell and Larcker, 1981). SmartPLS 3.2.9 and SPSS 28 were used to analyze the data in this investigation in two phases. The first step measurement model tests the content, convergent, and discriminant validity of structures. In the second step, the structural model and hypotheses are tested.

4. Data analysis and findings

4.1. Data analysis and Measurement Model

To ascertain the dependability and accuracy of the constructs inside the model, an assessment of the measurement model was conducted to examine both reflective and latent variables (refer to Annex I, figure 1). Reliability and construct validity were evaluated using factor loadings, Cronbach's Alpha, rho_A, composite reliability (CR), average variance extracted (AVE), and discriminant validity as indicated by Hair and Lukas (2014). Hair *et al.,* (2017) suggested that indicators exhibiting loadings below 0.40 should be excluded in order to enhance the quality of the outcome. No indicators were dropped from the model as shown in (Annex I, table (1) and figure (1). The values of reliability (Cronbach's Alpha, rho_A, and CR) should be greater than 0.6 (Fornell and Larcker, 1981) and AVE above 0.5 (Hair *et al.,* 2017). These indicate that the study satisfied these requirements for convergent validity and internal consistency of the scales.

Further, assessing the discriminant validity is done through Fornell–Larcker criterion and HTMT ratio. Fornell–Larcker criterion required that each composite AVE square root on the diagonal element should be greater than the correlations between the constructs (Hair *et al.,* 2017). The HTMT approach is “the ratio of the between-trait correlations to the within-traits correlations”. HTMT values

should be lower than 1 (Gaskin *et al.,* 2018). Following the previous guides of the Fornell-Larcker criterion and HTMT values in (Annex I, tables 2 and 3, the discriminant validity is established.

Annex I:

Table 1: Measurement model assessment

Construct	Item	Loading	Cronbach's Alpha	rho_A	CR	AVE
Environmental Pillar	**V1**	0.777	0.896	0.897	0.918	0.617
	V2	0.759				
	V3	0.694				
	V4	0.8				
	V5	0.837				
	V6	0.818				
	V7	0.807				
Sustainability Innovation	**V8**	0.857	0.888	0.889	0.923	0.749
	V9	0.882				
	V10	0.873				
	V11	0.849				
Sustainability knowledge	**V12**	0.926	0.951	0.951	0.964	0.872
	V13	0.931				
	V14	0.932				
	V15	0.944				
Cost Reduction	**V16**	0.89	0.905	0.905	0.934	0.781
	V17	0.909				
	V18	0.933				
	V19	0.797				
Supply Chain Integration	**V20**	0.913	0.938	0.938	0.956	0.844
	V21	0.928				
	V22	0.905				
	V23	0.928				
Social Pillar	**V24**	0.961	0.963	0.965	0.973	0.901
	V25	0.91				
	V26	0.968				
	V27	0.958				
Health and Safety management system	**V28**	0.937	0.969	0.97	0.976	0.889
	V29	0.916				
	V30	0.957				
	V31	0.956				
	V32	0.949				
Governance Pillar	**V33**	0.949	0.946	0.947	0.961	0.861
	V34	0.924				
	V35	0.945				
	V36	0.891				
Human resources	**V37**	0.922	0.962	0.962	0.97	0.868
	V38	0.94				
	V39	0.943				
	V40	0.927				
	V41	0.925				
Strategy	**V42**	0.962	0.979	0.979	0.983	0.921
	V43	0.97				
	V44	0.96				
	V45	0.963				
	V46	0.943				

Source: Reliability and convergent validity attained

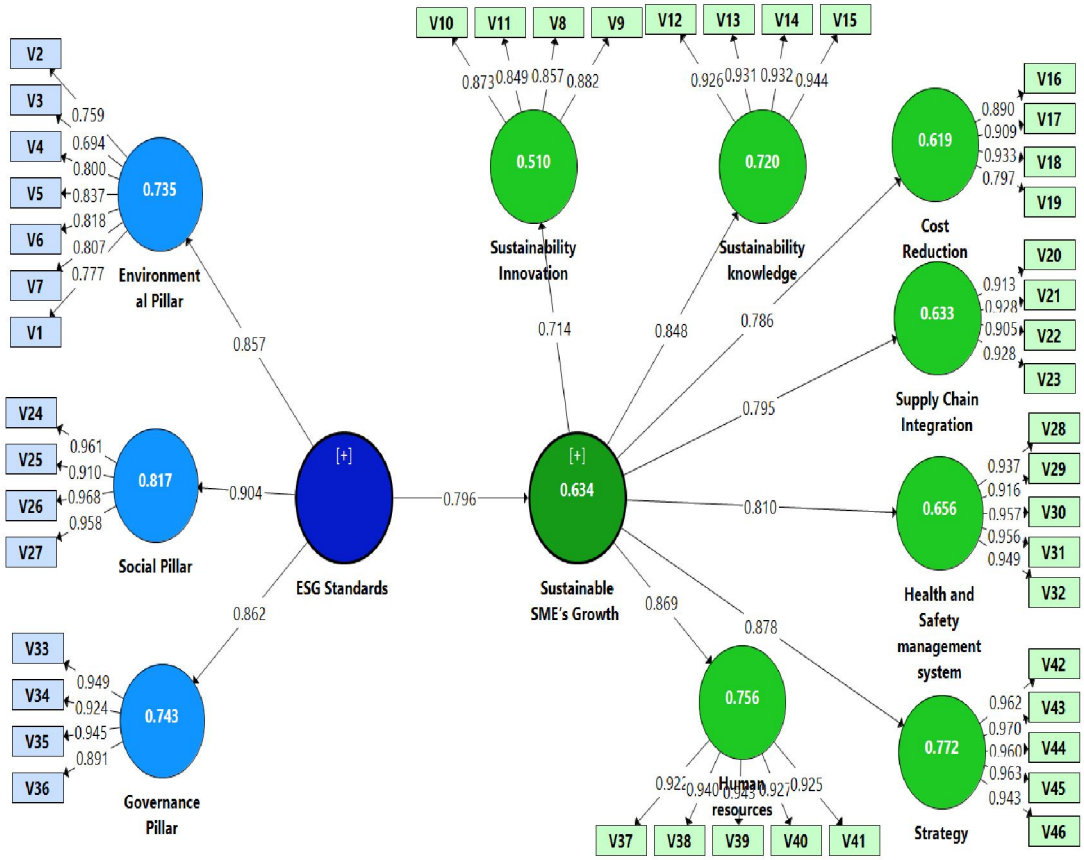

Fig.1: Measurement model assessment

Table 2: Discriminant validity (Fornell-Larcker criterion)

	Cost Reduction	Environmental Pillar	Governance Pillar	Health and Safety management system	Human resources	Social Pillar	Strategy	Supply Chain Integration	Sustainability Innovation	Sustainability knowledge
Cost Reduction	**0.884**									
Environmental Pillar	0.68	**0.786**								
Governance Pillar	0.476	0.562	**0.928**							
Health and Safety management system	0.533	0.559	0.543	**0.943**						
Human resources	0.616	0.593	0.492	0.652	**0.931**					
Social Pillar	0.612	0.635	0.751	0.642	0.575	**0.949**				
Strategy	0.599	0.567	0.53	0.669	0.8	0.589	**0.96**			
Supply Chain Integration	0.645	0.637	0.529	0.516	0.62	0.673	0.643	**0.918**		
Sustainability Innovation	0.664	0.726	0.446	0.495	0.506	0.568	0.469	0.545	**0.865**	
Sustainability knowledge	0.577	0.58	0.402	0.665	0.657	0.527	0.697	0.651	0.621	**0.934**

Source: Discriminant validity through Fornell-Larcker criterion attained

Table 3: Discriminant validity (HTMT ratio)

	Cost Reduction	Environmental Pillar	Governance Pillar	Health and Safety management system	Human resources	Social Pillar	Strategy	Supply Chain Integration	Sustainability Innovation	Sustainability knowledge
Cost Reduction										
Environmental Pillar	0.752									
Governance Pillar	0.51	0.61								
Health and Safety management system	0.566	0.598	0.567							
Human resources	0.655	0.638	0.515	0.674						
Social Pillar	0.651	0.683	0.785	0.665	0.596					
Strategy	0.631	0.605	0.551	0.686	0.824	0.605				
Supply Chain Integration	0.694	0.694	0.561	0.541	0.653	0.707	0.671			
Sustainability Innovation	0.738	0.812	0.486	0.531	0.546	0.613	0.502	0.595		
Sustainability knowledge	0.617	0.629	0.424	0.693	0.686	0.551	0.722	0.688	0.675	

Source: Discriminant validity through HTMT criterion attained

Descriptive statistics and Multiple correlations

After establishing the reliability and validity of the variables, it's time to provide some descriptive statistics and multiple correlations between the selected constructs. These include the mean (M), standard deviation (SD) that were reported in table (4). The descriptive statistics for the independent variable "ESG Standards" were $(M = 3.674, SD = 0.428)$, and for the dependent variable "Sustainable SME's Growth" were $(M = 3.748, SD = 0.626)$.

Between the dimensions of the independent variable "ESG Standards", it was shown that "Governance Pillar" has the highest mean $(M = 3.805, SD = 0.398)$ and "Environmental Pillar" has the lowest mean $(M = 3.514, SD = 0.510)$. Between the dimensions of the dependent variable "Sustainable SME's Growth", it was shown that "Health and Safety management system" has the highest mean $(M = 4.076, SD = 0.8195)$ and "Supply Chain Integration" has the lowest mean $(M = 3.363, SD = 0.6584)$. The values for Skewness between -2 to +2 and kurtosis between -7 and +7 are considered acceptable in order to prove normal distribution (Hair *et al.,* 2014; Byrne 2016). The results of the normality test in (Annex I, the table 4) show that the values of Skewness and kurtosis for the constructs of the model were within the specified range.

The Pearson product-moment correlation coefficient was calculated to determine the strength and the direction of the relationship between the selected constructs. Figure 2 shows the matrix of Pearson correlation coefficients between all constructs and the dimensions. It was indicated that there is positive relationship between the independent variable (and its dimensions) with the dependent variable (and its dimensions). It is also observed that there is a significant positive relationship between ESG Standards and Sustainable SME's Growth since .

Table 4: Descriptive statistic

	Notation	Mean	SD	Skewness	Kurtosis
Environmental Pillar	ENV	3.5139	0.50955	-1.042	0.309
Social Pillar	SOC	3.703	0.56297	-1.974	2.897
Governance Pillar	GOV	3.8051	0.39787	-2.036	3.587
Sustainability Innovation	SI	3.3936	0.58786	-0.665	0.071
Sustainability knowledge	SK	3.939	0.8613	-0.595	-0.11
Cost Reduction	CR	3.5162	0.5917	-1.185	0.521
Supply Chain Integration	SCI	3.3629	0.65839	-0.819	-0.374
Health and Safety management system	HSMS	4.0759	0.81953	-1.118	1.714
Human resources	HR	4.0021	0.84987	-0.873	0.561
Strategy	STR	3.9435	0.96282	-0.934	0.669
ESG Standards	**ESG**	**3.674**	**0.42847**	**-1.681**	**2.203**
Sustainable SME's Growth	**SUS**	**3.7476**	**0.62681**	**-0.948**	**0.6**

Source: ESG integration survey, 2023

Fig. 2: Visualization of the correlation matrix.

Table 5: Results of Hypo research paper Testing

Path	B	t-value	P-value	95% Bias-Corrected CI		R Square	f-Square	Q-Square	Remark
				LB	UB	>0.1	>0.02	>0	
ESG Standards -> Sustainable SME's Growth	0.796	24.737	<.001	0.721	0.849	0.634	1.729	0.358	Supported
Environmental Pillar -> Cost Reduction	0.685	15.79	<.001	0.591	0.763	0.469	0.885	0.357	Supported
Environmental Pillar -> Health and Safety management system	0.564	9.217	<.001	0.43	0.669	0.318	0.466	0.277	Supported
Environmental Pillar -> Human resources	0.607	9.966	<.001	0.473	0.714	0.368	0.582	0.315	Supported
Environmental Pillar -> Strategy	0.573	9.099	<.001	0.434	0.679	0.328	0.488	0.298	Supported
Environmental Pillar -> Supply Chain Integration	0.65	14.125	<.001	0.545	0.728	0.422	0.731	0.353	Supported
Environmental Pillar -> Sustainability Innovation	0.734	18.066	<.001	0.648	0.804	0.539	1.17	0.395	Supported
Environmental Pillar -> Sustainability knowledge	0.597	11.235	<.001	0.482	0.695	0.356	0.553	0.307	Supported
Social Pillar -> Cost Reduction	0.613	11.349	<.001	0.5	0.713	0.376	0.603	0.285	Supported
Social Pillar -> Health and Safety management system	0.642	12.38	<.001	0.524	0.73	0.413	0.702	0.363	Supported
Social Pillar -> Human resources	0.577	10.821	<.001	0.462	0.673	0.333	0.499	0.283	Supported
Social Pillar -> Strategy	0.589	11.279	<.001	0.483	0.689	0.347	0.532	0.317	Supported
Social Pillar -> Supply Chain Integration	0.674	15.338	<.001	0.581	0.751	0.454	0.831	0.379	Supported
Social Pillar -> Sustainability Innovation	0.569	11.165	<.001	0.459	0.658	0.324	0.48	0.237	Supported
Social Pillar -> Sustainability knowledge	0.527	10.51	<.001	0.426	0.62	0.278	0.385	0.24	Supported
Governance Pillar -> Cost Reduction	0.48	8.32	<.001	0.361	0.588	0.23	0.299	0.17	Supported
Governance Pillar -> Health and Safety management system	0.544	9.127	<.001	0.425	0.652	0.296	0.42	0.26	Supported
Governance Pillar -> Human resources	0.499	8.796	<.001	0.383	0.604	0.249	0.331	0.209	Supported
Governance Pillar -> Strategy	0.533	9.636	<.001	0.423	0.641	0.284	0.397	0.259	Supported
Governance Pillar -> Supply Chain Integration	0.53	10.427	<.001	0.421	0.625	0.281	0.39	0.232	Supported
Governance Pillar -> Sustainability Innovation	0.447	7.906	<.001	0.329	0.551	0.2	0.25	0.147	Supported
Governance Pillar -> Sustainability knowledge	0.403	6.729	<.001	0.275	0.515	0.163	0.194	0.14	Supported

CI=Confidence Interval; LB=Lower Bound; UB=Upper Bound.
Cut-off values references: Chin (1998), Cohen (1988), Hair *et al.,* (2017), Wetzels *et al.,* (2009).

The Results in (Annex I, the table 5) indicate that about 63% of the variation in Sustainable SME's Growth is explained by the variation in ESG Standards with high Cohen's effect size (f2 =1.729). Then, we evaluated predictive relevance by assessing Stone-Geisser's Q2 Blindfolding is a sample reuse technique that can be used to calculate Q2 values for latent variables. We executed the blindfolding procedure and calculated the Q2 values for Sustainable SME's Growth (Q2 =0.358). All values were greater than zero, thus indicate predictive relevance for endogenous latent variables in our PLS path model (Hair *et al.,* 2017). The Goodness of Fit (GoF) was introduced by Tenenhaus *et al.,*

(2005) as a global fit metric. The GoF criterion for determining if GoF values are too little, too moderate, or too high to be considered a globally adequate PLS model. The GOF value (0.524) is greater than 0.36 indicating high fit, so, it can be safely concluded that the GoF model is good enough to considered sufficient valid global PLS model.

4.2. Study Findings

The dissertation began with a descriptive analysis. In the distribution of respondents, about 65% of the sample were males, and 35% were females. 5% of the respondents aged less than 30 years old, 32% aged from 30 - 40 years' old, 40% aged from 40 - 50 years, 20% aged from 50 - 60 years, and 4% aged more than 60 years. The results also show that 6% had experience less than 5 years, 15% had experience from 5 to 10 years, 42% had experience from 10 to 20 years, 29% had experience from 20 to 30 years and 9% had experience had experience more than 30 years. Concerning the field of the companies, 13% were financing, 36% were manufacturing, 22% were service companies, 12% were trade or commerce, and about 17% were in other fields. Among these fields, 11% were in chemicals sector, 7% in construction and building services, 4% in electronics, 15% in food, 5% in packaging, and 58% in other sectors. Finally, 11% of the companies have sales less than 1MM, 26% have sales from 1MM to 50 MM, 11% have sales from 51 MM to 100 MM, 15% have sales from 101 MM to 150 MM, and 33% have sales from 151 MM to 200 MM.

The descriptive analysis also reveals the relationship between ESG principles and the development of Egyptian SMEs. The statistical findings indicate that SME perspectives on sustainability are positive. Mean (M), standard deviation (SD), and coefficient of variation (CV) were calculated and reported for the sample of surveyed SMEs. The descriptive statistics for the independent variable "ESG Standards" were (M=3.674, SD=0.428), whereas the descriptive statistics for the dependent variable "Sustainable SME's Growth" were (M=3.748, SD=0.626). It was determined that, among the dimensions of the independent variable "ESG Standards", "Governance Pillar" has the highest mean (M=3.805, SD=0.398) and "Environmental Pillar" has the lowest mean (M=3.514, SD=0.510). "Health and Safety management system" has the highest mean (M=4.076, SD=0.8195) among the dimensions of the dependent variable "Sustainable SME's Growth"; "Supply Chain Integration" has the lowest mean (M=3.363, SD=0.6583).

The matrix of Pearson correlation coefficients for Sustainable SME's Growth dimensions. All correlation coefficients were found to be positive, ranging from a moderate relationship (0.468) to a robust relationship (0.876).

All correlation coefficients were found to be positive (in green) and ranged from a moderate relationship (0.4) to a strong relationship (0.92). It was determined that the independent variable (and its dimensions) has a positive relationship with the dependent variable (and its dimensions). Moreover, there is a significant positive relationship between ESG Standards and Sustainable SME Growth (r(240) =.08, P 0.001), as observed.

The results of hypo research paper testing indicated that ESG Standards had a significant positive effect on the growth of sustainable SMEs (=0.796, t=24.737, P0.001, 95% CI for =[0.721,0.849]), thus confirming the main hypo research paper.

5. Conclusion & recommendations

5.1. Conclusion

This research paper examines the integration of ESG principles in the Egyptian SME growth. It assesses the sector's awareness, preparedness, and common practices. It also challenges the premise, supported by the literature, that the unique characteristics of SMEs in terms of size, age, and activity facilitate their incorporation of sustainability practices into their business strategy and operations. This has proved significant contribution to promoting inclusive and sustainable growth, creating employment opportunities, fostering substantial local capital formation, and achieving high levels of productivity. All the preceding gives the SME sector a crucial role in attaining sustainable economy.

The results indicate that the variation in ESG Standards explains approximately 63% of the variance in Sustainable SME Growth. All other values were greater than the minimum acceptable value of 0.1 and were arranged from greatest to least.

The study reveals that SMEs prioritize operational duties and prioritize initiatives that benefit business operations, leading to financial benefits such as decreased operating expenses, increased

customer numbers, profitability, and flexibility. Responsible SMEs act as catalysts for sustainability practices, raising awareness of other SMEs and encouraging them to act sustainably. Additionally, labor relations practices require additional efforts to build the capacities of SMEs in good governance, ensuring rules are followed, payments and receivables are controlled, expenses are accounted for, and shareholder and stakeholder rights are protected.

The research paper confirms the existence of a statistically significant relationship between the SME's category of activity and its sustainability practices. Observations indicate that SMEs in the service sector are more committed to sustainability than SMEs in the manufacturing sector, with SMEs in the trade sector showing the least commitment.

The green economy is crucial for achieving Sustainable Development Goals (SDGs), aiming to preserve natural capital, ecological diversity, environment, and natural resources. However, market weaknesses and suboptimal investment conditions persist in Egypt's green financing market, particularly for MSMEs. These include inefficient capital distribution among green industries, limited access to green financing for SMEs, and a lack of legal governance and regulatory progress to encourage corporate use of green finance.

According to DiPasquale and McInerney (2010, page 341), SMEs handle knowledge differently than large businesses. Despite "limited resources, volatility, and market influence," SMEs have "adaptability, emphasis on human-based processes, and short communication channels."

According to Scouto (2018), De *et al.,* (2017), and Trianni *et al.,* (2019), the implementation of social, environmental, and governance sustainability initiatives by small and medium-sized enterprises (SMEs) is hindered by resource restrictions. These constraints negatively impact knowledge acquisition, product and process innovation, as well as information exchange. Small and medium-sized enterprises (SMEs) experienced adverse consequences. According to Jones and Corral (2017, p. 265), it has been suggested that small and medium-sized enterprises (SMEs) might enhance their understanding of resources by utilizing research publications. According to BosBrouwers (2010), small and medium-sized enterprises (SMEs) can address their knowledge gap and foster sustainable innovations by utilizing the resources available at universities and research institutions.

The highest hierarchical figure always created fresh knowledge, distributed it around the firm, and talked directly to consumers. SME product makers understood market necessities and client applications.

To improve performance, SMEs prioritized new procedures, products, and technology. SMEs should help customers create new products. Product designs can be co-owned. Management invested in internal and external resource training.

This research article supports the opinion of other academics that SMEs can help establish sustainable business practices. This research article concluded that SMEs have a substantial chance of contributing to sustainable business practices. SME sustainability practices in Egypt are medium, leaving room for improvement. SME sustainability practices in Egypt are medium.

5.2. Recommendations

Small and medium-sized enterprises (SMEs) have the potential to enhance their connection with their current customer base by adopting a robust Continuous Improvement approach. This entails being adaptable to customer demands, minimizing product lead-time, reducing operational expenses to ensure economic viability, and facilitating reinvestment in the business to foster growth. According to Madhani (2010, p. 17), this confers a competitive advantage upon corporations. In the contemporary era characterized by rapid globalization, organizations that possess the ability to adapt swiftly and demonstrate heightened responsiveness to shifts in the competitive market are more inclined to acquire and sustain a competitive edge. The concept of gaining a competitive advantage.

It is recommended that small and medium-sized enterprises (SMEs) proactively engage in the customization of products for their current clientele, take ownership or establish joint ownership of ideas, and foster dependence in order to establish a state of lock-in. Small and medium-sized enterprises (SMEs) concurred that this approach proved to be efficacious in ensuring the consistent generation of cash flow on a yearly basis and establishing a trajectory for forthcoming initiatives, contingent upon the satisfaction of their clientele. This method is facilitated by the strategic utilization of knowledge, innovation, effective communication, and seamless integration of the supply chain.

It is advisable for small and medium-sized enterprises (SMEs) to engage in product and service diversification across various industries, geographies, and locations as a means to minimize risk and foster growth. The company's strategic decision to diversify its product offerings enabled it to effectively manage customer orders, even in the face of varying industry cycles, with some customers experiencing downturns while others enjoyed periods of growth. The utilization of strategy, skill, and creativity facilitates the implementation of this particular approach.

Small and medium-sized firms (SMEs) were able to increase business sustainability by applying what they learned about process improvement and product innovation and sharing this information with other SMEs, indicating actionable knowledge. Small and medium-sized firms (SMEs) appear to achieve sustainability through modifying products to assure long-term business and actively diversifying their customer base.

Jordo and colleagues (2017) found that small and medium-sized enterprises (SMEs) that "join action and cooperation" to become "efficient and competitive" function as a network by "sharing information and knowledge" (p. 670). This relationship with small and medium-sized organizations may help them gain experience and implement sustainable practices, which will boost their success.

SMEs should strategically address sustainability to gain a competitive edge, according to Cantele *et al.,* (2018, page 174). Small and medium-sized firms (SMEs) prioritized development, diversity, and lock-in through product design ownership or co-ownership. Their long-term plan involves locking in clients and expanding into additional industries, markets, and geographies. Despite the COVID-19 outbreak, they have remained in business for over a decade using this strategy. The lock-in strategy will help businesses stay profitable and strengthen their client supply chains.

Egypt's current endeavors to shift towards a more environmentally sustainable economy present a unique and unprecedented occasion for investment in several sectors such as manufacturing, agriculture, fishery, forestry, energy supply, sustainable tourism, waste management, construction, and building construction. The research revealed that micro, small, and medium enterprises (MSMEs) possess the potential to allocate resources towards environmentally-friendly initiatives within the European Union's green taxonomy. These initiatives encompass a wide range of areas, such as climate change mitigation and adaptation, sustainable management and preservation of water, soil, and marine resources, the promotion of a circular economy, prevention of pollution, as well as restoration of biodiversity and ecosystems. The research mostly centered around the topics of climate change mitigation, adaptation, and the sustainable use of water, soil, and marine resources.

It is advisable for Egypt to allocate a portion of its financial resources towards enhancing resource efficiency, as this has the potential to significantly contribute to the country's economic development. Currently, there is a global trend among small and medium-sized enterprises (SMEs) to explore various strategies aimed at promoting sustainable practices and mitigating their environmental impact. The subsequent examples are among the most noteworthy instances:

- SMEs have the opportunity to embrace sustainable production processes, which encompass the utilization of renewable energy sources, the mitigation of waste and emissions, and the integration of environmentally friendly products.
- The implementation of sustainable supply chain strategies involves small and medium-sized enterprises (SMEs) engaging in collaborative efforts with both suppliers and customers in order to effectively mitigate their carbon emissions. This can encompass the utilization of local sourcing for products and services, the optimization of transportation routes, and the mitigation of packaging waste.
- Small and medium-sized enterprises (SMEs) have the potential to embrace the ideas of the circular economy through the implementation of waste reduction strategies, the utilization of reusable materials, and the adoption of product recycling practices. This measure has the potential to mitigate the carbon emissions associated with their activities and foster a more environmentally friendly trajectory.
- SMEs have the potential to mitigate their environmental impact through the implementation of sustainable mobility strategies, including the use of electric vehicles and the promotion of public transportation among their workforce.

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