ENTREPRENEURIAL LEADERSHIP AND ENTERPRISE PERFORMANCE: A WAY OUT OF SUSTAINABILITY

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ABSTRACT

Purpose: Developing enterprise performance and sustainability is essential for firms' survival. This study explores the effect of accountability, responsibility and analytical thinking on enterprise among Egyptian firms.

Design/Methodology/Approach: We applied quantitative methods to detect this problem by collecting data from entrepreneurs working in different firms in Egypt. The study concludes the results based on 304 valid samples.

Findings: Employing path analysis through analysis of moment structures (AMOS) version 26.0, the findings suggest a positive and significant effect of responsibility and analytical thinking on enterprise performance. On the other hand, accountability negatively affects enterprise performance. Finally, the effect of enterprise performance on enterprise sustainability is positive and significant.

Research, practical and social implications: The findings of the study may be helpful for investors to invest in training for accountability, responsibility, and analytical thinking to optimize venture success. They may foster a corporate culture balancing accountability, risk-taking, and innovation for enduring success. Finally, they align performance metrics with sustainability goals and integrate ethical practices for resilient business outcomes.

Originality/value: This study addresses the lacunae in the empirical evaluation of enterprise performance and sustainability among Egyptian entrepreneurs by emphasizing accountability, responsibility, and analytical thinking. Doing so contributes to a more comprehensive understanding of the factors influencing business success and long-term viability in the Egyptian context.

Keywords: entrepreneurial leadership, enterprise performance, enterprise sustainability, accountability, responsibility, analytical thinking, entrepreneurs.
LIDERANÇA EMPRESARIAL E DESEMPENHO EMPRESARIAL: UMA SAÍDA PARA A SUSTENTABILIDADE

RESUMO

Objetivo: O desenvolvimento do desempenho e da sustentabilidade das empresas é essencial para a sua sobrevivência. Este estudo explora o efeito da responsabilização, responsabilidade e pensamento analítico sobre a empresa entre as empresas egípcias.

Design/Metodologia/Abordagem: Aplicamos métodos quantitativos para detectar esse problema coletando dados de empreendedores que trabalham em diferentes empresas no Egito. O estudo conclui os resultados com base em 304 amostras válidas.

Constatações: Empregando análise de caminho através da análise de estruturas de momento (AMOS) versão 26.0, as conclusões sugerem um efeito positivo e significativo da responsabilidade e pensamento analítico sobre o desempenho da empresa. Por outro lado, a responsabilidade afeta negativamente o desempenho da empresa. Por último, o efeito do desempenho das empresas sobre a sustentabilidade das empresas é positivo e significativo.

Investigação, implicações práticas e sociais: Os resultados do estudo podem ser úteis para os investidores investirem em formação para a responsabilização, responsabilidade e pensamento analítico para otimizar o sucesso do empreendimento. Elas podem promover uma cultura corporativa que equilibre a responsabilidade, a tomada de riscos e a inovação para um sucesso duradouro. Por fim, eles alinham as métricas de desempenho às metas de sustentabilidade e integram práticas éticas para obter resultados comerciais resilientes.

Originalidade / valor: Este estudo aborda as lacunas na avaliação empírica do desempenho empresarial e sustentabilidade entre os empresários egípcios, enfatizando a responsabilidade e o pensamento analítico. Isso contribui para uma compreensão mais abrangente dos fatores que influenciam o sucesso dos negócios e a viabilidade a longo prazo no contexto egípcio.

Palavras-chave: liderança empresarial, desempenho empresarial, sustentabilidade empresarial, prestação de contas, responsabilidade, pensamento analítico, empreendedores.

1 INTRODUCTION

In the dynamic tapestry of contemporary business, the symbiotic relationship between entrepreneurial leadership and enterprise performance has emerged as a pivotal axis, influencing the trajectory of ventures in an ever-changing landscape (Soomro et al., 2019; Abdelwahed et al., 2023). As businesses navigate the complexities of the global market, the call for sustainability has become an imperative echoing across industries. It embarks on an exploration of the nexus between entrepreneurial leadership and enterprise performance, presenting a compelling perspective on how this interplay serves as a transformative conduit—a way out of the sustainability challenges faced by organizations.
worldwide (Shafie, 2020; Khan et al., 2020). In an era marked by unprecedented challenges, where economic, social, and environmental factors converge, the pursuit of sustainability transcends mere corporate responsibility; it has become a strategic imperative. Against this backdrop, entrepreneurial leaders stand as vanguards, capable of steering enterprises towards not only financial success but also enduring relevance and resilience (Al Mamun et al., 2018; Soomro et al., 2021). As the global business landscape undergoes rapid transformations, understanding the nuanced interplay between entrepreneurial leadership and enterprise performance is critical for organizations aspiring to thrive momentarily and to endure and evolve. The importance of enterprise performance lies in its direct impact on a company's financial health, competitive standing, and stakeholder confidence. Efficient and strategic performance management ensures profitability and fosters a culture of innovation and adaptability, which is critical for sustained competitiveness (Gross, 2016; Soomro and Shah, 2022). On the other hand, enterprise sustainability is imperative for long-term viability and responsible corporate citizenship. Beyond regulatory compliance, sustainability initiatives enhance brand image, attract and retain top talent, and build resilient, ethical supply chains. In today's interconnected world, the synergy between enterprise performance and sustainability is integral, forming the bedrock for businesses seeking enduring success while navigating the challenges of a dynamic global landscape.

Against the backdrop of Egypt's unique blend of cultural heritage, economic intricacies, and global influences, we delve into the experiences of Egyptian entrepreneurs (Taha and Espino-Rodríguez, 2020; Othman et al., 2022). By unravelling the narratives of Egyptian entrepreneurs, we aim to provide practical insights and actionable recommendations that can contribute not only to the local business ecosystem but also to the broader discourse on global entrepreneurial leadership and sustainable enterprise performance (Radwan et al., 2020). Based on this importance, this study investigates the effect of factors such as accountability, responsibility and analytical thinking in developing enterprise performance. Besides, the study also underlines the influence of enterprise performance on enterprise sustainability among entrepreneurs in Egypt. The study's outcomes would assist policymakers and enterprise management to bring sustainability to firms, effective performance, and robust profit.
2 LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The function of accountability management in industrial firms provides potential methods for smoothly incorporating accountability into business operations (Babich and Mityuchenko, 2016). For example, Shafie's (2020) study offers a thorough analysis and recommendations while delving into the impact of accountability and control mechanisms on the long-term viability of social enterprises. Spira's (2001) study examines the complex relationship between corporate operations and responsibility, emphasizing organizational structures and decision-making processes. Connolly and Kelly (2011) clarified the aspects of responsibility unique to social entrepreneurship organizations. Bradford et al. (2020) claim that social enterprise accountability is linked to legitimacy and practical obstacles. Performance reporting, accountability procedures, and social business all interact, with the latter two highlighting the influence of accountability on accomplishing social business goals (Rahman and Hussain, 2012). Accessibility and accountability have a favourable and considerable impact on the efficacy of social enterprises, according to Karamoy et al. (2017). According to AbRahman et al. (2016), management accounting procedures improve worker accountability, improving business performance. Similarly, Florio (2014) suggests that innovation, accountability, and governance connect in modern public companies. Finally, Hapsari et al. (2020) illustrated the responsibility of managing traditional village-owned businesses, offering perceptions of the viability and difficulties in this particular setting.

The responsibility factor is prominent in organizations where it plays a significant role. Le et al. (2023) explore the moderating impact of power distance on the link between corporate social responsibility (CSR) and the performance of multinational enterprises. Their study highlights the significance of cultural elements in shaping this relationship within the same dimension. Enterprise risk management plays a mediating function in the relationship between responsibility and company performance within the Asia Pacific setting, as stated by Naseem et al. (2020). Vitezić (2011) posits a favourable and strong correlation between social responsibility and efficiency.

Similarly, the study by Khan et al. (2020) presents empirical findings that substantiate the favourable influence of sustainable social responsibility on the performance of small and medium-sized enterprises in China. The study by Khan et al. (2021) provides evidence of the significant influence that environmental knowledge has on corporate social responsibility (CSR) practises, yielding advantages for businesses
operating in a rising economy. In a study conducted by Wang and Lei (2020), it was shown that social responsibility has a beneficial impact on the performance of new energy automotive firms in China. According to Dimitriou (2020), corporate social responsibility (CSR) has a favourable and considerable impact on the performance of air transport firms.

Analytical thinking is a fundamental element that underpins achieving organizational objectives, exerting influence over many dimensions, including problem-solving, decision-making, strategic planning, and overall operational effectiveness. Organizations cultivating a culture centered on analytical thinking are more strategically positioned to effectively navigate difficulties, seize opportunities, and accomplish their objectives within a dynamic and competitive business landscape. The concept of analytical thinking exhibits variability in the existing body of literature, thereby highlighting the underlying influence of analytical thinking on organizational performance. Al Mamun et al. (2018) suggest that there is a relationship between entrepreneurial leadership in micro-enterprises and the impact of analytical thinking on performance and sustainability. Similarly, the study conducted by Huang and Hsueh (2007) provides evidence that intellectual capital possesses the capacity to engage in analytical reasoning to enhance business performance. Similarly, Asem-Bansah et al. (2012) and Boscoianu et al. (2018) have identified the predictive significance of innovative companies in fostering analytical thinking, contributing to the overall sustainability of firms. Gross (2016) has suggested a correlation between leadership styles and strategic thinking, with a favourable association explicitly observed in the context of analytical thinking. In analyzing the elements influencing enterprise performance in technological innovation, Ma and Guo (2020) suggest including analytical thinking as a crucial consideration. The study by Sadler-Smith (2004) emphasizes cognitive styles, which indirectly implies the significance of analytical thinking in the context of small and medium-sized firm management.

The study conducted by Bojnec and Tomšič (2020) explores the relationship between corporate sustainability, enterprise performance, internationalisation, and networks. The study's findings highlight the mediating roles of internationalisation and networks, indicating that sustainable practices can improve competitiveness and overall performance. Malesios et al. (2021) assert that enhancing sustainability performance in small and medium-sized enterprises (SMEs) can be achieved by implementing sustainable practices and utilising comprehensive performance indicators. The findings
of this study highlight the importance of developing resilient strategies to ensure long-term sustainability. According to Bogićević et al. (2016), there is a meaningful contribution of financial and non-financial performance and the development of enterprise sustainability. The study conducted by Fazal et al. (2022) establishes a clear and positive correlation between entrepreneurial motivation, competency, and the sustainability performance of micro-enterprises. Shad et al. (2019) argue that incorporating sustainability reporting into enterprise risk management highlights the intricate relationship between transparency, risk management, and overall business performance. Hao et al. (2023) make a valuable contribution by examining the correlation between environmental governance, executive incentives, and enterprise performance.

The existing literature underscores a compelling correlation between accountability, responsibility, and analytical thinking with notable positive impacts on enterprise performance. Additionally, it accentuates a positive interrelation between enterprise performance and the sustainability of enterprises. However, it is noteworthy that these correlations have primarily been established in contexts outside of Egypt, and there needs to be more emphasis on these factors among Egyptian entrepreneurs. Recognizing these gaps, our research endeavours to address this void by proposing a comprehensive model, as depicted in Figure 1. This model seeks to delve into the intricate dynamics of how accountability, responsibility, and analytical thinking collectively influence enterprise performance within the specific context of Egyptian entrepreneurship. Furthermore, we anticipate a substantial connection between enterprise performance and enterprise sustainability will be particularly significant among Egyptian entrepreneurs, providing valuable insights into the unique dynamics of business success and sustainability in this specific regional context.
2.1 ACCOUNTABILITY AND ENTERPRISE PERFORMANCE

The literature encompasses a broad spectrum of accountability considerations within diverse organizational settings. For instance, Spira’s study (2001) likely scrutinizes the intricate balance between enterprise activities and accountability, with a potential focus on decision-making processes and organizational structures. They elucidated accountability dynamics specific to social enterprise organizations (Connolly and Kelly, 2011). According to Bradford et al. (2020), practical challenges and legitimacy facets are associated with social enterprise accountability. The study of Shafie (2020) provides an in-depth examination of the influence of control mechanisms and accountability on the sustainable performance of social enterprises, presenting comprehensive analyses and recommendations. There is an interplay between social business, accountability practices, and performance reporting, emphasizing the impact of accountability on the success of social business initiatives (Rahman and Hussain, 2012). According to Karamoy et al. (2017), the effect of accessibility and accountability on the effectiveness of social enterprises is positive and significant. The role of accountability management in industrial enterprises offers potential strategies for seamlessly integrating accountability into their operations (Babich and Mityuchenko, 2016). In the perception of AbRahman et al. (2016), management accounting practices enhance employee accountability and, consequently, firm performance. Similarly, the intersection of innovation, accountability,
and governance in contemporary public enterprises is suggested by (Florio 2014). Lastly, Hapsari et al. (2020) demonstrated accountability within the governance of traditional village-owned enterprises, providing insights into the feasibility and challenges within this unique context.

While existing literature consistently demonstrates that accountability is a robust predictor of enterprise performance across various contexts, the specific dynamics of these relationships necessitate further investigation, particularly within the unique landscape of Egyptian entrepreneurship. While there is a wealth of evidence supporting the positive correlation between accountability and enterprise performance in diverse settings, the applicability of these findings to the Egyptian entrepreneurial ecosystem remains an open question. The nuances of cultural, institutional, and market-specific factors in Egypt may introduce variations in the accountability-performance relationship. Therefore, there is a compelling need to explore and confirm these relationships among Egyptian entrepreneurs, providing a more nuanced and contextually relevant understanding of how accountability practices contribute to entrepreneurial success in this socio-economic environment.

**H1. Accountability has a positive and significant effect on enterprise performance.**

### 2.2 RESPONSIBILITY AND ENTERPRISE PERFORMANCE

The relevant literature offers valuable insights into the intricate relationship between responsibility and enterprise performance. In the Asia Pacific context, enterprise risk management has a mediating role in the responsibility-firm performance relationship (Naseem et al., 2020). According to Vitezić (2011), social responsibility and efficiency are positively and significantly associated. In the same dimension, Le et al. (2023) investigate the moderating effects of power distance on the CSR-multinational enterprise performance relationship, emphasizing the influence of cultural factors on this dynamic. Likewise, the empirical investigation of Khan et al. (2020) provides evidence supporting the positive impact of sustainable social responsibility on small and medium-sized enterprise performance in China. The effect of CSR on performance in air transport enterprises is positive and significant (Dimitriou, 2020). Khan et al. (2021) demonstrate the meaningful impact of environmental awareness on CSR practices, which benefit enterprises in an emerging economy. Similarly, Wang and Lei's (2020) research exerts a
positive effect of social responsibility on performance in new energy automobile enterprises in China.

Consequently, in light of the extensive literature reviewed, a consistent trend emerges, affirming a positive correlation between responsibility and enterprise performance across various contexts. However, intriguingly, the dynamics among Egyptian entrepreneurs appear to deviate from this established pattern. Despite the wealth of evidence supporting the beneficial impact of responsibility on business outcomes in diverse settings, the empirical findings from Egypt suggest an exception to this norm. The recognition of this deviation prompts us to address a crucial deficiency in the current understanding of the relationship between responsibility and enterprise performance, especially within the specific context of Egyptian entrepreneurship. In response to this gap in the literature, we propose a closer examination of the factors that contribute to this unique scenario, aiming to unravel the intricacies that distinguish Egyptian entrepreneurs from their counterparts in other regions. Hence:

\textbf{H2. Responsibility has a positive and significant effect on enterprise performance.}

\subsection*{2.3 ANALYTICAL THINKING AND ENTERPRISE PERFORMANCE}

Analytical thinking varies across the literature, shows the implicit role of analytical thinking in shaping enterprise performance. According to Al Mamun et al. (2018), entrepreneurial leadership in micro-enterprises hints at the influence of analytical thinking on performance and sustainability. Similarly, Huang and Hsueh (2007) demonstrate that intellectual capital has the potential to involve analytical thinking in optimizing business performance. In the same notion, scholars like Asem-Bansah et al. (2012) and Boscoianu et al. (2018) found the predictive role of innovation enterprises in developing analytical thinking, which leads to enhanced sustainability among firms. In the study of Sadler-Smith (2004), the focus on cognitive styles indirectly suggests the relevance of analytical thinking in managing small and medium-sized enterprises. The relationship between leadership styles and strategic thinking, wherein analytical thinking is positive, is indicated by Gross (2016). Lastly, Ma and Guo's (2020) analysis of technological innovation factors affecting enterprise performance implies considering analytical thinking in this context.

As a result, an extensive examination of the existing literature unequivocally establishes analytical thinking as a robust predictor of enterprise performance across
diverse contexts. The empirical evidence from various studies consistently underscores the pivotal role of analytical thinking in shaping and enhancing organizational outcomes. However, amidst this comprehensive body of knowledge, a notable gap emerges—particularly in exploring analytical thinking among Egyptian entrepreneurs. While analytical thinking's significance has been extensively validated in global entrepreneurial landscapes, its nuanced manifestation and impact within the Egyptian entrepreneurial sphere remain inadequately explored. This discernible gap in research presents an opportune moment for a dedicated inquiry into the unique dynamics and intricacies surrounding the utilization of analytical thinking among Egyptian entrepreneurs. Thus, we proposed:

\textit{H3. Analytical thinking has a positive and significant effect on enterprise performance.}

2.4 ENTERPRISE PERFORMANCE AND ENTERPRISE SUSTAINABILITY

The connection between enterprise performance and sustainability is explored through various lenses of investigation. Mustapa et al. (2018) investigate the impact of development initiatives on performance and sustainability, establishing a connection between proactive development strategies and long-term viability. According to Malesios et al. (2021), sustainability performance in SMEs can be developed through sustainability practices and overall performance metrics. In the perception of Bogićević et al. (2016), the contribution of financial and non-financial performance is positive in developing enterprise sustainability. In the context of entrepreneurial leadership, micro-enterprise sustainability performance is affected by performance and leadership (Al Mamun et al., 2018). In a similar domain, Staniškis and Arbačiauskas (2009) confirm the effect of enterprise performance on sustainability performance.

Indeed, there is a positive link between entrepreneurial motivation, competency, and micro-enterprise sustainability performance, which leads to robust profit of the organizations (Fazal et al., 2022). According to Shad et al. (2019), sustainability reporting in enterprise risk management illustrates the interconnectedness between transparency, risk management, and overall business performance. An empirical assessment by Tomšič et al. (2015) explores the link between economic performance and corporate sustainability in SMEs and suggests a positive correlation between sustainable practices and financial success. A futuristic perspective, analyzing how big data and the Internet of Things can
drive sustainability in enterprise performance management (Yang, 2023). Moreover, Hao et al. (2023) contribute by investigating the relationship between environmental governance, executive incentives, and enterprise performance in Chinese mineral enterprises, showcasing the intricate interplay between sustainability measures, corporate management, and overall performance.

Consequently, despite extensive scholarly exploration, the inquiry into the intricate relationship between enterprise performance and sustainability still needs to be solved, particularly within the unique context of Egypt, where entrepreneurial focus on this nexus is notably limited. The existing literature has yet to definitively confirm the association between enterprise performance and sustainability in this specific regional landscape, leaving a critical gap in our understanding. Thus:

**H4. Enterprise performance has a positive and significant effect on enterprise sustainability.**

### 3 METHODS

#### 3.1 SURVEY STRATEGY AND RESPONDENTS

A quantitative strategy excels in decision-making by offering precise, objective data for comparative analysis. Statistical significance ensures reliability, enabling data-driven decisions and effective risk management (Lakshman et al., 2000). The efficiency of quantitative analysis, coupled with measurable progress tracking, enhances the overall reliability and clarity of the decision-making process (Rosenthal and DiMatteo, 2001). In the literature, a majority of scholars like Shad et al. (2019), Radwan et al. (2020), Othman et al. (2022), Shah and Soomro (2023), and Hao et al. (2023) applied the same technique to explore the issues, i.e. performance, sustainability, leadership, and entrepreneurship leadership.

We targeted the entrepreneurs in Egypt affiliated with diverse firms through a quantitative strategy, which is vital for market success. Egyptian entrepreneurs are justified by the country's burgeoning entrepreneurial ecosystem and its pivotal role in economic development (Roll, 2010). Egypt has witnessed a surge in innovative ventures and startups, reflecting a dynamic business landscape. By catering to the needs of Egyptian entrepreneurs, businesses can tap into a pool of forward-thinking individuals who are often early adopters of new technologies and services. By aligning with the entrepreneurial spirit in Egypt, enterprises can establish strong networks, leverage local
expertise, and contribute to the country's economic diversification (Adel et al., 2020). Targeting Egyptian entrepreneurs offers a strategic entry point into a market characterized by adaptability, allowing businesses to be part of a thriving and evolving business community.

3.2 DATA COLLECTION PROCEDURE

The research team opted for an online survey to gather responses, employing a strategic outreach strategy that involved tracing potential participants through diverse channels such as WhatsApp groups and email contacts sourced from company profiles and individual networks. A convenience sampling technique was applied to approach respondents to ensure a comprehensive representation. Before distributing the questionnaire, a conscientious effort was made to secure explicit consent and permission from participants, underscoring the ethical considerations of the study. This rigorous approach yielded a robust dataset of 304 valid samples, forming the foundation for a thorough and justifiable final analysis.

3.3 MEASURES

We adopted all the items of the scale from domain literature. More specifically, we measured accountability on four items. These items were adopted from Thoms et al. (2002), with a sample item, “I feel accountable towards my partners and employees.” Likewise, the responsibility factor was assessed with four items adapted from Berkowitz and Daniels (1964), with the sample item “It is more important to work for the good of the team than to work for my own good.” Further, the analytical thinking factor was assessed on seven items with a sample item: “As the owner of a business, I would rather do something that is sure to challenge my thinking”. These items were adopted from Epstein et al. (1996). We evaluated enterprise performance on five items adopted from Morgan and Strong (2003). The sample content of the scale is “Compared to your major competitors, your firm possesses relatively higher sales growth.” Finally, the enterprise sustainability factor was assessed with five items adopted from the study of Raymond et al. (2013) and Gualandris et al. (2014). The sample content is “Compared to your major competitors, your firm possesses a relatively higher level of environmental performance”. We measure all the items employing a five-point Likert scale ranging from strongly agree to strongly disagree.
4 RESULTS
4.1 MEASUREMENT MODEL

In the formulation of our measurement model, we rigorously assessed key indicators, aligning with established guidelines proposed by Sarstedt et al. (2020). Notably, our evaluation encompassed the examination of loading, composite reliability (CR), average extracted variance (AVE), and Cronbach's Alpha ($\alpha$). The outcomes of our analysis revealed that all items surpassed the recommended threshold of 0.7, indicative of robust loading. Furthermore, both AVE and CR metrics exceeded the suggested values of 0.5, underscoring the model's reliability and convergent validity under the criteria outlined by Sarstedt et al. (2020). Another noteworthy achievement is the exemplary values obtained for Cronbach's Alpha ($\alpha$), surpassing the 0.7 benchmarks proposed by Sarstedt et al. (2020) (Table 1). This attests to the high internal consistency and reliability of our measurement model. In essence, our meticulous adherence to established metrics ensures the validity and reliability of our measurement model, affirming its suitability for robust analysis and interpretation in line with contemporary standards.

<table>
<thead>
<tr>
<th>Item</th>
<th>Loading</th>
<th>AVE</th>
<th>CR</th>
<th>Alpha ($\alpha$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC1</td>
<td>0.938</td>
<td>0.762</td>
<td>0.821</td>
<td>0.811</td>
</tr>
<tr>
<td>ACC2</td>
<td>0.922</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACC3</td>
<td>0.943</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACC4</td>
<td>0.921</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RES1</td>
<td>0.909</td>
<td>0.698</td>
<td></td>
<td>0.887</td>
</tr>
<tr>
<td>RES2</td>
<td>0.890</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RES3</td>
<td>0.910</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>RES4</td>
<td>0.765</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANT1</td>
<td>0.957</td>
<td>0.716</td>
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<tr>
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<td></td>
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<td></td>
</tr>
<tr>
<td>ANT3</td>
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<tr>
<td>ANT4</td>
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<td>ANT5</td>
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<tr>
<td>ANT6</td>
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<td>ANT7</td>
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</tr>
<tr>
<td>EP1</td>
<td>0.925</td>
<td>0.666</td>
<td>0.781</td>
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<td>EP2</td>
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<td>EP3</td>
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<tr>
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<tr>
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<tr>
<td>ES5</td>
<td>0.846</td>
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</tbody>
</table>

Source: Estimated by the authors
Note(s): ACC=accountability; RES=responsibility; ANT=analytical thinking; EP=enterprise performance; ES=enterprise sustainability
We also checked the discriminant validity to see if there were any problems with multi-collinearity among the latent variables. Since the most popular technique for guaranteeing discriminant validity is the Fornell and Larcker criterion, we chose to apply it in this investigation (Ab Hamid et al., 2017). As a result, we discovered that every item loads highest on its concomitant construct and that each construct's square root of AVE is higher than its correlation (connection) with another construct (Table 2).

<table>
<thead>
<tr>
<th>Construct</th>
<th>ACC</th>
<th>RES</th>
<th>ANT</th>
<th>EP</th>
<th>ES</th>
</tr>
</thead>
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<tr>
<td>ACC</td>
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</tr>
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<td>RES</td>
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<td>0.707</td>
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<tr>
<td>ANT</td>
<td>0.164</td>
<td>0.168</td>
<td>0.071</td>
<td></td>
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</tr>
<tr>
<td>EP</td>
<td>0.077</td>
<td>0.099</td>
<td>0.124</td>
<td>0.059</td>
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</tr>
</tbody>
</table>

Source: Estimated by the researchers

4.2 STRUCTURAL MODEL

The researchers employed advanced statistical techniques, specifically path analysis through Analysis of Moment Structures (AMOS) IBM version 26.0. This robust software excels in enabling the examination of both complex and direct paths simultaneously (Wei, 2014). With regard to the hypotheses assessment, the path analysis appeared to have a negative effect of accountability on enterprise performance (H1= β=-0.013; p>0.01). Hence, H1 is rejected. Further, the analysis confirmed a positive and significant effect of responsibility and analytical thinking on enterprise performance (H2= β=0.415; p<0.01; H3= β=-0.266; p<0.01), which accepted the H2 and H3. Finally, the path coefficients confirmed a significant positive effect of enterprise performance on enterprise sustainability (H4= β=0.797; p<0.01). As a result, H4 is accepted by the data (Table 3 and Figure 2).
5 DISCUSSION AND CONCLUSION

The study aimed to investigate the factors that effect of enterprise performance and enterprise sustainability among Egyptian entrepreneurs. The results of path analysis through AMOS suggest a positive and significant influence of responsibility and analytical thinking on enterprise performance. These results are reinforced by scholars like Huang and Hsueh (2007), Asem-Bansah et al. (2012), Gross (2016), Boscoianu et al.
Doghan, M., A., A., Abdelwahed, N., A., A., Soomro, A., A. (2023). Entrepreneurial Leadership and Enterprise Performance: A Way Out of Sustainability (2018), Khan et al. (2020), Ma and Guo (2020), Dimitriou (2020), Khan et al. (2021) and Le et al. (2023), who suggested a significant effect of responsibility and analytical thinking on enterprise sustainability. The synergistic effects of these traits can elucidate the positive and significant impact of responsibility and analytical thinking on enterprise performance among Egyptian entrepreneurs. Entrepreneurs with strong analytical thinking skills are adept at making informed decisions based on a nuanced understanding of market dynamics, competitive landscapes, and data analytics. This analytical prowess contributes to efficient risk management, operational optimization, and adaptability to market changes, fostering innovation within the enterprise. Concurrently, entrepreneurs who prioritize responsibility demonstrate a commitment to their ventures’ long-term success and sustainability. This commitment translates into a proactive approach to risk mitigation, establishing transparent and fair business practices, and a positive workplace culture. The combined influence of analytical thinking and responsibility extends beyond strategic decision-making to impact stakeholder trust, reputation, and employee morale, ultimately culminating in enhanced enterprise performance. The complementary nature of these attributes creates a robust foundation for navigating the complexities of the business landscape and achieving sustained success in the Egyptian entrepreneurial context.

On the other hand, the accountability factor is a negative predictor of enterprise performance. The literature does not support this outcome; for instance the studies such as Connolly and Kelly (2011), Rahman and Hussain (2012), Florio (2014), Babich and Mityuchenko (2016), AbRahman et al. (2016), Karamoy et al. (2017), Bradford et al. (2020), Shafie (2020) and Hapsari et al. (2020) found a positive effect of accountability on enterprise performance. These results may reflect that entrepreneurs burdened by an overwhelming sense of accountability may exhibit risk aversion, leading to a reluctance to embrace innovative strategies critical for business growth. This heightened accountability might foster a fear of failure, impeding entrepreneurial creativity and the willingness to experiment, which is essential for adapting to dynamic market conditions. Moreover, an excessively accountable environment may stifle initiative within the entrepreneurial team, hinder efficient decision-making through micro-management, and contribute to burnout. The impact on employee morale and collaboration can further compound these challenges. Additionally, an exaggerated focus on accountability may promote a short-term orientation, impeding long-term strategic planning and
responsiveness to market changes. Addressing these challenges requires a nuanced approach that balances accountability with a strategic tolerance for risk, encourages innovation, and fosters a culture of shared responsibility to enhance overall enterprise performance.

Finally, the study results found a positive and significant effect of enterprise performance on enterprise sustainability. Likewise, these results are in line with various scholars suggested the same outcomes (Staniškis and Arbačiauskas, 2009; Tomšič et al., 2015; Bogićević et al., 2016; Al Mamun et al., 2018; Shad et al., 2019; Bojnec and Tomšič, 2020; Malesios et al., 2021; Fazal et al., 2022).

The outcomes suggest that high-performing enterprises often optimise resources, including financial, human, and technological assets, fostering sustainability through efficient resource allocation. Moreover, a strong emphasis on innovation and adaptability positions these businesses to proactively navigate dynamic market landscapes and evolving consumer preferences, contributing to their long-term sustainability. Positive enterprise performance correlates with satisfied customers, a favourable reputation, and heightened investor confidence, supporting sustained revenue streams and facilitating access to capital for ongoing growth initiatives. Additionally, a robust workplace culture associated with high performance promotes employee engagement, talent retention, and operational efficiency, all of which contribute to the enterprise's resilience and long-term sustainability. Furthermore, the commitment to environmental and social standards, community engagement, and a focus on ethical practices by high-performing enterprises aligns with sustainable business principles, fostering longevity and positive community relations. In essence, the positive relationship between enterprise performance and sustainability underscores Egyptian entrepreneurs' holistic and strategic approach, encompassing various dimensions of business management to ensure enduring success in a dynamic business environment.

In conclusion, the research findings reveal a compelling narrative about the intricate dynamics that shape entrepreneurial success. Firstly, the positive and significant impact of responsibility and analytical thinking on enterprise performance underscores the pivotal role of proactive decision-making and strategic insight in driving business success. Entrepreneurs who exhibit a strong sense of responsibility tend to make decisions with a long-term perspective, fostering a culture of commitment and dedication within the organization. Concurrently, analytical thinking skills empower entrepreneurs to
navigate complexities, make data-informed decisions, and adapt swiftly to changing market landscapes, collectively contributing to enhanced enterprise performance.

Conversely, the observed negative impact of accountability on enterprise performance sheds light on the potential challenges associated with an overly rigid and personally burdensome approach to decision-making. Entrepreneurs excessively burdened by accountability may become risk-averse, hindering their ability to seize opportunities, innovate, and steer the organization toward transformative growth. Striking the right balance between accountability and strategic risk-taking emerges as a critical consideration for entrepreneurs aiming to cultivate a dynamic and resilient business environment. Furthermore, the positive and significant effect of enterprise performance on enterprise sustainability accentuates the enduring impact of effective business management on the long-term viability of ventures. High-performing enterprises, buoyed by responsible decision-making and analytical thinking, exhibit financial resilience and a capacity for innovation and adaptability. This, in turn, positions them favourably to embrace sustainable practices, engage with stakeholders effectively, and contribute positively to the community and environment. The symbiotic relationship between enterprise performance and sustainability underscores the integral role that successful businesses play in fostering enduring economic, social, and environmental value.

6 IMPLICATIONS OF THE STUDY

The practical implications of these findings offer valuable guidance for entrepreneurs and business leaders seeking to optimize their ventures for sustained success. Investing in targeted training programs that enhance these skills among team members is essential. Striking a delicate balance between accountability and strategic risk-taking is crucial, necessitating a corporate culture that values innovation and learning from failures. Aligning performance metrics with long-term sustainability goals ensures a comprehensive evaluation of enterprise success. Integrating sustainable business practices, such as ethical sourcing and community engagement, into operations enhances the positive relationship between performance and sustainability. Policymakers can contribute by supporting entrepreneurial training initiatives emphasizing these skills and fostering robust and responsible business practices. Cultivating a positive organizational culture that celebrates responsible decision-making and critical thinking positions enterprises for resilience, innovation, and enduring success in the dynamic business
context.

Theoretical implications of the research findings offer significant contributions to various domains within entrepreneurship and organizational studies. Integrating decision-making theories, such as bounded rationality and prospect theory, becomes paramount in understanding the nuanced interplay between responsibility, analytical thinking, and optimal decision outcomes. These findings extend the conceptualization of dynamic capabilities and organizational learning, indicating that enterprises emphasizing continuous learning, adaptability, and strategic thinking are better poised for sustained high performance. Moreover, the insights align with behavioural agency theory, shedding light on how individual behaviours, particularly a reluctance to take bold actions under excessive accountability, can influence organizational outcomes. The Resource-Based View of the Firm gains further refinement as the research underscores the strategic value of intangible assets, including responsible decision-making and analytical capabilities, in fostering competitive advantage and sustainability. The positive connection between enterprise performance and sustainability contributes to institutional theory, emphasizing how organizations respond to societal expectations and institutional pressures. Additionally, the findings enrich ethical decision-making frameworks by highlighting the theoretical significance of responsible behaviour in entrepreneurial decision-making for long-term success. Together, these theoretical implications advance our understanding of the intricate dynamics that underlie entrepreneurial success and sustainable business practices.

7 LIMITATIONS AND FUTURE RESEARCH

The study reveals useful insights, it is essential to understand its limits to provide a comprehensive assessment of the findings. The quantitative nature of the research and reliance on cross-sectional data imply that causation cannot be definitively established, and the temporal dynamics of the relationships identified still need to be explored. A grounded theoretical framework is necessary for the depth of interpretation, necessitating caution in generalizing the results. Using a questionnaire as the data collection method may overlook the richness of qualitative insights and nuanced perspectives that other approaches, such as interviews or focus groups, could capture. While sufficient for specific statistical analyses, the study's sample size of 304 respondents may need to be revised to allow the generalizability of the findings.
The findings lay the groundwork for several promising future research directions within entrepreneurship and organizational studies. One avenue involves a nuanced exploration of accountability, delving into the conditions and contexts that may render it beneficial or detrimental to enterprise performance. Further investigation could include examining moderating variables, such as organizational culture and leadership styles, to uncover their influence on the identified relationships. Longitudinal studies tracking the evolution of responsibility, analytical thinking, and accountability over time would provide valuable insights into the dynamic nature of these variables and their implications for long-term organizational outcomes. Comparative, cross-cultural studies could assess the generalizability of the observed patterns across diverse cultural contexts. Besides, integrating technological innovation into the analysis and exploring the role of emerging technologies in decision-making and sustainability would align with the evolving business landscape. Considering the increasing significance of sustainability, incorporating environmental, social, and governance (ESG) metrics into the study could deepen our understanding of the pathways through which responsible decision-making and analytical thinking contribute to sustainable business practices. Exploring the impact on employee perspectives and well-being and investigating policy implications and interventions would further enrich our understanding of the intricate dynamics shaping entrepreneurial success and organizational sustainability. By pursuing these diverse avenues, future research has the potential to offer actionable insights for practitioners, policymakers, and educators alike.

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