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EXAMINING START-UP FACTORS TO DEVELOP A SUCCESSFUL START-UP UNIVERSITY IN THE UNITED ARAB EMIRATES

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ABSTRACT

The global adoption of start-up methodologies has sparked considerable interest in their use beyond traditional business firms, especially in emerging start-up organizations. However, research on the feasibility of implementing these methods for establishing start-up universities remains scarce. To fill this critical gap in the literature, this study examines the key factors that contribute to the successful establishment of a start-up university in the United Arab Emirates (UAE). Using a quantitative approach, data were gathered from 298 respondents through structured surveys. The data were then analyzed with various statistical techniques, including descriptive statistics, percentage assessments, reliability tests, and inferential analyses.

The findings highlight that successfully establishing a start-up university depends on a synergistic set of strategic enablers, including strong government support, sustained financial backing, advanced technological infrastructure, a culture of innovation, and active collaborative partnerships. Furthermore, these enablers help universities acquire essential resources, build institutional legitimacy, anticipate emerging needs, and remain competitive in a rapidly changing academic environment. The study used various analytical techniques, such as measures of central tendency and dispersion (Mean and Standard Deviation), reliability testing (Cronbach's Alpha), normality assessments (Kolmogorov-Smirnov and Shapiro-Wilk), and inferential statistical methods (One-Way ANOVA and Pearson Correlation).

Keywords: Start-up University, business factors, AI industry, government funding, innovation

1. INTRODUCTION

The journey of a start-up, from early development to long-term success, primarily depends on the strength of its business model, the strategy it employs, and the composition and effectiveness of its founding team. The strategic framework acts as a guide for navigating the complexities of a competitive marketplace. At the same time, the team functions as a close-knit social unit that forms the foundation of the enterprise (Slávik, Bednár, Hudáková, & Zagoršek, 2021, p. 11). Start-ups not only meet existing market demands but also play a crucial role in identifying and addressing emerging needs. The successful launch and growth of these ventures depend on the skillful application of solid business principles (Székely, 2024, pp. 113–145).

By 2021, more than half of established companies had adopted lean start-up methodologies, indicating a significant shift in their organizational strategies (Jesemann, Beichter, Herburger, Constantinescu, & Rüger, 2020, p. 20). That same year also marked a peak in entrepreneurial activity, with 591 start-ups collectively valued at $1.5 trillion. However, momentum slowed in 2022, when the number of new start-ups dropped to 319, with a combined valuation of $588.6 billion (Rubio, 2023, p. 2).

Contemporary universities are increasingly viewed as institutions in transition, facing growing pressure to demonstrate their relevance and value to society. A common argument suggests that higher education institutions need to transform into organizations similar to businesses, focusing on efficiency, market responsiveness, and managerial effectiveness. However, it is also recognized that universities and companies operate in different domains, guided by distinct core philosophies, cultural norms, and institutional goals.

Central to this discussion is the idea that establishing a new university is similar to launching a startup. Given the advantages of startup practices, it is essential to evaluate whether

these principles can be effectively applied within the university environment to promote institutional success. This study, therefore, examines the feasibility of applying entrepreneurial startup dynamics to the creation of new universities and highlights the key factors that may influence their performance.

One of the main challenges universities face is transitioning from a research-focused approach to one that addresses commercial needs. Similar to startups, universities often struggle with resource limitations, such as restricted funding and a lack of experienced leadership or business mentorship (Mundell, 2023, p. 22). These constraints necessitate careful resource management, strategic financial planning, and the building of strong entrepreneurial networks. Although business-oriented frameworks have been widely adopted across various organizational levels, there is still limited research on how effectively they work within new university models and whether they can achieve the same success seen in other sectors.

1.1 The Research Problem

This inquiry examines the feasibility and broader implications of applying core business principles to the operational structures of emerging higher education institutions. Start-up universities, due to their newness and limited resources, encounter complex challenges in achieving academic excellence and sustainability. Therefore, it is crucial to assess whether fundamental business concepts, such as financial management, strategic planning, and marketing skills, can be effectively applied to foster the growth and resilience of these institutions.

The investigation is based on a comprehensive review of existing literature, with a particular focus on the thematic proposition: “Examining Start-Up Factors to Develop a Successful Start-Up University in the United Arab Emirates.” This review aims to identify both well-studied areas and those that remain less explored. Central to this effort is a conceptual

analysis of the term “factors,” which will be examined through the lens of existing literature and supported by a strong theoretical framework.

The researcher proposes that the dynamic interaction among academia, industry, and government entities forms a vital hub for innovation-driven growth. Based on established studies, the research identifies five main variables: Funding, Innovation, Partnerships, Government Support, and Technology. These factors are crucial in promoting institutional innovation and sustainability and also help address gaps in the literature concerning the strategic development of start-up universities.

1.2 Research Questions and Objectives

Responding to the main research question about integrating business-focused variables into the framework of emerging universities, this study formulates the following guiding questions.

1. What are the experiences and perspectives of faculty, staff, alumni, and students at a start-up university in the United Arab Emirates (UAE) regarding the essential business start-up factors for the university's evolution and success?
2. How do faculty, staff, alumni, and students at a start-up university in the UAE perceive the application of business start-up factors to start-ups, and how do they believe these principles can enhance their relevance and success?
3. What challenges and opportunities are perceived when applying business start-up factors to create universities in the UAE?
4. What influence do external factors such as funding, government support, and technologies have on the success of a start-up university?

5. How can the findings of this study be utilized to recommend additional factors and practices for the evolution of approaches related to start-up universities in the UAE?

Research Objectives:

1. To identify and describe the key business start-up factors necessary for the evolution and success of establishing a start-up university in the UAE, as well as the challenges and opportunities associated with the same.

2. To explore the areas of specialization among faculty, staff, and students at a start-up university in the UAE to better understand the application of factors related to business start-ups at a university.

3. To investigate how external factors such as funding, government support, and technology influence the success of a start-up university.

4. Based on the findings of this study, we aim to develop recommendations for additional factors and practices that can enhance the evolution and success of a start-up university in the UAE, while also assessing the potential implications for other universities seeking to integrate business start-up factors into their operations.

This study used a mixed-methods approach, combining both inductive and deductive reasoning. Quantitative data were collected through structured, closed-ended questionnaires to enable empirical analysis and support the study's theoretical propositions.

2. LITERATURE REVIEW

This study highlights notable gaps in the existing literature, particularly regarding the application of lean start-up methods in higher education. Most research mainly focuses on organizational settings, where comparisons to lean start-up practices don't fully reflect the unique structures and educational dynamics of universities. Notably, there remains limited scholarly work examining whether strategically applying business start-up principles could significantly improve the success of new universities.

While small and medium-sized enterprises (SMEs) are generally defined by factors such as annual revenue, asset value, and employee count, the boundaries of what constitutes a "start-up" remain unclear in academic discussions. Recent research has suggested a more detailed way to identify start-ups, highlighting three main features: adopting lean start-up practices, experimenting with and testing innovative business models, and recognizing the organization's inherently temporary nature (Goldasteh et al., 2022, p. 157).

2.1 Ensuring Academic Rigor

Contemporary higher education institutions are increasingly functioning such as commercial enterprises, facing similar pressures, opportunities, and challenges. This similarity has become widely recognized, especially within entrepreneurial education programs that actively adopt business-oriented frameworks. Scholarly research has further clarified the connection between lean start-up methods and existing academic theories, emphasizing their significance in educational settings (Shum & Shibata, 2023, p. 33). However, maintaining academic integrity while pursuing entrepreneurial innovation remains essential. Achieving this balance is crucial to safeguarding the core mission of education. Collaborative efforts that bridge academic and entrepreneurial fields have played a vital role in developing strong start-

up ecosystems within universities, promoting interdisciplinary growth and institutional vitality (Becker & Endenich, 2023, p. 27).

2.2 Organizational Dynamics

Efforts to incorporate organizational dynamics within higher education institutions have consistently been linked to entrepreneurial development and innovation (Nabella, Rivaldo, Kurniawan, Nurmayunita, Sari, Luran, & Wulandari, 2022, p. 119). The concept of organizational dynamics includes interactions among individuals, institutional structures, and procedural processes, all of which work together to achieve strategic goals. In academia, such dynamics are increasingly viewed as crucial for fostering adaptive, entrepreneurial cultures that promote institutional change and sustainable growth.

2.3 Collaboration and Spin-Offs

In higher education, the concept of organizational dynamics involves encouraging collaborative practices, interdisciplinary research, and the formation of cross-functional teams. These integrative efforts are increasingly viewed as essential for promoting institutional agility and innovation (Gomis, Harvinder Saini, Chaminda Pathirage, & Muhammad Arif, 2023, p. 331). By adopting entrepreneurial frameworks and building collaborative networks, universities can strategically position themselves as centers of innovation, helping them remain relevant in a rapidly changing global landscape.

The rise of entrepreneurial universities has become a key driver in expanding academic entrepreneurship, marking a shift in how institutions engage with external stakeholders and pursue the commercialization of knowledge (Anthony Doh, Jari Jauhiainen, & Richard Boohene, 2022, p. 127). Academic entrepreneurship encompasses a wide range of activities, including joint research projects between universities and industry, patent applications, consulting work, the creation of startups and spin-offs, entrepreneurship education, and

incubation services (Giustina Secundo, Pierpaolo Rippa, & Roberto Cerchione, 2020, p. 120). As Fang and Xie (2022, p. 50) note, universities may employ various strategic approaches to achieve similar outcomes in developing spin-off companies, highlighting the flexibility and adaptability inherent in academic entrepreneurial models.

2.4 Academic Engagement and Partnerships

Ma and Wang (2022, p. 22) describe academic engagement as a collaborative interaction between academic researchers and external, non-academic groups, particularly in areas such as knowledge sharing and co-creation. This definition emphasizes the increasingly blurred boundaries between academia and industry, reflecting a broader shift in the university's role as a knowledge creator. The evolving landscape of knowledge production has been critically analyzed through various theoretical perspectives, including studies on changing methods of scholarly output and institutional involvement (Armel & Shizhou, 2022, p. 853).

In this context, the strategic partnership between universities and industry has become increasingly critical as a means to make academic programs more practical and enhance graduate job prospects. Jackson and Rowe (2023, p. 490) emphasize the key role of such collaborations in providing students with hands-on learning experiences, access to professional mentorship, and the development of industry-specific skills. These partnerships not only enhance the educational experience but also help strengthen the university's role within the broader innovation ecosystem.

2.5 Theories Underpinning Start-Up Universities

2.5.1 Entrepreneurship Theory and Its Relevance to AI Universities

Entrepreneurship theory is increasingly recognized for its role in shaping students' entrepreneurial attitudes and intentions. Some studies confirm that integrating entrepreneurial principles into educational settings can foster proactive behavior and encourage innovative

thinking among students (Tsaknis, Sahinidis, Tsakni, Vassiliou, Kavagia, Giovanis, & Stavroulakis, 2022, p. 7). However, other researchers caution that understanding the long-term effectiveness of these teaching strategies remains challenging, especially when it comes to measuring sustained results and behavioral changes over time (Farid, & Absul Rahman, 2020, p. 9).

2.5.2 Innovation Theory and Its Implications for AI Universities

Innovation theory broadly explains how new ideas emerge, are adopted, and become part of existing systems. It emphasizes how concepts are created and integrated within institutional structures (Deming, 2013, p. 78). The theory generally considers three interconnected factors that influence innovation paths: psychological, socio-economic, and organizational-regulatory. In university environments, innovation often occurs through creative exploration of new paradigms, which can evolve into organized efforts focused on implementation and adaptation to specific contexts (Sasaki, 2018, p. 18).

2.5.3 Organizational Theory and Its Application to AI University Contexts

The application of organizational theory to higher education has increased recently, with researchers exploring how universities respond to external pressures and legitimacy demands (Saad & Kaur, 2020, p. 77). Meyer and Rowan (1977, p. 45) argue that educational institutions often adopt formal structures that mirror societal expectations, thereby boosting their institutional credibility.

2.6 Theory and Innovative Behavior

Lee, Kim, and Sung (2019, p. 103) emphasize the critical role of innovative initiatives in the entrepreneurial process, arguing that innovation often stems directly from entrepreneurial activity. Likewise, Luamba, Blye, Mwema, Williams, James, and Chagadama (2021, p. 425)

argue that innovative behavior inherently involves seeking out new opportunities, often with active involvement in learning and applying knowledge.

In higher education, start-ups have demonstrated their ability to enhance teaching and learning by developing specialized applications, hardware, and software solutions (Teo, 2021, p. 115). This integration of innovation and entrepreneurial activity within academic environments has sparked a transformative shift in teaching methods. As Kayyali (2023, p. 33) notes, fostering collaboration and strategic partnerships is essential for promoting innovation and entrepreneurship throughout university ecosystems.

Although the scholarly discussion about innovation in start-up contexts remains somewhat fragmented, Weiblen and Chesbrough (2015, p. 24) note that the concept continues to attract significant interest from both academic and professional communities. This rising attention reflects the increasing importance of start-ups as drivers of innovation within the broader landscape of higher education.

2.7 Disruptive Innovations

Feng, Qin, Wang, and Zhang (2022, p. 101) note that innovations from start-ups are often viewed as disruptive, capable of transforming current markets or creating entirely new ones. These groundbreaking innovations challenge traditional ideas and frequently redefine industry boundaries. In the realm of service innovation, such advancements are usually associated with traits such as disparity, intangibility, and inhomogeneity, all of which demand greater customer engagement and interaction (Geissdoerfer, Vladimirova, Fossen, & Evans, 2018, p. 22).

Conversely, product innovation typically emphasizes technological advances and design enhancements. However, similar to service innovation, it is crucial to maintain a customer-focused approach throughout all areas of operations (Gutterman, 2023, p. 44). This

underscores the shared emphasis on user experience and responsiveness, regardless of the area of innovation.

2.8 Key Factors for Start-Up Success in Business and Higher Education

2.8.1 Lean Start-Up Methodology

The lean start-up methodology, introduced by Ries (2011, p. 211), is based on principles from lean manufacturing and the pioneering work of Blank (2013, p. 8). This approach combines various tools and frameworks from related theories, such as customer development (Blank, 2020, p. 8), rapid prototyping, design thinking (Müller-Roterberg, 2018, p. 4), and agile software development principles (Bermejo, Zambaldee, Tonelli, Souza, Zuppo, & Rosa, 2014, p. 90). Known for its distinct terminology, structured process, and prescriptive guidance, the lean start-up model offers a clear pathway for innovation and venture creation (Sreenivasan, & Suresh, 2024a, pp. 172–194).

2.8.2 Design Thinking and User-Centric Approaches

Although limited in scope, existing research indicates potential for combining lean start-up principles with design thinking to foster innovation (Marion, Cannon, Reid, & McGowan, 2021, p. 10). Originating from industrial design, design thinking has gained prominence through its adoption by engineering and design-focused organizations (Sitompul, & Sitompul, 2024, p. 46). Over the past decade, its use at the corporate level has grown, with leading firms adopting its user-centric approach to drive creative problem-solving and strategic growth.

2.8.3 Entrepreneurial Leadership

Entrepreneurial leadership has emerged as a robust theoretical framework for understanding the challenges of leading new ventures and driving organizational growth.

Despite a growing body of research, there remains no clear consensus on its conceptual boundaries and evaluation methods. Tools for measuring entrepreneurial leadership remain underdeveloped. According to a recent definition, entrepreneurial leadership involves influencing and guiding team members toward achieving organizational goals (Yusnita, & Virlania, 2024, pp. 1–11).

2.8.4 Organizational Culture

Numerous studies have explored the types and dynamics of organizational culture (Khan, Khan, & Idris, 2021, p. 22; Oluwa, & Ibrahim, 2021, p. 2). Aichouche, Chergui, Brika, El Mezher, Musa, and Laamari (2022, p. 11) suggest a framework with four different cultural archetypes: group culture, hierarchical culture, rational culture, and development culture. These categories offer a detailed understanding of how organizational values and norms shape institutional behavior and strategic direction.

2.8.5 Strategic Partnerships

Start-ups often use strategic partnerships, especially through external investments, to improve their financial performance and growth potential (Cacciolatti, Rosli, Ruiz-Alba, & Chang, 2020, p. 3). While existing research mainly focuses on partnerships within multinational corporations—covering topics such as differentiation, mergers and acquisitions, cost leadership, e-commerce, partner reputation, and governance structures (Dubrovski, 2020, p. 15)—the unique dynamics of start-up partnerships are still underexplored. Only a few studies examine how these alliances influence start-up performance.

2.8.6 Ecosystem Development

The development of entrepreneurial ecosystems is crucial for fostering innovation and growth in start-ups (Ravichandran, & Dixit, 2024, pp. 81–100). Instead of functioning in

isolation, start-ups often succeed within interconnected networks that promote collaboration, resource sharing, and knowledge exchange (Kayser, Telukdarie, & Philbin, 2023, p. 40).

2.8.7 Technology Commercialization and Spin-Off Creation

Technology transfer offices act as essential channels for turning academic research into market-ready innovations, often resulting in the formation of spin-off companies (Pohlmann, Duarte Ribeiro, & Marcon, 2024, pp. 1166–1178). These spin-offs are commonly regarded as strategies for managing and protecting intellectual property and expertise developed within academic institutions (Lekashvili, & Bitsadze, 2021, p. 7).

2.8.8 Employing Agile Methods

Agile methodologies have become crucial to start-ups' success, offering a flexible alternative to traditional project management approaches (Zielske & Held, 2022, p. 56). Unlike rigid frameworks, agile practices emphasize adaptability, collaboration, and the ongoing delivery of customer value (Rana, 2024, pp. 70–87).

2.8.9 Business Model Canvas

The Business Model Canvas (BMC) has become an essential strategic tool for start-ups navigating complex entrepreneurial environments (Fakieh, AL-Malaise, AL-Ghamdi, & Ragab, 2022, p. 22). Its simplicity and versatility help start-ups define their value propositions and align them with market demands. As Murray and Scuotto (2016, p. 6) note, the canvas encourages a customer-focused approach, ensuring business models remain responsive to changing consumer needs.

2.9 *Explanation of Lean Business Start-Up Approach*

The lean start-up methodology has become a key framework for both theoretical research and practical application in entrepreneurial settings (Ghezzi, 2019, p. 945; Hampel,

Tracey, & Weber, 2020, p. 440). Its core principles are “pivoting” and the “build-measure-learn” cycle (Chen, Elfenbein, Posen, & Wang, 2021, p. 10). As Hampel et al. (2020, p. 440) explain, pivoting involves a deliberate and structured change to a start-up’s strategic direction, aimed at testing new hypotheses that may better align with market realities. Meanwhile, the “build-measure-learn” cycle describes a systematic process for developing hypotheses, testing them through empirical methods, and gaining insights through iteration. Although these ideas are widely adopted, Sielski and Seckler (2021, p. 3) argue that both concepts are still under-theorized and require more in-depth academic research.

2.9.1 Pivoting

Sielski and Seckler (2021, p. 3) identify pivoting as a key principle of the lean start-up philosophy. It involves intentionally shifting a start-up’s vision and strategic direction. Ries (2011, p. 11) describes two essential steps in executing a pivot: first, recognizing signals that indicate the need for a strategic change; and second, developing new hypotheses in response to those signals. Ries (2011, p. 11) emphasizes the importance of paying attention to market feedback, which can expose misalignment between the start-up’s offerings and customer needs. Sielski and Seckler (2021, p. 3) also advise proactively embracing pivoting when necessary to minimize inefficiencies and realign strategic focus.

2.9.2 Build-Measure-Learn Cycle

The “build-measure-learn” cycle, as explained by Sielski and Seckler (2021, p. 3), is the second main element of the lean startup methodology. This repeated process involves continuously improving a business model by directly incorporating customer feedback. Cook, Bikkani, and Poterucha Carter (2023, p. 167) describe this cycle as a flexible mechanism for creating, testing, and refining business strategies, ensuring start-ups remain responsive to user

needs and market trends. By integrating learning into each stage of development, this method promotes agility and smarter decision-making in entrepreneurial efforts.

2.10 Challenges and Opportunities for AI Universities

2.10.1 Start-Up Principles: The Venture Creation Approach

The venture creation approach aims to transform university-based research into entrepreneurial ventures using educational tools. As Haj Brahim, Halima, and Missaoui (2019, p. 15) highlight, this process focuses on establishing new businesses grounded in academic research. Brantnell and Baraldi (2022, p. 102) add that these ventures are typically supported by institutional structures such as technology transfer offices (TTOs), science parks, and incubators, which serve as channels for commercialization and organizational growth.

2.10.2 Start-Up Principles in a University Setting

Flechas, Kazunari Takahashi, and Bastos de Figueiredo (2023, p. 238) emphasize the "triple helix" model, which highlights the collaborative interaction among industry, government, and academia. Ferreira and Carayannis (2019, p. 353) underline the importance of nuanced collaboration strategies that recognize potential conflicts of interest and the delicate balance between academic integrity and entrepreneurial goals. Santoso, Junaedi, Priyanto, and Santoso (2021, p. 21) demonstrate that while financial support is essential, non-financial resources such as mentorship and networking also play a critical role in start-up success. Haneberg and Aadland (2020, p. 121) argue that effective knowledge transfer requires a thorough understanding of industry dynamics and the ability to adapt research outputs accordingly.

2.10.3 Factors Affecting Start-Ups

Kautonen, Gelderen, and Fink (2015, p. 655) identify self-prediction, desire, and behavioral intentions as key indicators of individual engagement in start-up ventures. Williamson and Zander (2022, p. 6) explore a range of motivational drivers that motivate individuals toward entrepreneurship. Shabbir, Mohd Shariff, Salman, and Shabbir (2017, p. 72) stress the importance of entrepreneurial skills for navigating uncertain environments, while Jain and Kesari (2019, p. 83) highlight psychological factors such as cognitive biases and risk tolerance as significant elements influencing start-up outcomes.

2.10.4 Environmental Characteristics Facilitating University-Based Start-Ups

Universities often establish institutional mechanisms—such as TTOs, entrepreneurship centers, incubators, and internal seed funds—to support the commercialization of research (Amry, Ahmad, & Lu, 2021, p. 9). Marzocchi, Kitagawa, and Sánchez-Barrioluengo (2019, p. 167) note that the success of university spin-offs (USOs) depends on the strategic paths chosen. Although universities are frequently analyzed as units (Gheshlagh, Ahsan, Jafari, & Mahmoodi, 2022, p. 895), their specific roles in the start-up creation process remain underexplored.

2.10.5 Funding and Financial Sustainability

Owen, Vedanthachari, and Hussain (2023, p. 5) emphasize the essential role of external funding in developing university-based start-up ecosystems. Marzocchi et al. (2019, p. 36) found that institutions with large endowments are better equipped to provide internal funding, reducing dependence on external sources. Zhang and Nik Azman (2023, p. 55) identify financing as a significant challenge during the early stages of start-up development. As Zaabi (2021, p. 13) states succinctly, revenue must exceed operational costs to achieve sustainability.

2.10.6 Recruitment and Retention of Top Talent

Attracting and retaining skilled individuals relies not only on financial incentives but also on non-financial factors such as educational opportunities, career development, and work-life balance (Choso & Wetaba, 2019, p. 19). Marsicano, Dias Canedo, Pedrosa, Ramos, and Figueiredo (2024, pp. 720–757) argue that startup universities must strategically combine financial and non-financial offerings to attract their target talent pool.

2.10.7 Intellectual Property and Technology Transfer

Effective management of intellectual property is crucial for promoting technology transfer and commercialization (Crammond, 2024, pp. 389–409). Teixeira and Ferreira (2019, p. 11) describe technology transfer as the process of transforming academic research into market-ready innovations. Audretsch, Colombelli, Grilli, Minola, and Rasmussen (2020, p. 33) highlight the intermediary role of TTOs in supporting interactions between researchers and entrepreneurs.

2.10.8 Collaboration with Industry and Government Entities; Local and Global Competitiveness

Collaborative efforts between universities and external stakeholders, especially government agencies and industry partners, have become essential strategies for promoting start-up principles within academic ecosystems. Fidanoski, Simeonovski, Kaftandzieva, Ranga, Dana, Davidovic, and Sergi (2022, p. 49) highlight the significant shift of universities from traditional knowledge centers to active entrepreneurial hubs. However, Ianioglo (2022, p. 265) warns that these collaborations might unintentionally lead to academic brain drain as talent moves toward industry-focused projects. Feldman, Johnson, Bellefleur, Dowden, and Talukder (2022, p. 99) stress the importance of industry-university partnerships in nurturing local entrepreneurial cultures. These collaborations enable start-ups to benefit from academic

expertise, secure funding, and utilize institutional resources to enhance innovation and competitiveness.

2.10.9 Profitability and Revenue

Start-up success is often assessed using financial indicators such as revenue, profit margins, productivity, return on investment (ROI), and workforce size (Tookham, 2021, p. 35). Although profitability remains the primary goal, growth is typically viewed as a strategic intermediate objective. Pugliese, Bortoluzzi, and Balzano (2022, p. 38) argue that growth itself is a distinct and measurable aspect of start-up performance that warrants independent analysis in entrepreneurial research.

2.10.10 Customer Acquisition and Retention

Given their inherent resource constraints and exposure to market volatility, start-ups rely heavily on their ability to attract and retain customers. This skill serves as a key indicator of long-term viability and growth potential (Avram, & Oluwadamilola, 2023, p. 48). Continuous customer engagement not only affirms the start-up's value proposition but also enhances its adaptability in changing environments.

2.10.11 Market Share and Growth Potential

Market share and growth potential are widely recognized as key metrics for evaluating start-up success. Bhattacharya, Morgan, and Rego (2022, p. 44) highlight their broad application in performance assessments, while Tehseen, Johara, Halbusi, Islam, and Fattah (2023, p. 39) define market share as the portion of the total market captured by a start-up. These metrics indicate both competitive positioning and scalability, offering valuable insights into a venture's strategic direction.

2.10.12 Burn Rate and Runway

Burn rate and runway are essential financial metrics that evaluate a start-up's operational sustainability and strategic flexibility. Niittymaa (2022, p. 41) warns that high burn rates can lead to premature failure, emphasizing the importance of careful financial management. Doğan (2023, p. 70) finds that a longer runway boosts a start-up's resilience, enabling it to handle uncertainties and adapt quickly to changing market conditions. Investors often favor ventures with longer runways because they provide more room for product development and strategic changes.

2.11 Existing Gaps in the Literature

While existing studies have explored the application of start-up principles, this research has primarily been conducted within organizational contexts (Welter, Scrimpshire, Tolonen, & Obrimah, 2021, p. 77; York, York, & Powell, 2020, p. 10), leaving their relevance to educational institutions largely unexamined. In particular, empirical research on implementing lean start-up methodologies in university settings—especially regarding their establishment, governance, and operational management—remains limited (Cassens & Wedel, 2021, p. 11). To date, no studies have explicitly addressed whether strategically integrating business start-up factors within a start-up university context could drive institutional success. Additionally, the potential for combining lean start-up techniques with design thinking to foster innovation has received only minimal scholarly attention (Marion, Cannon, Reid, & McGowan, 2021, p. 10).

This literature review highlights the crucial role of lean start-up principles and agile methodologies in promoting sustainable growth. It also stresses the importance of building entrepreneurial ecosystems that foster adaptability and resilience. Although this chapter has

examined various factors related to business start-ups and outlined the involved variables, there remains a notable gap in the literature regarding their application to start-up universities.

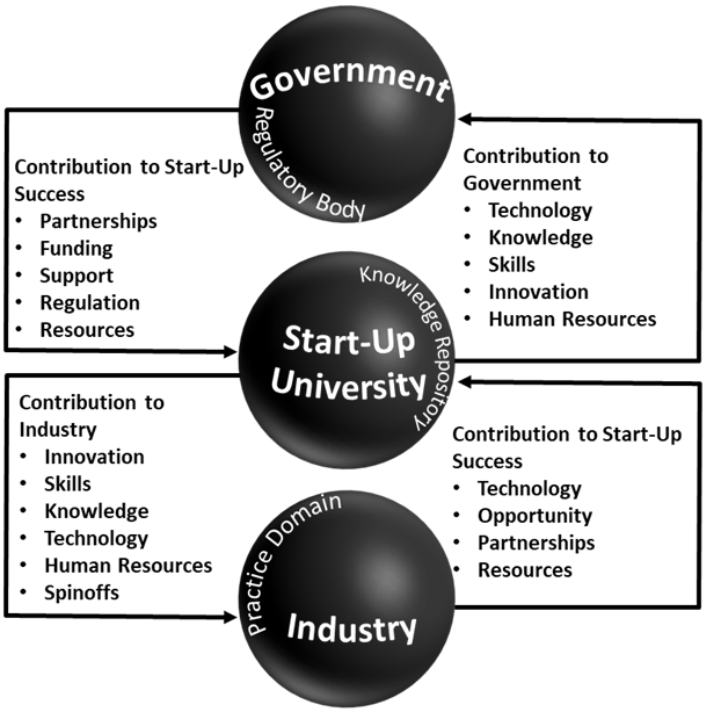
Therefore, this study aims to address this gap by examining how business start-up factors are incorporated into the context of emerging universities. It seeks to offer insights that will guide the strategic development and growth of start-up universities, contributing meaningfully to both academic debates and practical institutional strategies.

3. METHODS AND PROCEDURES

3.1 The Conceptual Framework for the Study

Figure 3.1.

Conceptual framework for success at a start-up university (Author, 2024)



Note: Foundation for theory development.

Analyzing startup factors within the context of building a successful startup university reveals that innovation is a key characteristic of learner institutions. This innovation spreads outward from universities and influences two main areas: government and industry. In these areas, spontaneous and mutually beneficial relationships are likely to form, driven by the ideal conditions and actions encouraged within learner institutions. These conditions foster success factors that appear in two interconnected ways: (1) successful startup universities impact government and industry, and (2) in turn, government and industry support the success of startup universities.

3.2 Research Philosophy

This study adopts a positivist research philosophy, which is viewed as most appropriate for examining the factors that contribute to the development of successful start-up universities in the UAE. Positivism allows researchers to objectively evaluate the social world by emphasizing empirical evidence and observable phenomena instead of subjective judgment. This philosophical approach supports the use of structured methods and measurable data, thereby justifying its application in this research.

3.3 Research Approach

A deductive research approach has been employed to quantitatively examine the relationships between variables, based on established theories and previous research. The sample size of 298 participants is sufficient for various statistical analyses. This approach enables testing of theoretical propositions from the literature and facilitates generalizing the results. Therefore, it is well-suited to address the research questions in this study.

3.4 Research Design

The study employs a descriptive research design, which is appropriate for documenting and detailing specific aspects of the phenomenon being examined. Unlike exploratory or explanatory designs, the descriptive approach aims to capture the characteristics and patterns associated with start-up universities. This choice of design is justified by the study's objective to provide a comprehensive account of relevant factors rather than to uncover new theories or establish causal relationships.

3.5 Data Collection

Secondary data were gathered through an extensive literature review, as described in Chapter 2. This process built the conceptual foundation and confirmed the validity of the

study's framework. Primary data were collected using closed-ended survey questionnaires distributed to target respondents via Google Forms. A pilot study was conducted prior to the main data collection phase, which helped improve the questionnaire and verify its effectiveness for this research.

3.6 Overview of Hypothesis Development

Based on empirical research and the conceptual framework, several key variables have emerged that warrant further investigation. The identified independent variables include funding, government support, partnerships, and innovation, all of which are essential for establishing a start-up university. The dependent variable, success, is typically measured by metrics such as turnover, growth, return on investment, profit, employee count, and productivity.

The main hypothesis of this study proposes that a strong connection exists between government support, technology, innovation, funding, and partnerships (independent variables) and the successful establishment of a start-up university (dependent variable).

3.7 Sampling Technique and Sample Size

3.7.1 Justification for Sampling Technique and Sample Size

A simple random sampling method was employed to select participants for this study. This method was selected to ensure that all respondents had comparable levels of experience and understanding of the phenomenon being studied. After applying the inclusion and exclusion criteria, the resulting population was sufficiently large to support robust quantitative analysis. The sample size was determined using the Cochran formula, which is described in the next section.

The confidence interval is 0.05, and the confidence level is 95 percent.

When plugging in the values:

$$n=\frac{(1.96)2\cdot0.5\cdot0.52}{(0.05)} = \frac{3.8416\cdot0.25}{0.0025} = \frac{0.9604}{0.025} = 384.16$$

Using the above formula and rounding following standard practice, the ideal sample size is 384. The researcher distributed 400 questionnaires to gather data. Due to limits in time and resources, 350 questionnaires were returned, resulting in an 87.5% response rate, which is fairly high. Of these, 298 were fully completed (a 74.5% usable response rate - acceptable) and were used for the final analysis.

3.7.2 Inclusion and Exclusion Variables and Sampling Method

This study defines its inclusion criteria as individuals who are full-time members of the university community. These include students enrolled in regular academic programs, active researchers, and alumni. Conversely, exclusion criteria consist of individuals not directly affiliated with the university on a full-time basis, such as third-party consultants, part-time faculty, and students enrolled in distance education programs.

Given the quantitative nature of this research and the use of closed-ended survey questionnaires, a probability sampling method was selected to ensure objectivity and minimize bias. Specifically, a simple random sampling technique was employed after generating a list of eligible participants based on the inclusion criteria. This approach guarantees that every individual within the target population has an equal chance of being chosen, thereby increasing the validity of the sample, reducing selection bias, and improving the generalizability of the findings. Although it demands more resources, simple random sampling remains one of the most reliable methods for obtaining a representative sample in quantitative research.

3.8 Reliability and Validity

To ensure the robustness of the research instrument, content validity was assessed during both the pilot and main phases of the study. This evaluation focused solely on the key success factors and independent variables identified in the conceptual framework. In this context, reliability refers to the consistency of the questionnaire in capturing the same data when administered under similar conditions. As noted by Aithal and Aithal (2020, p. 1–29), while replicating responses from individuals can pose challenges, assessing the reliability of the instrument is essential for determining its accuracy and dependability in measuring the intended constructs.

3.8.1 Internal consistency – Reliability testing using Cronbach's Alpha

Table 3.1

Summary of six factors measured by a 21-item questionnaire (Author, 2024).

Factors	**No. of Items**	**Mean**	**Cronbach's alpha**
Government Support	4	5.64	0.921
Technology	5	5.50	0.851
Innovation	6	5.72	0.920
Funding	2	5.35	0.813
Partnerships	4	5.70	0.954
Organizational development/support	6	5.00	0.922

Note: The above table summarizes six factors measured by a 21-item questionnaire to assess perceptions in various domains.

The mean scores offer insights into perceptions of each factor, while Cronbach's alpha values verify the reliability of the items within each factor.

3.9 Data Analysis

The primary goal of quantitative research analysis is to measure hypothetical scenarios and examine relationships between variables. This method provides two main advantages. First, it allows researchers to systematically organize and summarize observations using techniques called descriptive statistics. Second, it helps interpret data from a specific sample, enabling researchers to draw informed conclusions about the wider population.

To support the data analysis process, SPSS version 25 was utilized. A descriptive statistical approach was used to examine the relationships among variables. Pearson's correlation analysis was especially effective in evaluating both the direction and strength of associations between variables. The selection of analytical methods, including ANOVA, correlation analysis, and regression analysis, was based on the need to explore relationships, identify group differences, and uncover predictive patterns within the dataset. Each statistical test had a specific purpose: parametric tests, such as t-tests, ANOVA, and regression, were deemed appropriate because of the assumption of normality. Additionally, homogeneity of variance ensured that group comparisons remained valid and reliable.

3.10 Ethical Considerations

Researchers have an ethical duty to inform participants about the main aspects of the study (Kaewkungwal, & Adams, 2019, p. 1–25). In this study, participants were fully informed about the data collection and analysis methods to ensure transparency regarding how their information would be used. To comply with data protection laws, personal identifiers were

removed from the dataset; instead, participants were assigned codes, such as “respondent one,” “respondent two,” and so on. All electronic data were securely stored on a password-protected removable device, which was physically locked away. To further protect participant privacy, the data will be destroyed one year after the completion of the research.

4. RESULTS

4.1 Descriptive Statistics of Success Factors

To summarize results, descriptive statistics are selected because they offer a straightforward way to organize, interpret, and summarize raw data, making it easier to recognize patterns and insights. Raw data can be overwhelming, but descriptive statistics simplify it into meaningful summaries.

Table 4.1

Descriptive Statistics of Success Factors (Author, 2024).

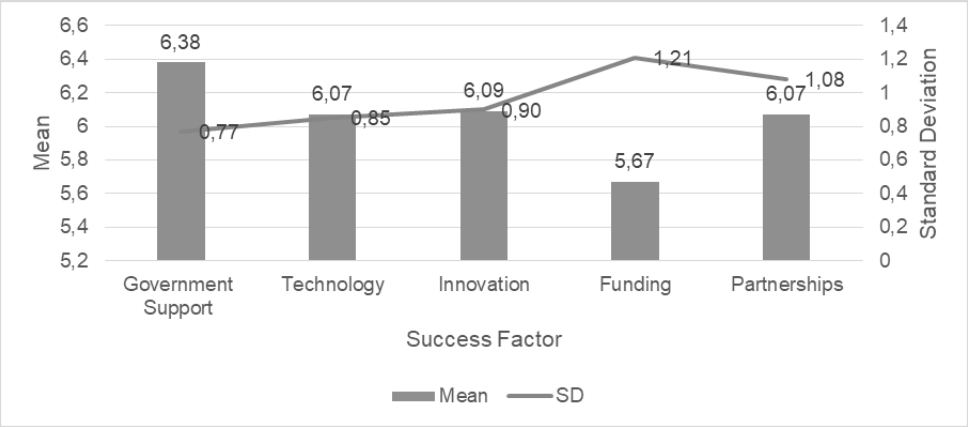
Success Factor	**Minimum**	**Maximum**	**Mean ± S.D.**
Government Support (n = 298)	1.00	7.00	6.38 ± 0.77
Technology (n = 298)	2.60	7.00	6.07 ± 0.85
Innovation (n = 298)	2.00	7.00	6.09 ± 0.90
Funding (n = 298)	1.50	7.00	5.67 ± 1.21
Partnerships (n = 298)	1.75	7.00	6.07 ± 1.08

Table 4.1 lists key success factors, ranked from highest to lowest based on average responses from 298 participants. Government Support is rated the highest, with a mean of 6.38 ± 0.77, showing its high perceived importance and consistency among responses. It is followed by Innovation, with a mean of 6.09 ± 0.90, and Technology and Partnerships, which have similar mean scores (Technology: 6.07 ± 0.85; Partnerships: 6.07 ± 1.08), emphasizing their vital roles in success. Funding has the lowest mean at 5.67 ± 1.21, indicating more response

variation and slightly less emphasis compared to the other factors. This ranking highlights Government Support as the most recognized success factor, while Funding is viewed as less important.

Figure 4.1

Mean Scores and Standard Deviations of Success Factors (Author, 2024).



4.2 Reliability and Validity Analysis

4.3.1 Reliability analysis

Reliability analysis evaluates a measurement tool's consistency, stability, and dependability, ensuring that the results are reproducible over time.

Table 4.2

Reliability Statistics of Success Factor (Author, 2024).

Success Factors	**No of Items**	**Cronbach's Alpha**
Government Support (n = 298)	4	0.772
Technology (n = 298)	5	0.857
Innovation (n = 298)	6	0.884

Funding (n = 298)	2	0.753
Partnerships (n = 298)	4	0.920

Table 4.2 evaluates the reliability of five success factors using Cronbach's Alpha based on data from 298 respondents. Each factor is measured with a specific set of items (questions). The Cronbach's Alpha values indicate the internal consistency of these factors (Jugessur, 2022, p. 5) or reliability (Nha, 2021, p. 88), with higher values representing greater reliability. Overall, the reliability analysis shows that all five factors demonstrate acceptable to excellent internal consistency, supporting their validity as success factors in the study.

4.3 Test of Normality

Two tests for normality were used to evaluate if the datasets follow a normal (Gaussian) distribution.

Smirnov Test: This test assesses whether each success factor follows a normal distribution and indicates whether each success factor significantly deviates from normality.

Shapiro-Wilk Test: This test further evaluates the normality of the success factors and shows that each factor significantly deviates from normal distribution.

The Kolmogorov-Smirnov and Shapiro-Wilk tests show that none of the success factors (Government Support, Technology, Innovation, Funding, and Partnerships) follow a normal distribution.

4.4 Correlation Analysis

The analysis reveals that all identified success factors exhibit statistically significant correlations, underscoring their interconnected nature. Among these, Partnerships and Innovation stand out as especially central, demonstrating strong links with other variables. This suggests they may be key drivers in supporting the success and growth of initiatives within the university setting. Consequently, the proposed theory - that there is a significant relationship between Government Support, Technology, Innovation, Funding, and Partnerships - is supported by the data and confirmed.

5. CONCLUSIONS

The researcher conducted a comprehensive investigation into the complex relationships among various start-up factors, which enabled accurate predictions and provided a detailed understanding of the elements that improve the reliability and importance of the study. By calculating and analyzing descriptive statistics—including variable distributions, measures of central tendency, and frequency analysis—the researcher was able to draw well-supported conclusions that validate the study's findings.

The findings of this research indicate that the most influential principles for launching a successful university include Government Support, Funding, Technology, Innovation, and Partnerships. These results agree with the study by Wasnik and Jain (2023, p. 88), which emphasized the critical importance of Government Support in developing and strengthening start-up ecosystems. Such support is essential for helping start-ups overcome initial obstacles and pursue innovative projects.

From a theoretical perspective, a start-up university has the potential to make a significant contribution to the knowledge economy by producing highly skilled graduates and promoting research that addresses practical, real-world issues. It can serve as a central hub within the entrepreneurial ecosystem, fostering collaboration among students, researchers, and industry stakeholders to drive innovation and societal advancement.

However, the scope of these findings is limited to the specific context of start-up universities in the UAE. Because higher education systems vary across different regions, comparative studies in different geographic and socio-economic settings are necessary to validate and expand the relevance of these insights.

Looking ahead, this research offers valuable guidance for policymakers, university administrators, and educators seeking to align higher education strategies with the rapidly evolving technological and social landscape. It, thus, supports the long-term resilience, relevance, and adaptability of start-up universities worldwide.

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