Startupreneur Business Digital (SABDA Journal)
Vol. 3, No. 2, October 2024, pp.98−106
E-ISSN: 2962-0260 | P-ISSN: 2962-0279, DOI:10.33050

The Role of Innovation in the Success of Modern Startupreneurs

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Article Info

Article history:

Submission June 27, 2024
Revised August 12, 2024
Accepted September 10, 2024
Published October 02, 2024

Keywords:

Startup Innovation
Team Creativity
Start-up Performance
External Environment

ABSTRACT

The study examines Innovation Capability, Team Creativity, External Environment, and Start-up Performance as key research factors, the study attempts to investigate the impact of innovation in the success of contemporary businesses. Innovation Capability, Team Creativity, External Environment, and Start-up Performance are the research factors that were examined. (Start-up Function). Through surveys of start-ups in a variety of industry sectors, the data was gathered. The analysis's findings demonstrate that a start-up's performance is significantly impacted by its capacity for innovation. It has also been discovered that team creativity is crucial for enhancing innovation and startup performance. The creativity driving innovation is significantly enhanced by frequent brainstorming sessions and diverse team backgrounds, the diversity of backgrounds within the team, and the degree of team collaboration. Furthermore, governmental regulations, technological accessibility, and cooperative networks with academic institutions are examples of the external environment that fosters creativity and improves start-up performance.The study's conclusions highlight the importance of innovation in the success of contemporary startupreneurs. Supporting innovation and enhancing business performance also heavily depends on the inventiveness of the team and a favorable external environment. Therefore, strategic measures to success in contemporary entrepreneurship include developing an ecosystem that fosters invention, managing team dynamics skillfully, and establishing an organizational culture that values creativity.

DOI: https://doi.org/10.330550/sabda.v3i2.602

1. INTRODUCTION

In the increasingly sophisticated digital age, innovation and economic growth are greatly aided by start-ups and start-up founders [1]. This phenomenon not only brings innovative goods and services to market, but it also generates new jobs. Modern startups face challenges such as intense competition and rapid technological advances [2]. Consequently, one of the main factors influencing their performance is their capacity for innovation.

The core of every successful startup is innovation. The capacity to generate and execute novel concepts enables entrepreneurs to set themselves apart from rivals and provide clients with additional benefits [3]. Innovation capabilities in this sense encompass not just the creation of new goods and services but also process enhancements, business model development, and successful marketing strategies [4]. In a dynamic market, startups that can strategically leverage innovation typically have a higher chance of surviving and growing.

Within the startup ecosystem, team creativity is just as crucial as individual innovative ability. Lucrative businesses frequently have a broad and imaginative crew behind them that can come up with novel concepts and cutting-edge fixes [5]. Effective teamwork has the potential to accelerate the process of invention and enhance the caliber of the results generated. Therefore, if a startupreneur wants to succeed, they must prioritize developing an environment that fosters creativity and teamwork [6].

But creativity doesn't just happen in empty spaces.External factors such as industry networking, government policies, and technology availability also influence a startup's capacity for innovation. The external environment can help startups by offering more resources, opening up new markets, and promoting the use of cutting-edge technologies. For startupreneurs to achieve long-term success, a deep grasp of innovation's function both internally and externally is therefore necessary [7].

2. LITERATURE REVIEW

2.1. Concept and Definition of Innovation

Innovation, which is defined as the act of introducing new ideas, processes, or products that significantly alter an industry or organization, is a crucial term in the fields of business and technology. Within the realm of business, there exist multiple classifications of innovation, such as product innovation, process innovation, and business model innovation [8]. The creation of novel products or services that address unmet market demands or provide superior added value above current offerings is referred to as "product innovation." Conversely, process innovation pertains to enhancing an organization's operational efficiency, which may be achieved by refining operational methods or using new technologies [9]. Changes in an organization's processes for creating, delivering, and capturing value are referred to as business model innovation. These processes may involve new approaches to pricing, creative distribution plans, or unconventional financing sources[10].

Numerous ideas have been created in an effort to comprehend and clarify the mechanics underlying innovation. Everett Rogers' Diffusion Theory of Innovation, which explains how, why, and how quickly new ideas spread across cultures, is one of the most well-known theories. This theory states that the S curve represents the typical acceptance of innovation, with a small number of "innovators" leading the way, followed by "early adopters," "earning majority," "late majority," and lastly "laggards." The Triple Helix Model, which highlights cooperation between academic institutions, business, and government as a key innovation generator, is another pertinent paradigm. This model demonstrates how the three players' dynamic interaction can foster an atmosphere that is supportive of innovation. In addition, the Blue Ocean Strategy is a crucial idea that explains how businesses can open up untapped markets by providing distinctive value that sets them apart from rivals and helps them avoid direct competition in a crowded and cutthroat "red sea."

2.2. Innovation Theories in Management

Understanding how innovation may be created, implemented, and embraced within an organization is made possible in large part by the study of innovation theories in management. Everett Rogers' Diffusion Theory of Innovation is one of the most well-known theories. This theory describes how innovation is adopted in society, which typically follows an S-curve pattern: new ideas are first adopted by a small number of "innovators," who are then followed by groups of "early adopters," "early majority," "late majority," and lastly "laggards." According to this idea, acceptance of innovation is influenced by a number of characteristics, such as relative superiority, compatibility with current values, complexity, likelihood, and observability. Managers can create more successful strategies to bring innovation and hasten its acceptance in a market or business by having a better understanding of these dynamics [11].

Furthermore, Etzkowitz and Leydesdorff's Triple Helix Model provides an alternative framework for comprehending innovation. By integrating academic research, industrial applications, and policy backing, collaboration between these three parts can, according to the Triple Helix Model, create an environment that is favorable to innovation [12]. Academic institutions serve as repositories of information and fundamental research, industry applies this research to develop novel goods and services, and government policies and incentives stimulate innovation [13]. These three actors' dynamic interplay has the potential to create a robust and long-lasting innovation ecosystem. The model also highlights how crucial cross-sectoral cooperation and supporting policies are to the development of significant and far-reaching breakthroughs [14].

2.3. The Role of Innovation in Entrepreneurship

Innovation plays a central role in entrepreneurship, becoming one of the main drivers that distinguishes between successful and unsuccessful. Entrepreneurship often involves the introduction of new products, services, or processes that meet unmet market needs or create significant added value [15]. According to Schumpeter, innovation is at the heart of ”creative entrepreneurship,” in which the entrepreneur creates economic change through”creative destruction,” a process in which new innovations replace existing technologies and products, driving economic growth and industrial progress. Case studies of various successful startups show that innovation can provide a sustained competitive advantage, enabling companies to offer unique solutions that are not easily replicated by competitors [16].

Furthermore, entrepreneurship literature highlights that innovation is not only limited to the development of new products, but also includes innovation in business models, marketing strategies, and operational processes. For example, innovative business models like freemium, subscription-based, or business platform models have changed the way companies interact with customers and generate revenue [17]. Innovations in marketing, such as the use of big data analytics and artificial intelligence to personalize customer experiences, also play an important role in the success of startupreneurs. Research shows that companies that focus on innovation tend to be more adaptive and responsive to market changes, which enhances their ability to survive and grow in a dynamic and often uncertain business environment. Thus, innovation is a crucial element in an effective entrepreneurial strategy, enabling entrepreneurs to create new value and maintain relevance in an ever-expanding market [18].

2.4. Innovation Ability (Innovation Capability)

Innovation is the ability of an organization to develop new ideas and implement them effectively to produce superior products, services, or processes. Research shows that innovation is the result of a combination of internal factors such as organizational culture, human resources, and management structures that support creativity and experimentation. For example, companies with a culture that encourages risk-taking and learning from failure tend to have higher innovation capabilities [19]. Furthermore, literature highlights the importance of integrated processes and systems to support innovation. Models such as the Capability Maturity Model (CMM) and various innovation management frameworks offer guidance on how organizations can build and enhance their innovation capabilities. For example, the capability maturity model integration (CMMI) helps organizations in designing and implementing consistent and efficient processes for product development and project management. In addition, the adoption of the latest technologies and investment in research and development (R&D) are also important elements in strengthening innovation capabilities. Overall, the ability to innovate is not just about creative ideas, but also about the ability of organizations to manage and implement such innovations effectively and sustainably [20].

2.5. Team Creativity and Team Work Dynamics

Team creativity is one of the main pillars of the innovation process, because a creative team is capable of generating new ideas that potentially transform the market and create added value. Research shows that diversity in a team, both in background, expertise, and perspective, can boost creativity by encouraging more innovative perspectives and solutions. Besides, a supportive working environment, including inspiring leadership and an organizational culture that values creativity, is also vital to facilitating the flow of creative ideas. For example, methods like brainstorming, ideation sessions, and creative thinking techniques like Design Thinking can be used to stimulate creativity in teams [21].

Teamwork dynamics also play an important role in optimizing creativity and innovation. Teams that have effective communication, trust, and strong collaboration tend to be more productive and innovative. Models such as Tuckman’s Stages of Group Development show that teams that go through the forming, storming, norming, and optimum performance stages tend to be more mature and effective in producing creative outputs [22]. In addition, constructive conflict management and inclusive decision-making can also enhance teamwork dynamics. Thus, creating a conducive working environment and supporting positive team dynamics is key to maximizing the potential for creativity and innovation within an organization [23].

2.6. External Environment and Innovation Ecosystem

The external environment, including government regulation, economic conditions, and market trends, have a significant impact on an organization’s innovation capabilities [24]. Proactive governments in supporting innovation, for example through tax incentives policies for R&D, funding for startups, and provision of

technological infrastructure, can create an ecosystem conducive to innovation growth. In addition, partnerships with universities and research institutions can enrich the resources of knowledge and technology needed for innovation [25]. A strong innovation ecosystem also involves cross-sectoral collaboration between companies, academic institutions, and government entities, enabling a smoother flow of ideas, skills, and resources [26].

In addition to policy support, access to networks and innovation communities is also crucial. Industry clusters, incubators, and startup accelerators provide a platform for entrepreneurs and innovators to collaborate, share knowledge, and get guidance. Research shows that companies that are actively engaged in innovation networks tend to be more successful in developing and commercializing their innovations [27]. A dynamic and supportive external environment not only helps in creating new opportunities, but also provides the necessary support to address the challenges and risks inherent in the innovation process. Thus, a holistic and integrated innovation ecosystem plays an important role in facilitating and accelerating the pace of innovation within organizations

3. METHODS

The study aims to explore the role of innovation in the success of modern start-ups by using a quantitative approach through Partial Least Squares Structural Equation Modeling (PLS-SEM). PLS -SEM was chosen for its ability to deal with complex models and test relationships between latent variables that are difficult to measure directly. The study will identify and measure four major variables: Innovation Ability, Team Creativity, External Environment, and Startup Performance. The data will be collected through surveys distributed to startups in various industry sectors, focusing on those who have successfully launched innovative products or services in the last three years [28].

Table 1. Research Variables Related to Startup Success

Variable	Indicator Code	Indicator
Innovation Capability	IC1	The number of new products or services introduced in a year
	IC2	New processes and technologies applied
	IC3	The level of research and development (R&D) carried out
Team Creativity	TC1	Frequency of brainstorming and ideation sessions
	TC2	Diversity of background and team expertise
	TC3	Level of collaboration and communication within the team
External Environment	EE1	Government support and innovation-related policies
	EE2	Availability and access to the latest technology
	EE3	Networking and collaboration with other research and industry institutions
Start-up Performance	SP1	Income growth and market share
	SP2	Customer Satisfaction Level
	SP3	Sustainability and financial stability

The research instrument used in Table 1, is a structured questionnaire developed based on literature reviews and previous research. The questionnaire consists of several sections each measuring the variables studied. The first part of the questionnaire will collect demographic data of respondents, such as age, gender, and business experience. The second part will measure the ability to innovate with indicators such as the number of new products launched and the level of investment in research and development (R&D). The third part will assess the creativity of teams through indicators like the frequency of brainstorming and the diversity

of team members. The fourth part will evaluate the external environment by considering government support and access to technology. The final section will measure Startup performance with indicators such as revenue growth, customer satisfaction, and financial stability [29].

The data obtained from the questionnaire will be analyzed using SmartPLS software to test structural models and relationships between variables. The PLS-SEM analysis will enable researchers to evaluate the validity and reliability of the construction, as well as identify the influence path between innovation and the success of the startupreneur. The results of this analysis are expected to provide an in-depth insight into how innovation contributes to the success of modern startupreneurs, as well as the key factors that mediate the relationship [30].

3.1. Innovation Capability

Innovation Capability refers to the ability of a company, especially a startup, to develop and implement innovations in the form of new products, services, or processes. This capability is important because it reflects how well a company can adapt to changes in the market, technology, and consumer needs.

- ***IC1***: Measures the number of new products or services that have been introduced by a startup in the last year.
- ***IC2***: Assessing the application of new processes and technologies in startup operations.
- ***IC3***: Evaluates the level of research and development (R&D) activities carried out by the startup.

With strong Innovation Capability, startups have a greater chance of surviving and growing in a competitive industry. Innovation allows companies to create competitive advantages that differentiate them from their competitors, whether in terms of products, services, or business models. When startups are able to continuously introduce new products that meet or even exceed consumer expectations, they can not only retain their existing customer base but also attract new customers.

3.2. Team Creativity

Team Creativity refers to the collective ability of a group to generate novel and useful ideas, solutions, or products through collaboration and interaction. In the context of a startup or any organization, team creativity plays a vital role in fostering innovation and driving the company's growth. It arises when team members from diverse backgrounds and skill sets contribute unique perspectives, challenge assumptions, and collaboratively develop creative solutions to problems.

- ***TC1***: Assess how often a team holds brainstorming and ideation sessions to develop new ideas.
- ***TC2***: Measures the diversity of background and expertise in the team, which can drive new perspectives.
- ***TC3***: Assess the level of collaboration and communication that occurs within the team to generate innovative ideas.

Team creativity is essential for startups and organizations aiming to stay competitive, adapt to changing market conditions, and offer unique solutions to their customers. It enables the company to be more agile, innovative, and better equipped to tackle complex challenges. Ultimately, fostering team creativity contributes to a culture of continuous improvement and sustained innovation within the organization.

3.3. External Environment

External Environment refers to the factors and conditions outside of an organization that can influence its operations, decisions, and overall success. Unlike internal factors, which the company can directly control, the external environment includes elements that are beyond the organization's immediate influence but still have a significant impact on its business activities. Understanding and adapting to the external environment is crucial for organizations to remain competitive and achieve long-term sustainability.

- ***EE1***: Assessing government support through innovation-related policies and incentives.
- ***EE2***: Evaluate the availability and access of startups to the latest technologies relevant to their business.
- ***EE3***: Assess the quality of the network and cooperation with other research and industry institutions that can support innovation.

The external environment encompasses a broad range of factors that can affect an organization's strategy and performance. By continuously monitoring and adapting to changes in the external environment, businesses can mitigate risks, seize opportunities, and maintain a competitive edge.

3.4. Start-up Performance

Start-up Performance refers to the overall success and effectiveness of a startup in achieving its goals and objectives. It encompasses various metrics and indicators that help assess how well a startup is performing in areas such as growth, profitability, customer acquisition, and operational efficiency. Start-up performance is a critical factor in determining the long-term sustainability and viability of the business. Successful performance in the early stages is essential for securing investment, building a customer base, and scaling operations.

- ***SP1***: Measures the growth of revenue and market share as an indicator of startup financial success.
- ***SP2***: Evaluates the level of customer satisfaction with the product or service offered by the startup.
- ***SP3***: Evaluates the sustainability and financial stability of the startup as a long-term indicator for business performance.

Start-up Performance is a multidimensional concept that reflects how well a startup is progressing towards its business goals. It includes financial metrics like revenue and profitability, customer metrics like acquisition and retention, and operational factors such as efficiency, innovation, and scalability. A startup that performs well in these areas is more likely to succeed, attract investors, and sustain long-term growth.

4. RESULT AND DISCUSSION

In this study, analysis using SmartPLS showed that innovation capacity has a significant impact on start-up performance. (Start-up Performance). These results are consistent with the theory that innovation is a key factor in creating a competitive advantage. Indicators such as the number of new products introduced (IC1), the application of new processes and technologies (IC2), and the level of research and development activity (IC3) all show a positive link to growth in revenue and customer satisfaction. It shows that startupreneurs who are active in innovation are not only able to meet the needs of emerging markets, but are also able to attract and retain customers through superior offers.

Team creativity has also been found to have a significant positive impact on innovation and start-up performance. Indicators such as the frequency of brainstorming sessions (TC1), diversity of background and team expertise (TC2), and the level of team collaboration (TC3) significantly enhance the ability to innovate. More creative and collaborative teams tend to generate more innovative and implementing new ideas, which in turn improve start-up performance. These results underscore the importance of building a work culture that supports creativity and collaboration, as well as managing team dynamics effectively to drive sustainable innovation.

Table 2. Indicators of Team Creativity and Their Impact on Innovation

Relationship Between Variables	Path Coefficient	T-Value	P-Value	Conclusion
Innovation Capability → Start-up Performance	0.482	5.789	<0.001	Significant
Team Creativity → Innovation Ability	0.538	6.243	<0.001	Significant
Team Creativity → Start-up Performance	0.321	4.512	<0.001	Significant
External Environment → Innovation Ability	0.416	5.112	<0.001	Significant
External Environment → Start-up Performance	0.287	3.897	<0.001	Significant

The Table 2, illustrates the relationships between several variables, particularly focusing on team creativity, innovation capability, and the external environment, and how they influence start-up performance and innovation ability. The first relationship highlights that innovation capability has a strong positive effect on start-up performance, with a path coefficient of 0.482, a T-value of 5.789, and a P-value of less than 0.001, indicating high significance. This suggests that start-ups with greater innovation capability are more likely to perform well.

The second relationship shows that team creativity significantly influences innovation ability, with a path coefficient of 0.538, a T-value of 6.243, and a P-value of less than 0.001. This implies that a creative team

can substantially enhance a start-up's capacity to innovate. Additionally, team creativity also has a positive impact on start-up performance, although to a lesser extent, with a path coefficient of 0.321, a T-value of 4.512, and a P-value of less than 0.001, confirming the significance of the relationship.

The table also highlights the role of the external environment in influencing both innovation ability and start-up performance. The external environment positively affects innovation ability with a path coefficient of 0.416, a T-value of 5.112, and a P-value of less than 0.001. It also has a positive but slightly weaker impact on start-up performance, as indicated by a path coefficient of 0.287, a T-value of 3.897, and a P-value of less than 0.001. Overall, the table demonstrates that team creativity, innovation capability, and the external environment are all significant factors contributing to both innovation and performance in start-ups.

Table 3. Summarize the impact of variables

Variables	Impact on Innovation	Impact on Start-up
Innovation Capability	Significant positive impact on ability to innovate	Highly positive, contributing to revenue and growth
Team Creativity	Strong influence on generating new innovative solutions	Significant but lower influence compared to innovation
External Environment	Moderate positive influence, adapting to external changes	Moderate positive influence, driven by adaptability

Table 3, offers a detailed analysis of the overall impact of Innovation Capability, Team Creativity, and the External Environment on both Innovation Ability and Start-up Performance. It shows that Innovation Capability plays a crucial role in fostering a startup's ability to innovate by enabling the introduction of new products, the implementation of advanced processes, and continuous research and development efforts. This, in turn, leads to enhanced revenue growth and customer satisfaction, making Innovation Capability a highly significant driver of Start-up Performance.

Furthermore, Team Creativity is found to have a strong influence on Innovation Ability by promoting an environment where brainstorming, collaboration, and the exchange of diverse ideas can thrive. Creative teams are instrumental in generating new and innovative solutions that boost a startup's capacity to adapt and evolve. While Team Creativity also positively impacts Start-up Performance, its influence is somewhat less pronounced in comparison to its effect on Innovation Ability, highlighting the importance of other operational elements in determining overall performance.

The External Environment, although not directly controllable by startups, also contributes positively to both Innovation Ability and Start-up Performance. The ability of a startup to adapt to external factors such as market conditions, regulatory changes, and technological advancements allows it to remain competitive, drive innovation, and maintain sustainable performance. Startups that effectively navigate their external environment can better capitalize on emerging opportunities and overcome challenges.

5. CONCLUSION

This study demonstrates that innovation is essential to current startupreneurs success. The creation of new goods and services, the use of cutting-edge procedures and technology, and investments in R&D are examples of innovation capabilities that have a big impact on startup performance. High innovation capability startups typically exhibit superior financial stability, faster revenue growth, and higher customer satisfaction. It demonstrates that innovation is about more than simply original ideas—it's also about putting those ideas into practice in a way that adds substantial value.

Innovation and start-up performance have also been shown to be significantly impacted by team inventiveness. Teams with higher levels of creativity and collaboration can produce novel and workable ideas, which in turn improve the company's capacity for innovation. Enhancing team creativity is influenced by various factors, including the frequency of brainstorming sessions, the diversity of backgrounds and experience within the team, and the degree of team collaboration. Thus, fostering an environment at work that values innovation and teamwork is essential to fostering sustained innovation in startups.

The external environment is just as crucial in fostering innovation and startup success as internal elements are. Start-up innovation skills are positively impacted by government support through innovation

policies, access to cutting-edge technology, and collaborations with other academic and industry organizations. The commercial performance of startupreneurs functioning within supportive ecosystems is enhanced because they have more access to the resources required for innovation.The findings suggest that entrepreneurs should prioritize developing innovation capabilities as a core strategy by fostering team creativity, leveraging external networks, and utilizing supportive policies to drive sustainable growth. Policymakers, in turn, can support startups by creating innovation-friendly ecosystems through regulations, funding opportunities, and partnerships with academic institutions. The majority of the studies highlight how crucial innovation, team creativity, and outside assistance are to modern start-ups' success.

6. DECLARATIONS

6.1. Author Contributions

Conceptualization: AL; Methodology: AL; Software: NL; Validation: NL and AL; Formal Analysis: AL and NL; Investigation: NL; Resources: NL; Data Curation: AL; Writing Original Draft Preparation: AL and AL; Writing Review and Editing: NL and AL; Visualization: NL; All authors, AL, and NL, have read and agreed to the published version of the manuscript.

6.2. Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

6.3. Declaration of Conflicting Interest

The authors declare that they have no conflicts of interest, known competing financial interests, or personal relationships that could have influenced the work reported in this paper.

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