

Network Orientation and Technological Transformation Shaping Startup Models and Performance

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Abstract. The role of network orientation and technological transformation is increasingly crucial in the dynamic landscape of the startup ecosystem. The aim of this research is to examine the impact of these factors on startup performance and business models. Network orientation involves efforts to carry out strategic alignment with external parties, build collaboration, and utilize shared resources. Technological transformation is the process of applying innovative technology to improve operational efficiency, product offerings and market differentiation. The research was conducted at Anwar Futuhiyyah Islamic Boarding School, which manages BUMP Anfut. The research sample involved students from Anfut who were involved in business units belonging to the Islamic boarding school. Data processing uses Partial Least Squares Structural Equation Modeling (PLS-SEM). Results show that Business Model Innovation improves Startup Performance and that Network Orientation and Technological Transformation contribute to it. These results demonstrate the relevance of an innovative company concept, strong networks, and technology developments for startup performance and business success.
Keywords: Network Orientation, Technological Transformation, Business Models and Performance

1 Introduction

In recent decades, the startup ecosystem has emerged as a driving force for innovation and economic growth worldwide. Startups are known for their dynamic and adaptive nature, capable of introducing novel solutions through technology and innovative business models. However, their success hinges not only on internal innovation but also on their ability to foster relationships and adapt to rapid technological advancements. A primary challenge for startups is navigating the complexities of keeping pace with technological developments and maintaining relevance in a highly competitive market [1]. Strategies focused on strengthening network and technological capabilities are crucial for enhancing competitiveness [2]. Startups must devise strategies that prioritize technological

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advancements, external relationships, and strategic collaborations to address these challenges effectively.

Network orientation is a critical factor in startup success. By strategically aligning with external stakeholders, fostering effective collaboration, and leveraging collective resources, startups can enhance their innovation capabilities and compete in dynamic markets. Network orientation empowers startups to access the knowledge, skills, and resources necessary for continuous innovation, thereby strengthening their position in the business ecosystem. Research indicates that startups with a strong network orientation are better equipped to overcome market challenges and adapt to changes in the external environment [3]. Moreover, robust relationships with business partners open up new avenues for collaboration and product development [4]. Startups must concentrate on internal innovation and keep abreast of rapid technological transformation to achieve long-term success.

On the other hand, technological transformation is a key element that enables startups to increase operational efficiency, enrich product offerings, and differentiate themselves in the market. The application of innovative technologies such as business process digitization, adoption of new technologies, and integration of sophisticated systems are the primary drivers of achieving competitive advantage. Technological transformation not only enhances a startup's capacity for efficient operations but also facilitates more effective responses to market needs. Recent research demonstrates that startups successfully implementing digital technology experience significant increases in productivity and market performance [5]. Furthermore, startups that innovate in technology often possess an advantage in terms of innovation speed and adaptation to market changes [5]. AI aids digital transformation and continuous innovation by automating business processes, increasing operational efficiency, and creating novel, more advanced products and services that cater to evolving market needs.

The Anwar Futuhiyyah Islamic boarding school environment, which manages BUMP Anfut, presents an intriguing case study for exploring how network orientation and technological transformation can influence the business models and performance of startups operating within this unique context. Involving Anfut students engaged in Islamic boarding school business units, this research provides valuable insights into the dynamics of startups within the traditional educational institution setting. This study highlights the challenges and opportunities faced by startups operating in the Islamic boarding school environment, including how to leverage network orientation and technology to improve business performance [6]. The integration of traditional values and modern technology is key to creating a sustainable business model in the Islamic boarding school environment [7].

A startup business model reflects the way a company creates, delivers, and captures value. Business model innovation refers to the development of new business models or significant improvements to existing ones to achieve competitive advantage. Startup performance, on the other hand, is measured based on indicators such as revenue growth, market share, operational efficiency, and customer satisfaction. Startups that are able to adapt their business models to market changes tend to be more successful in the long term [5]. Demonstrating that sustainable business model innovation plays a crucial role in maintaining competitiveness in an ever-changing market [7].

Successful startups often possess flexible and adaptive business models, enabling them to respond swiftly to market changes. This adaptability is a key to success in navigating market dynamics that are often unpredictable and rapidly evolving [5]. Additionally, startup performance is influenced by their ability to implement new technologies and establish strong relationships with external stakeholders, granting them access to resources, knowledge, and networks that support innovation [4]. Effective collaboration with external stakeholders also enhances a startup's ability to undertake relevant and timely innovation, ultimately strengthening its position in the market [4]. This study aims to identify and analyze how network orientation and technological transformation can drive business model innovation

and improve startup performance, focusing on how these two elements can synergistically create sustainable competitive advantages [6].

The Anwar Futuhiyyah Islamic boarding school environment, which manages BUMPA Anfut, provides a unique context for understanding startup dynamics. This research is one of the few studies that investigate the influence of network orientation and technological transformation on startups within the Islamic boarding school education environment. This study contributes significantly by providing in-depth insights into how education and the values instilled in Islamic boarding schools influence the thinking patterns and business performance of students. Involving Islamic boarding school students as research subjects allows researchers to explore the complex interactions between religious education and modern business practices, which can potentially lead to innovative and adaptive business models [8]. By focusing on effective network orientation and innovative technology adaptation, this research not only enriches the literature on startup ecosystems but also provides relevant practical implications for business development in Islamic boarding school education environments [8]. The research results demonstrate that the integration between network orientation and technological transformation has the potential to provide significant competitive advantages for startups, especially in unique contexts such as Islamic boarding schools [6].

The objective of this research is to investigate and analyze the impact of network orientation and technological transformation on business models and the performance of startups operating within the Anwar Futuhiyyah Islamic Boarding School. Additionally, this research aims to provide practical recommendations for Islamic boarding school managers and other stakeholders in supporting startup development in the Islamic boarding school education environment. It is hoped that this research will elucidate how network orientation and technological transformation can contribute to the formation of more creative and sustainable business models within the Islamic boarding school environment. This will contribute to local economic growth and enhance the quality of santri education.

2 Literature Review

2.1 Network Orientation

Network orientation, which refers to a company's ability to build and utilize external relationships with various stakeholders, is a crucial component in startup performance and success. Network orientation empowers startups to access valuable resources, information, and technology that are often difficult to obtain independently. Startups with a strong network orientation exhibit superior innovation performance and greater access to new markets and technologies [3]. Moreover, network orientation assists startups in overcoming market uncertainty and improving business resilience, resulting in more stable performance outcomes [3]. Network orientation has been identified as an important factor that supports startup success. Through strategic alignment with external stakeholders, effective collaboration, and leveraging collective resources, startups can enhance their ability to innovate and compete in dynamic markets. Network orientation allows startups to access the knowledge, skills and resources necessary for continuous innovation, which in turn strengthens their position in the business ecosystem. Research shows that startups with a strong network orientation are better able to overcome market challenges and adapt to changes in the external environment [3]. In addition, strong relationships with business partners enable new opportunities for collaboration and product development [4].

2.2 Technology Transformation

Technological transformation is a key element that enables startups to increase operational efficiency, enrich product offerings, and differentiate themselves in the market. The application of innovative technologies such as business process digitization, adoption of new technologies, and integration of sophisticated systems are the primary drivers of achieving competitive advantage. Technological transformation not only enhances a startup's capacity for efficient operations but also facilitates more effective responses to market needs. Recent research demonstrates that startups successfully implementing digital technology experience significant increases in productivity and market performance [7]. Furthermore, startups that innovate in technology often possess an advantage in terms of innovation speed and adaptation to market changes [8]. AI aids digital transformation and continuous innovation by automating business processes, increasing operational efficiency, and creating novel, more advanced products and services that cater to evolving market needs. Startups can also enhance their competitiveness in the global market by leveraging technological transformation, which enables them to create business models that are more flexible and responsive to external changes [9]. Additionally, adopting the right technology can help startups optimize their marketing strategies through better data analytics and more personalized customer interactions, positively impacting business growth [5].

2.3 Business Models and Startup Performance

Successful startups often possess flexible and adaptive business models, enabling them to respond swiftly to market changes. This adaptability is a key to success in navigating market dynamics that are often unpredictable and rapidly evolving [9]. Additionally, startup performance is influenced by their ability to implement new technologies and establish strong relationships with external stakeholders, granting them access to resources, knowledge, and networks that support innovation [10]. Effective collaboration with external stakeholders also enhances startups' ability to undertake relevant and timely innovation, ultimately strengthening their position in the market [11]. This study aims to identify and analyze how network orientation and technological transformation can drive business model innovation and improve startup performance, focusing on how these two elements can synergistically create sustainable competitive advantages [12]. Recent studies demonstrate that innovation in business models can enhance startup performance [13], and adapting the right business model significantly contributes to operational and financial results [14].

2.4 Framework of Thinking

To visualize the relationships between these key factors and their impact on startup success, we present the Figure 1

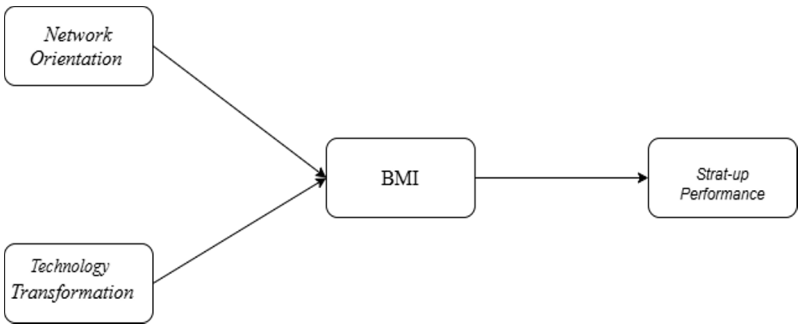


Fig. 1. Framework of Thinking

3 Hypotheses

3.1 The Effect of Network Orientation on Business Model Innovation

A strong network orientation plays a pivotal role in startups' success by empowering them to identify new opportunities, access important external resources, and increase collaboration with various stakeholders [4]. By effectively connecting with investors, strategic partners, and the business community, startups can expand their capacity in terms of capital, technology, and market knowledge. This not only drives the innovation process in developing or improving business models but also increases their competitiveness and adaptability in a competitive market [4]. Effective network onboarding can assist startups in adapting to unexpected changes in the business environment, enabling them to adjust strategies swiftly and remain relevant in the market [14]. Additionally, startups can mitigate risks associated with market uncertainty and enhance their ability to innovate sustainably [14]. Therefore, the research hypothesis is as follows:

H1: Network orientation has a significant influence on innovation in startup business models within the Anwar Futuhiyyah Islamic Boarding School environment.

3.2 The Effect of Technological Transformation on Business Model Innovation

Technological transformation, including the adoption of new technologies and digitization of processes, plays a crucial role in reshaping the operational landscape of startups. By implementing the latest technology, startups can increase efficiency in their operational processes, reduce costs, and accelerate response times to market demand [5]. Moreover, technology enables startups to develop more innovative products or services, integrate new solutions, and capture emerging market opportunities more rapidly [4]. This transformation not only enhances startup competitiveness in meeting increasingly high consumer expectations but also opens up new new opportunities to design and adapt business models that are more effective and adaptive to changing market conditions and ever-changing technology [14]. So, the research hypothesis is as follows:

3.3 The Effect of Business Model Innovation on Start-Up Performance

Innovations in business models not only enable startups to strengthen their position in market competition, but also enhance their ability to respond quickly to changing market demand dynamics [8]. By adopting innovative business models, startups can offer solutions that better suit customer needs, generate significant differentiation from competitors, and open new opportunities for broader market penetration [14]. The impact of this innovation is not only limited to revenue growth and market share expansion, but is also visible in improving overall operational efficiency, which supports the viability and scalability of startup businesses in a competitive environment [7]. So, the hypothesis proposed in this research is:

H3: Innovation in business models has a significant effect on startup performance in the Anwar Futuhiyyah Islamic Boarding School environment.

4 Methods

4.1 Research Design

This research uses a quantitative approach with a cross-sectional research design. This approach was chosen to collect data at a certain point in time from respondents that is relevant to the objectives of this research. The research was conducted at the Anwar Futuhiyyah Islamic Boarding School, which manages BUMP Anfut. This location was chosen because of its unique context in providing an environment for startups operating under the auspices of Islamic boarding schools.

4.2 Population and Sample

The population of this research is all Anfut students who are involved in business units owned by Islamic boarding schools. The sample was selected using a purposive sampling technique, with inclusion criteria involving students who were actively involved in business operations and had sufficient knowledge about network orientation and technology applied in startups.

4.3 Data Collection Instrument

The data was collected using a questionnaire that was devised in accordance with the research objectives and pertinent literature. The research paradigm applied in this investigation comprises four variables: Startup Performance, Technology Transformation, Network Orientation, and Business paradigm. In an effort to guarantee the content's validity, all instruments were adapted from prior research to align with the context and objectives of this investigation. New Capability, New Product or Service, and New Market are the three dimensions that are used to evaluate business model innovation, as adapted from Dong et al. [7]. Meanwhile, the Technology Transformation framework is also derived from Dong et al. [7] and encompasses innovation and adaptation. As per the research conducted by Zhang & Zhang [15], network orientation can be quantified using three primary dimensions: network opening, network construction, and cooperation. The performance of startups can be evaluated using the following dimensions: Goal Achievement, Customer and Partner Trust, and new cost structure, as per the previous research conducted by Dong et al. [7]. a new cost structure.

4.4 Data analysis

The collected data will be analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). PLS-SEM was chosen because of its ability to test complex conceptual models with relatively small samples. This analysis will be carried out to test the relationship between research variables and test the research hypothesis.

5 Results and Discussion

5.1 Outer Model

The proposed structural model was assessed using Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis in this study. Initially, it is imperative to verify that the outer model satisfies the necessary standards of reliability and validity before investigating the relationships between constructs in the inner model. The study's results, which were obtained through data analysis using PLS (Partial Least Squares), are represented Figure 2. below.

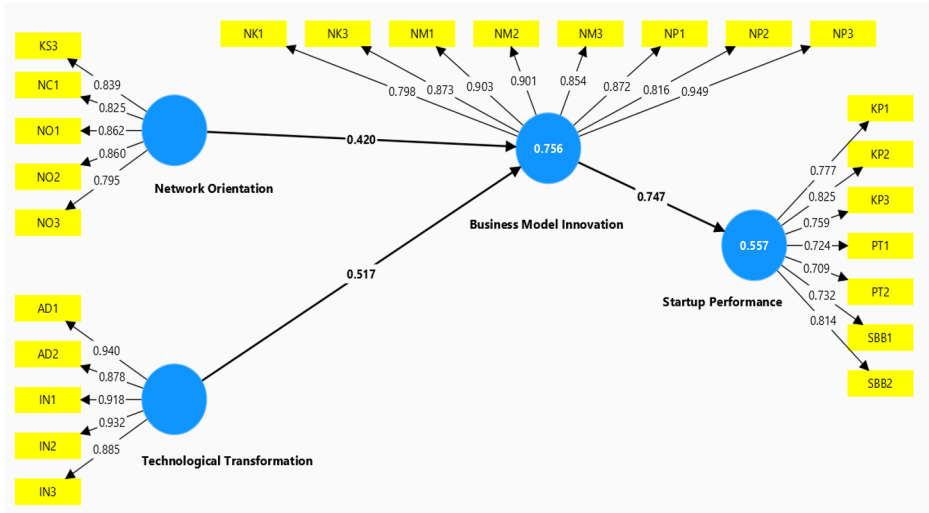


Fig. 2. Outer Model

5.2 Outer Loading

Based on the analysis, it is evident that all loading factors meet the criteria of being more than 0.70. Values of loading below 0.70 are not included in the model. These results indicate a high level of convergent validity, as each signal reliably reflects the idea being measured as defined by the research model. Therefore, it can be inferred that the measurement instruments utilized in this study have sufficient validity for future examination. Generally, Garson [10] proposes that a value of 0.70 is deemed sufficiently close to 0.708 to be deemed an acceptable outcome. The following Table 1. provides a detailed overview of the analysis results.

Table 1. Outer Loading

	Network Orientation	Convergent Validity
KS3	0.839	Valid
NC1	0.825	Valid
NO1	0.862	Valid
NO2	0.860	Valid
NO3	0.795	Valid
	Technological Transformation	Convergent Validity
AD1	0.940	Valid
AD2	0.878	Valid
IN1	0.918	Valid
IN2	0.932	Valid
IN3	0.885	Valid
	Business Model Innovation	Convergent Validity
NK1	0.798	Valid
NK3	0.873	Valid
NM1	0.903	Valid
NM2	0.901	Valid
NM3	0.854	Valid
NP1	0.872	Valid
NP2	0.816	Valid
NP3	0.949	Valid

	Startup Performance	Convergent Validity
KP1	0.777	Valid
KP2	0.825	Valid
KP3	0.759	Valid
PT1	0.724	Valid
PT2	0.709	Valid
SBB1	0.732	Valid
SBB2	0.814	Valid

5.2.1 Reliability

The Composite Reliability output results in Table 2 for the constructs of Business Model Innovation, Network Orientation, Startup Performance, and Technological Transformation are all greater than 0.70, indicating that these constructs are reliable.

Table 2. Construct Reliability

	Cronbach's alpha	Composite Reliability (rho a)	Composite Reliability (rho c)	Average Variance Extracted (AVE)
Business Model Innovation	0.955	0.959	0.962	0.760
Network Orientation	0.893	0.900	0.921	0.700
Startup Performance	0.881	0.886	0.907	0.583
Technological Transformation	0.948	0.951	0.961	0.830

In the interim, the Cronbach Alpha output results for the constructs of Business Model Innovation, Network Orientation, Startup Performance, and Technological Transformation are also above 0.70, suggesting that these constructs are also reliable. The convergent validity of all constructs in this research model is demonstrated by the satisfactory results of the Average Variance Extracted (AVE) values in Table 2, which are all greater than 0.50. It can be concluded that the model devised satisfies the standards in the literature and has adequate measurement quality, as the indicators used to measure all research variables are capable of accurately reflecting their constructs.

5.3 Inner Model

The inner model analysis, which investigates the connections between constructs, occurs subsequent to the validation of the outer model. The primary objective of this step is to evaluate the structural routes and determine their importance within the proposed model. The findings of the inner model analysis offer valuable understanding of the interrelationships between the components and the extent to which the empirical evidence supports the proposed connections. The results are presented in Figure 3. below.

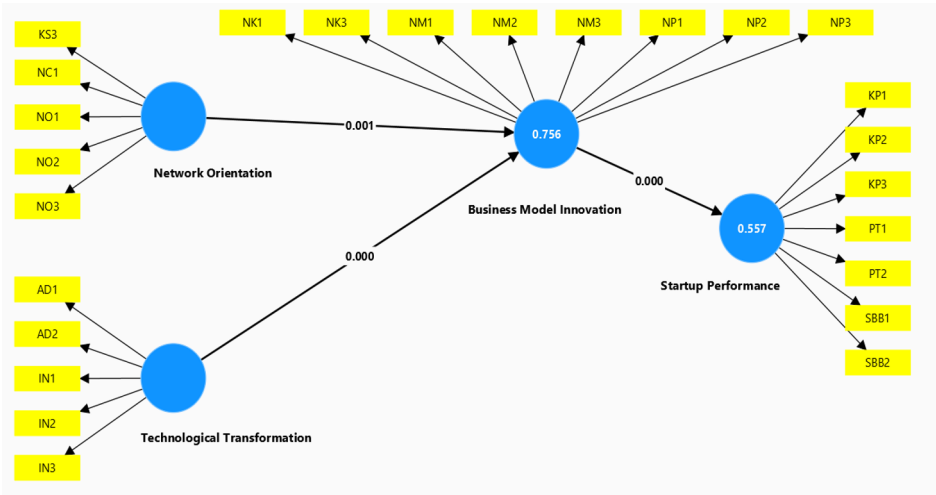


Fig. 3. Inner Model

5.4 Path Coefficient

An Analysis of the Impact of Business Model Innovation on the Performance of Startups. It in the Tabel 3. can be concluded that there is a positive impact of Business Model Innovation on Startup Performance, as indicated by the coefficient parameter value of 0.747. It is important to note that the crucial value for t at a significance level of 5% is 1.96, whereas the t-statistic value is 7.252. Given that the t-statistic of 7.252 is higher than the value of 1.96 in the t-table, it can be concluded that Business Model Innovation has a considerable impact on the performance of starting businesses.

Table 3. Path Coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Business Model Innovation -> Startup Performance	0.747	0.758	0.103	7.252	0.000
Network Orientation -> Business Model Innovation	0.420	0.431	0.128	3.290	0.001
Technological Transformation -> Business Model Innovation	0.517	0.514	0.131	3.933	0.000

5.4.1 The Effect of Network Orientation on Business Model Innovation

The value of the coefficient parameter is 0.420, which indicates that Network Orientation has a favorable impact on the innovation of existing business models. The value of the t-statistic is 3.290, and the critical value for t at a significance level of 5% is 1.96. As a result, the t-statistic of 3.290 is higher than the value of 1.96 in the t-table, which indicates that Network Orientation has a considerable impact on Business Model Innovation.

5.4.2 *The Effect of Technological Transformation on Business Model Innovation*

The value of the coefficient parameter is 0.517, which indicates that there is a favorable effect of technological transformation on business model entrepreneurship. It is important to note that the crucial value for t at a significance level of 5% is 1.96, whereas the t -statistic value is 3.933. Due to the fact that the t -statistic of 3.933 is higher than the value of 1.96 in the t -table, it can be concluded that Technological Transformation has a remarkable impact on Business Model Innovation.

6 Conclusion

The analysis illuminate's startup performance dynamics and Business Model Innovation. A robust coefficient shows that startups that invest in and build new business strategies do better. This shows how important business model innovation is for startup growth and competitive advantage.

The study also shows that Network Orientation and Technological Transformation drive Business Model Innovation. Network Orientation has favorable and statistically significant effects for entrepreneurs, suggesting that those with strategic network connections can reinvent their company models. Networking provides access to resources and information and encourages collaborations that can generate new ideas.

Business Model Innovation also benefits from technological transformation. The findings imply that companies might explore new business prospects, optimize processes, and improve value propositions by using technology. Staying competitive and adjusting to market changes requires adopting new technology.

These findings emphasize numerous strategic imperatives for businesses seeking success. First, creating an innovative company strategy is crucial to corporate development and performance. Second, startups should actively network to gather insights, resources, and support for innovation. Finally, to be competitive in the fast-changing business world, businesses must adopt and integrate new technology. The study supports the premise that business model innovation, strong networking, and technical transformation are essential for startup performance and long-term business success.

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