






Achieving Innovation Performance: Do Entrepreneurial Technology Opportunism, Organizational Readiness, and Environmental Dynamism Matter?

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Abstract. The purpose of this study is to examine the influence of entrepreneurial technology opportunism on innovation performance through organizational readiness as a mediator and environmental dynamism as moderator. This study was carried out using a quantitative approach. The population of this study was creative MSMEs in Yogyakarta, Indonesia, which was then chosen using purposive sampling with a total number of samples were 210 MSMEs. The data was collected through questionnaires distributed to the respondents. The data obtained were then processed and analyzed using conditional process analysis with SPSS macro-process. The findings of this study proved that: (1) entrepreneurial technology opportunism positively influenced organizational readiness; (2) organizational readiness had a positive influence on innovation performance; (3) organizational readiness acted as a mediator in the influence of entrepreneurial technology opportunism on innovation performance; and (4) environmental dynamism negatively moderated the influence of entrepreneurial technology opportunism on organizational readiness. This study is expected to contribute to MSMEs actors in Yogyakarta to implement integrated marketing system in digital platform in order to drive their innovation performance.

Keywords: Environmental Dynamism · Entrepreneurial Technology Opportunism · Innovation Performance · Organizational Readiness

1 Introduction

As the practice of startups and technological developments becomes very popular and expanded dramatically, several researchers have tried to analyze the factors that affect performance, especially in small and medium-sized business settings [1, 2]. Environmental, economic, technological, and social factors are the aspects that can affect organizational performance [3, 4]. These factors will continue to be both opportunities and threats to the organization, and it is crucial to have a clear understanding of them. This is because to achieve innovation performance, organizations must have the ability to

deal with any changes that occur in the environment [5, 6]. According to Sturgeon [7], the business world which is increasingly adapting to technology has given rise to an idea known as the digital economy. Therefore, the role of IT in business is essential to achieve innovation. Asim et al. [8] stated that previous researchers showed that organizational ability and business performance were associated with market orientation, but that linking with the willingness to innovate was still rare, especially in MSMEs settings.

Many think that the context of MSMEs is difficult to innovate due to several reasons, such as the lack of understanding and the perceived cost that is quite large [8–10], and the ever-changing environment driven by technological advances [11].

In developing countries such as India, Pakistan, the Philippines, and Indonesia, the development of industry, especially small and medium enterprises, is not accompanied by a comprehensive application of technology [6], as well as the unpreparedness of the organization in dealing with environmental changes. Jafari-Sadeghi et al. [12] argues that an environment significantly affects the performance of SMEs in developing countries. Therefore, their behavior is affected by the environment and the readiness of the organization to improve its performance, especially in relation to innovation.

Technological opportunities have become a factor that can have an impact on business performance. To pursue innovation performance, the presence of a digital platform today is one of the must-have tools. Digital platform capability is defined as the organization's ability in establishing relations with consumers or other organizations that use online platforms [8, 13]. Seizing technological opportunities is a fundamental requirement for business organizations, especially in MSMEs to improve innovation performance [14]. Previous researchers found that innovation performance is the result of the organization's ability to capture technological opportunities and the organization's readiness to respond. However, there is very little literature that examines innovation performance in MSMEs, specifically in today's digital economy.

Innovation performance can be achieved if organizations, especially MSMEs, can seize technological opportunities. Therefore, along with the development of digital technology, a business needs the ability to respond quickly to assist in achieving innovation performance [15]. This study aimed at investigating how the organization's ability to respond to technological opportunities and organizational readiness in improving innovation performance. This study also explored how a dynamic environment acts as a moderator.

Technology opportunism (TO) is defined as a system, process, and ability to find opportunities that can create something new [9]. In the organizational context, [1] states that TO is defined as the organization's ability to acquire knowledge and understand new technological developments to be applied in business activities. Skills in capturing business opportunities are important assets for the organization. According to [1] the internal capabilities of the organization are important to respond to technological opportunities, especially in improving innovation performance.

Currently, organizational readiness is very important as it can assist in adapting technology as well as helping to improve innovation performance. Organizational readiness first arises from change management and is defined as the company's capability to accept changes, and acts as the key to promoting organizational innovation [16, 17]. Tsou & Hsu

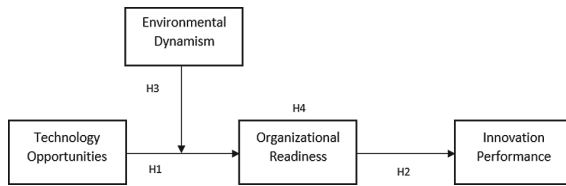


Fig. 1. Research model.

[18] explained two types of organizational readiness, namely psychological and structural readiness. According to [16] technological opportunities must be accompanied by organizational readiness to improve business performance.

According to the perspective of Petrenko et al. [19], organizational readiness stands up in bridging the gap of organizational culture and digital innovation. From this role, the mediating effect of organizational readiness and digital innovation can be explained and justified. This is because the set of values that exist in the organization is the basis for innovation. With the existence of digital platforms, consumers find it easy to find the products or services they need [20]. Every organization continues to strive to implement and utilize its resources to respond to changes in order to improve performance [21], thus leading to the integration and utilization of resources, which positively influences innovation.

Furthermore, Teng et al. [22] defined environmental dynamism as the level of uncertainty and instability in the organizational environment [11, 23]. The study from [24] suggested organizations to develop their infrastructure according to the needs of the external environment for achieving high performance in their MSMEs. The change experienced by firms is often associated with a high degree of dynamism [11, 25]. Organizations must need information that can help in responding to a dynamic environment. These uncertain environmental conditions can have a negative impact on the way organizations operate [26]. Even though they have been able to seize technological opportunities, organizations will not be prepared when they are in a highly dynamic environment. Therefore, the dynamic environment can have an effect on the readiness of the organization to adopt technological opportunities.

Based on these explanations, this study has several research questions that need to be answered: (1) Does technology opportunism positively influence organizational readiness? (2) Does organizational readiness positively influence innovation performance? (3) Does organizational readiness mediate the relationship between technology opportunism and innovation performance? (4) Does environmental dynamism moderate the influence of technology opportunism on organizational readiness?

The model of this study is presented in Fig. 1.

2 Method

This study was carried out with a quantitative approach, with the objective to explore the causality of the focal variables. The population of this study was batik entrepreneurs who run their businesses (batik MSMEs) in Yogyakarta, Indonesia. The sample was

determined by purposive sampling with the criteria that the business has been established for at least 2 years. It indicates that the MSMEs have experienced the dynamics of environmental changes in business and technological developments and measuring their readiness to innovate.

Questionnaires were distributed to 210 respondents measured with 5-point Likert scale (1: strongly disagree, 5: strongly agree). The data obtained were analyzed further using structural equation modeling with Amos 5.0. This study used the variables of entrepreneurial technology opportunism, organizational readiness, environmental dynamism, and innovation performance. Entrepreneurial technology opportunism was measured using 8 items adopted from Parola et al. [1]. Organizational readiness was measured using 6 items adopted from Sanders et al. [16]. Environmental dynamism was measured using 4 items adopted from Ahmed et al. [11]. Innovation performance was measured using 3 items adopted from Jun et al. [14].

3 Results and Discussions

3.1 Respondents Characteristics

The characteristics of respondent in this study indicate that most of the respondents are female (67%), with the age of 35–39 years old (38%), have the last education as bachelor degree, and have run their business for 2–4 years (Table 1).

The Construct Reliability (CR) parameter must have a value greater than 0.7 so that the indicator can be said to be reliable for measuring latent variables. The recommended value for the Average Variance Extracted (AVE) parameter must exceed 0.5. From the results of data processing parameters Cronbach's Alpha, Construct Reliability (CR) and Average Variance Extracted (AVE) meet the acceptance criteria, so the indicators used can be declared reliable.

Furthermore, the output of the significance test of the standard loading estimate on the measurement model indicates that all indicators are at a significant value of $p < 0.001$, with the value of loading factor of >0.5 . Therefore, all indicators have good validity and can be used for further analysis (Table 2).

3.2 Model Fit Test

The parameters used in testing the fit model were Chi-Square, CMIN/DF, AGFI, RMSEA, TLI and CFI. A good model shows that the measurement model in the study is in accordance with the empirical conditions on the activity of the population. The results of the model suitability test in this study can be seen in Table 3.

3.3 Convergent Validity

This test was conducted to determine the validity of each of the estimated indicators, by measuring the dimensions of the concepts tested in the study. If each indicator has a critical ratio (C.R.) value that is greater than twice the standard error (S.E.), it means that a set of indicators can represent one latent variable that underlies the latent variable.

Table 1. Respondents' Characteristics

Profile	Amount	Percentage
Gender		
Male	71	33%
Female	144	67%
Age		
25–29 years old	34	16%
30–34 years old	45	21%
35–39 years old	82	38%
30–44 years old	54	25%
Education		
Senior/Vocational High School	30	14%
Diploma	71	33%
Bachelor	75	35%
Magister	39	18%
Time of Establish Business		
2–5 years	140	65%
5–10 years	75	35%
Total	215	100%

From the test results, the regression weight value shows that the critical ratio (C.R.) is greater than twice the standard error (S.E.), which means that all indicators in the study are valid for each latent variable. The regression weight values for each construct are shown in Table 4.

3.4 Model Causality Test

This test was conducted to determine the causal relationship between variables by measuring the strength of the relationship between two or more latent variables. The results of calculations with AMOS 23 can be seen in Fig. 2, Tables 5 and 6.

Based on the t-count significance in Table 6 with a probability value (p) = 0.05, it is found that the latent variables have a significant effect because they have a probability value less than 0.05. It can be explained more clearly as follows:

1. Technology Opportunities has a significant positive influence on Organizational Readiness, with the probability value smaller than 0,05 and the CR value of 3,205. Therefore, H1 is accepted.
2. Organizational Readiness has a significant positive influence on Innovation Performance with the probability value smaller than 0,05 and the CR value of 4,572. Therefore, H2 is accepted.

Table 2. Reliability Test Results

Latent Variable	Indicator measurement	Standard Loading	C α	CR	AVE
Technology Opportunity	Tech1	0,823	0,762	0,924	0,603
	Tech2	0,828			
	Tech3	0,766			
	Tech4	0,724			
	Tech5	0,747			
	Tech6	0,841			
	Tech7	0,726			
	Tech8	0,746			
Environmental Dynamism	Env1	0,859	0,800	0,875	0,636
	Env2	0,746			
	Env3	0,804			
	Env4	0,777			
Organizational Readiness	Org1	0,794	0,775	0,917	0,648
	Org2	0,738			
	Org3	0,852			
	Org4	0,781			
	Org5	0,765			
	Org6	0,891			
Innovation Performance	Inno1	0,751	0,847	0,849	0,653
	Inno2	0,755			
	Inno3	0,909			

3. Environmental Dynamism has a significant positive influence on Organizational Readiness with the probability value smaller than 0,05 and the CR value of 4,463). Therefore, H3 is accepted.
4. Environmental Dynamism as a moderating variable has a negative significant influence on technology opportunity on Organizational Readiness with the probability value smaller than 0,05 and the CR value of 6,518. Therefore, H4 is accepted.

The explanation in the table below shows that the first to fourth hypotheses can be accepted.

3.5 Direct Effects, Indirect Effects, and Variable Total Effects

Furthermore, the effect of each latent variable either directly, indirectly, and total effect can be seen in the following description and is summarized in Table 6.

Table 3. Model Fit Test Result

Statistical Test	CR Value	Test Result	Conclusion
Chi Square	–	390,864	–
Degree of Freedom	–	204	–
p-Value	>0,05	0,058	Fit
CMIN/DF	<2,00	1,916	Fit
Root Mean Square Residual (RMR)	>0,05	1,603	Fit
Root Mean Square Error of Approximation (RMSEA)	<0,08	0,064	Fit
Goodness of Fit Index (GFI)	≥0,90	0,932	Fit
Adjusted Goodness of Fit (AGFI)		0,921	Fit
Comparative Fit Index (CFI)		0,902	Fit
Tucker Lewis Index (TLI)		0,935	Fit

1. The moderating variable, namely environmental dynamism, has a direct effect on organizational readiness for 0.415, and it does not have an indirect influence.
2. Technology opportunism has a direct effect on organizational readiness for 0,319, and it does not have an indirect influence.
3. Environmental dynamism has a direct effect on organizational readiness for 4.50.
4. Organizational Readiness has a direct influence on Innovation Performance for 0.408.
5. Technology opportunism has an indirect influence on innovation performance through organizational readiness for 0.130.

The results of this study indicated that the first to the last hypothesis were accepted. This showed that the relationship between technology opportunism and organizational agility could improve innovation performance in business and create the ability to adapt, execute and take advantage of new technological opportunities by presenting platforms in transactions making it easier for consumers to make purchases and find information. In addition, the RBV concept could be used to support the role of a dynamic environment as a moderator between technological opportunities and organizational agility so as to produce innovation performance.

In addition, the impact of the interaction of technological opportunities on organizational agility significantly affected innovation performance. This is as stated by Jun et al. [14] that by utilizing technology, organizations can improve their performance. In addition, in facing today's competitive environment, organizations must be more proactive to survive and remain competitive. In particular, SMEs are vulnerable to a dynamic environment due to limited resources.

To achieve innovative performance, organizations need to reconfigure their resources to match market demands and make themselves ready for change. This study examined the relationship of technology opportunism to organizational readiness and its impact on innovation performance moderated by a dynamic environment. The findings of this study are supported by [11, 27, 28] which found that there was a positive relationship between technology opportunities and organizational readiness, and research [14] which proved

Table 4. Regression Weight Value

			Estimate	S.E.	C.R.	P
Tech8	←	Technology	1,000			
Tech7	←	Technology	,809	,086	9,427	***
Tech6	←	Technology	1,339	,120	11,123	***
Tech5	←	Technology	1,000			
Tech4	←	Technology	1,700	,140	12,167	***
Tech3	←	Technology	,880	,087	10,088	***
Tech2	←	Technology	1,206	,112	10,734	***
Tech1	←	Technology	,872	,093	9,330	***
Env1	←	Environmental	1,087	,102	10,670	***
Env2	←	Environmental	1,000			
Env3	←	Environmental	,996	,098	10,199	***
Env4	←	Environmental	1,137	,103	11,030	***
Org4	←	Organizational	1,000			
Org3	←	Organizational	,838	,096	8,762	***
Org2	←	Organizational	,941	,119	7,935	***
Org1	←	Organizational	,507	,102	4,970	***
Inno1	←	Innovation	1,000			
Inno2	←	Innovation	,853	,094	9,053	***
Inno3	←	Innovation	1,222	,122	10,015	***
Org5	←	Organizational	,820	,083	9,843	***
Org6	←	Organizational	,739	,103	7,182	***

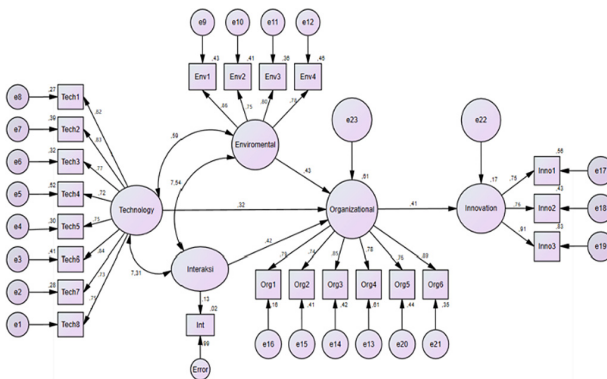


Fig. 2. Results of Data Analysis

Table 5. Results of hypothesis test

	Estimate	S.E.	C.R.	P
Organizational ← Technology	.448	.140	3.205	.001
Innovation ← Organizational	.346	.076	4.572	***
Organizational ← Environmental	.561	.126	4.463	***
Organizational ← Environmental (as moderator)	.508	.001	6.518	***

Table 6. Direct, Indirect, and Total Effect of Variables

Variable	Direct effect	Indirect effect	Total effect
Moderating variable (environmental behavior behavior) → Organizational	0,415	–	0,415
Technology opportunism → Organizational readiness	0,319	–	0,319
Environmental dynamism → Organizational readiness	0,430	–	0,430
Organizational readiness → Innovation performance	0,408	–	0,408
Technology opportunism → Innovation performance	–	0,130	0,130

that organizational readiness also had a positive effect on innovative performance. In addition, the role of organizational readiness could be a medium between technology opportunism and innovative performance. Thus, this study also supports that a dynamic environment weakens the effect of technology opportunism on organizational readiness. This is because the dynamic environment can be understood as the volatility and uncertainty of the environment in the organization [29].

In addition, these uncertain environmental conditions can have a negative impact on the way the company operates. When companies are not aware of and unable to keep up with dynamic changes, they can suffer losses. Research conducted by [30] states that the current environmental conditions are very volatile and rapidly changing, so a dynamic environment is one aspect that must be considered by organizations. [25] suggested that a dynamic and unstable environment significantly affected organizational capabilities so that it had a negative effect, thus requiring companies to immediately respond to these conditions [11]. Therefore organizations must be aware of and recognize the environment in which they do business.

4 Conclusion

Based on the data analysis and discussion that has been done, it showed that the four hypotheses in this study were accepted. This research was only conducted in the context of small and medium entrepreneurs in the city of Yogyakarta. Future research is expected to be able to examine the relationship between variables in research in different contexts, for example in the context of the manufacturing or service industry by using a larger sample so as to increase the generalizability of the research results. Future research can also consider the use of other variables, such as network capability and knowledge management or innovation strategy as determinants that can affect innovation performance. Given that environmental changes are increasingly uncertain, future research can also use other moderating variables such as local government policies or gender factors where these two variables can determine the strength or weakness of a variable relationship.

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