

The Effect of Competitive Aggressiveness on Business Performance: A Case Study of Private Universities in Indonesia

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Abstract

Competitive aggressiveness has long been believed to be the direct trigger for increased business performance, however, as a mediating variable it still needs to be further proven. This paper aims to examine the causal relationship between network capability, knowledge creation, innovativeness, competitive aggressiveness, and business performance of private universities. One model is proposed to test the role of competitive aggressiveness as a mediating variable. The population is lecturers at the 10 best private universities in East Java, Indonesia. Analysis by SEM, on 230 respondents, using random sampling method. The results show that the model is accepted, and competitive aggressiveness is proven to be a positive mediating variable in the relationship of network capability, knowledge creation, innovativeness, and business performance. The results also show that knowledge creation, and innovativeness, have an effect on competitive aggressiveness, while network capability has no effect. The research implication is that management should encourage lecturers and organizations to be more productive in conducting research and writing articles published in reputable journals, this will increase the ranking of universities. In order for the lecturers be more enthusiastic, the management gave an award to each lecturer who could submit their articles, which were then published by reputable journals.

Keywords: Network Capability, Knowledge Creation, Innovativeness, Competitive Aggressiveness, Business Performance

JEL Classification Code: M21, M30, I23

1. Introduction

Education is the foundation and hope of the state and the Indonesian nation to be of equal quality with other countries and nations. National progress cannot be achieved without the support of a quality education system. A quality education system will contribute greatly to the birth of quality human resources, which can increase independence and competence

in life. Higher education plays a role in improving the quality of resources, and in order to improve the quality of graduates, universities should also continuously improve the quality of their lecturers and organizations, while Anjum et al. (2021) state that knowledge transfer is influenced by social interactions.

The quality of a higher education organization is closely related to the quality of lecturers and the quality of graduates. This is very important because it affects the quality of higher education institutions, thus the existence of lecturers is one of the resources, which must always be a concern and need to be continuously improved, so that indirectly will have an impact on the quality of graduates and the quality of the organization, which also has an impact on higher education rankings.

Webometric informs that of the 10 best universities in East Java, Indonesia, the dominance of universities is in the city of Surabaya (Infokampus, 2020). This is understandable because the city of Surabaya is the center of government in East Java Province. Webometric is a university web ranking system. Webometric uses assessment of the following indicators: Impact, which shows the visibility of the college

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website; Presence, measured by the amount of information presented on the campus website; Openess, from the number of documents indexed by Google Scholar; and Excellence, which is measured based on the number of articles indexed in reputable journals.

The emphasis of this research is on the importance of an organization's impact, presence, openness, and excellence, which has an impact on the university's ranking. A high ranking will be an important value, and become a source of competitive strength and competitiveness for higher education institutions as an organization. Organizations with comparative advantage will be able to compete because they have superior resources and master the latest technology (Hunt & Madhavaram, 2012). Higher education as an organization engaged in education is also required to be able to compete. In order to compete healthily, it is necessary to have competitive behavior from the available resources. One of the resources referred to is lecturers, with their individual skills and knowledge. In order to have a comparative advantage, lecturers are required to have the ability to access through networks, namely, being able to develop themselves, by utilizing internal and external cooperation. In order to have a comparative advantage, lecturers must also be able to produce new works, as well as creative ideas. This creative performance will be easily achieved if someone has information, knowledge and skills that support creativity (Zacca et al., 2015).

Lecturers who have the ability to access networks and also capable of producing creative ideas and new works will also be able to create new knowledge, and this is considered as the most important source for organizations having a competitive advantage (Nonaka & Takeuchi, 1995). The ability of lecturers to create new knowledge causes lecturers to also be able to solve problems in new ways (innovation), this is because innovativeness is a process that works entirely with awareness and deliberateness (Schumpeter, 2004). The ability to create new knowledge in addition to causing someone to be able to innovate is also able to cause someone to be aggressive in competing, which has an impact on organizational aggression. This can be seen from the intense attitude of the organization to challenge and excel from competing organizations, which is marked by an aggressive attitude towards the actions of competitors.

Organizations that are willing to be innovative through a process of experimentation and creativity and intensely strive to outperform competitors are expected to have high performance (Klehe & Anderson, 2007). The innovative behavior of lecturers, is their ability to generate and implement new and useful ideas in the workplace (Scott & Bruce, 1994), innovation is essential for organizational and sustainable competitive advantage (Montani et al., 2017; Ramamoorthy et al., 2005). Many researchers point out that employees are an important source of innovation

in most organizations. Employee innovation is responsible for new ideas that the organization will implement (Getz & Robinson, 2003). There is strong evidence that innovation positively affects individual performance, which has an impact on company performance (Bowen et al., 2010; Wang & Dass, 2017; Abraham et al., 2006; Yuan & Woodman, 2010). Where the company's performance is the success of the organization in realizing the strategic goals that have been previously set with the expected behavior.

Therefore, this research was conducted to get a better understanding of the relationship between network capability, knowledge creation, innovativeness, and competitive aggressiveness against the business performance of private universities in East Java, Indonesia, and to examine the role of competitive aggressiveness as a mediating variable in the relationship of network capability. Knowledge creation, innovativeness in business performance, which will be able to raise higher education rankings, a novelty of this study.

2. Literature Review and Hypotheses

Business performance (company) is the result of the implementation of a series of activities carried out by all elements within the company as a process of achieving goals. A good company performance will be seen from the level of productivity, effectiveness and good efficiency. In college, business performance can be seen from the college ranks, in Webometric. Performance has a broad meaning, not only the result of work, but how the work process takes place. Armstrong and Baron (2005); Wibowo (2008) state that performance is the result of work that has a relationship with the strategic objectives of the organization and contributes to the economy. Business performance, especially in higher education, is closely related to network capability, knowledge creation, innovativeness, and organizational competitive aggressiveness.

2.1. Network Capabilities and Competitive Aggressiveness

Capability is a collection of more specific skills, procedures, and processes that can take advantage of competitive advantage resources (Baker & Sinkula, 2005). Capability is an ability that has more than just skills in something that is a competitive advantage and mastering abilities from a weak point. Network capabilities are the ability to initiate, develop and take advantage of internal organizations and relationships between external organizations.

Zacca et al. (2015) show that network capability is positively related to knowledge creation, and that aggressiveness and innovation are the main mediators between knowledge creation and firm performance. Walter et al. (2006) show that

spin-off trends and organizational processes that promote innovation, constructive risk-taking, and proactivity in dealing with competitors do not increase growth and ensure long-term survival. That network capability moderates the relationship between entrepreneurial orientation and organizational performance. Roininen (2008) shows that network structure and network competencies are facilitative of an entrepreneurial orientation. That being involved in network relationships and having the ability to initiate, develop, and leverage these relationships early on in company development will enhance innovation, proactivity and business risk-taking. That entrepreneurial orientation improves company performance. While Hughes et al. (2018) stated that aggressive, competitive volume improves operating performance. Based on this description, the following hypotheses are proposed:

H1: *Network capabilities have an effect on competitive aggressiveness in private universities in East Java.*

H2: *Network capabilities affect business performance in the mediation of competitive aggressiveness.*

2.2. Knowledge Creation and Competitive Aggressiveness

Knowledge creation is the stage of entering all new knowledge into the system, including the development and discovery of knowledge (Waluyo & Wibowo, 2013). Mungkasa (2012) develops a knowledge management model, which is popularly called the Knowledge Spiral Model. This model illustrates how tacit and explicit knowledge are transformed from one form to another as part of the knowledge creation process. This method is known as SECI (Socialization, Externalization, Combination and Internalization).

Lewin and Massini (2004) state that company-level innovation and the ability to create knowledge begin with technological changes in the company. Nieves and Osorio (2013) show that social networks allow their members to access new knowledge. The exchange and combination of knowledge provided by these networks are widely recognized as an antecedent knowledge creation. For Floyd and Wooldridge (1999), entrepreneurial ideas are subject to subjectivist, empirical, and pragmatic criteria in the process of creating knowledge. Also, that actor centrality, structural equality, and bridging relationships are responsible for the individual's ability to acquire new information to reach a position. Salmador and Florín (2011) show a relationship between the learning process used, the strategy chosen, and business performance. Almulhim (2017), emphasized that organizational creativity is very important to improve performance in the banking sector. In addition, the externalization process has the most positive influence on organizational creativity, followed by internalization,

socialization, and combination processes. Based on this description, the following hypotheses are proposed:

H3: *Knowledge creation affects competitive aggressiveness in private universities in East Java.*

H4: *Knowledge creation affects business performance in the mediation of competitive aggressiveness.*

2.3. Innovativeness and Competitive Aggressiveness

An entrepreneur is an innovator or someone who discovers certain technologies that are associated with financial gain (Runyan et al., 2008). Innovativeness is an important component of organizations to seek new opportunities. Rodan and Galunic (2004) show that, important network structure, for heterogeneous access to knowledge, is equally important for overall managerial performance and more importantly for innovation performance. For Santos (2010), innovativeness has two main dimensions, perfectly differentiated, product process innovation and management innovation. The dimensions of human resources (knowledge formation and creation, innovative behavior, and incentives for innovation) affect differently each type of innovation power capacity. Akgün et al. (2007) found that the level of the company's emotional capabilities has an influence on the company's learning capabilities. The company's emotional ability influences its product innovation through learning abilities. The company's product innovation is influenced by emotions and learning abilities that affect company performance. Based on this description, the following hypotheses are proposed:

H5: *Innovativeness affects competitive aggressiveness in private universities in East Java.*

H6: *Innovativeness affects business performance in the mediation of competitive aggressiveness.*

2.4. Competitive Aggressiveness and Business Performance

Competitive aggressiveness reflects the organization's ability to act aggressively in dealing with its competitors. The aggressive dimension in competition reflects the company's ability to take aggressive actions in dealing with its competitors by increasing product quality, production capacity and others in order to attract consumer-buying interest.

Iyer and Doucette (2003) state that the environment acts as a moderator for the entrepreneurial performance-orientation relationship through contingent effects. An entrepreneurial orientation is a strong contributor to business performance. Abdullahi et al. (2019) found that competitive aggressiveness has a positive impact on financial performance. Therefore,

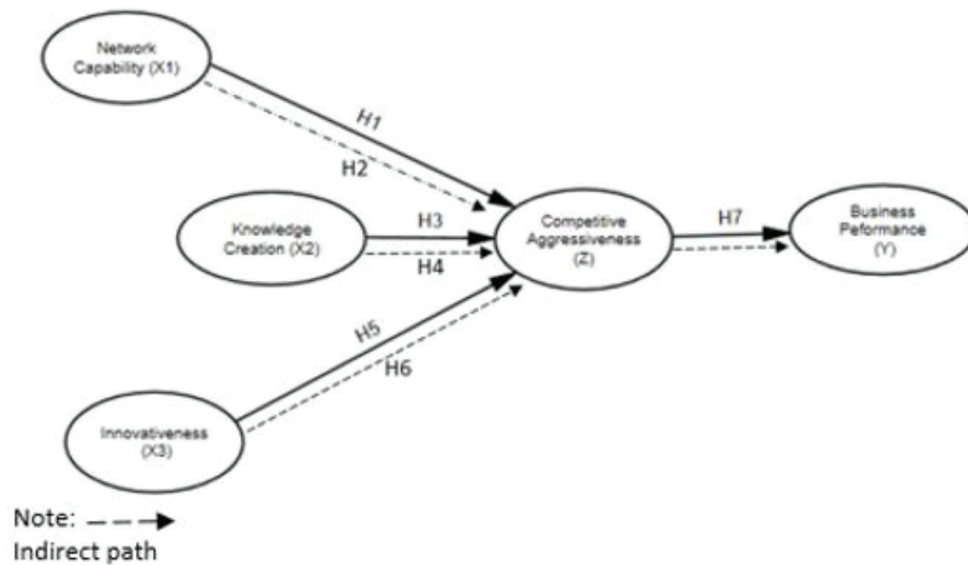


Figure 1: Research Framework

companies must adopt and encourage a competitive, aggressive approach in decision making to improve business performance and maintain relevance in the construction industry. For Adeiza et al. (2016), the personality characteristics, such as competitive skills and level of control possessed by business owners, play a role in business success and entrepreneur satisfaction. Valeria (2013) states that competitive advantage can be achieved through entrepreneurial orientation, environmental adaptability, and innovation, creativity, where the competitive advantage generated by a company can improve business performance.

Spiritual marketing and entrepreneurial orientation influence competitive advantage (Bambang et al., 2021). According to Syaifullah et al. (2012), marketing using social media has an effect on performance. Work motivation has an effect on performance (Yumhi et al., 2021). Meanwhile, Hatta (2014) states that innovation, being risky, and autonomous have a positive influence on the company's marketing capabilities. Based on this description, the following hypothesis is proposed:

H7: *Competitive aggressiveness has an effect on business performance in private universities in East Java.*

2.5. Research Framework

Based on the literature review and discussion previously described, a research framework can be developed, which explains the relationship between research variables. Figure 1 shows the relationship between network capability, knowledge creation, innovativeness, competitive aggressiveness and business performance of private universities in East Java.

3. Research Methods

This research is a causal research. The study population was lecturers at the top 10 private universities in East Java, Indonesia. The analysis technique uses SEM analysis with the help of Amos software. Estimation uses Generalized Least Square Estimation, and the number of samples studied is 230 respondents, obtained from $10 \times (18 \text{ indicators} + 5 \text{ variables})$ research, in accordance with the provisions of SEM (Hair et al., 2014). The sample was evenly distributed as many as 23 at each university (Table 1), while the sampling method uses random sampling.

The study used a questionnaire instrument where network capability used four indicators adopted from Zacca et al. (2015), namely, coordination, internal communication, partner knowledge, and relationship skills. Knowledge creation uses four indicators adopted from Mungkasa (2012), namely, socialization, externalization, combination and internalization. Innovativeness uses four indicators adopted from Santos (2010), namely, program design, labor market environmental research, job market advertising, and organizational promotion. Competitive aggressiveness uses three indicators adopted from Abdullahi et al. (2019), namely, graduate quality, graduate capacity, and curriculum development cycle times. Business performance uses three indicators adopted from Darroch (2005), namely, profit, market share, and student growth.

4. Results

A total of 240 survey questionnaires were distributed and 236 were collected. Of these, six incorrect responses were excluded, leaving 230 usable. Table 2 shows the demographic information of the respondents.

Table 1: Sample Distribution in 10 of the Best Private Universities in East Java, Indonesia in 2020

Rating	Name of College	Number of Samples
1.	Universitas Surabaya	23
2.	Universitas Kristen Petra Surabaya	23
3.	Universitas Narotama Surabaya	23
4.	Universitas Muhammadiyah Malang	23
5.	Universitas Muhammadiyah Surabaya	23
6.	Universitas 17 Agustus Surabaya	23
7.	Sekolah Tinggi Ilmu Kesehatan Bina Sehat PPNI Mojokerto	23
8.	Universitas Muhammadiyah Ponorogo	23
9.	Universitas Panca Marga Probolinggo	23
10.	Universitas Wisnuwardhana Malang	23
Total		230

Table 2: Demographics of Respondents ($N = 230$)

Categories		Frequency	Ratio (%)
Gender	Men	119	51.7
	Women	111	48.3
Age (years)	≤35	58	25.2
	36–45	124	53.8
	≥46	48	21.0
Education	S2	192	83.5
	S3	38	16.5
Work experience (years)	≤2	23	10.0
	3–10	121	52.6
	>10	86	37.4

4.1. Instrument Validity and Reliability Test

From the results of the Pearson product moment correlation it is known that all the question items in the questionnaire have a significant correlation at an error rate of 5%, so it can be said that all question items are valid. The Cronbach's Alpha (α) test shows that all research variables are reliable, because all alpha coefficient values of each research variable are greater than the standard (0.6),

so that each question item on the measurement instrument can be used. The total corrected item correlation value of all question items was greater than 0.3 (Table 3).

4.2. Cconfirmatory Factor Analysis

Table 4 shows the overall results of the confirmatory factor analysis on the research measurement model. The validity and reliability of constructs are two tests to evaluate the ability of the measured variable (manifest) to form latent variables. In Table 4, all manifest have a loading factor with a probability of less than 0.05, meaning that they are significant in forming latent variables. It can also be seen that each latent variable has a construct critical ratio of more than 0.2, which means that it comes from one dimension (unidimensional).

4.3. Hypothesis Testing

Hypothesis testing is carried out based on the Probability (Sig) value, and the value of the indirect-effect research model shown in Table 5 (see Figure 2).

5. Discussion

From the test results of the model in this study, it is able to explain the relationship between network capability, knowledge creation, innovativeness, competitive aggressiveness, and business performance of private universities in East Java.

The research findings are: network capability has no significant effect on competitive aggressiveness in private universities in East Java. This shows that the current network capability of the organization has not been able to encourage an increase in organizational competitive aggressiveness. Network capability is the company's ability to initiate, develop and utilize internal organizations and relationships between external organizations. Organizational relations with external parties really need to be improved because one of the assessments of the success of a university is the impact of the site's visibility on the university's web ranking, this can only be done by providing as much useful information as possible to the external parties of the higher education, and also sending as much, perhaps journal articles of repute such as journals indexed in Scopus, Thomson Reuters, and others. Thus the college ranking will increase. Higher university rankings indicate the success of the business performance of a university, especially private universities.

Network capability, which consists of coordination, internal communication, partner knowledge, and relationship skills, in this research have not been implemented properly, so that it has not been able to increase competitive aggressiveness. If the indicators of the network capability, variable are implemented

Table 3: Validity and Reliability Test

Research variables	Indicator	Question Number	Pearson correlation	Coefficient Alpha (α)
Network capability	NET1	01–02	0.800**	0.791
	NET2	03–04	0.650**	
	NET3	05–06	0.808**	
	NET4	07–08	0.667**	
Knowledge creation	KNW1	09–10	0.793**	0.721
	KNW2	11–12	0.744**	
	KNW3	13–14	0.609**	
	KNW4	15–16	0.711**	
Innovativeness	INN1	17–18	0.879**	0.873
	INN2	19–20	0.657**	
	INN3	21–22	0.707**	
	INN4	23–24	0.832**	
Competitive aggressiveness	COM1	25–26	0.721**	0.784
	COM2	27–28	0.677**	
	COM3	29–30	0.877**	
Business performance	BUS1	31–32	0.723**	0.791
	BUS2	33–34	0.878**	
	BUS3	35–36	0.772**	

**Correlation is Significant at the 0.01 Level (2–tailed).

Table 4: Confirmatory Factor Analysis

Research variables	Relationship	C.R.	Loading Factor (λ)	Probability
Network capability	NET → NET1	2.000	0.676	0.000
	NET → NET2	3.603	0.552	0.000
	NET → NET3	7.711	0.699	0.000
	NET → NET4	6.040	0.518	0.000
Knowledge creation	KNW → KNW1	2.000	0.508	0.000
	KNW → KNW2	8.618	0.853	0.000
	KNW → KNW3	7.711	0.725	0.000
	KNW → KNW4	6.042	0.463	0.000
Innovativeness	INN → INN1	2.000	0.884	0.000
	INN → INN2	13.717	0.746	0.000
	INN → INN3	7.711	0.740	0.000
	INN → INN4	10.451	0.610	0.000
Competitive aggressiveness	COM → COM1	2.000	0.610	0.000
	COM → COM2	5.815	0.884	0.000
	COM → COM3	9.550	0.746	0.000
Business performance	BUS → BUS1	2.000	0.478	0.000
	BUS → BUS2	2.263	0.796	0.000
	BUS → BUS3	2.900	0.740	0.000

Source: Processed Data.

Table 5: The Results of Path Analysis and Hypothesis Testing

Hypothesis	Path analysis	Direct effect	P value	Indirect Effect	Total Effect	Decision
H1	NET → COM	−0.188	0.062	0.000	0.188	Rejected
H3	KWN → COM	0.360	0.000	0.000	0.360	Accepted
H5	INN → COM	0.390	0.000	0.000	0.390	Accepted
H7	COM → BUS	0.467	0.000	0.000	0.467	Accepted
H2	NET → COM → BUS	0.000	0.000	0.089	0.089	Accepted
H4	KWN → COM → BUS	0.000	0.000	0.168	0.168	Accepted
H6	INN → COM → BUS	0.000	0.000	0.182	0.182	Accepted

NET: Network capability, KWN: Knowledge creation, INN: Innovativeness, COM: Competitive Aggressiveness, BUS: Business Performance, P: Probability.

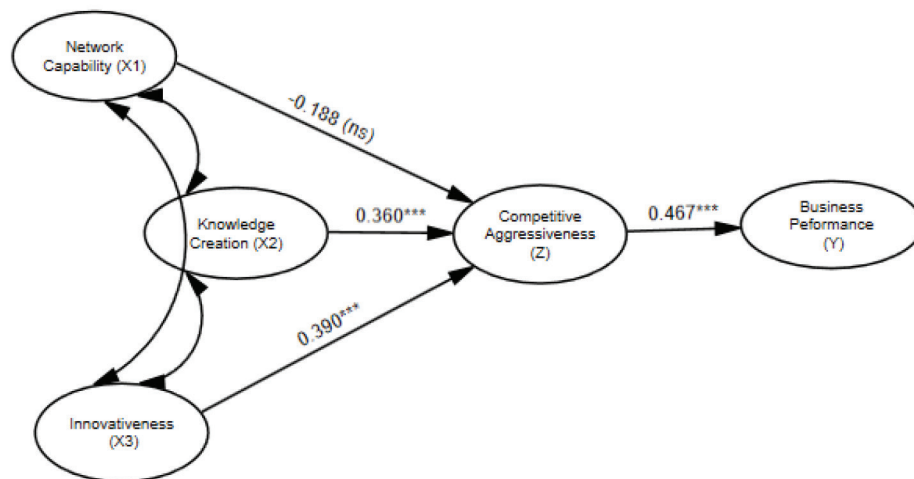


Figure 2: The Result of SEM

Note: $***p < 0.001$; ns not Significant

properly and always improved, it is expected that competitive aggressiveness will increase. The results of this study differ from the findings of Zacca et al. (2015); Hughes et al. (2018). The results also indicated an indirect relationship between network capability and business performance through organizational competitive aggressiveness. Even though this value is small, this shows that competitive aggressiveness is a mediating variable in the relationship between network capability and business performance.

Knowledge creation has a significant effect on competitive aggressiveness in private universities in East Java. This shows that the current knowledge creation is able to encourage an increase in organizational competitive aggressiveness. Knowledge creation, which consists of socialization, externalization, combination and internalization, if implemented properly and always improved, will increase the competitive aggressiveness of the organization. The results

also indicate an indirect relationship between knowledge creation and business performance through organizational competitive aggressiveness. This shows that competitive aggressiveness is a mediating variable in the relationship between knowledge creation and business performance.

Innovativeness has a significant effect on competitive aggressiveness in private universities in East Java. This shows that the current innovativeness is able to encourage an increase in organizational competitive aggressiveness. Organizations are already involved and support new ideas, and creative lecturers and organizations have been able to produce new products and services, and all the information on innovations that have been made, is outlined in articles published in reputable journals. Innovativeness, which consists of design programs, labor market environmental research, job market advertising, and organizational promotion, if implemented properly and always improved,

will increase the competitive aggressiveness of the organization. The results also indicate an indirect relationship between innovativeness and business performance through organizational competitive aggressiveness. This shows that competitive aggressiveness is a mediating variable in the relationship between innovation and business performance.

Competitive aggressiveness has a significant effect on business performance at private universities in East Java. This shows that the current competitive aggressiveness of lecturers and organizations is able to encourage an increase in organizational business performance. Competitive aggressiveness, which consists of graduate quality, graduate capacity, and curriculum development cycle times, if implemented properly and always improved, will increase the organization's business performance. The results of the study are in accordance with the findings of Valeria (2013); Hatta (2014).

Of the three variables (network capability, knowledge creation, and innovativeness), which are hypothesized to have an effect on competitive aggressiveness, the dominant one is the innovativeness value. This shows that innovativeness from lecturers and organizations is very important in order to increase the competitive aggressiveness of the organization. Innovativeness reflects the company's tendency to engage and support new ideas, updates, experimentation, and creative processes that can produce new products, services, or technological processes. Therefore, the leadership of the organization should encourage to be able to increase the innovativeness of lecturers and organizations. By doing a lot of research, and producing new findings, which are published in reputable journals, the university rankings will rise to a higher level.

6. Conclusion

The results of the study prove that the variable knowledge creation and innovativeness have an effect on competitive aggressiveness, and the variable network capability has no significant effect on competitive aggressiveness.

The results of this study have proven that competitive aggressiveness is a good mediating variable in the relationship between network capability, knowledge creation, and innovativeness variables on the business performance of private universities in East Java. It also proves that innovativeness is the dominant variable that affects competitive aggressiveness.

The research implication is for management to encourage lecturers and organizations to be more productive in conducting research and writing articles published in reputable journals, this will increase the university's ranking on Webometric. This can be done by giving awards in the form of rewards to anyone whose works and articles can be entered and published in reputable journals.

Further research is suggested to examine further the effect of network capability, knowledge creation, innovativeness, and competitive aggressiveness on business performance by adding other variables and indicators as well as expanding the scope of the research area. In particular, it is recommended to review the relationship between network capability variables and competitive aggressiveness, which has not played a role in this study.

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