

# The Influence of Information Technology and Organizational Climate on the Competitiveness of Private Universities in Indonesia

Galih Abdul Fatah Maulani, Nizar Alam Hamdani

**Abstract:** Indonesian private universities are business entities operating in a global competition. The present study aimed at examining the influence of information technology and organizational climate on the competitiveness of private universities. Data were collected from 34 private universities selected using a non-probability sampling technique. Data analysis was performed using SEM-PLS. The results revealed that information technology and organizational climate had influence on the competitiveness of private universities in Indonesia. To conclude, it requires good organizational internal environments and information technology-based business process to improve the competitiveness of Indonesian private universities.

**Index Terms:** Keywords: Information Technology, Organizational Climate, Competitiveness of Private Universities.

## I. INTRODUCTION

The current Industrial Revolution 4.0 with its fast-paced and disruptive technology offers opportunities on the one hand and new challenges on the other hand. This is amplified with the convergence of digital, physical, and biological technologies. The emerging technology provides a huge economic potential (Hamdani, Susanto, & Maulani, 2018). World Economic Forum (WEF) published a report on Global Competitiveness Index 2017-2018 [2], and what follows is the competitiveness index of ASEAN countries.

**Table I.** Competitive Index of ASEAN countries 2017-2018

No	Country	Global Rank	Score
1	Singapore	3	5.71
2	Malaysia	23	5.17
3	Thailand	32	4.72
4	Indonesia	36	4.68
5	Brunei Darussalam	46	4.52
6	Vietnam	55	4.36
7	Philippines	56	4.35
8	Cambodia	94	3.93

Source: [2]

Table I shows that has still a long way to go even to compete with other ASEAN countries. In ASEAN, Indonesia ranks fourth of ten countries after Singapore, Malaysia, and Thailand. As any other sectors, the existence of higher education institutions is indispensable when it comes to

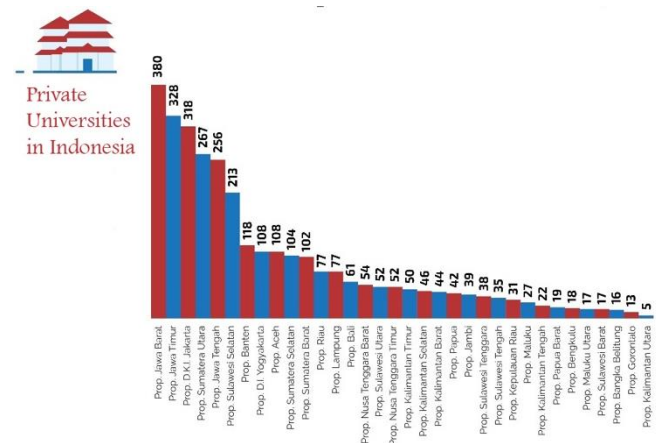
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improving a nation's competitiveness. Higher education institutions play a big role in the improvement of human resources, which is one of the most contributing factors to a nation's competitiveness [3].

There are 3,276 universities in Indonesia, consisting of 122 public universities and 3,154 private universities [4]. However, quantity does not mean quality. The rankings of Indonesian universities in the world are very disappointing. Only nine Indonesian universities indexed by QS World University Rankings, one of which is a private university. It goes to show that Indonesia has a lot to do to address the global competition.



**Fig. 1.** Private Universities in Indonesia [4]

The competitiveness of universities is also determined by organizational climate. Organizational climate also influences human resource competencies. The better organizational climate, the higher the quality of organizational behaviors. Organizational climate is also said to have significant influence on university performance (Chathoth, Mak, Jauhari, & Manaktola, 2007; Pasaribu & Kariono, 2013; Raza, 2010).

The development of information technology can be utilized to improve higher education institution national and international competitiveness [8]. Information technology is one of the key resources to realize strategic goals and help ensure the long-term sustainability of higher education institutions [9]. To optimize its performance, a university is now required to implement information technology in each of its business processes (Hamdani & Fatah, 2018; Maulani & Hamdani, 2018).

The competitiveness of



private universities has been a major subject of many studies on strategic management, and yet there are still many gaps in this research niche. The present study attempted to examine the influence of the implementation of information technology and organizational climate on the competitiveness of private universities.

II. LITERATURE REVIEW

The term competitiveness has been widely discussed by many academic literatures since it became the focal point of policy debates in the late of 1980s and early 1990s [12]. The competitiveness of an organization is derived from its unique values, reputation, innovation, architecture, and strategic assets [13]. According to the classical strategic model, the competitiveness is derived from a combination of external and internal factors (strengths, weaknesses, opportunities, and threats). However, it is important to think over that competition is a complex phenomenon. After all, a manager's strategic choice will directly impact the organizational performance and the organization's strategic adaptation to the external environment is the principle of competitiveness [14]. Knowledge of urban theories, new institutional theories, and Schumpeter's theory are required to understand the concept of competitiveness [15]. Competitiveness deals with the ability to compete with others using the following parameters: technology, staff knowledge and skills, level of strategic and operational planning, quality of management systems, and communication [3].

Some studies show that information technology had significant influence on company competitiveness (e.g., Laudon & Laudon, 2014; Wijnhoven & Wassenaar, 1990). It is also revealed that information technology had significant influence on organizational climate, which in turn had influence on competitiveness [18]. Some other studies also suggest that the use of information technology can improve innovative performance in creating competitiveness [19]. It is also suggested that there is a relationship between information technology capabilities and human resource competencies [20]. Information technology is established upon four resources: IT infrastructure, IT business experience, IT relationship resources, and IT human resources [20].

Organizational climate is a phenomenon experienced by researchers during field practices in different organizational conditions [21]. Organizational climate has positive influence on the sustainability of an organization competitiveness (Sarros, Cooper, & Santora, 2008; Ceyda & Sevinc, 2012; Permarupan, Ahmad, Suzana, & Kasim, 2013). There are many dimensions of organizational climate; among others are: clarity, standards, responsibility, flexibility, rewards, team commitment [25], [26]. A healthy organizational climate is a long-term proposition. Every manager should take an asset-based approach, meaning that each one of them views long term climate as an organizational asset [27].

III. RESEARCH METHODS

The present research selected 34 private universities in Indonesia using a non-probability sampling technique. Data analysis was performed using SEM-PLS. The research

variables included:

Table II. Research Variables

VARIABLES	INDICATORS	SOURCES
COMPETITIVENESS (Y)	Technology (Y1)	(3)
	Staff Knowledge (Y2)	
	Level of Strategic and Operational Planning (Y3)	
	Quality of Management System (Y4)	
	Staff Skills (Y5)	
	Communication (Y6)	
ORGANIZATIONAL CLIMATE (X2)	Clarity (X21)	(25,26)
	Standards (X22)	
	Responsibility (X23)	
	Flexibility (X24)	
	Rewards (X25)	
INFORMATION TECHNOLOGY (X1)	Team Commitment (X26)	(20)
	IT Infrastructure (X11)	
	IT Relationship Resources (X12)	
	IT Business Experience (X13)	
	IT Human Resources (X14)	

IV. RESULT AND DISCUSSION

Data analysis was performed using SmartPLS. Data normal distribution test was not necessarily done due to the bootstrapping method featured by SmartPLS. The result of SmartPLS analysis was follows:

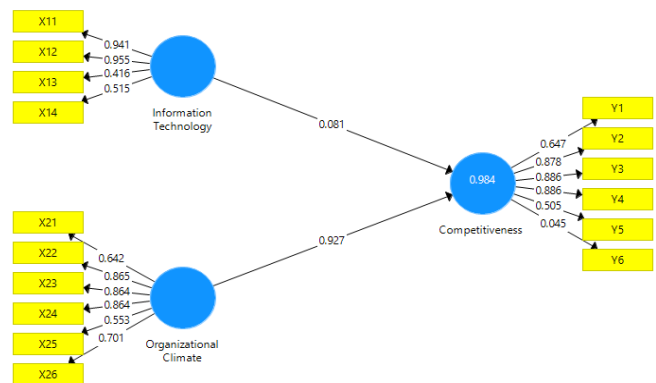


Fig. 1. PLS Algorithm Modelling

Fig. 1 illustrates the convergent validity of measurement model using reflective indicators. The suggested value of every indicator of each variable is above 0.50 so as to be deemed reliable. Table 1 presents the correlational output between the indicators and their constructs:

Table I. Outer Loading Matrix

MATR IX	COMPETITIVENESS	INFORMATION TECHNOLOGY	ORGANIZATIONAL CLIMATE

MATRIX	COMPETITIVENESS	INFORMATION TECHNOLOGY	ORGANIZATIONAL CLIMATE
X11		0.941	
X12		0.955	
X13		0.416	
X14		0.515	
X21			0.642
X22			0.865
X23			0.864
X24			0.864
X25			0.533
X26			0.701
Y1	0.647		
Y2	0.878		
Y3	0.886		
Y4	0.886		
Y5	0.505		
Y6	0.045		

Table I shows that the variables IT business experience (X13) and communication (Y6) were not reliable since their loading factor values were below 0.50, so the model should be modified by removing these two variables.

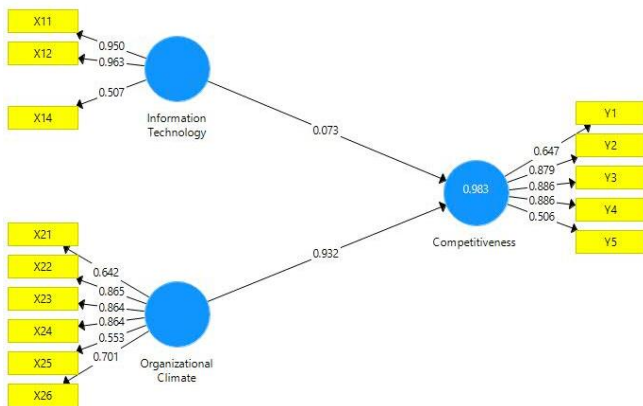


Fig. 2. PLS Algorithm Modelling without X13 dan Y6

cross loading values between the indicators and their constructs indicate the discriminant validity of the indicators. SmartPLS displayed the following results:

Construct Reliability and Validity				
Matrix	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Competitiveness	0.822	0.863	0.879	0.603
Information Technology	0.757	0.886	0.865	0.696
Organizational Climate	0.847	0.879	0.888	0.575

Fig. 3. Construct Reliability dan Validity

The variable validities can also be determined by the Average Variance Extracted (AVE) values. The suggested value is above 0.50. Figure 3 shows that the variables competitiveness, information technology dan organizational climate were valid since their AVE values were higher than 0.50.

The variable reliabilities can also be measured using yang composite reliability and Cronbach's alpha. The suggested

value is above 0.70. Figure 3 shows that all variables were reliable because their composite reliability and Cronbach's alpha values were higher than 0.70.

Next is structural model (inner model) testing. This was done by looking at the R-Square value.

R Square

Matrix	R Square	R Square Adjusted
Competitiveness	0.983	0.982

Fig. 4. R-Square Value

Fig. 4 shows that the R-Square value was 0.983, meaning that information technology and organizational climate had influence on the competitiveness of private universities as much as 98.3%, the rest were influence by factors other than the studied variables.

The parameter coefficient and T statistics value show how significant information technology and organizational climate influenced the that information technology and organizational climate, but first a bootstrapping method was performed. The result was the following model:

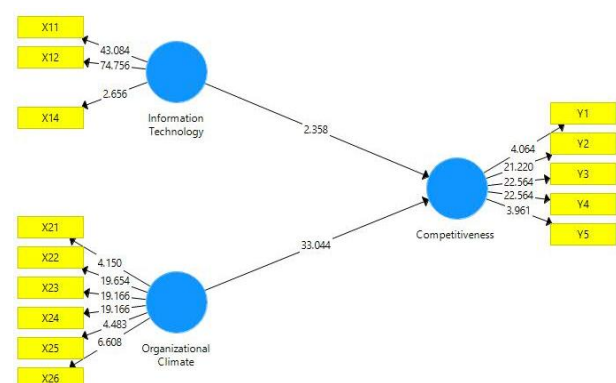


Fig. 5. Bootstrapping PLS Model

The bootstrapping also resulted in the following matrix:

Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviati...	T Statistics...	P Values
Information Technology -> Competitiveness	0.073	0.077	0.031	2.358	0.019
Organizational Climate -> Competitiveness	0.932	0.929	0.028	33.044	0.000

Fig. 6. Path Coefficients

The parameter coefficient of 0.073 on Original Sample Column means that information technology had positive influence on the competitiveness and that the more information technology is used, the better the competitiveness of private universities. The T statistics of 2.358 is higher than the critical t of 1.96, meaning that the influence was significant. Organizational climate also had positive influence on the competitiveness as indicated by the parameter coefficient of 0.932. It could also be said that



the better the organizational climate, the better the competitiveness of private universities. The influence of organizational climate on the competitiveness of private universities was also significant because the T statistics of 33.044 was higher than the critical t of 1.96.

## V. CONCLUSION

Information technology and organizational climate play strategic and important roles in creating the competitiveness of private universities in Indonesia. Technology, staff knowledge and skills, level of strategic and operational planning, and quality of management systems were dimensions to take into account when creating the competitiveness of universities equipped with information technology and good organizational climate.

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