The Influence Information Technology Capabilities and Differentiation on the Competitiveness of Online Culinary SMEs

Nizar Alam Hamdani, Galih Abdul Fatah Maulani

Abstract: ***Culinary business is emerging due to the increasing demand for it, especially in big cities. There is a new behavioral trend that nowadays people tend to order food, rather than to cook at home, as they are busy with their works. This behavior is amplified by the advance of technology and Internet. This behavior poses an opportunity, and at the same time, a threat to culinary SMEs. This study investigated information technology capability of SMEs and differentiation in increasing competitiveness of online culinary SMEs. The unit of analysis in this study was online culinary SMEs in West Java, Indonesia. The study was conducted using an explanatory survey method. The samples were 90 online culinary SMEs selected purposively. Based on PLS-SEM analysis, it was revealed that the surviving SMEs are the ones with information technology and differentiation. These capabilities improved their competitiveness.***

Index Terms**:** ***Keywords: Information Technology Capability, Differentiation, Competitiveness.***

I. INTRODUCTION

The competitiveness of small and medium-sized enterprises (SMEs) is one of economic strategic issues that has been a subject of many studies. Some studies put forward the importance of research on SME competitiveness (e.g., Moghavvemi, 2012; Utami & Lantu, 2013). Some other studies suggest that competitiveness is a determining factor in an SME business performance (e.g., Hamdani, 2018; Hamdani & Susilawati, 2018).

SMEs can encourage regional economic growth and eventually will improve the national economy (Hashi & Krasniqi, 2011). They help the government improve the economy by distributing the income of the society, opening employment opportunity, and supplying the needs of the bigger sector. SMEs increase people's income from the non-formal sector [6]. SMEs offer significant contribution to the economic growth in many countries. The Organisation for Economic Co-operation and Development (OECD) suggests the productivity gap between large firms and SMEs has widened in some countries since the global crisis [7] as illustrated in Fig. 1.

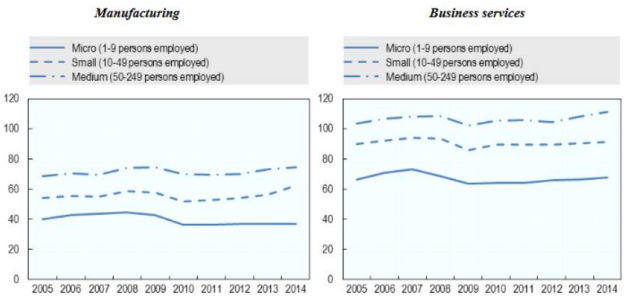

Fig.1: The productivity gap between large firms and SMEs
Sources: OECD Structural Business Statistics (database), November 2017

The rapid development of Information and Communication Technology (ICT) and Internet has transformed the way we do things in life; business and commerce are not the exceptions [8]. Internet and ICT allow marketing and sales processes to be done anytime and anywhere (Gusaptono, Effendi & Charibaldi, 2012). Many business entities make use of the Internet capabilities to transfer various forms of data such as texts, graphics, images, sounds, animations, or even videos to promote their business (Bodendorf & Lang, 2009; Daniel, 2002).

Fig. 2: Top 6 Countries with Highest Number of Internet Users

Top 6 Countries With Highest Number OfInternet Users - December 31, 2017

#	Country or Region	Population, 2018 Est.	Population 2000 Est.	Internet Users 31 Dec 2017	Internet Users 31 Dec 2000	Internet Growth
1	China	1,415,045,928	1,283,198,970	772,000,000	22,500,000	3,331 %
2	India	1,354,051,854	1,053,050,912	462,124,989	5,000,000	9,142 %
3	United States	326,766,748	281,982,778	312,322,257	95,354,000	227 %
4	Brazil	210,867,954	175,287,587	149,057,635	5,000,000	2,881 %

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5	Indonesia	266,794,980	211,540,429	143,260,000	2,000,000	7,063 %
6	Japan	127,185,332	127,533,934	118,626,672	47,080,000	152 %

Source: Top 6 Countries Internets User [12]

Now almost all society (especially in developed countries) are very familiar with the Internet, from which they can easily get informed. High number of Internet users in Indonesia offers business potentials to online shops, marketplaces, and e-commerce [13]. In this respect, differentiation is the key in the creation of product competitiveness (Tan & Sharma, 2009; Harahap *et al.*, 2017)

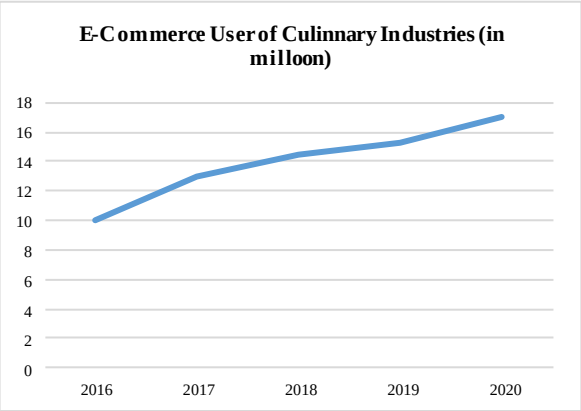

Fig. 3: Culinary E-Commerce Users (million)
Source: Culinary E-Commerce [16]

Fig. 3 shows that e-commerce has been prolifically implemented in various business lines in recent years. However, its application in culinary business is relatively low [16]. Public expenditure behavioral changes can be indicated by an increase in the volume of e-commerce transactions. The annual report issued by We Are Social shows that the number of Indonesians who buy goods and services online in a month in 2017 reached 41% of the total population, an increase of 15% compared to 2016 [17]. Therefore, information technology capabilities and differentiation can be the key to the creation of SME competitiveness.

The purpose of the present study was to examine to what extent information technology capabilities and differentiation influence culinary business competitiveness.

II. LITERATURE REVIEW

The success of SMEs can be constrained by their ability to respond the market due to low information technology resources [18]. And studies show optimal use of information technology can improve their competitiveness (Den Hengst & Sol, 2001; Windrum & De Berranger, 2010; Apulu & Latham, 2010; Zoroja, 2016). Information technology facilitates market penetration, product diversification, and production cost efficiency and improves business performance. In other words, the use of information technology can improve the profitability ratio (Ling, 2017; Hamdani & Fatah, 2018; Lingesiya, 2012).

Information technology capabilities refer to the company capabilities to mobilize resources using information technology in combination with other resources and other capabilities [23]. Technology capabilities are the capabilities to develop and design new products and to process and enhance knowledge of the physical world in a unique way, and to transform this knowledge into design and instruction to achieve the expected outcomes (Turulja & Bajgorić, 2016). To put it another way, technology capabilities are a set of knowledge consisting of practical and theoretical know-how, methods, procedures, experiences, and physical devices and equipment. Information technology capabilities refer to the capabilities of an organization to store, process, and transfer information (Al-Rajhi, Majed & Liu, 2010). Therefore, information technology capabilities can be measured using the following indicators: dynamic information technology capability, integrating information technology capability, utility information technology capability [23].

Differentiation refers the process of making a product different from other similar products [28]. It is a strategy to produce unique products that are different from the competitors. This uniqueness is the customer value (Setyowati & Fadah, 2018). Differentiation can be done by identifying the existing advantage value, creating unique features, and selecting market niche. Differentiation can be offered in three ways: product differentiation, service differentiation, and image differentiation (Kotler & Keller, 2009).

Product differentiation deals with new products. There is a significant positive relationship between new product success and product differentiation measurement [31]. Product differentiation can be said successful if the consumers feel that the new products are unique and different from the others [32]. Service differentiation is a service and quality improvement wherein different values in services are offered to customers (Martinsuo & Väliaho, 2016). Image differentiation can be done through different marketing strategies. Image playa a significant role in business, and it is important to make customers feel that the image is different from the competitors' images [28].

Companies with no competitiveness will be left behind because competitiveness means advantage. In short, there is no way a company can survive in a long-term competition without advantage (Kabue & Kilika, 2016). Competitiveness deals with how effective an organization offers its products or services to beat its competitors. To be effective in a competition, companies should be able to offer quality products or services. Some studies measured the competitiveness using the following indicators: contains factor condition, demand condition, related and supporting industries and business strategy (e.g., Anton, Muzakan & Muhammad, 2015). The present study used organizational capabilities, owners' competencies, and SME performance as the indicators for SME competitiveness (Hudson, Smart & Bourne, 2001; Darsono, Yahya & Amalia, 2016; Utami & Lantu, 2013; Nota & Santander, 2012). Previous studies have discussed the competitiveness factors of SMEs (e.g., Kadocsa, 2006). Some other put forward the importance of information technology for SMEs (e.g., Ladokun, Osunwole, & Olaoye, 2013;

Windrum & De Berranger, 2010; Hamdani & Maulani, 2018).

III. RESEARCH METHODS

This study was conducted using a quantitative explanatory research approach. There were 90 of randomly selected online culinary SMEs that returned the questionnaires. Data analysis was performed using SEM-PLS. The studied variables were information technology capability (X1) measured using the indicators dynamic ITC (X11), integrating ITC (X12) and utility ITC (X13); differentiation (X2) measured using the indicators product differentiation (X21), service differentiation (X22), and image differentiation (X23); and competitiveness (Y) measured using the indicators organizational capabilities (Y1), owner's competencies (Y2) and SME performance (Y3).

IV. RESULTS AND DISCUSSION

Data analysis was performed after bootstrapping, so the data distribution is ignored. SmartPLS analysis resulted in the following model:

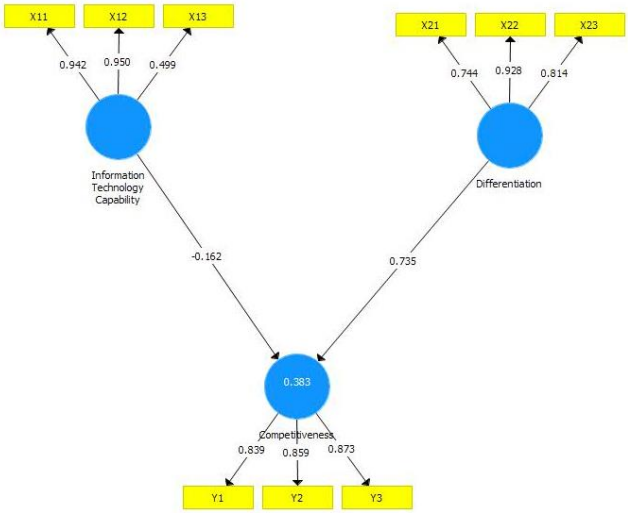

Fig. 4. Analysis Results using PLS Algorithm

Fig. 4 can be interpreted as follows:

1. The path coefficient of Information Technology Capability (X1) to the latent variable Competitiveness (Y) was -0.162, meaning that X1 had influence on Y as much as -0.162,
2. The loading for the indicator Dynamic ITC (X11) was 0.942, meaning that X1 contributed to X11 as much as 0.942,
3. The loading for the indicator Integrating ITC (X12) was 0.950, meaning that X1 contributed to X12 as much as 0.950,
4. The loading for the indicator Utility ITC (X13) was 0.499, meaning that X1 contributed to X13 as much as 0.499,
5. The path coefficient of Differentiation (X2) to the latent variable Competitiveness (Y) was 0.735, meaning that X2 had influence on Y as much as 0.735,
6. The loading for the indicator Product Differentiation (X21) was 0.744, meaning that X2 contributed to X21 as much as 0.744,
7. The loading for the indicator Service Differentiation (X22) was 0.928, meaning that X2 contributed to X22 as much as 0.928,
8. The loading for the indicator Image Differentiation (X23) was 0.814 meaning that X2 contributed to X23 as much 0.814,
9. The loading for the indicator Organizational Capabilities (Y1) was 0.839, meaning that Y contributed to Y1 as much as 0.839, and so on.

Since the loading factor was lower than 0.6, the indicator X13 should be removed. The model then was as follows:

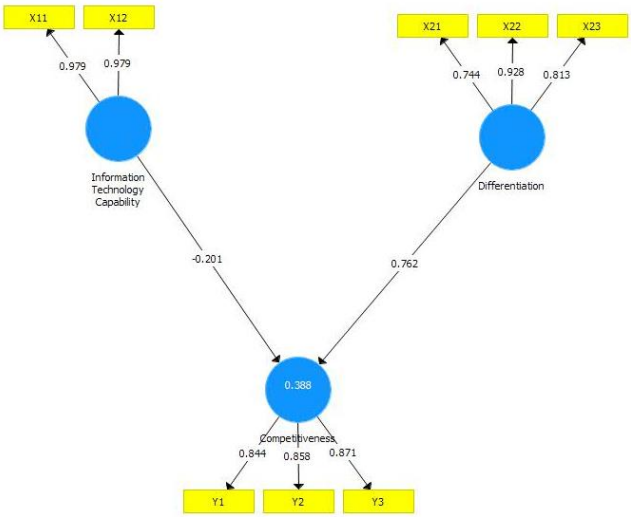

Fig. 5. Analysis Results using PLS Algorithm without X13

Fig. 5 shows that all constructs were above 0.6, meaning that all indicators were valid and met the convergent validity. In addition, SmartPLS also showed the following matrix:

Construct Reliability and Validity

Matrix | Cronbach's Alpha | rho_A | Composite Reliability | Average Variance Extracted (AVE)

	Cronbach's Alpha	rho_A	Composite Relia...	Average Varian...
Competitiveness	0.821	0.833	0.893	0.735
Differentiation	0.779	0.848	0.870	0.692
Information Tec...	0.956	0.956	0.979	0.958

Fig. 6. Construct Reliability and Validity

The values of square root of average variance extracted (AVE) show the discriminant validity. The suggested value was above 0.5. The AVE value of X1 was 0.958, of X2 was 0692, and of Y was 0.735. Thus, all of these values have met the requirements. The composite reliability values show each variable's reliability. The suggested value was above 0.7. In this research the composite reliability of X1 was 0.979, of X2 was 0.870, and of Y was 0.893. All of them were above 0.7. To justify these, Cronbach's Alpha test resulted in the following: the Cronbach's Alpha value of X1 was 0.956, of X2 was 0.779, and of Y was 0.821. These are above the suggested value of 0.6.

Data analysis also resulted in the following R-Square value.

Table I. R-Square Value

	R-Square
X1	
X2	
Y	0.388

The R-Square value from Information Technology Capabilities (X1) with its indicators and Differentiation (X2) with its indicators to variable competitiveness (Y) was 0.388, meaning that the influence of Information Technology Capabilities and Differentiation on Competitiveness as much as 38%.

The outer model analysis using the bootstrapping method resulted in the following:

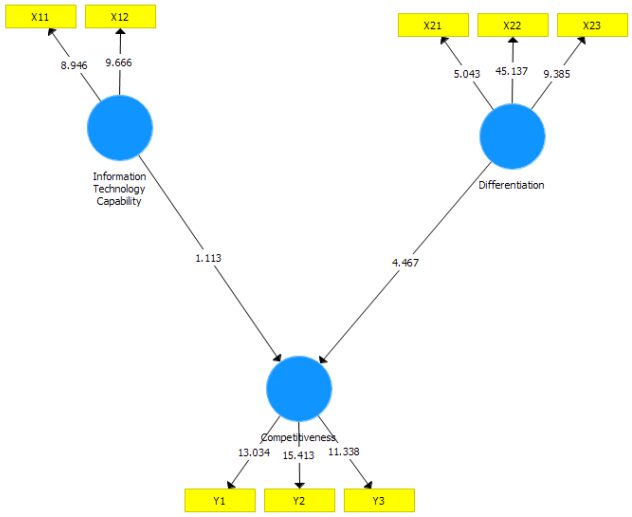

Fig. 5. Bootstrapping Result

Path Coefficients

Mean, STDEV, T-Values, P-Values | Confidence Intervals | Confidence Intervals Bias Corrected | Samples

	Original Sample ...	Sample Mean (M)	Standard Devia...	T Statistics (|O/...	P Values
Differentiation -> Competitiveness	0.762	0.775	0.171	4.467	0.000
Information Technology Capability -> Competitiveness	-0.201	-0.198	0.181	1.113	0.266

Fig. 6. Path Coefficients

Fig. 6 shows that there was significant relationship between differentiation (X2) and competitiveness (Y) as the statistical-T value was 4.467 (>1.66). The original sample estimate value was 0.762, meaning that there was positive relationship between X2 and Y. To conclude, differentiation had significant influence on the competitiveness of online culinary SMEs. It was also revealed that Information Technology Capability (X1) had no significant influence on the competitiveness of online culinary SMEs as the statistical-T value was 1.113 (>1.66).

V. CONCLUSION

Information technology capabilities will encourage companies to be more responsive to problems threatening their existence. This study found that SMEs had low information technology capabilities and that product differentiation and service differentiation improve customer satisfaction and in turn improve their image.

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