Linking accounting information system with organizational learning and competitive advantages

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Abstract: The development of the tourism industry in East Java, Indonesia, has impacted positively on the development of hotels in various regions. The development of the tourism industry in East Java, Indonesia, has impacted positively on the development of hotels in various regions. This study examines the role of accounting information systems to support organizational learning process in achieving competitive advantages, particularly in the hospitality industry at East Java. The paper presents the role of accounting information system as the intervening variable was effective in strengthening the influence of organizational learning to competitive advantages.

Keywords: accounting information system, organizational learning, competitive advantaged, hospitality industries, mediation

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1 Introduction

In this current modern business era, every organization is required to create innovation in order to generate a competitive advantage. Competitive advantages are the competencies or abilities which set an organization apart from its competitors (Li et al., 2006). The rapid technological development in information system must be balanced by the ability of each organization to continue to learn and develop the ability to strengthen its competitive advantages. An organization can develop its competitive advantages through the learning process, which is a continuous improvement process (Garvin, et.al, 2008; Njuguna, 2009).

The development of technology has an important role in the changing business environment. Business people should be able to respond the desires and expectations of customers which are constantly changing (Ozturk and Hancer, 2014). The investments in information technology (IT) are expected to give critical impact in managing the strategy in the hotel industry. The effective deployment of IT applications will lead to the enhancement of guest services in order to meet customers satisfaction, cost control, and more effective marketing strategies (Bilgihan et al., 2011, Law and Jogaratnam, 2005; Piccoli, 2008).

The applications of computers and telecommunication tools enable IT to store, retrieve, transmit and manipulate data in order to create perceived knowledge or valuable information (Ghasemi, et al., 2011). Nowadays, accounting information system (AIS) cannot be separated from the uses of information technology system which helps accountings to measures, process and communicates the financial and non-financial information (Lim, 2013). The usage of technology in AIS elevates the position of the organization in the competitive market as the AIS plays the critical role to create qualified information for better decision making (Hall, 2008).

2 Research Context

Hospitality is one of the potential business sectors in the Indonesian economy. The Indonesian government, especially the Ministry of Tourism, believes that the existence of the ASEAN Economic Community (AEC) has the potential to drive growth in the number of tourists visiting Indonesia to be above 10%. During the period 2005-2015, tourism in the ASEAN region was able to grow an average 8.3% per year, well above the average global growth of only 3.6%. Even in 2013, the flow of tourists to ASEAN countries reached 92.7 million. In 2023, the potential contribution of tourism to the economy in the ASEAN region is projected to reach the US \$ 480 billion with an average growth of 5.8% per year. This is a great opportunity for Indonesia in strengthening the national economy. Until the year 2013, the contribution of tourism to the Gross Domestic Product (GDP) in Indonesia reached around 9% with employment 8.9% of the total workforce. This sector became the fourth largest sector in Indonesia. Ministry of Tourism and Creative Economy made assorted efforts to advance the competitiveness of the tourism industry in Indonesia, especially in the aspect of improving the quality of human resources. Until the end of 2013, has created 58.627 certified tourism workforce. The role of hotels in the tourist industry is imperative because the hotel is a primary means in tourism. Just like a building, the hospitality sector is a pillar of the tourism industry (Ministry of Tourism, 2014).

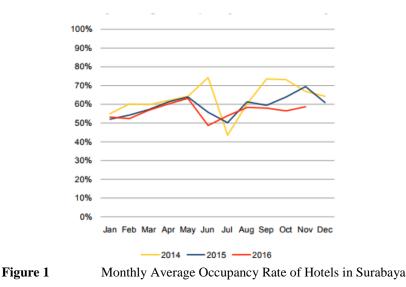
Table 1 The Statistic of Foleign Fourism Entering Juanda Amport													
Month	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Total
Year 2016	12,558	16,296	19,026	18,916	19,168	15,325	22,010	19,908	20,619	21,629	23,866	22,134	231,455
Year 2015	15,832	14,456	16,931	16,538	17,881	15,501	18,245	19,372	18,860	16,534	21,197	17,489	208,836
Growth (%)	-20.68%	12.73%	12.37%	14.38%	7.20%	-1.14%	20.64%	2.77%	9.33%	30.82%	12.59%	26.56%	10.83%

 Table 1
 The Statistic of Foreign Tourism Entering Juanda Airport

Source: Ministry Tourism Statistic

According to the statistical data of Ministry of Tourism, the number of foreign tourists who came to East Java via the entrance of Juanda International Airport reached 208,836 visitors in the year 2016. As shown in Table 1, it was an increase of 10.83 percent over the number of foreign tourists in the year 2015. Within 2 years after 2013, the number of hotel development in East Java has increased. This is because of the support of the government of East Java in rearranging licensing systems become more productive. In addition, business opportunities in the field of hospitality that is promising have made investors and entrepreneurs' property take part in a benefit to the hospitality business, especially in East Java (Colliers, 2016).

Surabaya, as the capital of East Java, is one of the industrial areas and the most prominent commercial cities in Indonesia. Being the main hub for economic activity for eastern Indonesia, Surabaya is the principle business goal after Jakarta. In the year 2016, Surabaya recorded a total of 5,305 rooms of the 3-star class; 3,550 rooms in the 4-star hotel class; and 2,224 rooms of the 5-star class (Colliers, 2016). The attributes of hotels in Surabaya are like those in Jakarta. As the focal point of business centers in eastern Indonesia, hotel performance in Surabaya is likely dictated by the business activities in the city. While business movement is specially controlled by worldwide monetary performance, Surabaya, much the same as Jakarta, was affected by the downturn in economy reflected by the declining investment value. Likewise, this additionally affected hotel performance in Surabaya, which converted into moderately low occupancy and room rate. Figure 1 demonstrates that the average occupancy rates (AOR) in the year 2016, with an average of 58.7%, was lower than the AOR for the year 2014 and 2015. It explained that that hotel competition in Surabaya has turned out to be amazingly high, especially in the most recent three years (Colliers, 2017).



3 Conceptual Framework

3.1 Accounting Information System

Romney and Steinbart (2012) contend that the information system is an accumulation of data that comprises of at least two interrelated subsystems that associate to accomplish an objective. As that study mentioned, every subsystem is intended to accomplish at least one targets of the association. Information is data that have been sorted out and prepared to give meaning and enhance the decision-making process. Clients settle on better choices and in addition the amount and quality of information increments. Information collected will vary from one organization to another; it is customized to the requirements of the organization. Hall (2008) reveals three fundamental goals of AIS. To start with, the AIS underpins the execution of administration works in dealing with the organization's assets and announcing its exercises as a type of responsibility. External users receive information which has been overseen through traditional financial statements and other required reports. Second, AIS supports business decision-making in the internal organization. Managers utilize the information to assist them in arranging and control decisions relating to their duty zone. Third, AIS bolsters the daily operations of the organization. Operating staffs utilize the data to help them in completing their tasks productively and successfully.

Another exploration done by DeLone and McLean (2003) argues various variables which frame the reason for measuring the achievement of information systems, including accounting information system. These components are the information system quality, the quality information, the intensity of the use of information systems (system use), end-user satisfaction, individual impact, and organizational impact of information systems. The definition of each factor is as follows. First, system quality which is the assessment of information processing in which the information to be produced in accordance with the needs of the organization. The second factor is information quality which is the assessment of the accuracy of the information system, whether as desired by the user. The third is system use which is an assessment

of how information systems can be used by the organization in order to facilitate the organization in getting the updated information. The fourth is user satisfaction which is the assessment of user satisfaction in using the system, whether the system is flexible in change and easy to use. The next factor is Individual impact which is the result obtained from individuals once they get the information that has been processed, and will be used to increase knowledge and improve decision-making in the next period. And the last one is Organizational impact which is an assessment of how the influence of such information to the entire organization in order to improve company performance.

3.2 Organizational Learning

Individual learning is the first step of organizational learning as it is an accumulation of outcomes from individual learning (Senge, 1990). Organizational learning as a procedure of acquisition, interpretation, storage, and execution of new information to enhance the organizational capacity to take care of issues (Huber, 1991). According to Garvin (1993), organizational learning can be characterized as theory and behavior, which brings about cognitive changes, as well as the behavior that leads to improved performance that conducted through the updated methods and concepts of thinking. Organizational learning can likewise be viewed as changes in conduct through information processing; it refers to the advancement of new information and bits of knowledge, and the capacity to use new information to enhance organizational performance (Slater and Narver, 1995). Surveys, questionnaires, interviews, and performance measures should be utilized precisely to quantify organizational learning.

Based on the concept of organizational learning proposed by Huber (1991) and Slater and Narver (1995), there are four dimensions that can be used to describe organizational learning. First, Information acquisition or creation. Qualified information collected, both from the internal and external environment. This information will be used to evaluate past performance, and create new information for future strategies. Second, interpretation and exchange information. Qualified information that has been obtained is then distributed, resulting in the transfer of information between individuals, groups and the different divisions within the organization. Furthermore, the information received will be interpreted. Any individual or division may have different interpretations, so it takes a discussion to harmonize the interpretation results. Third, information application and knowledge creation. Organizations can use the information system applications that are proportionate, adjusted to the conditions and needs of the organization. The information is used for decision-making so that this information becomes valuable. This information produces knowledge. Organizations need technology information systems for storing knowledge. Knowledge, as the result of the learning process, has a relatively short half-time due to the personnel turnover, and the dynamic of a business environment that is constantly changing (Sinkula, 1994). Fourth, knowledge internalization. Information that has produced this knowledge will be generalized to the entire organization. This knowledge is not just a theory but will be practiced in daily activities.

3.3 Competitive Advantages

Competitive advantage is the ability of an organization to differentiate itself from its competitors, based on the existence of a superior competence that can be leveraged to create value-added services to customers, and generate profits (Barney, 1991). The manager agreed that the cost and quality will continue to remain the dimensions of a competitive advantage. Some of the factors that underlie the organization in order to survive in the global market are the need to focus on time, the flexibility, and the speed in responding to customer needs (D'Souza and Williams, 2000).

Ramaswami et al. (2004) and Li et al. (2006) examined some dimensions of competitive advantages. In the first place, developing differentiated products. It is the organization's capacity to create a product or service that is not quite the same as its rivals. Second, collaboration with partners, as the level of organizations to utilize and coordinate internal and external entities when developing new products or services. Third, a market sense is the capacity of organizations to observe and react to patterns and occasions in the market ceaselessly, with the goal that it can make more values for customers. Fourth, market responsiveness, is the speed of the organization respond to customer needs and competitors developments. Hence, the organization can give competitive offers to its customers. Fifth, concentrate on high-value customers, is to concentrate on customers who give the most revenues and profit for the organization. Sixth, customers as assets are the capacity to keep up associations with customers, as the customers are the organization's benefits. Seventh, information transparency. Transparency of demand will ensure suppliers make the correct supplies at the perfect time. While the transparency of the decision

information will guarantee that suppliers can alter their policies in accordance with their knowledge. Transparency of information additionally enables organizations to reduce supply chain costs. Eight, (networked) supply chain leadership, is the ability to lead the supply chain, in this manner the organization can utilize the connections in the supply chain to enhance operational productivity and provide better value to the customers.

3.4 Accounting Information System, Organizational Learning, and Competitive Advantage

The process of sharing knowledge and expertise as the part of organizational learning can be facilitated by the information system, thus AIS is designed to improve organizational learning (Romney and Steinbart, 2009; Sinkula et al, 1997; Ouksel et al, 1997; Emmanuel et al, 1990). In the digital era, the organization is required to have a more dynamic view of the relationship between the company, its customers, suppliers and competitors (Laudon and Laudon, 2012). The information system and information technology support the organization's efforts in engaging and collaborating with its stakeholders in its innovation process (Lichtenthaler, Hoegl and Muethel 2011).

Markus and Robey (1988) argue about an approach, namely the emergent perspective, which states that the technology and organization features cannot be separated. The approach emphasizes the impact from the inseparability of organization and system, which is the continuous learning. It creates a culture of continuous searching for improvements and innovation. Furthermore, innovation is not only about R&D for new products or services, but also the changes and new things in the business process, customer services, marketing and sales, data collection and decision making, training and learning, logistic management, operation system, and any other parts of the business (Xu and Quaddus, 2013).

Organizational learning is the process that shows organization dynamic capability in the shifting knowledge environments to ensure organization continued survival and competitiveness; it has been proposed to be positively related to organization competitive advantage (Maiga, 2015; Hoang and Rothaermel, 2010; Njuguna, 2009; Chenhall, 2005; Eisenhardt and Martin, 2000).

The focus of this study is on the contribution of accounting information system (AIS) to effective organizational learning by managers at the operational and tactical business levels. It is due to the complexity of information collected at the strategic business level (Wijnhoven, 1995). Therefore the hypotheses in these relationships are:

H1: Organizational learning has a positive influence on the usage of AIS.

H2: The usage of AIS has a positive influence on competitive advantage.

H3: Organizational learning positively affects competitive advantage

The study intends to confirm the role accounting information system and organizational learning in predicting competitive advantage in East Java hotels. Fig. 2 presents the conceptual model used in this study

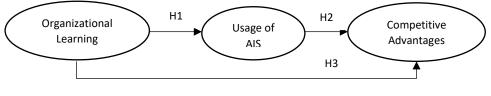


Figure 2 Conceptual Framework

4 Research Methodology

4.1 Generation of Items

In measuring the constructs, the relevant items were adopted from different studies on the basis of literature review, along with qualitative interviews in the form of focus group discussion conducted with the one manager each hotel from ten selected hotels. Purification processes conducted to pretest the items of three constructs – the usage of AIS, organizational learning, and competitive advantage. This study examines the influence of AIS usage and organizational learning on the organization's competitive advantage in three to five stars hotels in East Java. The six dimensions of the usage of AIS, which modified from DeLone and McLean (2003), are System Quality (IS1), Information Quality (IS2), Use (IS3), User Satisfaction (IS4), Individual Impact (IS5), and Organizational Impact (IS6). The items of organizational learning

relating to Information acquisition or creation (OL1), Interpretation and exchange information (OL2), Information application and knowledge creation (OL3), and Knowledge internalization (OL4). Those are modified from Huber (1991) and Slater and Narver (1995). In addition, modified scale of Ramaswami et al. (2004) and Li et al., 2006 used to measure to measure the domain of competitive advantage comprising items relating to developing differentiated products (CA1), collaboration with partners (CA2), market sensing (CA3), market responsiveness (CA4), focus on high value customers (CA5), customer as assets (CA6), information transparency (CA7), and (networked) supply chain leadership (CA8).

4.2 Data Collection and Measurement

The research is empirical studies using quantitative data. The source of data used is a primary source which is collected from distributing the questionnaire to the 3-5 stars hotel managers in East Java who have been working for three years. The population in this research are the three to five stars hotels in East Java. Based on Indonesian Statistic Bureau on 2015, the number of stars hotels in East Java is 143 hotels. This research used *non-probability sampling* with the *sampling purposive sampling* technique. The questionnaires were given to 100 stars hotels in East Java from November 2015 to February 2016. The questionnaires that were finally used in this research were 70 questionnaires and came from 41 stars hotels (3-5 Stars) in East Java. Those hotels areas include Surabaya, Batu, Kediri, Tretes, Trawas Jember, Madiun, Tulungagung, Bondowoso, dan Situbondo.

The data analysis uses in this research is Partial Least Square (PLS) analysis which is also an alternative part from *Structural Equation Modeling* (SEM) analysis. The partial least squares, as the part of structural equation modeling method, has gained increasing attention in some business and management research fields, such as marketing, accounting, strategic management, and management information systems (Richter, et al, 2015). PLS application will be suitable for the issues related to the estimation and assessment of formative and reflective measurement models. The application also suitable for the studies of mediating and moderating effects.

5 Research Findings and Analysis

5.1 Validity and Reliability Analysis

The main principle in convergent validity is that a construct must have a high correlation with its observed variables or indicators, and measured by the outer model weights. The indicator is reliable if the outer model weight is higher than 0.70; but if it the weight is 0.5 or higher and the *average variance extracted* (AVE) is also higher than 0.5 thus it is still acceptable (Hulland, 1999). The internal consistency reliability is contented if the composite reliability is higher than 0.70 (Bagozzi and Yi, 1988). The questionnaires are reliable to reflect the variables if the Cronbach's alpha is higher than 0.76 (Kember, et.al. 2000). Since the research framework examined using multiple regression concepts, therefore multicollinearity should not exist. No collinearity is commonly accepted if the Variance Inflation Factor (VIF) is less than 10 (Hair et al., 1995). The discriminant validity is met when the loading factor of indicators to their own construct is higher than to other constructs. In addition, the square root AVE must be higher than the correlation of latent variables in order to meet the discriminant validity. In summary, Table 2 and Table 3 show that all indicators used were valid and reliable.

5.2 Inner Model and Hypotheses Tests

The causal relationships between latent variables are predicted in the inner model. The significant causal relationship obtained if the t-stat > 1.96. The accuracy of the prediction model can be measured by the R-squared value, even though it is an absolute parameter since the basic theoretical relationship is the main one. *Stone-Geisser* (Q^2) is used to test how well the observation value resulted by the model.

Table 4 shows that the observation value elicited by this structural model were 62.5%. It means that OL and AIS were able to predict CA simultaneously on 62.5%. As seen on the Table 4, the t-stat values are higher than 1.96, therefore, all path coefficients in the inner model were statistically significant. The result shows that all the hypotheses were accepted. In partial, OL has positive effect on AIS by 59.7%, as well as on CA by 18.7%. AIS also has positive influence on CA by 51.7%. The summary shown in Fig 3.

Fable	e 2 The Convergent an	a Disc		ant v	anon	у		
			Outer	Model	Weight	Outer		Reliability
Items	Descriptions	Mean	and Cross Loadings			Outer Model T-	VIF	Reliability Cronbach Alpha
items	Descriptions	Wiedin	Factors			Statistic		
			IS	OL	CA			
IS1	The existing system has been used properly. Protection and security programs used are always active to prevent unknown access	3.96	0.762	0.547	0.506	22.407	1.621	
IS2	Information systems in your organization connected with all existing network within the organization	3.83	0.815	0.366	0.469	19.949	2.198	
IS3	Computer and cabinet files are always used in your organization, so it will be easier for user to transform the data into information	4.30	0.758	0.441	0.437	15.252	1.707	0 707
IS4	The information systems (programs) are dynamic. The systems are regulatory updated as the business environment changes	3.58	0.520	0.342	0.373	7.613	1.181	0.787
IS5	Employees gain benefit in their work when able to apply systems and procedures in information systems	3.84	0.594	0.331	0.269	7.467	1.437	
IS6	The accuracy in analyzing the information generated by the information system will improve the financial performance of the organization	3.92	0.773	0.467	0.554	27.732	1.667	
OL1	Employees were able to identify new information relevant to the scope of their work and be able to combine it with past experiences, so they can generate creative ideas	3.74	0.340	0.753	0.255	13.655	1.744	
OL2	An exchange of information between units and between individual employees, which will be used for decision making	3.89	0.568	0.858	0.509	44.987	1.980	0.846
OL3	Learning facilities available for employees, both internal learning, as well as learning from the outside (such as seminar or training)	3.77	0.550	0.844	0.442	32.588	2.009	
OL4	Employees were able to transform theoretical knowledge into practical knowledge, so that it can be used to improve the organization performance	3.72	0.456	0.846	0.365	27.528	2.174	
CA1	My organization has uniqueness in designing products and services	3.83	0.414	0.510	0.709	14.032	2.481	
CA2	My organization uses a cross-functional team in the design of new products	3.52	0.334	0.430	0.693	12.071	2.152	
CA3	My organization is able to follow the market trend	3.99	0.515	0.416	0.828	21.215	3.488	
CA4	My organization has the capacity to respond effectively to market needs	3.86	0.575	0.386	0.786	22.596	3.215	
CA5	My organization gives particular attention to the customer who provides a relatively large profit	3.90	0.519	0.417	0.815	22.776	3.025	0.901
CA6	My organization recognizes the customer as the company's assets	4.01	0.476	0.343	0.813	23.881	3.378	
CA7	My organization shares information with the parties in the value chain (especially suppliers and distributors)	4.07	0.541	0.226	0.754	17.751	2.169	
CA8	My organization gives customers the opportunity to negotiate with the parties in our value chain, such as suppliers and distributors	3.89	0.471	0.353	0.785	19.915	2.128	

Table 2The Convergent and Discriminant Validity

Table 3The Validity and Reliability

	AVE	Composite Reliability	Cronbachs Alpha	Latent	Square Root AVE		
				IS	CA	OL	KOOLAVE
IS	0.506	0.858	0.799	1			0.712
CA	0.599	0.923	0.904	0.628	1		0.774
OL	0.682	0.896	0.847	0.597	0.495	1	0.826

 Table 4
 Inner Model and Hypotheses Tests

Tuble T filled and Hypotheses Tests									
	Path Coeficient	Sample	Standard			Prediction			
Original Sample		Mean (M)	Deviation	T-Statistics	R Squared	Relevance			
	(0)	Mean (M)	(STDEV)			(Q2)			
OL->AIS	0.597	0.600	0.051	11.706	0.356				
AIS -> CA	0.517	0.529	0.066	7.849	0.417	0.625			
OL->CA	0.187	0.181	0.082	2.264	0.417				

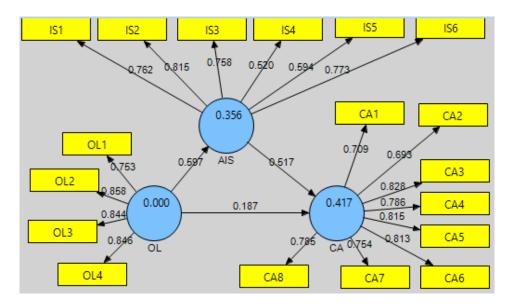


Figure 3 Path Statistical Results

5.3 Discussion and Managerial Implication

Mean values shown in Table 2 has explained that all the indicators in each variable observations have been achieved well. This indicates that hospitality in East Java has had a good learning culture. The ability to exchange information and interpret information are the organizational learning process most widely applied in the hospitality industry at East Java. It is good for business dynamism since it makes every division in the hotel should be able to collect data on changes in the business environment, which is then processed into quality information. Information from each of these divisions should be incorporated into a strategy of innovation, so it can produce a competitive advantage. This process cannot be separated from the role of accounting information systems. The mean value demonstrated that the use of computers, file cabinets, and applications in the information system has been instrumental in transform the collected data to be valuable information. In addition, the media in the information system also enables the exchange of information within a hotel.

The process of exchange of information among individual employees and between divisions will facilitate business decision-making process. The culture of sharing this information also appears with external parties. The competitive advantage of the hospitality industry in East Java is achieved through a process of exchanging information with the parties in the value chain. Information that can be obtained by a customer on a hotel in East Java such as: the location of the hotel, the number of rooms available, the type of hotel services, special activities, including customer complaints against the hotel services. Such information is not only available on the hotel's own web pages, but also on the web page of the hotel distributors, such as tour and travel online. Openness to cooperate with various online tour and travel, as the distribution channel, has helped the hospitality industry in increasing sales and customer service capabilities. Some hotels in the study sample even have additional business unit to supply the equipment

and supplies in the hotel. An example is the business of manufacturing bath room amenities (soap, shampoo, shower cup, toothbrush and toothpaste). The existence of the additional business units is not only for providing the hotel's needs, the output also can be sold to other hotels, thus become source of income for the hotel.

Table 5	The Direct and	lects	
	Path Coeficient Original Sample (O)	Standard Deviation (STDEV)	Results
OL -> AIS	0.597	0.051	The indirect effect is
AIS -> CA	0.517	0.066	higher than the direct
OL->CA	0.187	0.082	one (0.308 > 0.187)
OL->AIS->CA	0.308	0.047	0.10/

Table 5The Direct and Indirect Effects

The existence of accounting information system becomes a factor that strongly supports organizational learning relationship with the achievement of competitive advantage. Table 5 shows that, statistically, AIS is able to perform its role as an intervening variable. The use of computerized accounting information system has enabled the hotel to record business transactions, including qualitative and quantitative data that supports business transactions. This computerized system has been able to connect any network in the organization, thus that the process of information exchange becomes easier, business decision-making become more accurate and timely, and enhance the competitiveness of the hotel. AIS facilitates the recording process of the hotel transaction, in both financial and non-financial data. Therefore, in the high competitiveness of the AOR in East Java, the collection, storage, and processing of financial and accounting data by the AIS hugely affect the quality of the decision-making process. The AIS enables the managers to provide the qualified financial and non-financial information in order to improve the performance evaluation.

From the observation, Table 6 shows that hotels in East Java have relatively similar capabilities in the application of AIS and OL. Likewise with their efforts to achieve competitive advantage. The average response score of the respondents is almost the same for the 3 to 5 star hotels. This indicates that the high competition among starred hotels, has made the 3-star hotel was able to fight to achieve equality with 4-star and 5-star hotels.

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Average Scores	AIS	OL	CA				
3 stars	3.90	3.78	3.91				
4 stars	3.97	3.85	3.94				
5 stars	3.95	3.84	4.00				

 Table 6 The Average Score of Respons

Statistic data from the tourism ministry, only 6.63% of the total hotels in East Java is a star hotel, the rest is a non-star hotel. Until 2016, the total number of hotels in East Java totaled 2,234. As is the case in this study, this observation hotel consists of 3-star hotels (24 hotels), 4-star hotels (12 hotels), and 5-star hotels (5 hotels). The high competition among the hotels, has encouraged hotel entrepreneurs to lower the AOR. As indicated above (Figure 1), the AORs in 2015 and 2016 are even much lower than in 2014. The Association of Indonesian Hotels and Restaurants (PHRI) in East Java is also concerned about the tight competition of the AOR. The hotel's financial performance may decline, especially long-standing hotels. Because, although the tariff has come down, people will glance at new hotels that offer cheaper rates with better facilities. The increasing number of budget hotels and 3 star hotels has made the Surabaya government publish a 3-star hotel development permit moratorium since 2015. If the occupancy rate shows better figures, then the moratorium will be stopped.

6 Conclusion

This study revealed the direct and indirect influences of organizational learning on competitive advantages through the usage of accounting information system. Using partial least square, the results shown that the usage of AIS is able to play its role as intervening variable effectively. It prompts the claims that AIS is designed to improve OL. The valuable information resulted from AIS become knowledge and expertise of individual employees and organization as the whole. AIS facilitates the process of sharing knowledge and

expertise which lead to the ability in following the market trend. Knowledge about market will assists the hotels to treat the customer as an asset and to be focus on giving more additional values to the customers.

This research was conducted in the hospitality industry in East Java. The development of dynamic business making can continue to grow the number of hotels. Further research can use the same framework with the number of observations for more. Framework in this study can give different results when applied to another object, such as different industries, and different observation locations. Rapid development of the business environment as well as changes in the behavior of businesses, encourage further research using other variables that can improve organizational learning role in achieving competitive advantage.

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References

- Bagozzi, R. P., and Yi, Y. (1988) 'On the evaluation of structural equation models', Journal of the Academy of Marketing Science, Vol. 16, No. 1, pp.74–94.
- Barney, J. (1991) 'Firm resources and sustained competitive advantage', *Journal of Management*, Vol. 17, No. 1, pp.130-139.
- Bilgihan, A., Okumus, F. and Nusair, K. (2011) 'Information technology applications and competitive advantage in hotel companies', *Journal of Hospitality and Tourism Technology*, Vol. 2, No. 2, pp.139-154.
- Chenhall, R. H. (2005) 'Integrative strategic performance measurement systems, strategic alignment of manufacturing, learning and strategic outcomes: An exploratory study', *Accounting, Organizations and Society*, Vol. 30, No. 5, pp.395-422.
- Colliers, International Indonesia. (2016) 'Half Year Report 2015: Surabaya Property Market Report', http://www.colliers.com/-/media/files/marketresearch/apac/indonesia/h22015-surabaya-
- researchandforecastreport.pdf?la=en-gb (Accessed on 20 March 2017).
- Colliers, International Indonesia. (2017) 'Half Year Report 2016: Surabaya Property Market Report', http://www.colliers.com/-/media/files/marketresearch/apac/indonesia/h2-2016-colliersreport-surabayafinal.pdf?la=en-GB (Accessed on 20 March 2017).
- D'Souza, D., and Williams, F. (2000) 'Towards a texonomy of manufacturing flexibility dimensions', *Journal of Operation Management*, Vol. 18, pp.577-579.
- DeLone, W., and McLean, E. R. (2003) 'The DeLone and McLean Model of information system success : A ten-year update', *Journal of Management Information Systems*, Vol. 14, No. 4, pp.9-30.
- Eisenhardt, K. M., and Martin, J. A. (2000) 'Dynamic capabilities: what are they? *Strategic Management Journal*', Vol. 21, pp.1105-1121
- Garvin, D. A. (1993) 'Building a Learning Organization', *Harvard Business Review*, Vol.17, No. July-August, pp.78-91.
- Garvin, D. A., Edmondson, A. C., and Gino, F. (2008) 'Is Yours a Learning Organization? Harvard Business Review', Vol. 86, No. 3, pp.109-134.
- Ghasemi, M. Shafeiepour, V. Aslani, M., and Barvayeh, E. (2011) 'The impact of information technology (it) on modern accounting', *Procedia - Social and Behavioral Sciences*, Vol. 28, pp.112–116.
- Hair, J. F., Anderson, R. E., Tatham, R. L. and Black, W. C. (1995) 'Multivariate data analysis: with readings. Englewood Cliffs', New Jersey, Prentice-Hall.
- Hall, A. J. (2008) 'Accounting information system. (6th edition)', USA: South Western Publishing.
- Hoang, H., and Rothaermel, F. T. (2010) 'Leveraging internal and external experience: Exploration, exploitation, and R&D project performance', *Strategic Management Journal*, Vol. 31, pp.734-758.
- Huber, G. P. (1991) 'Organizational learning: the contributing processes and the literature. *Organization Sciences*', Vol. 2, No. 1, pp.88-115.
- Hulland, J. (1999) 'Use of partial least squares (PLS) in strategic management research: a review of four recent studies', *Strategic Management Journal*, Vol. 20, No. 2, pp.195–204.
- Kember, D., Doris, Y. P., Leung, A. J., Alice, Y. L., Jan, M., Kit, S., Harrison, T., Celia, W., Frances, K. Y. W., Maria, W., and Ella, Y. (2000) 'Development of a questionnaire to measure the level of reflective thinking', Assessment & Evaluation in Higher Education, Vol. 25, No. 4, pp.381–395.
- Laudon, K.C. and Laudon, J.P. (2012) 'Management information systems: Managing the digital firm', Toronto: Prentice Hall.
- Law, R. and Jogaratnam, G. (2005) 'A study of hotel information technology applications', International Journal of Contemporary Hospitality Management, Vol. 17, No. 2/3, pp.170-80.
- Li, S. Ragu-Nathan, B. Ragu-Nathan, T. S. and Rao, S. (2006) 'The impact of supply chain management practices on competitive advantage and organizational performance', *The international Journal of Management Science*, pp.107-124.
- Lichtenthaler, U., Hoegl, M. and Muethel, M. (2011) 'Is your company ready for open innovation?' *MIT Sloan Management Review*, Vol. 53, No. 1, pp.45–48.

- Lim, F. P. C. (2013) 'Impact of information technology on accounting systems', Asia-pacific Journal of Multimedia Services Convergent with Art, Humanities, and Sociology, Vol. 3, No. 2, pp.93-106.
- Maiga, A. S. (2015) 'Organizational learning and firm profitability: The role of competitive advantage', In Advances in Accounting Behavioral Research, pp.179-211.
- Markus, M. L., and Robey, D. (1988) 'Information technology and organizational change: causal structure in theory and research', *Management Science*, Vol. 34, pp.583-598.
- Ministry of Tourism. (2014) 'ASEAN Economic Community Has Potential to Increase Tourist Visits Growth To Indonesia Above 10%', <u>http://www.kemenpar.go.id/asp/detil.asp?c=16&id=2555</u> (Accessed on 12 August 2016)
- Njuguna, J. I. (2009) 'Strategic positioning for sustainable competitive advantage: An organizational learning approach', KCA Journal of Business Management, Vol. 2, No. 1.
- Ozturk, A. B., and Hancer, M. (2014) 'Hotel and IT decision-maker characteristics and information technology adoption relationship in the hotel industry', *Journal of Hospitality and Tourism Technology*, Vol. 5, No. 2, pp.194 206.
- Piccoli, G. (2008) 'Information technology in hotel management: a framework for evaluating the sustainability of ITdependent competitive advantage', *Cornell Hospitality Quarterly*, Vol. 49, No. 3, pp.282-96.
- Richter, N.F., Cepeda, G., Roldan, J.L., Ringle, C.M. (2015) 'Eurepean Management Research Using Partial Least Squares Structural Equation Modeling (PLS-SEM)', *European Management Journal*, Vol. 33(2015), pp.1-3.
- Romney, M.B. and Steinbart, P.J. (2012) 'Accounting Information System', Harlow: Pearson Education Limited.
- Senge, P. (1990) 'The fifth Discipline: The Art and Practice of the Learning Organization', New York: Doubleday.
- Sinkula, J. M. (1994) 'Market information processing and organizational learning', *Journal of Marketing*, Vol. 58, pp.35-45.
- Slater, S. and Narver, J. (1995) 'Market orientation and the learning organization', *Journal of Marketing*, Vol. 59, No. 3, pp.63-74.
- Wijnhoven, A.B.J.M. (1995) 'Organizational learning and information systems: the case of monitoring information and control systems in machine bureaucratic organizations', *PhD. thesis*, University of Twente.
- Xu, J., and Quaddus, M. A. (2013) 'Managing information systems: Ten essential topics', Paris: Atlantis Press.