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An Analysis of Intellectual Capital in the Disruptive Technology Era: Are Accountants' Mindsets Ready for It?

Devie*, Fely Julia Christina Hartanto, Saarce Elsye Hatane, Accounting Department, Universitas Kristen Petra
Correspondent author: dave@petra.ac.id

This study aims to assess the effect of information technology on intellectual capital, with organisational learning as a mediating variable, meanwhile, also considering the influence of a mindset upon the public accounting firms in Indonesia. The data was obtained through questionnaires, which were distributed to public accounting firms in Indonesia. The data was subsequently processed using the structural equation model. The respondents were limited to those residing on Java Island. The results show that information technology and organisational learning are favourable in the formation of intellectual capital in public accounting firms. It is confirmed that organisational learning can be a mediating variable in the relationship between information technology and intellectual capital. Moreover, mindset, as a moderating variable, mitigates the influence of information technology upon intellectual capital. The results imply that without a growth mindset, technology is unable to create organizational learning and intellectual capital. Technology offers a change, and only people with a growth mindset can make changes.

Keywords: *Intellectual capital, Mindset, Organisational learning, Information technology, Resource-based view (RBV) theory*

Introduction

Since the creation of the Association of Southeast Asian Nations (ASEAN) Economic Community, ASEAN member countries have agreed upon a Mutual Recognition Arrangement (MRA), which is a framework that facilitates the exchange of experts within the ASEAN, which includes eight professions[i]. An accountant professional service is one of them. The competition has not only become more intense, but it has been fundamentally changed in its nature, so that now, continuous change is the key to survival and development (Lefebvre *et al.*,

[i] http://investasean.asean.org/index.php/page/view/asean-free-trade-area-agreements/view/757/newsid/868/mutual-recognition-arrangements.html

2001). López *et al.* (2005) also stated that the business environment has continuously undergone complex and dynamic development. Hence, issues regarding the company's durability in facing current conditions are really important (Devie *et al.*, 2019).

Both physical and financial capital, material resources, and technology are needed but are not enough to achieve a company's success. Continous excellent performances come from intangible assets, which is intellectual capital (IC) (Lefebvre *et al.*, 2001). According to Wasiluk (2013), IC plays an important role in continuous operations, people motivations, relationships with customers, and performance improvement. Research studies show that IC supports continuous economic development (Chang & Chen, 2012; Pedrini, 2007; Wasiluk, 2013). Intellectual capital itself can be explained as a set of intellectual assets that are owned by a company, and is the most influential towards the company's competitive position (Marr & Schium, 2001).

Lefebvre *et al.* (2001) also stated that the global economy is becoming more knowledge based. Lundvall (1992) said that the most basic resource in the modern economy is knowledge, therefore, the most important process is to learn. It supports the statement that a company cannot only experience better performances than their competitors to survive, but they also need to adapt to the ever-changing surrounding conditions (Chi *et al.*, 2009). Companies that have organisational learning (OL) will have better responses to the market change compared to their competitors, so it will enable them to maintain their performance and competitive advantages (Jiménez-Jiménez & Sanz-Valle, 2011).

On the other hand, with the influence of the disruptive technology era, a condition has appeared that can bring industries growth through product introduction and services that are much cheaper, better, and more comfortable (Kostoff *et al.*, 2004). This era demands improvements in the company's information technology (IT), and causes IT to hold a very significant role in the overall organisation process, including in relation to OL. Several previous research stated that OL can be driven with the existence of IT (Anand *et al.*, 1998; Davenport *et al.*, 1998; Robey *et al.*, 2000). Information technology is a device that can create, save, collect, transmit, restore, analyses, and communicate data and information (Kudyba & Diwan, 2002). Thus, it can be a supporting medium for smooth learning. Several previous researches also stated that IT has direct impacts on companies' IC. Bontis (1998), Černe and Etinger (2016), Joia (2007), and Nahapiet and Ghoshal (1998) said that IT can be used to maximise companies' IC potential. On the other hand, El-Bannany (2008; 2012), and Venkatesh *et al.* (2010) found a result in which investment in IT is significantly negative than what is expected for IC. Therefore, because of the uncertainty of the IT impact from the previous research, this research wants to perform a further analysis of the IT and IC impacts, especially for Indonesian public accounting firms.

Moreover, mindset also has an important role in affecting whether the learning in the organisation can run well. Mindset shapes the way people think about their efforts (Grant &

Dweck, 2003), and that includes learning. People that have a static mindset believe that talents and skills are fixed, so they tend to not learn and only rely on the available skills (Blackwell *et al.*, 2007; Dweck & Leggett, 1988; Erdley *et al.*, 1997). Meanwhile, a growth mindset believes it's not permanent, but dynamic, and can be developed through efforts and practices (Dweck, 2006). Therefore, this mindset directs people to improve their competencies and skills (Blackwell *et al.*, 2007; Dweck & Leggett, 1988; Erdley *et al.*, 1997).

This study aims to determine the relationship between IT, OL, and IC, as well as to assess whether mindset has an impact on the relationship between IT and OL. The author will conduct this research upon Indonesian public accounting firms to analyse the relationship between IT towards IC through OL, as the mediator variable, and mindset, as the moderator variable.

Literature Review

Resource-Based View Theory

The resource-based view (RBV) is a concept used in business strategy as the continuous competitive advantage's source by stressing upon the strategic choices and important tasks to identify, develop, and utilise resources, and the main capabilities to maximise returns (Fahy, 2000; Gallego-Álvarez *et al.*, 2011; Helfat & Peteraf, 2003). However, according to Madhani (2010), not all company's resources are strategic and are the source of a competitive advantage, except when there are resources' heterogeneity and immovable resources. Resources must have value, be rare, and unique, and cannot be replaced to produce continuous competitive advantages that are hard to be duplicated by competitors (Henri, 2006). In which, according to Barney (1991), and Prahalad and Hamel (1990), those characteristics can be found in IC. Information technology does not meet the RBV's requirements because it is a resource that can be easily duplicated by competitors; thus, it cannot directly produce a competitive advantage to the company (Cheng & Chun, 2005). The synergy between IT and organisations' resources is an important determinant of IT's usage result (Brynjolfsson & Hitt, 2000).

Furthermore, according to Sahaf (2019), companies' capability development requires continuous and complex interaction to obtain the benefit from the relationship between various resources. This concept can be achieved more easily, if companies have an OL capability, which is their ability to develop through the process of solving current problems (Lien *et al.*, 2007). Therefore, this journal will observe the impact of IT towards resources (IC) and a company's capabilities (OL), while also considering whether mindset can affect the IT implementation process and support IT interaction with the OL capability in a company, in which mindset is a mentality that shapes someone's behaviour (Grant & Dweck, 2003).

Theoretical Framework

Information Technology on Organisational Learning

Several researchers have already defined OL in terms of obtaining, maintaining, and transferring knowledge at the levels of individuals and groups (Argote, 2011; Huber, 1991; Robey *et al.*, 2000). The actions of obtaining, transferring, and maintaining knowledge must go through a social process that involves communication and collaboration between the organisation's members, which can be facilitated with IT. Kane and Alavi (2007) said that IT enhances the OL process and knowledge management. This notion is supported by Robey *et al.* (2000), whom also state that IT is an important factor in designing OL. According to Kudyba and Diwan (2002), IT is a set of technology that consists of hardware, software, and telecommunication that can create, save, collect, recover, analyse, and communicate data and information. Anand *et al.* (1998), and Davenport *et al.* (1998) also stated that IT now has the potential to support OL through capturing, representing, storing, and gathering data inside an electronic database.

However, previous research showed uncertain results in regard to the relationship between IT and OL. Robey *et al.* (2000), in their research, found that IT improves OL with increasing the communication between them. However, in the same research, the researcher said that IT can activate and deactivate OL depending upon the business condition. Further, Kane and Alavi (2007) summarised that the learning mechanism with IT has varied effects to the learning dynamics in an organisation. They found that the effect of the learning mechanism that uses IT upon OL was affected significantly by the individuals, organisation, and environment condition, as well as by turbulence to the change of knowledge needed for an organisation. In addition, in other research, Masino (1999) also summarised that it cannot be confirmed whether IT can improve or hold the OL process, as IT gives complex changes and creates different effects because IT can affect OL on different decision levels and various knowledge types. From the previous research, the impact of IT usage to OL still cannot be confirmed.

H1: Information technology influences organisational learning in Indonesian public accounting firms.

Organisational Learning on Intellectual Capital

Gavious and Russ (2009) define IC as an increase of the firm's values in assets, which is created from a firm's function, process, information technology network, employees' efficiency, competency, and the relationship to customers. Organisational learning is the capability of a company to develop through the process of solving the problems that occur in the organisation (Lien *et al.*, 2007), so it can produce and apply new knowledge through people's interaction, which will continue to renew the organisation's behaviour. Lefter *et al.* (2008), and Ramezan (2012) said that learning can contribute to IC. This is supported by Amiri *et al.* (2010), who found that OL is considered as a precious resource that has a positive impact on the IC and

competitive advantage. Moreover, when an organisation uses its money for its employees' education and training, the organisation expects an increase upon its IC in the forms of human capital, relational capital, and organisational capital.

Managers see OL as a strategy to create IC by placing learning as the main organisational activity (Garvin, 1993). The knowledge that is created from this learning can improve the IC through the process of knowledge utilisation and knowledge transfer (Ramezan, 2012). Knowledge transfer is conducted through an alliance and inter-organisational relations (Ramezan, 2012). It shows that OL influences the relational capital. Other than that, OL also increases the structural capital through knowledge utilisation, in which a company integrates and coordinates various types of knowledge to take actions (Choo & Bontis, 2002). Orgainsational learning also has the most significant effect upon human capital because through the created knowledge from the learning process, the organisation's members are exposed with new ideas, which will demand them to widen their knowledge and start to think differently. Subsequently, they will start to internalise their new knowledge and change their behaviour (Garvin, 1993). Therefore, the previous research supports the notion of a positive relationship between OL and IC. Moreover, research regarding the relationship between IC and OL is also still a rarity, and it has never been conducted for public accounting firms.

H2: Organisational learning has an influence on the intellectual capital in Indonesian public accounting firms.

Information Technology on Intellectual Capital

According to Murray *et al.* (2016), IT is an innovation that creates value and improves the company's decision-making process, so it can be much faster and more efficient. Meanwhile, IC is an intangible asset that has the potential to create values for a company (Mavridis, 2005). Despite the same understanding of IT and IC, in which both create values for a company, there is still much debate in previous research related to the fact that IT and IC have a positive relationship. El-Bannany (2008, 2012), in his two studies in the banking industry, found that investment in IT is significant and negative with what was expected before because investment in IT is considered as a threat by the employees, in which they think the management have an intention to fire employees and replace them with IT. Therefore, it provides a negative effect upon the human resources. This finding is supported by research conducted in India on a service company by Venkatesh *et al.* (2010), which discovered that investment in IT lowers working satisfaction and employee performance.

On the other hand, Bontis (1998), Nahapiet and Ghoshal (1998), and Saunders and Brynjolfsson (2016) said that IT can be used to maximise a company's IC potential. It is aligned with the research from Černe and Etinger (2016), which posited that IT usage can increase a company's system and procedure, and repair and fasten the transactions process, as well as information's innovation, which will transform into knowledge. Information technology

infrastructure can provide access to the external source of knowledge and create a new communication channel, which will improve business efficiency and innovation (Joia, 2007). This assumption is directed into the relationship between IT with relational capital and IT as a part of structural capital. Aside from that, by improving this IT system, companies enable their employees to increase their skills and enable human capital and the whole IC to achieve their maximum potential (Joia, 2007). From those studies, it can be concluded that it is still unclear whether IT usage can improve IC or not. Research related to the relationship between IT and IC has never been conducted in public accounting firms.

H3: Information technology has an influence upon intellectual capital in Indonesian public accounting firms.

Organisational Learning as a mediator variable in the relationship between Information Technology and Intellectual Capital

In past research, there was no certainty upon the usage impact of IT, meanings IT needs other factors to influence a company's IC. Powell and Dent-Micallef (1997) said that IT cannot improve the company's performance when there are no complementary resources. An organisation must always be oriented towards improving its competencies to assimilate new technologies and enhance existing technologies (Ramo, 1989; Rastogi, 1995). Venkatesh *et al.* (2010) identified four elements that hinder the success of IT implementation, which are: environmental barriers, learning difficulties, culture shock, and employees' thoughts. Opportunities in technology are not the result of a series of decisions but are the process of continuous learning (Kak & Sushil, 2002). Damanpour and Evan (1984) said that with learning, it can improve employees' skills and ability in coping with new technologies. This result is supported by Carayannis (1994), who said that learning through technology will enable an organisation to renew its abilities and assets, which is the new source of a competitive advantage. From this research, it can be concluded that OL can encourage the creation of a company's IC to bring the benefit of IT usage. Therefore, in this research, OL is used as a mediator variable between IT and IC.

H4: Organisational learning mediates the relationship between information technology and intellectual capital in Indonesian public accounting firms.

Mindset as a moderator variable in the relationship between Information Technology and Organisational Learning

Mindset shapes the way people see effort (Blackwell *et al.*, 2007; Grant & Dweck, 2003; Middleton & Midgely, 1997) and motivation (Dweck, 1999; Plaks *et al.*, 2005). Dweck (2009) divided mindset into two main categories: fixed mindset, and growth mindset. The growth mindset believes that intelligence is dynamic and can be enhanced through efforts and practices (Dweck, 2006). It leads people to learning goals, where they try to improve their competencies

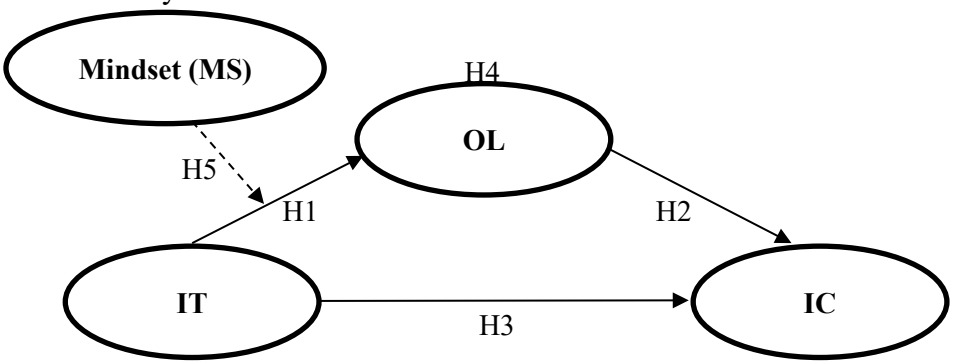
and expertise through learning (Blackwell *et al.*, 2007; Dweck & Leggett, 1988; Erdley *et al.*, 1997).

Research exists which shows that having a growth mindset can encourage learning performance (Asbury *et al.*, 2015; Boyd, 2014; Dweck, 2006). Today, we live in an ever-changing environment, including regarding IT usage. Having a growth mindset enables students to utilise new findings. Referring to previous research, it can be seen that the growth mindset improves learning, while a fixed mindset hinders learning. Thus, mindset takes an important role in deciding whether IT can or cannot drive the learning inside of an organisation. Therefore, the relationship between IT usage to OL can be influenced by mindset.

H5: Mindset moderates the relationship between information technology to organisational learning in Indonesian public accounting firms.

From the discussion above, the following research model is employed in this study (see Figure 1).

Figure 1. Hypothesis Analysis Model



Research Methodology

In this research, IC is divided into human capital, relational capital, and structural capital. Intellectual capital's measurement item is developed from past research, specifically, Sharabati *et al.* (2010)'s measurement item. The measurement of OL is based on the previous research conducted by Tohidi *et al.* (2012), which summarised the measurement of OL from several researchers into five dimensions: managerial commitment and empowerment, experiment, risk-taking, interaction with the external environment, and knowledge transfer and integration. The measurement of IT investment refers to Sakaguchi and Dibrell (1998), who used three indicators: IT training, perceived importance of IT, and IT investment. Meanwhile, the measurement of mindset is based on the measurement that was developed by Dweck (2008), which was categorised into two mindsets: growth mindset, and fixed mindset.

The type of data used in this research is quantitative data. The source of data used in this

research is primary data, which was obtained through a questionnaire distributed to all Indonesian public accounting firms that have been registered on the Ministry of Finance of the Republic of Indonesia as of 31 January 2019, and which have valid Internet media in the data that they registered with the Ministry of Finance of the Republic of Indonesia. The number of public accounting firms that fulfilled the criteria was 290, and the number that replied the questionnaires was 51. Thus, the sample used in this research is 51 public accounting firms.

The questionnaires are designed using five-point Likert scale, in which '1' means 'strongly disagree', and '5' means 'strongly agree'. The test was then processed using WarpPLS. The tests conducted included the goodness of fit test, reliability test, validity test, and research hypothesis test. The Partial Least Square (PLS) has the main goal of minimising the number of errors (Hulland, 1999), it can also work with a small sample (Bontis, 2001), and has been used as a research tool in various settings, such as the business discipline (Hulland & Kleinmuntz, 1994) and in the research of intellectual capital (Bontis, 1998).

The path coefficient score in the research hypothesis test is in the p-value score. The path coefficient score for hypothesis testing of the basic model variable uses alpha five per cent. However, to do the hypothesis testing of the impact of the mindset moderator variable, the alpha used is ten per cent because this relationship is an exploratory research. Warner (2013) has previously stated that the use of α level varies for exploratory research.

Result

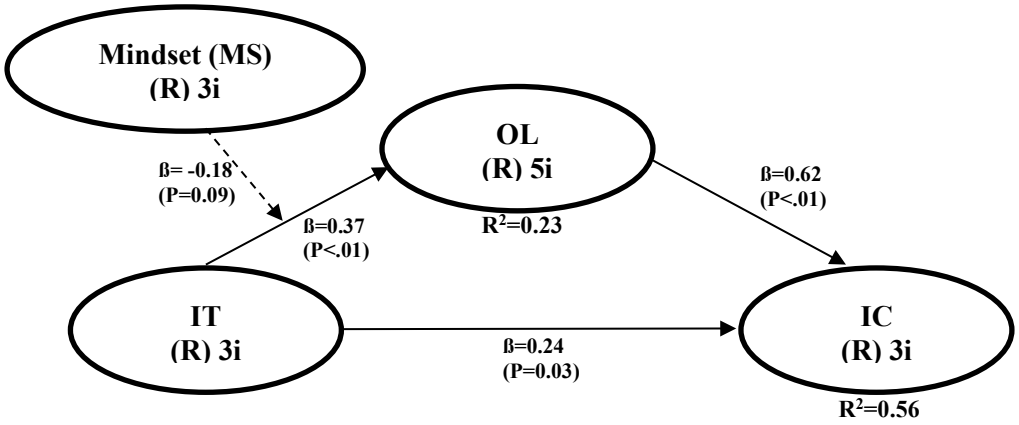
The final number of respondents was 51 public accounting firms in Indonesia, with a majority of 72.55 per cent based in Java. A total of 52.9 per cent of the respondents have a position as a partner in a public accounting firm, and therefore, they have a strategic position in the public accounting firm.

From the results of the data processing, this research model has fulfilled all the criteria required. Thus, the model can be used in this research.

All scores of the outer loading are > 0.50, so it can be concluded that the indicators have already fulfilled the criteria from the perspective of convergence validity and are practically significant. Furthermore, from the score of the cross-loading, it can be concluded that each indicator in a latent variable has differences with the indicators in the other variables, which is shown through the loading score that is higher than its construct. Therefore, the variables of IT, OL, IC, and MS already have good discriminant validity.

The test result of composite reliability and Cronbach's alpha also fulfil the rule of thumb > 0.7. All scores of composite reliability and Cronbach's alpha are higher than 0.7, which shows that the variables in this research are reliable.

Figure 2. Warp PLS Analysis Results



The R^2 score of 0.23 shows that the variation of the OL variable changes described by the IT variable and MS moderator are 23 per cent. Meanwhile, the score of R^2 that shows the variation of IC variable changes by the IT and OL variables is a direct 56 per cent. The mindset moderator has also been seen to have a moderation effect upon OL, but the result has a negative coefficient, as based on the questionnaires descriptive results, the public accounting firms have not fully developed a growth mindset in their employees, which means that public accounting firms tend to have a fixed mindset and it weakens the IT impact upon OL within a company.

There is an influence from IT on OL, OL on IC, and from IT on IC directly, which can be proven from the significance level in which the p-value score is below 0.05 (alpha five per cent), which means that it is significant. There is also an impact from the MS moderator towards the relationship between IT and OL, which is proven through the p-value significance level that is below 0.1 (alpha 10%), which means it is significant.

Through this indirect effect score, it can be seen that OL is needed to connect the impact of IT to IC, although IT can directly affect IC, the total significance impact increased when OL acts as a mediator. Meanwhile, if it is viewed, IT and OL can influence IC.

In respect to the relationship between IT and OL, the research result shows that IT has a direct impact on OL. This result is aligned with several previous research studies (Kane & Alavi, 2007; Robey *et al.*, 2000; Anand *et al.*, 1998; Davenport *et al.*, 1998). Although, several of the previous research studies also state that IT has an uncertain impact and has other factors that influence its success on affecting IC (Masino,1999; Kane & Alavi, 2007; Robey *et al.*, 2000). The research result shows that the respondents see that IT is important for their company, in which it can help the process of OL within the company. Therefore, it can be concluded that IT influences OL in Indonesian public accounting firms. Thus, the first hypothesis is accepted.

The research results also show that OL has a direct impact on the IC. It is aligned with previous research (Amiri *et al.*, 2010; Choo & Bontis, 2002; Garvin, 1993; Lefter *et al.*, 2008; Ramezan,

2012). Therefore, it can be concluded that OL influences IC in Indonesian public accounting firms. Thus, the second hypothesis is accepted.

The third hypothesis is also accepted because the research result shows that IT has a direct impact on the IC. This result is supported by previous research (Bontis, 1998; Černe & Etinger, 2016; Joia, 2007; Nahapiet & Ghoshal, 1998; Saunders & Brynjolfsson, 2016). Although, in several previous studies, they mentioned that IT negatively influences IC (El-Bannany, 2008; 2012; Venkatesh *et al.*, 2010). However, based on this research result, it can be concluded that IT influences IC in Indonesian public accounting firms.

Orgainsational learning is proven capable of being a mediator variable in the influence of IT upon IC. The result of this research shows that IT's influence on IC is more significant if applied through OL. Thus, the fourth hypothesis is accepted. This research result is also supported by previous research (Damanpour & Evan, 1984; Carayannis, 1994), which mentioned that when there is an OL factor in IT utilisation, it can optimise the benefit or ability of the owned assets. Therefore, based on the research result, it can be concluded that OL is a mediator variable in the relationship between IT and IC in Indonesian public accounting firms.

The research result also shows that MS is proven capable of being a moderator variable in the influence of IT upon OL, but with a negative sign coefficient, which means the MS variable in this research is slowing the IT impact upon OL. Thus, the fifth hypothesis is accepted. This result occurs because most of the public accounting firms that became respondents are firms that are yet to develop a MS in their employees and tend to have a fixed mindset because the final score is < 3. This result is consistent with many of the previous research findings, which show that a growth mindset is positively related to learning performance (Asbury *et al.*, 2015; Boyd, 2014; Dweck, 2006), so when there is no growth mindset, the learning performance will be hindered. Therefore, based on the research result, it can be concluded that MS is a moderator variable in the relationship between IT and OL in Indonesian public accounting firms.

A company that has sufficient IT will produce integrated information between departments. This information is useful for management. A good IT system will help the OL process in an organisation through the exchange of information. A fixed mindset in this research brings a negative impact upon the relationship between IT and OL within an organisation. A mindset may trigger people's intention to always learn, but when people have a fixed mindset, it can hinder their learning process because they feel that they cannot improve their skills or ability through learning.

An organisation's speed on adapting and responding to changes becomes an important factor in supporting its sustainability. When an organisation has OL and wants to learn continuously, it will drive the creation of IC in the form of human capital, which keeps evolving both in knowledge and skills, a better structural capital, and also a wider relational capital through the needed interactions in the OL process. Companies that can quickly adapt to the market changes

will have better opportunities in providing a market response and directing their resources to create products that are well-suited for the market needs. Thus, it can be concluded that OL will create IC and make them better than their competitors. Therefore, a company that can learn will have better operational and financial performances.

Moreover, good utilisation of IT can also directly influence IC because IT improves the employees' performance; makes the system or procedures in a company easier, more efficient, and more effective to use; and makes communication with many parties easier. Thus, it can be concluded that it is improving the company's IC asset, which will later create continuous competitive advantages for the company.

Discussion

In a disruptive business environment, where IT continues to grow and develop, companies are required to be able to learn and adapt so they can achieve competitive advantages; public accounting firms included. Nowadays, IT has already taken over many of the activities in an organisation. If a company can have and take good advantage of IT, it will be very helpful in supporting the processes in their organisation. Moreover, from the research result, it can also be concluded that a good utilisation of IT will help the OL of public accounting firms because IT can facilitate the process of OL.

As the conditions change rapidly, an organisation's speed in adapting becomes an important factor in supporting a company's sustainability, and it can happen if a company has OL. The research result on public accounting firms also shows that when they have OL, it indicates that the company wants to continuously learn, and it will drive the creation of IC. A company that can adapt will have a better response to the market and direct its resources to produce products that are suitable for the market needs. Therefore, a company that can learn will have a better IC and will encourage better performances.

The research result shows that a good utilisation of IT can also directly influence IC because IT improves the employees' performance; makes the system or procedures in a company easier, more efficient, and more effective to use; and makes communication with many parties easier. Thus, it can be concluded that it is improving the company's IC assets, which will later create continuous competitive advantages for the company. Organisational learning is also proven to be capable of being a mediator variable in the relationship between IT and IC. The research data shows that OL is significant in providing IT with an influence upon IC, which indicates that if the use of IT is encouraged with learning, it will be effective in creating IC.

Furthermore, based on the research result, mindset is proven to have an influence on the relationship between IT and OL, although it brings a negative impact. Based on the previous research, people with a growth mindset want to continuously learn, while people with a fixed mindset will be hindered in their learning process because they feel that they cannot increase

their skills through learning. The negative result regarding the impact of a mindset moderation upon the relationship between IT and OL is because there is no growth mindset in the organisations under study. This indicates that public accounting firms still have a fixed mindset, so they will not encourage the utilisation of IT upon OL. The negative result further shows that mindset hinders the utilisation of IT upon OL. This occurs because the accountant and auditor professions are closely related to mandatory rules, so it closes off their chance to innovate and develop. Thus, it is hard for them to change and they tend to feel comfortable with the existing systems.

Conclusion and Implication

Based on the research result, there are some recommendations that can be proposed to companies' owners and managers, especially Indonesian public accounting firms. Companies must direct their attention to the utilisation of IT in order to increase their capabilities. The good utilisation of IT can bring significant benefits to an organisation. Companies must also start applying an OL culture within their organisations, especially in this disruptive era because the environment has changed greatly and the companies' adapting speed will decide their success to survive and stay competitive. Therefore, organisations need to be aware of the importance of IT in order to support OL, which will provide a positive influence upon their IC. Intellectual capital is a company's intangible resource and it is also an important factor that decides a company's competitiveness level compared to its competitors. Thus, a company must also pay attention to their IC's development, which can be facilitated by IT and OL, so that the company can still survive in the middle of a very competitive condition. Intellectual capital will help companies in creating continuous competitive advantages. Moreover, companies must also start to develop their mindset because growth mindset will greatly support encouraging the learning process to be accepted and utilised effectively in a company and encouraging companies to embrace changes appropriately.

This research is expected to be able to help managers in understanding the importance of IT and OL's role in public accounting firms, so that managers can be expected to make the correct choices regarding the utilisation of IT within their companies. This will facilitate OL within the companies, and in the end, create IC that has a significant impact upon the creation of a company's competitive advantages and sustainability.

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