

Enhancing Managers' Cognitive Capabilities with Confucian Virtues

Jui-Aik Tan*, Kian-Aun Law** and Yet-Mee Lim***

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Abstract

This conceptual study aims to enhance the understanding of how a manager's cognitive capabilities (mental level) that underpin his dynamic capabilities (behaviour level) may be improved by practising Confucian virtues in the decision-making process. Dynamic capabilities refer to the manner with which managers create, extend, and modify the ways in which firms conduct business. The literature on the cognitive underpinning of dynamic capabilities of managers is focused mainly on the Western perspective of rational thinking and privilege variance-based understanding, with limited attention to the interaction between cognition and emotion, and insufficient attention to factors that guide a manager's thoughts and actions. A key lesson of Confucian teachings is to instil proper individual behaviour and its core virtues call for the consistency between words and action. This paper argues that the core Confucian virtues of *rén* (仁) or benevolence may enhance individual managers' cognitive capabilities for sensing new business opportunities, the core Confucian virtues of *zhì* (智) or wisdom may enhance individual managers' cognitive capabilities for seizing business opportunities, and the core Confucian virtues of *lǐ* (禮) or propriety may enhance individual managers' cognitive capabilities for transforming firms' assets. To increase process-based understanding, three process frameworks are proposed to explain how the virtues of *rén*, *zhì* and *lǐ* may improve these managers' mental abilities. Lessons drawn from the experience of successful Chinese entrepreneurial managers indicate how particular Confucian virtues could sharpen the mental abilities of managers, distinguish individual managers' dynamic capabilities, give rise to strategic changes, and improve their organisational performance in a highly volatile work environment. The process frameworks and entrepreneurial experience increase understanding

of the origin of firm performance differences by tracing and presenting how the difference in individual managers' cognitive capabilities may emerge. This study lacks empirical support to increase the credibility of the three process-oriented conceptual framework, which may be validated and enriched by further case study research. Besides, this study focuses on Confucian virtues. However, it offers little analysis of the fact that it needs the support of learning. Further research is needed to explore how Confucian learning may mitigate this weakness for a flawless state of virtue.

Keywords: Managers' cognitive capabilities, Confucian virtues, dynamic capabilities, entrepreneurship, strategy and firm performance

Introduction

The literature on dynamic capabilities¹ suggests that enhancing managers' cognitive capabilities for effective strategic change and organisational performance is the key to achieving better firm performance (see Helfat & Peteraf, 2015; Hodgkinson & Healey, 2011). In contrast to a manager's capabilities to take physical actions, cognitive capabilities² is part of a manager's capabilities that take mental actions to acquire, organise, and process information in order to fulfil managerial tasks (Helfat & Peteraf, 2015). Strategic management studies' central concern is how a firm may achieve better performance (Teece et al., 1997). To address the question, Teece et al. (1997) proposed the concept of dynamic capabilities as an organisational level construct to identify the origins and methods of wealth generation by businesses operating under fast-changing conditions. However, drawing on an individual level of analysis, Adner and Helfat (2003) found that different managers make different decisions for strategic change in a changing environment, which is a central factor that distinguishes the performance of the firm among managers. This phenomenon can be understood through the concept of "dynamic managerial capabilities." According to Helfat and Martin (2015, p. 1281) these are "the capabilities with which managers create, extend, and modify the ways in which firms make a living." They proposed the concept of "managerial cognitive capabilities" to explain variations in managers' capacities to perform mental activities, which may produce differences in dynamic managerial capabilities. Managerial cognitive capabilities refer to "the capacity of an individual manager to perform one or more of the mental activities that comprise cognition" (Helfat & Peteraf, 2015, p. 835). The literature on dynamic capabilities suggests that the differences among individual managers' cognitive capabilities significantly explain variations in the performance of the firm. This implies that the enhancement of a manager's cognition improves his/her mental activities, which in turn would enhance the performance outcome of the firm.

However, a review of the management literature shows that research has focused chiefly

on improving cognition by deploying either an individual's rational cognitive (e.g., experience accumulation) or emotional (e.g., empathy) capabilities (Hodgkinson & Healey, 2011), thereby neglecting the interaction of the two capabilities and its resulting process of strengthening cognition for better firm's performance (Foss & Lindenberg, 2013). Rational cognitive capabilities that underpin the dynamic capabilities of managers can be strengthened through: 1) activities that add experience or knowledge, such as practising repetitively or practising in different contexts or domains of application (Helfat & Peteraf, 2015); 2) attention training (Verhaeghen, 2021), such as Western and Eastern mindfulness (Gärtner, 2011; Weick & Sutcliffe, 2006); and 3) imagination, such as the application of design thinking (Liedtka, 2015). Emotional capabilities that underpin managers' dynamic capabilities can be enhanced through empathy, such as simulation and re-experience to understand another's cognition and emotion (Jian, 2021). Therefore, applying cognition in the literature offers little insight into the elements that guide a manager's thoughts and actions (Calori, 1998). This oversight is caused by insufficient attention to considerations of philosophy in the study of managerial cognition (Calori, 1998), and omits the underpinning structures that support cognitive activities, which is the key to identifying the origin and method of wealth creation. Filling this research gap is vital to guide managerial processes and practices towards strategic change and a firm's survival and success in a volatile environment (Teece et al., 1997), such as during the COVID-19 pandemic.

The research question of this study is "how do Confucian virtues strengthen managers' cognitive capabilities?" In the Western culture, although Aristotelean "mean"³ and "phronesis"⁴ or practical wisdom are valuable concepts of virtue, their system of virtue ethics is grounded in Aristotle's arguments for contemplation as the single ultimate purpose of all human beings (Bertland, 2009). Embracing any one objective as the only human aim is unlikely to be acceptable in a world that values the diversity of individuals and goals. Moreover, the Aristotelean purpose focuses only on rationality (Bertland, 2009). It can lead to evil ends (Bertland, 2009), especially when there is comparatively little concern for harmony (Koehn, 2019). Conversely, little is known about the way Confucian virtues may contribute to the cognitive origins of managers' dynamic capabilities, which entail effective strategic change and wealth generation. Confucianism is adopted in this study because the *Great Learning*, a core Confucian text, stresses that virtue is the origin of wealth (Legge, 2013) and that the interaction and alignment between an individual's rational cognition (e.g., wisdom) and emotion (e.g., benevolence) is of great importance. As social ethics is central to Chinese philosophical thought (Romar, 2013), insights from Confucianism can guide what a manager ought to do, and thus to provide the philosophical perspectives that have hitherto been neglected in the strategic management literature (Calori, 1998).

To answer the research question, this study on Confucian virtues as the underpinnings of managers' cognition expands the proposition of Helfat and Peteraf (2015) that managers' mental

abilities reinforce their dynamic capabilities for sensing new business opportunities,⁵ seizing new business opportunities,⁶ and transforming firms' assets.⁷ The analysis of Confucian virtues involves reference to relevant Confucian classics as well as research findings on Confucianism, business ethics, and Chinese businesses. The analysis of the effect of virtues on managerial cognition is based on the research findings on the micro-foundations of dynamic capabilities, dynamic managerial capabilities, social psychology, and cognitive psychology. The objective is to present new process-oriented⁸ instead of variance-oriented⁹ (Mohr, 1982) conceptual frameworks about how Confucian virtues strengthen the cognitive foundations of managers' dynamic capabilities. These are required capabilities for managers to be more competent in forecasting, understanding, and adapting to a volatile environment. Despite the growing number of studies on dynamic managerial capabilities, the focus is mainly on variance-oriented empirical and conceptual research rather than on process-oriented research.

The objective of this study is threefold. First, to incorporate Confucian virtues in a Chinese theory of management to complement and provide novel insights into the Western idea of dynamic capabilities and managerial cognitive capabilities (Leung, 2009). Second, to contribute to a better understanding of the origin and manner of wealth creation through a process-oriented analysis of the influence of Confucian virtues on managers' mental abilities. The process-oriented analysis takes the form of a chain of sequential events and activities to show the processes under observation in this study rather than relying on the use of correlations, predictions and variables commonly applied in variance-oriented research and quantitative research method (Cloutier & Langley, 2020). Third, to propose three process-oriented conceptual frameworks to provide guidelines for applying the concepts of *rén*, *zhì* and *lǐ* to strengthen managers' cognition.

Following the critical review of the literature relating to the foundations of dynamic managerial capabilities, the concept of managerial cognitive capabilities is introduced to provide the contextual background of the study. The relevant Confucian concepts of virtue are discussed to demonstrate how these virtues may strengthen managers' capacities to perform various mental activities relating to managerial decisions. The conclusion will present the key findings of the study. However, it will also raise the limitations of the analysis as well as suggest possible avenues for future research on the subject.

The Impact of Managers' Cognitive Capabilities on Strategic Change and Firm Performance

In the search for the root causes behind variations in firm performance, strategic management researchers have found that the influence of senior corporate leaders on firm performance exceeds those of other key factors such as macro-economic conditions, presence in a profitable industry, and company circumstances (Hambrick & Quigley, 2014). The Chief Executive Officer (CEO) is incredibly influential because of his decision-making power and heavy responsibilities that affect

changes and outcomes, including the formation of the top management team and new strategies (Hambrick & Quigley, 2014). Hence the differences in the managerial style among CEOs may be examined to identify the root causes behind the variations in the strategic change and performance of different firms. The differences among CEOs vary according to human capital, social capital, and managerial cognition categories. Managers rely on these factors to make decisions to bring about change. Consequently, different emphasis given to these three factors can produce divergent managerial decisions that may produce contrasting firm performance (Adner & Helfat, 2003).

Human capital is a product of one's learning, which is reflected in the level of knowledge and skills developed from experience, education, and training (Helfat & Martin, 2015). In this regard, a CEO's educational background is positively correlated with research and development spending (Barker & Mueller, 2002), but not with the strategic interpretation of information or changes in ongoing organisational practices (Thomas, Clark & Gioia, 1993). A CEO's tenure in the current position is positively correlated with the firm's entrepreneurial activities (Cao et al., 2015), but negatively correlated with its level of diversification (Boeker, 1997). Social capital is the term used to mean the goodwill that results from a manager's relationship with other people, which opens doors to resources and information (Helfat & Martin, 2015). According to McDonald and Westphal (2003), the CEO who consulted other managers with different functional backgrounds was often positively related to product market diversification but negatively related to geographic diversification.

Managerial cognition is an umbrella term that covers knowledge structures, mental processes, and emotions (Helfat & Peteraf, 2015). Dimov (2010) found that entrepreneurs' beliefs about the feasibility of new opportunities and their ability to exploit them mediate the impacts of entrepreneurial experience (a type of human capital) and the early planning of new ventures. Nadkarni and Narayanan (2007) further revealed that the complexity of top management knowledge structures leveraged for strategy development positively affects strategic flexibility.

The previous studies signify conflicting results concerning the dominant influence of managerial cognition in shaping strategic change. This suggests that further research is needed to understand the ways managerial cognition may be sharpened. It is crucial to focus on managerial cognition because the development and deployment of both social capital and human capital depend on an individual's cognitive abilities (Adler & Kwon, 2002). However, despite the potential for managers' mental competency to improve their dynamic capabilities, research in the dynamic capability area has devoted limited attention to the investigation of the psychological processes, and Confucian virtues in particular, that involve the interaction between rational cognition and emotion for the improvement of managerial cognition.

Managers' Cognitive Capabilities

Researchers have proposed that a manager's cognitive capabilities are needed to support his/her

dynamic capabilities for sensing new business opportunities, seizing new business opportunities, and transforming firms' assets (e.g., Helfat & Peteraf, 2015; Teece, 2007). These cognitive capabilities imply the capacity of the manager to shape (Teece, 2007), recognise, and create opportunities, as well as foresee competitive threats (Hodgkinson & Healey, 2011).

A manager's cognitive capabilities for sensing new business opportunities are associated with the mental abilities of perception and attention. Perception refers to the mental activities that process perceptual data from the external environment to generate valuable and meaningful information related to that environment (Helfat & Peteraf, 2015). Perception supports opportunity identification through its mental functions of interpreting data and recognising emerging patterns in the external environment. Attention is a mental condition that involves direct cognitive resources towards some components of the environment rather than others and is characterised by the central system is ready to react to sensory input (American Psychological Association [APA], 2018a). Attention reinforces the sensing capabilities by orienting mental resources towards relevant information to facilitate environmental scanning as well as the recognition of business opportunities (Helfat & Peteraf, 2015). A manager's cognitive capabilities for seizing new business opportunities reflect the manager's readiness to take advantage of opportunities and overcome potential threats (Kump et al., 2019). The mental skills that underlie seizing activities are problem-solving and reasoning. Problem-solving is the process by which people try to overcome obstacles, develop strategies to go from where they are to where they want to be, or arrive to conclusions by utilising advanced mental functions like reasoning and creativity (APA, 2018b). Reasoning is the process of utilising rational procedures like formal rules of logic to find answers to problems (Helfat & Peteraf, 2015). The problem-solving and reasoning skills are applied in evaluating and creating investment decisions and business models to seize opportunities.

The cognitive capabilities for transforming firms' assets refer to the mental capacity to select, strengthen, align, recombine, and reconfigure assets and organisational structures (Teece, 2007). These capabilities are needed to address corresponding changes in the external environment and preserve corporate growth and profitability brought about by sensing new business opportunities and seizing new business opportunities. Social cognition and language are the mental abilities underpinning transforming firms' assets (Helfat & Peteraf, 2015).

Social cognition refers to mental activities in generating thinking related to; understanding, perception, categories and judgment of the interactions among people (APA, 2018c). Social cognition may support transforming activities because it influences social skills that can establish co-operation and minimises resistance among organisation members to achieve the objectives of transforming firms' assets (Helfat & Peteraf, 2015).

Language is defined as forms of verbal and non-verbal communication. Firstly, as a verbal communication, it will underpin transforming firms' assets by convincing organisation members to

support new initiatives (Helfat & Peteraf, 2015). Secondly, as a non-verbal means of communication in sign language or computer language, it supports the transforming of firms' assets via facial expressions and gestures that elicit required reactions from other organisation members.

Researchers have consistently found that individual differences in these mental abilities affect task performance. One of the critical differences is culture. In Western culture, the application of managers' cognition is more consciously controlled, purely rational, emotionally restrained, and free of social biases to make an objective, dispassionate decision (Hodgkinson & Healey, 2011). However, recent findings in cognition research hint that conscious rationality frequently has limited influence in decision making (Slingerland, 2010). At the same time, effortless attention and spontaneous habits precede conscious awareness, exerting a more significant influence on an individual's behaviour (Slingerland, 2010). In this regard, guidance from Confucian virtues to enhance a manager's unconscious thinking and mental abilities becomes valuable. Confucianism emphasises effortless action and attention in conducting virtuous acts, which serve as hallmarks of authenticity and ethical proficiency, and provide higher context sensitivity and flexibility in decision making (Slingerland, 2010).

Confucian Virtues and Cognitive Capabilities

Confucianism refers to "a social ethic which encourages a lifetime pursuit of moral excellence" (Romar, 2013, p. 985). The system of social ethics is based on the teachings of Confucius, which consists of a set of *dé* or virtues (德), *xíng* or practices (行) and *yì* or skills (艺). Confucianism is a dominant traditional philosophy that is the foundation of Chinese culture. Research on Confucianism in Chinese business enterprises consistently found that the management practices of these firms are heavily affected by Confucianism (see Chou & Cheng, 2020; Hui, 2022; Tian et al., 2022; Tsai & Tsai, 2022). Writings on Confucianism and Chinese business indicate that elements of Confucian thought have a decisive influence on Chinese managerial behaviour and practices (see Cheung & Chan, 2005, 2008; Yao, 2002; Zhu, 2015),

The corpus of Confucian thought is embedded in the four classics, including the *Great Learning* (Ni, 2017). According to the *Great Learning*, virtue is the origin of wealth as it attracts people to the virtuous person. This classic suggests that the relationship between wealth and virtue is similar to the relationship between the fruit and root of a tree (Legge, 2013). Zhong and Bao (2016) commented that this notion follows the theory of economics, which offers unique insights into the core objectives of the dynamic capabilities perspective to understand where wealth comes from and how it is generated by businesses under fast-changing conditions (Teece et al., 1997).

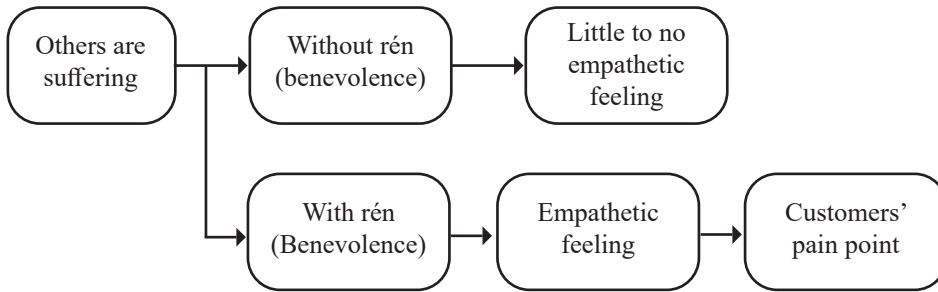
Virtue refers to "a state of human character (associated with the mind) that guides people to do 'good'" (Hackett & Wang, 2012, p. 870). Virtue is a product of the interaction and integration of emotion and cognition. Although virtue is initiated by emotion, its development rests on

cognition (Nichols, 2011; Virág, 2016). Confucianism advocates more than 50 virtues (Hackett & Wang, 2012). As this study aims to trace the origin that contributes to the improvement of managers' mental abilities that support their dynamic capabilities, process-oriented analysis is used to propose a possible process of *rén* (仁) or benevolence, which may strengthen managers' cognitive capabilities for sensing new business opportunities, of *zhì* (智) or wisdom may strengthen managers' cognitive capabilities for seizing business opportunities, and of *lǐ* (禮) or propriety may strengthen individual managers' cognitive capabilities for transforming firms' assets, rather than utilise variance-oriented analysis to test exhaustive numbers of virtues that are sufficient to enhance managers' mental abilities (Poole & Van de Ven, 2010). *Rén* is arguably the most essential virtue of Confucianism and fundamental to moral behaviour (Chen, 2013). *Zhì* is vital to materialise the benefits of *rén* (Thompson, 2007). *Lǐ* can complement *rén* by providing an expression of *rén* (Hu et al., 2021). Connections among these virtues are consistent with complementary relationships among the three types of managers' cognitive capabilities. Managers implement sensing activities to discover new business opportunities, which will then be captured with seizing activities (Teece, 2007). To maintain the profitable growth resulting from sensing and seizing activities, managers has to transform firms' assets to adapt to different conditions of firms in different stages of growth and changes in the external environment (Teece, 2007).

Rén

Rén means “benevolence”, “humaneness”, and “humanity” (Ni, 2017). It is the ability to empathise with others (Wong, 2017). It is a unique type of awareness that enables a person to feel sorrowful upon noticing the sufferings and hardships of others (Wong, 2017). A manager who is imbued with a strong sense of *rén* is inherently conscious of the feelings of others. The manager is likely to possess an enhanced level of cognitive abilities for sensing new business opportunities. The manager is more likely to have an empathic feeling when other people are suffering and is thus motivated to learn about customers' pain points that signify their latent needs (Figure 1). This is because *rén* can create “transference,” which is the mental action of understanding others' perspectives, interests, needs, and preferences (Wong, 2017). Notably, Figure 1 follows a process perspective presentation (Cloutier & Langley, 2020), while Confucian thinking is process-oriented (Lai, 2006).

The empathic feeling stimulated by *rén* is crucial for sensing new business opportunities. Zhu (2015) found that emotion is a necessity in Chinese entrepreneurs' business decisions. Livnat (2004) proposed that the emotive element of a benevolent initiative comprises of the motivation to alleviate the suffering of the beneficiary and the emotions of care and concern. Since empathetic feelings encompass care and concern for other human beings and things, such feelings are likely to raise awareness and encourage a benevolent manager to ease suffering by seeking to comprehend customers' pain points and the problems involved.

Figure 1*Rén and the Cognitive Capabilities for Sensing New Business Opportunities*

Source: Proposed by authors

Rén may improve capabilities for attention, especially towards identifying and understanding potential customers' issues. Without *rén*, the feeling of care and concern are less likely to emerge, giving rise to "inattentional blindness" (Simons & Chabris, 1999), which means the inability to notice a happening while working on other things (Helfat & Peteraf, 2015). Inattentional blindness may occur when a manager runs a business to achieve rational economic incentives only, thereby neglecting to pay attention to other important firm objectives (Romar, 2002). In contrast, Zhu (2015) documented that business practices are improved when Chinese entrepreneurs allocate attention to both benevolent purposes and economic purposes. For example, a Chinese entrepreneur helps an employee's father to overcome a critical health problem when the employee is away travelling for a business opportunity. Benevolent attention can also be extended to other stakeholders, such as customers and business partners. Therefore, *rén* may increase a manager's attention to the problems customers or other parties face and translate their pain points into information about latent customer needs or new opportunities (Zhu, 2015).

In addition, *rén* may enhance a manager's perception abilities to improve accuracy in perceiving new problems as opportunities. The idea of love within the concept of *rén* (Wong, 2017), may empower a manager to understand customer needs from the customer's perspective rather than the manager's perspective. This is because *rén* teaches one how to love people from the perspective of love-receiver rather than the love-giver (Huang, 2005). Sensing new business opportunities through the customer's perspective would undoubtedly increase the accuracy of customer needs identification, as their perspective is a better source of information about actual customer needs. Kurtmollaiev et. al. (2018) found that adopting users' perspective can generate deeper customer insights and improve sensing capabilities.

Several empirical studies have shown that *rén* improves managers' cognition for sensing new business opportunities. Tian et al. (2022) reported that FOTILE's founder saw potential demand

for a new product upon learning that lung cancer could be caused by inhaling cooking smoke. In their study of business leaders in Singapore and Brunei, Low and Ang (2012) revealed that an interviewee with a caring mindset achieved sales success from product improvement by acting on customer feedback. Similarly, Ip (2002) showed that the founder of China's Weizhi Group achieved considerable revenue growth by introducing a product refund policy to compensate for counterfeit or sub-standard goods.

Zhi (Wisdom)

Zhi refers to “the intellectual capacity of human beings that makes knowledge or the learning of a skill possible” (Kim, 2014, p. 59). According to Confucius, “the wise are free from perplexity” (Ni, 2017, p. 244). *Zhi* has at least three essential components: (1) the ability to foresee the possible outcomes of different courses of action and deeply consider ideal ways to accomplish specific goals; (2) the ability to appreciate virtuous conduct and devotion to it; and (3) the ability to develop an intellectual understanding that enables a person to know or be conscious of more things from a single source of information (Van Norden, 2007). The wise can understand swiftly and accurately, deliberate competently on taking the ideal action to attain desired ends, and anticipate and evaluate the possible effects of different courses of action.

Figure 2 shows that a manager imbued with *zhi* will enhance his cognitive abilities for seizing opportunities, specifically in the form of novel products, processes, or business models (Teece, 2007). These may call for decisions to strategically invest in development and commercialisation activities, technological competencies, complementary resources, and capabilities (Teece, 2007; Matysiak et al., 2018). The mental skills of reasoning and problem solving, which are enhanced by *zhi*, are helpful in making and evaluating investment decisions and business models to seize opportunities (Helfat & Peteraf, 2015). In this regard, a business model may exist as a specific problem-solving system to determine target customers, meet their needs, and fulfil their satisfaction to gain financial return (Baden-Fuller & Haefliger, 2013). To overcome difficulties through problem solving, *zhi* may be needed to conduct effective means-end deliberation to detect the most effective course of action to meet desired goals (Van Norden, 2007).

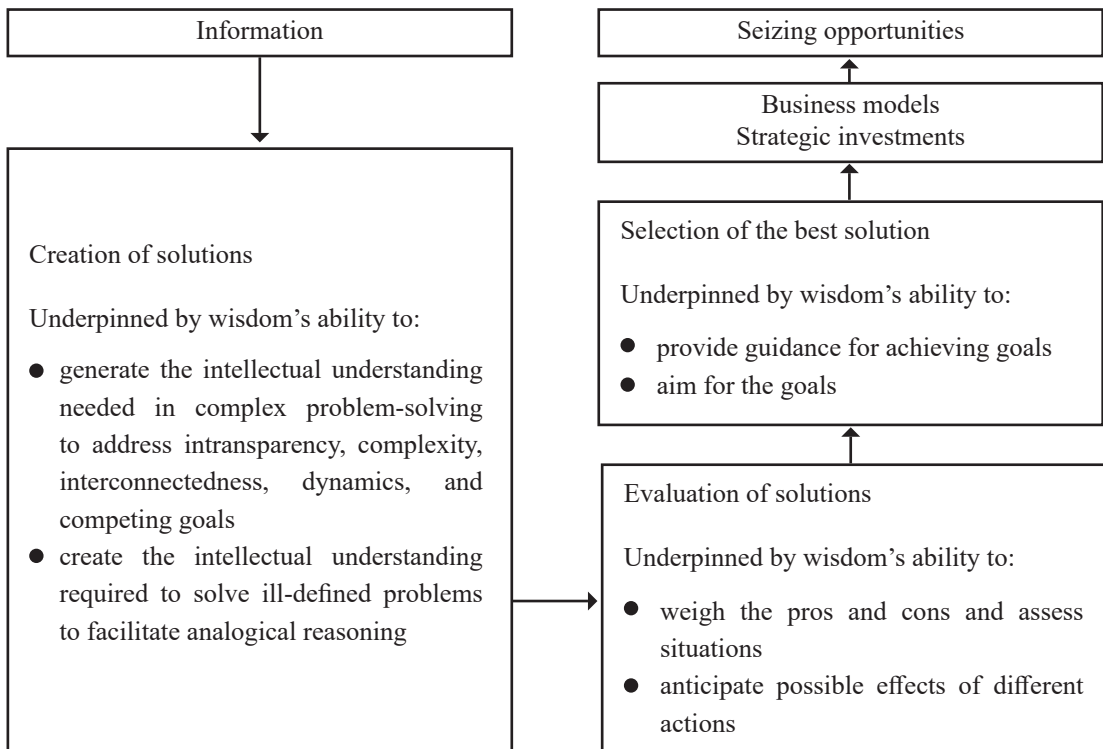
Zhi may improve problem solving by producing the best means to achieve objectives as in ideal investment options and appropriate business models to seize opportunities (Van Norden, 2007). Problems encountered in strategic decision making that deal with opportunities are usually complex and ill-defined (Brightman, 1978). Complexity arises when “the problem’s current and goal states, along with obstacles encountered along the way, are diverse, dynamic during their resolution, interdependent, and/or not transparent” (Chevallier, 2016, p. 6). An instance of the complexity of a problem can be found in selecting a career that is both financially and emotionally rewarding (Dörner & Funke, 2017). Complex problems concern dynamic systems that problem-solvers must

address during uncertainty (Funke et al., 2018). These dynamic systems are characterised by (1) lack of transparency, which refers to the unavailability and inaccessibility of pertinent information, (2) complexity, which denotes the quantity of interconnected elements, (3) interconnectedness, which represents the elements' relationships, (4) dynamics, which denotes their changes over time, and (5) conflicting objectives (Funke et al., 2018).

Complex problem solving calls for *zhi* to overcome transparency issues, which typically require information retrieval. *Zhi* may be exercised to develop nuanced, holistic, and responsive intellectual awareness for clearer perceptions as well as to guide and deliver felicitous responses (Varela, 1999; Thompson, 2007). A more precise understanding of a situation can be achieved with intellectual awareness because it involves self-cultivated attention to not only the parts of a situation, but also the parts' relationship with the whole situation in their entirety that may help perceive the overall structure of a complex problem (Varela, 1999). Information retrieval becomes more comprehensive as “all relevant aspects are included, not just those which fit the reduction of a categorical analysis” (Varela, 1999, p. 28). The resulting information is vital for generating skillful and well-tailored reactions to achieve goals and establish desired situations accurately (Thompson, 2007).

Figure 2

Zhi and the Cognitive Capabilities for Seizing New Business Opportunities



Source: Proposed by authors

The man of *zhi* is quick to understand complex situations and capable of finding solutions to problems arising from different sources. Zi Gong, a student of Confucius, once confessed that “Hui hears one point and thereby knows ten; I hear one point and know two” (Ni, 2017, p. 153). Hui’s ability to gather more information and insights from one source would demonstrate that he was more capable of addressing complex situations by considering a range of interconnected elements. The implication is that the ability of knowing additional things allows one to visualise the entire image from a specific portion of the total (Ni, 2017).

The ability of knowing additional things is effective in dealing with a complex problem’s dynamic issues, a feature of dynamic systems of a complex problem that refers to changes happening in a complex problem as time passes. Fischer et al. (2012) suggest that dynamic decision making and prediction are needed to deal with the dynamics feature of a complex problem or the changes in complex problems. Dynamic decision making is the process of making goal-oriented decisions that depend on prior decisions and their effects in a situation where things can change naturally or as a result of prior decisions (Fischer et al., 2012). An example of dynamic decision making is the decision to adopt a low-price strategy to increase market share and the number of units produced with the prediction of subsequently cost of producing a similar item will decrease because of the increase in competence of production from larger quantity of production (Rahmandad et al., 2021). The example shows that dynamic decision making and prediction can benefit from the ability of knowing additional things that enables an understanding of the dynamics between earlier actions and later actions. This is evident in Confucius’ remark about Zi Gong: “being told about what was in the past, he knows what is to come after” (Ni, 2017, p. 92).

Similarly, tackling competing goals relies on the manager’s *zhi* to gain additional insights. Dynamic decision making can be applied to handle competing goals which arise from the complex and interconnected nature of human relations and affairs (Thompson, 2007). A case in point is the sacrifice of short-term profits to achieve a long-term productivity increase. This may involve the proper balance between employee treatment, long-term productivity, and short-term profits. The ability of knowing additional things may be helpful in dealing with the dynamics between employee treatment, long-term productivity and short-term profits to overcome potential problems that come from these three competing goals. Better employee treatment calls for the manager’s *zhi* to engage in virtuous conduct, conceive the best course of action and foresee potential consequences. The need to balance competing goals arises when some objectives are contradictory and call for the *zhi* to understand different expected consequences from the means adopted to attain specific objectives (Fischer et al., 2012).

Next, *zhi* can help to solve ill-defined problems through its analogical reasoning. Ill-defined problems are those in which the initial state, goal, or operations of a problem and constraints on the solution are impossible to be known at the outset, such as the selection of a script for a movie production (Smith & Kosslyn, 2014). Ill-defined problems may be solved with analogical reasoning,

which involves searching for a problem that is in some ways similar to the ill-defined problem at hand so that the solutions of the analogical problem can be employed as references to produce new solutions for the present ill-defined problem (Gick & Holyoak, 1980). An example of analogical reasoning is how Zi Gong knew what was coming after hearing about things in the past (Rošker, 2014), which signifies the link between analogical reasoning and *zhi* via Zi Gong's foresight from additional things. Another example is in Confucius' confession, "to those who have been presented one corner but do not from it figure out the other three, I do not repeat my lesson" (Ni, 2017, p. 195). These four corners are analogies connected by their common attributes to relate the known to new and unknown things (Rošker, 2017).

The evaluation of solutions calls for two abilities of *zhi*. The first is the ability to weigh pros and cons and assess situations before acting according to one's sense of appropriateness or righteousness to generate the most favourable outcome (Thompson, 2007). The wise would consider the larger context of events and human affairs to benefit the greater community, such as society, humanity, or nature, rather than only themselves or their clan (Thompson, 2007). The second is the ability to anticipate the possible effects of different actions (Van Norden, 2007), which can be compared and matched with the most favourable outcome.

The most effective course of action would be selected after evaluating different solutions. For this purpose, at least two abilities of *zhi* are required to select the solution that best accomplishes the objectives. First, *zhi* provides the proper direction for achieving objectives under varying conditions, like guiding an arrow to hit a bird (Thompson, 2007). Second, *zhi* encompasses the skill to aim for objectives by adapting to changing situations rather than rigidly adhering to a set of guidelines (Thompson, 2007).

The discussion above illustrates the ways manager's *zhi* can strengthen problem solving and reasoning, which underpin effective strategic and investment decision making as well as business model design for seizing opportunities (Helfat & Peteraf, 2015). *Zhi* facilitates reasoning while increasing the accuracy, sense of direction, flexibility, and new knowledge needed for problem solving. An individual with superior *zhi* is more likely to be able to reason effectively. An example of a man of *zhi* is Li Kashing, the Chairman of Hutchison Whampoa and arguably the world's richest Chinese, who solved the problem of expanding his business (McDonald, 2012). He analogised his business expansion following the way the Yangtze River accepts many tributaries to grow large, which involved treating people with politeness, being acceptable towards them, exercising caution in rejecting them, and developing personal relationships with them (McDonald, 2012). In this example, the phenomenon of the Yangtze River can be analogically connected to the first "corner" Confucius taught his students, whereas the behaviours of being polite, more acceptable, reluctant to reject, and personally connected are comparable to "the other three corners" he expected his students to figure out themselves.

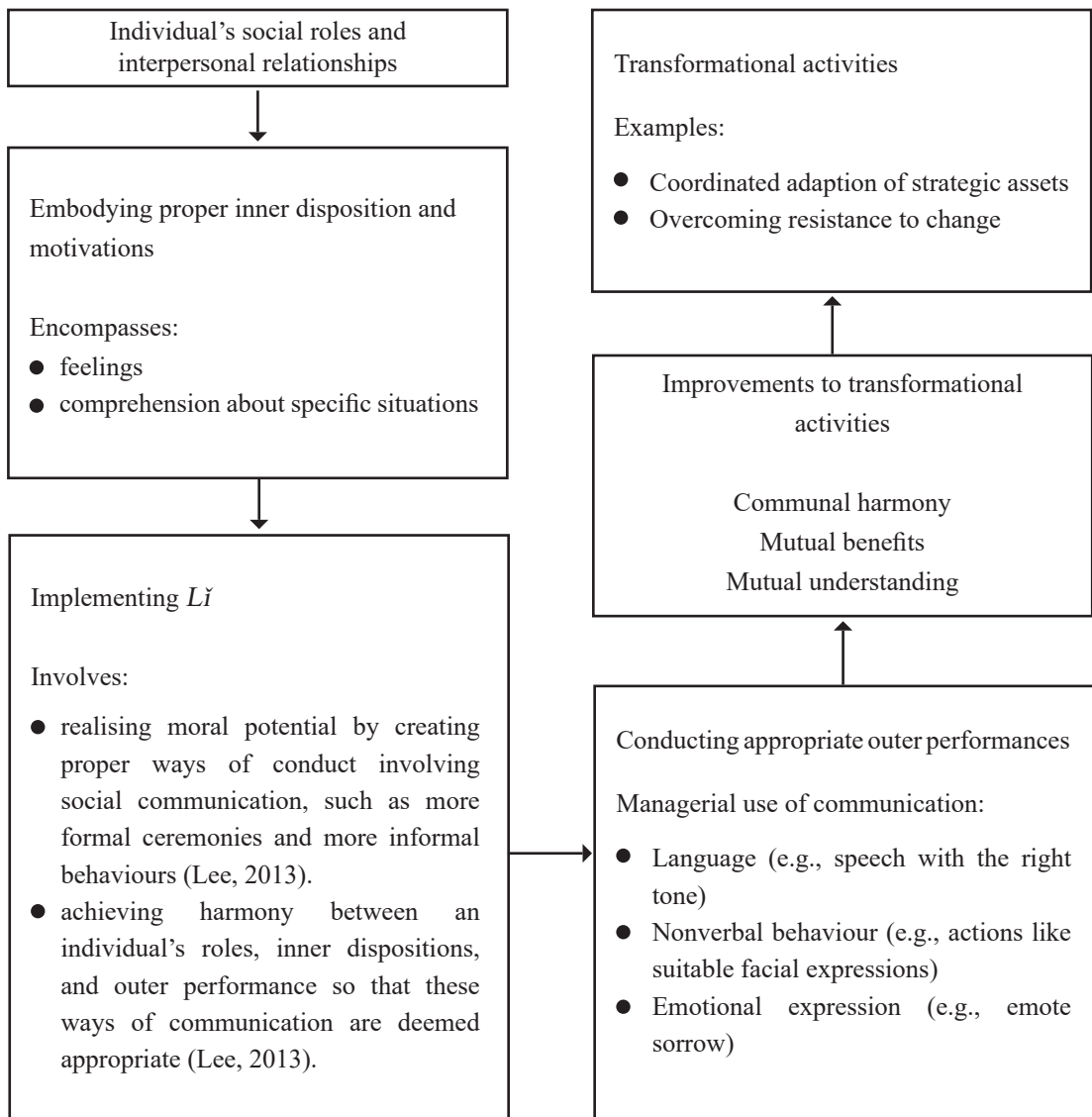
Empirical research has provided evidence that *zhi* enhances managers' cognition for seizing. The founder of a real estate succeeded in expanding his business by adopting innovative game-changing practices grounded on a tree-planting method (analogical reasoning) involving care for the roots and the trunk for the tree to grow sufficiently to generate a long-term return. This was in contrast to a transplant method to harvest a short-term gain from the transplanted tree that was unlikely to adapt to the environment (Tsai et al., 2011). The founder of a food company was conscious of the Confucian wisdom of "rowing a boat upstream, if the boat is not moving up, it will come down" (F. L. T. Yu, 2008, p. 261) to capture growth opportunities with several strategic moves such as tracking and meeting changes in customers' demands and preferences, and business expansion with chain store franchising which was previously perceived as a threat to company reputation. The founder of Taiwan's Acer Group applied *zhi* to expand his business by drawing on his inspirations from the success of McDonald. The company mimicked its business model to operate overseas business units to assemble new PCs like fast-food restaurants and to achieve economy of scale by treating Acer's factories as "central kitchens" (Shih, 1996).

***Lǐ* (Propriety)**

Lǐ is "a disposition connected with following the rites" and translated to mean "propriety," "etiquette," "ritual," and "rites" (Van Norden, 2007, p. 117; Romar, 2013). *Lǐ* is the practice of proper individual conduct to promote mutual benefits. An action is deemed appropriate when an individual's actions, speech, and feelings are in harmony with his/her role in a given society (Lee, 2013). According to Confucius, "in performing ritual propriety, it is better to be sparing than extravagant. In mourning, it is better to express deep sorrow than be particular about tedious formalities" (Ni, 2017, p. 115). The expression of sorrow should be in accordance with the feeling of sorrow as determined by the mourning situation. Under conditions of harmony, language and communication become more persuasive, and the practice of *lǐ* can enhance the power of language and communication. In itself, harmony contributes to greater social coherence as a whole (Lee, 2013). Hence, *lǐ* may improve relationships with other organisation members, lower their resistance to change, and induce their co-operation in transforming firms' assets. The manner in which propriety strengthens managers' cognitive capabilities for transforming firms' assets is shown in Figure 3.

Cheung and Chan (2008) found that Hong Kong Chinese CEOs assume the role of a supportive team member among their colleagues, fill their inner dispositions with team spirit, communicate sufficiently with co-workers in a group setting and show good affection and concern in their relationships with colleagues. Within the organisation, the harmony between the CEOs in the performance of their leadership role and their disposition will promote workplace coherence, mutual benefits and understanding, which in turn may lead to better co-ordination, collaboration, dedication and the full play of talent in the organisation (Cheung & Chan, 2008).

Figure 3

Lǐ and Cognitive Capabilities for Transforming Firms' Assets

Source: Proposed by authors

Studies show that *Lǐ* strengthens managers' cognition for transforming firms' assets. Chou and Cheng (2020) showed that the founder of a leading Taiwanese real estate company instilled humanistic values and Confucian virtues in employees through leading by example, mentorship, formal training sessions, business philosophy lectures, and conducting symbolic ceremonies, rituals

and honouring heroes. These practices helped employees better understand and satisfy customer needs and enabled them to treat customers as friends with respect. Tian et al. (2022) reported that FOTILE's founder encouraged his employees to follow Confucianism in their actions and treat FOTILE like a family to naturally take customers' concerns into account to produce products of superior quality. The founder explained the philosophy, acted as a role model to his employees and conducted company rituals, such as a formal "Three Reflections Meetings" for his employees to examine and be responsible for shortcomings in their work through the Confucian way of self-reflection. Similarly, Hui (2022) found that Haier Group's founder organised ceremonies to honour the firm's heroes to encourage his employees and to win their support. The founder transformed his employees' mindset of selling inferior quality refrigerators at lower prices into establishing Haier's quality-centred product standards. This was accomplished by repeated communications about a public event of smashing the inferior quality refrigerators by him together with the workers who made them.

Discussion and Conclusion

The previous discussion focuses on selected Confucian virtues that may form the basis of managerial cognitive capabilities. These virtues help to improve a manager's mental processes about attention, perception, problem solving, reasoning, social cognition, and language skills. A manager imbued with Confucian virtues practises virtuous conduct through psychological activities involving the interaction between emotion and cognition. These activities are essential in the face of the growing demand for managerial competency in crafting and implementing strategic change.

The present study contributes to advancing dynamic capabilities research in three ways, namely, by being scientific, revelatory, and practical (Corley & Gioia, 2011). Firstly, it incorporates some of the cardinal Confucian virtues to contribute dynamic capabilities research by demonstrating the relevance of these virtues in strengthening managers' cognitive capabilities for sensing new business opportunities, seizing new business opportunities, and transforming firms' assets. In particular, it explores the function of *rén* in sensing new business opportunities, *zhì* in seizing new business opportunities, and *lǐ* in transforming firms' assets. The role of Confucian virtues in engaging affect-cognition interaction for more effective dynamic capabilities cannot be accomplished by either cognition or emotion alone (Hodgkinson & Healey, 2011). For example, in sensing new business opportunities, the feeling of sorrow (affect) brought by *rén* is essential to generate sensitivity (managers' ability to allocate attention) to others' suffering, which may signal potential business opportunities. Confucius taught that *zhì* can seize business opportunities, provided that *rén* exists to preserve these opportunities (Ni, 2017). The literature suggests that firm performance is related to the possession and differences in human capital, social capital and managerial cognition (Helfat

& Martin, 2015). Similarly, the implementation of individual mental aptitude can increase and capitalise on human and social capital (Alomani et al., 2022; Brymer et al., 2012). The present study is thus a step forward to understanding where firm performance differences come from by extending Helfat and Peteraf's (2015) analysis of managerial cognition with Confucian virtues.

Secondly, the study is revelatory by demonstrating the application of Confucian virtues may generate differences in managerial cognitive capabilities, which in turn may result in a higher level of dynamic managerial capabilities that can create effective strategic change for better firm performance. Helfat and Martin (2015) call for research on the root of firm performance improvement by examining the processes of how resources owned by individual managers (e.g., managers' cognition, knowledge and personal relationship with others) that support dynamic managerial capabilities influence strategic change, together with the process of how the strategic change affects firm performance. Helfat and Peteraf (2015) emphasised that one source of differences in managers' cognition is improving managers' intellectual capacity via practice, which leads the processing of information in mind to shift from controlled mode to automatic mode and becomes path-dependent. Information processing in the mind can be categorised into two types of process, namely automatic and controlled mental processes (Stanovich & West, 2000). Automatic mental processes demand comparatively less mental effort and provide fast reactions to external stimuli and data, while controlled mental processes require much control from consciousness and involve the use of rational methods, analysis and formal rules of logic (Helfat & Peteraf, 2015). Path dependence refers to the reliance on previously learned knowledge and firms' history in selecting the strategic direction a firm will move forward (Teece et al., 1997). Increasing the reliance on automatic mental processes can cause biases in decision making and confine an individual's mindset to existing knowledge, which may result in resistance to change and unable to see new technologies and changes in customer needs from new perspectives (Helfat & Peteraf, 2015; Haase et al., 2009). This problem highlights the need for additional ways of enhancing managerial cognition. As shown earlier, the application of *rén* can enhance managers' cognitive capabilities for sensing new business opportunities, which is vital to generate insights about potential business opportunities and to identify and react to environmental changes. This can counteract the weaknesses of the path dependence of cognitive capabilities, such as restraining firms from discovering novel ways to generate value (Bohnsack et al., 2014).

In seizing new business opportunities, differences generated through *zhì* are critical in addressing the lack of transparency, complexity, interconnectedness, dynamics, competing goals, and unfamiliar conditions. As these issues characterise the volatile environment in which dynamic capabilities operate, *zhì* has a unique contribution to superior reasoning and problem-solving capabilities that underpin superior dynamic managerial capabilities. *Zhì* will increase the understanding of how dynamic capabilities function in a volatile environment. In transforming

firms' assets, differences produced through *li* render communication cognitively and emotionally more convincing in gaining co-operation and minimising resistance to change. This implies that the harmonious relationship promoted through *li* is valuable. As the relationship is durable, these virtues are suitable for transforming firms' assets that require long-term commitment, like strategic investments (Helfat & Peteraf, 2015).

One of the causes of differential firm performance may be explained by considering the role of Confucian virtues in a way that differs from the existing literature findings. This is revelatory and counters the criticism that Confucianism is authoritarian and paternalistic and thus represses human nature (Ip, 2009; Wong, 2017). Resorting to the practice of Confucian virtues may benefit both managers and employees. This argument is in line with the teachings of Confucius that virtues are part of human nature and are non-repressive (Ni, 2017),

Thirdly, the study is of practical utility through the development of three process-oriented conceptual frameworks that uncover how Confucian virtues strengthen managers' cognitive capabilities for their enhanced dynamic capabilities, which lead to more effective strategic change and improved firm performance. This helps overcome the lack of process-oriented study in the dynamic managerial capabilities literature and fills the research gap in existing studies that reveal the contradictory impacts of managerial human capital, managerial social capital, and managerial cognition on strategic change. Central to these process-oriented conceptual frameworks are the processes of adopting and applying Confucian virtues for heightened mental performance, paving the way for more effective managerial behaviours. These insights and the emergence of differences in managers' cognition exemplified by the sequence of events are unlikely to be made available through the variance-based approach and quantitative research method that emphasises relationships between variables and detail abstraction to produce variables (Cloutier & Langley, 2020). Moreover, practitioners who aspire to improve firm performance can apply these process-oriented conceptual frameworks by taking necessary actions to strengthen managers' cognitive capabilities (Corley & Gioia, 2011). This complements Helfat and Peteraf's (2015) insights that managerial mental processes vary across individuals. However, they provided little knowledge on how these differences emerge.

Two shortcomings deserve further study. First, the three process-oriented conceptual frameworks need more empirical support to enhance credibility (Guba, 1981). Empirical studies should advance the knowledge of the influence of Confucian virtues on managerial cognitive capabilities by employing case study research, which is suitable for investigating processes and process-oriented conceptual frameworks (Cornelissen, 2017). These frameworks can be exploited to direct the initial stages of a structured case study aimed at building theory (Carroll & Swatman, 2000).

Second, this study is focused on Confucian virtues but provides little analysis of the fact that it needs the support of learning (Ni, 2017). Confucius warned that loving *rén*, *zhì*, *xìn* (trust),

uprightness, courage, and steadfastness without loving learning might lead to corresponding flaws (Ni, 2017). His teachings imply that individuals differ in their competency to apply virtues since learning is needed for the appropriate use of virtue to exploit its latent merits and avoid its latent flaws. Lin (2018) proposed Confucian learning as personal development to become a gentleman in pursuing one's life goal, rather than merely accumulating knowledge for its own sake. Ni (2017) argued that Confucian teachings are not instructions that impose restrictions on individual conduct but to impact skills to allow one to live better. Despite the possibility of contradictory interpretations, knowledge and empirical evidence are lacking on how Confucian learning may mitigate weaknesses for a flawless state of virtue. These are issues for future studies to ponder.

* Jui-Aik Tan [陈威宇] is a PhD student, Institute of Postgraduate Studies and Research, Universiti Tunku Abdul Rahman Sungai Long Campus, Malaysia. Email: juiaik@gmail.com

** Kian-Aun Law [刘建安] is Associate Professor, Department of International Business, Faculty of Accountancy and Management, Universiti Tunku Abdul Rahman Sungai Long Campus, Malaysia. Email: lawka@utar.edu.my

***Yet-Mee Lim [林月美] is Associate Professor, Graduate Business School, UCSI University Kuala Lumpur Campus, Malaysia. Email: LimYM@ucsiuniversity.edu.my

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Notes

- 1 Dynamic capabilities are first introduced as an organisation's ability (Teece et al., 1997). Among influential definitions of dynamic capabilities, the recommended definition is "the capacity of an organisation to purposefully create, extend, or modify its resource base" (Helfat et al, 2007, p. 4). This study focusses on the dynamic capabilities of managers. Dynamic capabilities of managers are another type of dynamic capabilities (Ambrosini & Altintas, 2019), which denotes "the capabilities with which managers create, extend, and modify the ways in which firms make a living" (Helfat & Martin, 2015, p. 1281). This type of dynamic capabilities is reflected in management activities to achieve management objectives, suggesting that dynamic capabilities are put in place by individual managers rather than organisations (Ambrosini & Altintas, 2019). Dynamic capabilities are essential to develop and maintain capabilities to manage better than competitors, to support strategic change for the improvement of firm performance, to address rapidly changing environment, and to make changes to the environment (Helfat & Peteraf, 2009).
- 2 Cognitive capabilities refer to the part of cognition that conducts activities or functions of cognition and is different from the part of cognition that exists as representations of external realities stored in mind (Helfat & Peteraf, 2015). Cognitive capabilities can perform a range of mental activities. Processes of knowing, such as attention, reasoning and recall, involve cognitive capabilities (Helfat & Peteraf, 2015). In addition, representations of information and external realities in mind may be retrieved, created, or changed by cognitive capabilities in the circumstances like thinking about a problem to produce possible ideas of solutions (Helfat & Peteraf, 2015).
- 3 One of the main ideas of Aristotle's virtue ethics is his theory of the mean (Kaptein, 2017). In the theory, the term "mean" denotes an intermediate state that avoids the potential problem of moral purposes being destroyed by the practice of either too many or too few moral actions and moral sentiments that represent virtues (Kaptein, 2017). Achieving the specific mean of a human action and emotion is less about overcoming excessive virtues by reducing the quantity of virtues or avoiding deficient virtues by increasing the quantity of virtues but more about tailoring the action and emotion commensurate to the individual actor's abilities, resources, activities, circumstances and target audience, and to be as precise as possible rather than moderate at hitting the point of mean (Sim, 2007). In the context of organisation, the mean between the two extreme amounts of virtue can be viewed as an essential feature of any virtue needed to foster ethical behaviour and deter unethical behaviour among organisation members (Kaptein, 2017).
- 4 Phronesis is commonly translated as practical wisdom and refers to the capacity to make wise decisions and take effective actions to accomplish a goal (Scalzo & Fariñas, 2018). Practical

wisdom is responsible for working on how to achieve the target rather than determining the target as the good end (J. Yu, 2007). In management, practical wisdom is seen as experiential knowledge that empowers managers to quickly and wisely make decisions (Nonaka & Takeuchi, 2021).

- 5 Dynamic capabilities for sensing new business opportunities are the capacity to accumulate information that suggests new business opportunities, such as scanning, searching, exploring, learning and interpreting technological possibilities and customer needs (Teece, 2007). New business opportunities may be created or discovered from existing information or generated from novel information and knowledge (Teece, 2007). Dynamic capabilities for sensing new business opportunities are supported by managers' cognitive abilities for sensing new business opportunities, like attention and perception (Helfat & Peteraf, 2015).
- 6 Dynamic capabilities for seizing new business opportunities are the capacity to take new business opportunities through launching novel products, services or processes (Teece, 2007). To achieve a successful launch, these capabilities involve devising or choosing an appropriate business model, investing in developing and commercialising the new offerings, preserving and upgrading technological competencies and complementary assets, as well as in the most promising technologies and designs (Teece, 2007). Dynamic capabilities for seizing new business opportunities are supported by managers' cognitive abilities for seizing new business opportunities like problem solving and reasoning (Helfat & Peteraf, 2015).
- 7 Dynamic capabilities for transforming firms' assets are the capacity to renew firms' assets continuously to match with firms' changing conditions in different stages of their growth and changes in the external environment (Teece, 2007). These capabilities involve generating, using, safeguarding and reconfiguring firms' assets (Teece, 2007). Dynamic capabilities for transforming firms' assets are supported by managers' cognitive abilities for transforming firms' assets, like social cognition and language (Helfat & Peteraf, 2015).
- 8 The process orientation of a study refers to the nature of a study to build a process theory. Process theory explains movements in the development of what happens over time in an individual, an organisation or other social entity (Van de Ven, 2007). The explanations of process theory are presented in terms of the sequence of events that result in an outcome, such as putting action A into practice, followed by action B to get outcome C (Langley, 1999). Unit of analysis of process theory is event (Welch & Paavilainen-Mäntymäki, 2014), not a variable that is normally used in a quantitative research method or research method to produce variance theory (Mackenzie, 2000). Variable acts as an encapsulation of the process under a research's investigation (Mackenzie, 2000). The chains of events constitute causality in process theory (Langley et al., 2013). Satisfactory explanations of process theory rest solely on necessary causes, which means each event in the sequence of events is essential but may not be sufficient

for the outcome of the process under investigation to happen (Poole & Van de Ven, 2010). Process theory assumes the world is an open system where outcomes can be heavily affected by unexpected events and human manipulation (Poole & Van de Ven, 2010). The assumption is needed in this study because the world in this view allows managers with dynamic capabilities to take an active role in driving strategic change to influence the external environment (Kirova, 2023), and adapt to changing environment (Helfat & Martin, 2015).

- 9 The variance orientation of a study refers to the nature of a study to develop a variance theory. Variance theory employs connections among independent and dependent variables to explain phenomena (Langley, 1999). These variables are units of analysis in variance theory and abstraction of the phenomenon under research investigation that encapsulate the key features of the phenomenon (Poole & Van de Ven, 2010). In variance theory, variables are causes that have instant, efficient and regular effects (Poole & Van de Ven, 2010). Satisfactory explanations of variance theory require both necessary causes and sufficient causes, which implies that variables included in research are necessary and sufficiently for producing a result (Poole & Van de Ven, 2010). Variance theory assumes the world is a closed system (Poole & Van de Ven, 2010), a system where a conjunction of events happens regularly, such as an event that may represent an input factor is regularly accompanied by another event that may represent a result of the earlier event (Bhaskar, 2008). A closed system may not apply to social reality (Poole & Van de Ven, 2010), because it is artificially developed, controlled and isolated from reality (Bhaskar, 2008).