

# The Moderating Role of Environmental Dynamism on School Leaders' Strategic Thinking and Decision-Making Competency

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**Abstract** - The rapid changes during and after the pandemic outbreak have given hard times for school leaders worldwide including in Malaysia. School leaders have been challenged to think strategically and come out with good decision making within the available knowledge and capability. The objective of this study is to investigate the moderating effect of environmental dynamism on the relationship between strategic thinking among school leaders and their strategic decision-making competency. A system thinking and reflective thinking in strategic thinking dimensions will be utilized in this study. Dual processing theory explains the two modes of thinking-analytical and intuitive-that go into making decisions. The research will be administered among a sample of school leaders in Malaysia. It is hoped that the proposed findings of the study will provide evidence that environmental dynamism plays a crucial role in moderating the relationship between strategic thinking, either rational or intuitive, and strategic decision-making competency. The present study will contribute novel insights to the expansion of the competency theory, particularly by expanding our understanding of the interplay between strategic thinking and decision-making as well as the moderating effect of environmental dynamism. Additionally, it will also contribute to the understanding of strategic thinking and decision-making competency among school leaders when they are confronted with a dynamic environment. Consequently, this facilitates school leaders in making effective decisions pertaining to the pedagogical aspects of teaching and learning.

**Keywords** - Strategic decision-making competency, strategic thinking, environmental dynamism, school leader

## I. INTRODUCTION

School leadership is essence in educational advancement and success of students. A school leader plays crucial role as a decision maker. The quality of the outcomes is guaranteed by the ability to make effective decisions (Donelan et al., 2016). In-line with Malaysian Ministry of Education (MOE) aspirations which aspires to produce performing students through the competencies of the school leaders (MEB 2013-2025).

School leaders must be able to demonstrate prompt and effective decision despite situations especially when in times of crisis (Netolicky, 2020). In facing the crisis, the school leaders can change the thinking mode from standard procedure towards strategic thinking (Smith & Riley, 2012). The utilization of strategic thinking in assisting school leaders' decision-making are mostly agreed by researchers especially in management studies. Assessment of system thinking and reflective thinking in strategic thinking components help school leaders to affirm the credibility of

intuition and adapt the ambiguity of the environment (Smith & Riley, 2012). Dual processing theory explains the two modes of thinking-analytical and intuitive-that go into making decisions (Wason & Evans, 1974). Researchers believe the complementation of rationality and intuition can support the cognitive and mental process (Luoma & Martela, 2021; Pang & Pisapia, 2012).

School leaders as decision-makers are also tailored to any new government policies. Pursuing the advancements of the Fourth Industrial Revolution (IR 4.0), the Ministry of Education has improvised educational policies to align with the demands of the digital age. Many changes regarding the syllabus, teaching methods, and learning materials have been implemented to equip students with the necessary skills for the future. For example, the Dual Language Programme (DLP), which has been implemented since 2016, is continuously being debated over the Ministry of Education (MOE) regulations, the capability of the teachers to handle the classes and the effects on the students in a long run (Abdullah & Zaimuariffudin, 2023). The programme is aimed at providing students with the opportunity to learn and develop proficiency in two languages, typically their native language and a second language. Proponents argue that the DLP enhances students' cognitive abilities, cultural understanding, and future career prospects in an increasingly globalized world. However, critics express concerns about the potential strain on teachers who may not have sufficient training or resources to effectively teach in two languages, as well as the potential for students to become overwhelmed or confused by the dual language instruction.

Furthermore, teachers have also emphasized the importance of adapting their teaching styles to accommodate diverse learning styles and abilities, promoting inclusivity, and ensuring that every student has equal opportunities for success. This year, teachers are introduced to a new Guided Module Programme (MOBIM) that uplift a hands-on teaching method starting early since Year 1. This initiative is believed to become one of the findings from the previous pandemic (Selangor Journal, 2023). On top of being educators, teachers also need to manage administrative workloads, which barely give adequate free time and caused new pattern of early retirement among senior teachers (Vinod & Vinod, 2022). This phenomenon can also be attributed to the frequent modifications in government rules, such as the shift from a conventional to an online reporting system. The transition necessitated the active involvement of teachers and school leaders in keeping up with the latest developments.

The ability to think strategically is a fundamental aspect that enhances the decision-making skills of school leaders

(Umoh et al., 2020). Nevertheless, a turbulent environment will impact the interaction between strategic thinking and decision-making. Environmental dynamism is characterized by unstable, unpredictable, and rapidly changing external conditions or context of a system. Within the context of educational institutions or organizations, environmental turbulence refers to the recurring and significant changes in various elements, including rules, regulations, technology, demographics, and societal expectations. School leaders, who are trained teachers with experience in management, are required to function effectively in the VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) educational environment (Shamsudin, 2019; Minciu et al., 2020).

The dynamic of the environment to some extent has affected the competencies of school leaders to conduct decision-making. By leveraging the strategic thinking to come out with good decision-making seems indispensable. To date, there is still limited empirical study exploring the environmental dynamism effects towards this relationship within school context. Hence, this study seeks to present a study into the new competence model of strategic thinking and decision-making among school leaders in Malaysia, and the effect of environmental dynamism on the link between these factors.

## II. LITERATURE REVIEW

### Decision making competency.

The concept of decision-making competency is commonly recognized as an individual's capacity or ability to make effective decisions. Parker and Fischhoff (2005) assert that decision-making competency pertains to the capacity to extract information, employ overarching values, and integrate these factors within a decision-making framework. In a study, Finucane and Gullion (2010) propose a broad conceptualization of decision-making competency, positing that it is a composite construct influenced by cognitive processes that rely on fundamental cognitive capacities. In contrast, Rönnlund et al. (2019) put forth the concept of decision-making competency, which refers to the precision and uniformity of decisions made during the course of performance.

Cognitive ability of individuals to comprehend information and make appropriate choices and judgements in decision-making is commonly referred to as decision-making competency (Bavolar, 2013; Finucane & Gullion, 2010; Parker & Fischhoff, 2005). This competency is a result of the combination of skills, mental capacity, and the ability to process information effectively (Fischhoff & Broomell, 2020; Rönnlund et al., 2019). Román et al. (2019) highlight an effective decision maker possesses the ability to assess the potential actions and outcomes, integrate the existing knowledge to make flexible choices, and evaluate the intuitive responses, cognitive processes, and overt behaviours involved in the decision-making process. The competency of decision-making simultaneously emphasizes the importance of decision effectiveness (Rönnlund et al., 2019) by ensuring that decisions are made in conformity with the principles of decision quality (Siebert et al., 2021). The literature suggests that decision-making quality is influenced

by subjective human factors such as an individual's knowledge, skill, motivation, and tolerance for ambiguity (Donelan et al., 2016; Kahneman et al., 2011). The quality of decision-making is fundamentally dependent on the decision maker's ability in making decisions (Donelan et al., 2016).

School leaders who undertake positions of power require an exceptional degree of decision-making competence. Decision making among school leaders are pertinent to three main leadership roles namely regulative, democratic, and persuasive (Amalia et al., 2020). School leaders must possess the ability to make decisions while managing networking activities with stakeholders, building strong relationships with them, and at the same time upholding work ethics and demonstrating empathy as a leader towards subordinates. Mustamin and Yasin (2012) conclude that the ability to make decision is important for school leaders in managing change and innovation. This is significant with the increasing complexity and demands of the education system. By effectively utilizing their decision-making skills, school leaders can guide their schools towards success and ensure positive outcomes for both students and staff. As proved by Gill and Berezina (2020) through the evaluation of Programme for International Student Assessment (PISA), the study suggests empowering school leaders with autonomy and having decision-making competency among teachers and school leaders positively impact the overall performance of the school.

In relation to the aforementioned discourse on decision-making competency, the researcher aims to further elucidate decision-making competency as the capacity of school leaders to effectively make informed decisions that align with the organizational objectives.

### Strategic thinking

Within the realm of organizational management, the concept of strategic thinking serves as a guiding principle for strategists as they navigate the intricacies and ambiguities of future circumstances. According to Mintzberg (1994), the ability to engage in strategic thinking necessitates the utilization of synthesis skills, which encompass intuition and creativity. This assertion is substantiated by Liedtka (1998) research, which revealed that the process of envisioning the future of an organization necessitates a mode of thinking that is primarily intuitive, experimental, and inherently disruptive, since it seeks to transcend conventional logical reasoning.

According to Conway (2013), three strategic thinking processes have been identified, namely thinking big, thinking deep, and thinking long. The concept of thinking on a larger scale encompasses the practice of system thinking, which necessitates leaders to possess a comprehensive understanding of the functioning of existing systems and their interdependencies. In the context of leadership, the act of deep thinking serves as a crucial tool for individuals who possess an awareness of their own worldview and mental frameworks. These frameworks are often influenced by the knowledge and experiences that are readily accessible to them.

By engaging in deep thinking, leaders are able to identify and analyze the gaps and uncertainties that exist

within their understanding. Furthermore, adopting a long-term perspective will enable leaders to effectively engage in environmental scanning, so facilitating the identification of pertinent information and anticipating the future operational landscape of the organization. Hence, strategic thinking is often perceived as a means of addressing strategic challenges through the integration of rational and convergent thinking approaches (Bonn, 2005 as referenced in Steptoe-Warren et al., 2011).

### Environmental dynamism

Dynamic environments encompass not only high turnover rates, unpredictability, and absence of pattern, but also conditions that make it difficult to forecast outcomes and generate uncertainty among organization's members (Agypong, 2019; Dess & Robinson, 1984). In business management literature, environmental dynamism has been studied to examine the effect of competency and competitiveness of the organizations (Ma et al., 2018). However, very limited studies observed the environmental dynamism within the educational institutions. Therefore, it is crucial for school leaders posing role as decision makers to possess the ability to react and adapt to the ever-changing environmental conditions and uncertainties (Jansen et al., 2009).

Prior research has established a link between environmental dynamism and knowledge, thinking, and performance (Li & Liu, 2014; Ma et al., 2018; Murphy & Seriki, 2021). Environmental dynamism refers to the extent of change in demand, market structure, industry, and attitude. This concept requires the collection of new knowledge and introduces volatility to the organization's activities. a significant amount of uncertainty and volatility might result in chaos, which makes existing knowledge and capabilities irrelevant (Ma et al., 2018). Similarly, in the field of education, the VUCA elements have influenced leaders to the formulation of a syllabus that focuses on competency-based curriculum (Shamsudin, 2019). Hence, this study defines environmental dynamism as the degree to which principals and headmasters in Malaysia encounter changes in demand, the educational sector, and structure.

### **III. UNDERPINNING THEORIES**

#### Dual processing theory

The dual processing theory posits that decision-making is influenced by two distinct cognitive processes, namely intuitive and analytical thinking (Wason & Evans, 1974). According to Djulbegovic et al. (2012), human cognition involves two essential systems for reasoning and decision-making: the intuitive, experienced, affective system and the analytical, deliberative processing system. The dual processing concept has been applied in the context of strategic thinking, wherein intuition and rationality collaborate to enhance and reinforce cognitive processes (Luoma & Martela, 2021; Pang & Pisapia, 2012). According to Pang and Pisapia (2012), strategic thinking is demonstrated through the interplay of three primary components, namely system thinking, reframing, and

reflecting. Reflecting is considered to have a significant role in generating intuitive principles for future behaviours, as suggested by Pang and Pisapia (2012) and Pisapia et al. (2009). Reflection is a cognitive process that focuses on how decision makers use their perceptions, experiences, and knowledge to understand different situations (Pisapia et al., 2009) and subsequently make well-informed decisions. It is strongly related to deliberate or rational thought. Nevertheless, the dual processing theory has limitations in the field of educational management and leadership studies, making it essential to investigate further.

#### Dynamic capability theory

Dynamic capability refers to the capacity of a firm to effectively integrate, construct, and adapt its internal and external competences in order to effectively respond to a fast-evolving business environment. The application of this theory has been expanded in studies to encompass personal dynamic capability and the skills possessed by individuals (Buil-Fabregà et al., 2017; Wiczorek & Mitreğa, 2017). As stated by Teece et al. (1997), theoretical frameworks suggest that dynamic capabilities consist of three fundamental components: coordination, learning, and reconfiguration. Managers coordinate internal and external aspects to integrate them efficiently. Learning discovers new opportunities through repetition and experimentation. Also, reconfiguration is understanding the need to restructure the organization and change from within to beyond. School leaders may incorporate the three fundamental components to overcome the dynamic of the environments.

### **IV. PROPOSED RESEARCH HYPOTHESES AND FRAMEWORK**

As a competent school leader, decision-making competency is vital in any circumstances. A good decision-making will determine the future of the schools and students. Decision-making competency is a term that is used interchangeably with mental processes and cognitive abilities, which involve the capacity for thinking (Nicky et al., 2021). Nevertheless, given the unpredictable dynamics of the school environment and previous challenges faced during the crisis, it is crucial to study the decision-making and strategic thinking abilities of school leaders to assess their effects.

The concept of environmental dynamism, as explored by Luoma and Martela (2021), is closely connected to cognitive factors. Making strategic decisions in various environmental contexts requires the utilization of distinct cognitive strategies. The author discovered that reframing, which is one of the dimensions of strategic thinking, is highly effective in various situations and is commonly employed. Supported by finding of Hough and White (2003), environmental dynamism is potentially to become moderator of rational comprehensive decision towards the quality of education. This suggests that rational thinking is more successful in contributing to decision-making skill in stable and predictable contexts. Whereas, in highly uncertain situations, where quick and flexible responses are essential, utilizing intuitive reasoning improves one's capacity for

making decisions. However, the studies of environmental dynamism as moderator in educational area are still lacking (Setiadi et al., 2021). Hence, this paper tries to narrow this gap by embarking a study on the decision-making competency of Malaysian school leaders by proposing a moderating role of environmental dynamism in the interplay between strategic thinking and decision-making among the school leaders in Malaysia.

Hypothesis 1: There is significant relationship between strategic thinking and decision-making competency.

Hypothesis 2: There is significant relationship between strategic thinking (rational and intuitive) and decision-making competency moderated by environmental dynamism.

Hypothesis 2a: The positive relationship between rational thinking and decision-making competency is moderated by environmental dynamism: when uncertainty is high, the positive relationship is weak; as uncertainty decreases, the relationship becomes stronger.

Hypothesis 2b: The positive relationship between intuitive thinking and decision-making competency is moderated by environmental dynamism: when uncertainty is high, the positive relationship is strong; as uncertainty increases, the relationship becomes weaker.

Figure 1 depicts the cross-sectional relationship between strategic thinking (the dual processing – rational and intuitive thinking) and decision-making competency with moderating role of environmental dynamism.

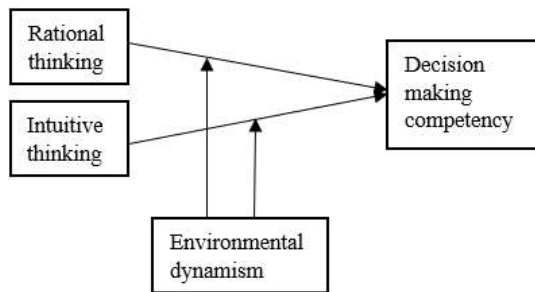


Figure 1. The Theoretical Framework

## V. METHODOLOGY

Decision-making competency typically involves the utilisation of statistical analytic techniques, as highlighted by Bruine de Bruin et al. (2020). The use of the Structural Equation Modelling (SEM) approach is considered a suitable method for assessing decision-making competency. The present study employs SEM to investigate the decision-making competency of school leaders. The primary aim is to estimate the parameters associated with this structural model. The cross-sectional study design, represented in Figure 1, seeks to examine the hypothesis of environmental dynamism plays a significant moderating role in the relationship between strategic thinking and decision-making competency.

To the best of the researchers' knowledge, there is no findings and studies that have been conducted to investigate the moderating role environmental dynamism within school

context empirically. Using a survey to school leaders as the respondents, the results are expected to enhance the competency of strategic thinking towards school leaders' decision-making competency.

## VI. EXPECTED OUTCOME

Environmental dynamism demands a different way of thinking. Having limited knowledge during this period distresses school leaders to make an effective decision-making. Owing to the empirical studies, decision-making competency is the capability of decision maker to become decisive and make effective decisions despite any situations. Due to continue the competency in post-pandemic era, this study proposes a comprehensive framework for studying the competency of school leaders' decision-making in Malaysia using statistical methods. The development of this framework will contribute to the understanding the environmental dynamism impacts towards the competency of school leaders. The developed model framework in this paper will contribute to respective groups: government, industry, society, academia and environment.

This model will help government monitoring and striving to accomplish a sustainable development goal four (SDG 4) quality education as proposed in Ministry Education Blueprint 2013-2025 (MEB 2013-2025). Moreover, by proposing a collaboration with the main training centre of school leaders in Malaysia, Institute of Aminuddin Baki (IAB) hopefully will benefit the trainers and module developers. The established model can be emphasized and strengthened through the proposed model which can be utilized by not only public schools but private school sectors and other government agencies (i.e., Maahad tahfiz, MAMPU, INSPIN).

Furthermore, this proposed model will also contribute to the society by reinforcing the school-community engagement program, nationhood, and school-community volunteerism activity. The academia group also can gain advantage by adding new knowledge through the development of the new model of competency specifically in understanding the combination of cognitive and competency theory. Lastly, the proposed model will benefit the competent school leader (especially with high strategic thinking and decision-making competency) to respond towards the external pressures strategically and effectively.

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