

**DECISION ORIENTATION OF CEO  
EDUCATION AND ITS EFFECT ON RISK-  
TAKING: THE MODERATING EFFECT OF  
ECONOMIC POLICY UNCERTAINTY**

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by

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**ORIENTASI KEPUTUSAN PENDIDIKAN CEO DAN KESANNYA  
TERHADAP PENGAMBILAN RISIKO: KESAN PENYEDERHANAAN  
KETIDAKTENTUAN POLISI EKONOMI**

**ABSTRAK**

Tesis ini bertujuan untuk mengkaji kesan orientasi keputusan Ketua Pegawai Eksekutif (CEO) terhadap pengambilan risiko korporat, dengan menggunakan data daripada 3,927 syarikat yang disenaraikan secara awam di Bursa Malaysia dari tahun 2015 hingga 2021. Penyelidikan kami memfokuskan kepada bagaimana orientasi keputusan yang berbeza, iaitu logik dan intuitif, mempengaruhi pengambilan risiko syarikat. Hipotesis kami mencadangkan bahawa CEO dengan orientasi keputusan logik cenderung untuk mengambil risiko yang lebih tinggi, didorong oleh keyakinan yang disokong oleh pendekatan yang terstruktur dan analitikal. Walau bagaimanapun, hasil empirik menunjukkan sebaliknya, dengan CEO yang logik sebenarnya kurang cenderung untuk mengambil risiko yang besar, satu trend yang konsisten merentas kebanyakan pembolehubah yang dinilai. Satu pengembangan akademik lanjut dalam tesis ini adalah untuk mengkaji hubungan antara kerumitan kognitif CEO (yang dikembangkan melalui latihan khusus yang berpunca daripada latar belakang pendidikan) dan pengambilan risiko korporat. Ini boleh dibahagikan lagi kepada dua kategori: Analitikal dan Konseptual. Walau bagaimanapun, penemuan kami menunjukkan tiada korelasi yang bermakna antara kerumitan kognitif dan pengambilan risiko CEO tanpa mengira orientasi keputusan. Ini menunjukkan bahawa kerumitan semata-mata mungkin tidak mempengaruhi tingkah laku pengambilan risiko dengan kuat seperti yang dijangkakan. Tambahan lagi, tesis ini juga

mengembangkan kajian tentang bagaimana CEO yang logik mempengaruhi pengambilan risiko korporat semasa waktu ketidakpastian, diukur menggunakan Ketidakpastian Dasar Ekonomi (EPU). Keputusan menunjukkan hasil yang bercampur-campur: di satu pihak, CEO yang logik cenderung meningkatkan leveraj dalam masa ketidakpastian yang tinggi, mungkin sebagai tindak balas strategik. Walau bagaimanapun, ukuran pengambilan risiko lain tidak menunjukkan perubahan ketara dalam tempoh ini. Satu penjelasan terletak pada sifat dan ciri-ciri CEO yang berorientasi keputusan logik, yang kelihatan rasional, berkaedah, dan kurang dipengaruhi oleh tindakan impulsif atau berasaskan emosi. Walaupun dalam menghadapi ketidakpastian, CEO yang logik cenderung untuk kekal tenang, bergantung pada pendekatan yang dikira dan seimbang daripada mengambil risiko yang berlebihan.

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**ABSTRACT**

This thesis aims to examine the effect of a Chief Executive Officer's (CEO's) decision orientation on corporate risk-taking, using data from 3,927 publicly listed companies on the Malaysia Stock Exchange from 2015 to 2021. Our research focuses on how different decision orientation, logical and intuitive affect firm risk-taking. Our hypothesis suggests that CEOs with a logical decision orientation are likely to engage in higher risk-taking, driven by confidence backed from a structured and analytical approaches. However, the empirical results indicate otherwise, showing that logical CEOs are actually less inclined to take significant risks, a trend that holds across most of the variables assessed. A further academic extension of this thesis is to study the relationship between CEOs' cognitive complexity (which is developed through specific training derived from the educational backgrounds) and corporate risk-taking. This can be further broken into two categories: Analytical and Conceptual. However, our findings show no meaningful correlation whatsoever between cognitive complexity and a CEO's risk-taking regardless of decision orientation. This suggest that complexity alone may not influence risk behaviours as strongly as anticipated. Additionally, this thesis further branch out to study how logical CEOs affect corporate risk-taking during times of uncertainty, measured by using the Economic Policy Uncertainty (EPU). Results are mixed: on one hand, logical CEOs tend to increase leveraging in times of high uncertainty, possibly as a strategic response. However,

other risk-taking measures show no significant changes during these periods. An explanation lies in the nature and characteristics of logical decision-oriented CEOs, who appear to be rational, methodical, and less influenced by impulsive or emotionally driven actions. Even in the face of uncertainty as logical CEOs tend to maintain composure, relying on calculated, balanced approaches rather than excessive risk-taking.

## CHAPTER 1 INTRODUCTION

### 1.1 Motivation and Background

In today's ever-changing era, education is one of the most recurring topics that is often discussed. Thus, in the corporate world, there is an ongoing bias which indicates that the de facto path of being a CEO is via a strong engineering background along with managerial acumen as seen from many CEO in Fortune 500 companies (Forbes Asia, 2014). In fact, a study by the Harvard Business Review found that individuals with an engineering background are more prevalent to become CEO compared to that with a finance or MBA background. However, based on research from the past century on this topic, there seems to be a gap as up to today, and there are still no conclusive results with respect to how the different fields of the CEO's educational background affect the firm risk-taking (Hansen, Ibarra, and Peyer, 2010).

A look at the Fortune 500 list reveals notable engineering CEOs such as Microsoft CEO, Satya Nadella and Amazon CEO, Jeff Bezos. However, the trend extends beyond technology-based industries as key individuals like Even Klaus Schwab who is the Executive Chairman of the World Economic Forum is an engineer. Furthermore, Jeffrey Sprecher, the CEO of Intercontinental Exchange, which owns the New York Stock Exchange (NYSE) is also an engineer and the list goes on. Statistically, over 30% of CEOs in the Fortune 500 companies are Engineers (Star, 2020). There may be many explanations to this bias however, according to McGregor (2018), the major determinant factor for such a bias derives from the decision orientation gained from the education background in engineering.

This trend is also evident in Malaysia, where several prominent leaders with engineering backgrounds have risen to top corporate positions. For example, Wan Zulkiflee Wan Ariffin, former CEO of Petronas, whose background in chemical engineering played a significant role in driving growth and managing the energy giant through volatile times in the oil market. Whereas, the former CEO of Malaysia Airlines, Ahmad Jauhari Yahya, an engineer, has faced criticism for taking significant risks during his tenure, which included ambitious expansion plans that ultimately led to financial strain on the company, especially in the aftermath of the MH370 and MH17 tragedies (Reuters, 2014).

As stated in the works of researchers like Li and Tang (2010) and Sanders and Hambrick (2007), a management background has a positive relationship to the corporate risk-taking and decision-making process. Whereby the managements' background can be assessed based on their individual background such as the educational background. This is because, different education background possessed a mix of different characteristics and values. For example, education background such as Science, Technology, Engineering and Mathematics (STEM), finance, accounting, and law will cognitively be wired to be more rational as they circle their decision making solely on facts and figures as well as being highly data driven. While on the other hand, education background with values of intuitive such as humanities, social sciences, business, and arts will focused greatly into the qualitative insights such as market emotions, trends and psychology which tend to humanize information by giving meaning to it which are deemed to be intuitive.

On the other hand, another set of elements derived from education background which can further divide to complex or simple cognitive complexity. According to Rowe and Mason (1987), the cognitive complexity is defined as the way the individual make use and interprets information. Hence, a complex cognitive indicates that the education field emphasis training on the evaluation process and the use of various level of information by extracting multiple dimensions from the given information such as via discussions and multiple level confirmation in risk-taking which also indicated that the training is taught to not be bounded by structure.

Therefore, we agree with Sanders and Hambrick (2007) as we believe that educational background do in-fact play a role in affecting the behavioural and cognitive ability of the CEO which will thus affect the decision orientation of the CEO as a whole which in return produced a chain reaction on corporate risk- takingness of the CEO.

Whereby corporate risk-taking is defined as firms aim to achieve high profit but in return firms are paying for taking more risks (Lumpkin and Dess, 1996). This is essential as risk is needed in order to generate profit. Therefore, firms will be actively taking high-risk investment projects in order to gain a high yield (Amihud and Lev, 1981). However, as mentioned by Bluhm and Krahn (2014), the profitability of a decision is equally as important as the expected risk. Therefore, it is by identifying future profitability through future uncertainties such as measuring up trends, data and facts and figures that company leaders avoid the “bad” uncertainty and make good use of the “good” uncertainty that firms are able to achieve value creation (Segal et al., 2015).

As Malaysia's aspirations to achieve a high-income status, as outlined in various development plans, including the Shared Prosperity Vision 2030 and the 12th Malaysia Plan. Malaysian companies face crucial challenges ranging from political uncertainties and rapid economic shifts to rapid technological advancements which requires a dynamic and risk-tolerant CEOs capable of taking risk and face the uncertainties head on. Thus, by understanding the impact of CEO educational background and risk-taking, we can provide valuable insights for shaping and achieving the National Vision.

#### 1.1.1 CEO Education Background Trend

Throughout time, preference for CEO in the corporate level have changed drastically (Koyuncu, 2010, p. 871). These changes are due to a shift in trend which is affected by the change in market environment. This is still observed today. Therefore, today, once gain we can see the change in environment due to digitalization.

This trend has further influenced the upper echelon as in the studies supported by Chaganti & Sambharya (1987) and Ocasio (1999), we can see that in the past primarily before the 50s, the typical CEOs are those with an operations-related background as we can see that in that period, we can witness the largest percentage of CEOs with an educational background in operations. This is because this was when companies are operating at a smaller skill in a pre-globalization era and CEOs are deemed to have the skill and expertise to run the business

In the midst of the 1950s to 1970s, the trend has once again change as the market now favour law educated CEOs. This phenomenon can be explained by implementing organizational theory. This is because, during the post-World War 2, companies are facing with various problems in running businesses. Companies are now faced with problems such as coordinating, securing market outlets and other areas of litigation (Priest et al., 1985); (Perro,1970). With that said, it is no wonder companies rely on CEOs with a law background especially during a time whereby firms and corporate structures are in a complex web of law (Perro,1970).

Simultaneously, in the United States of America, where market sentiments such as Wall Street are positive, the corporate strategy for businesses changed as well. Businesses are obsessed over profits. We can see that businesses focused on profitability be it if its short-term profitability or long-term profitability. Thus, this gives rise to popularity of CEO with a background in finance (Fligstein, 1985). This is because the agenda of firms are to maximised profit. Hence, under the rule of financed based CEOs, these CEOs will be more competent and be able to apply the financial tools necessary to enhance short term profitability (Ocasio, 1999). As financed based CEOs are also more competent in financial planning, it boosts their confidence to be willing to take more risks in colossal deals such as merger and acquisitions. The effect as we know it can be seen today in conglomerate through large scale merger and acquisition under these CEOs' reign.

In around the 1990s, the business environment has once again changed. This is aligned to the circulation of control model whereby March et al (1962) argues that firms are political coalition which only response to the issues which was given rise by

the environment. In this case, in a time where awareness of corporate governance issues and divestures are at the peak, hence, CEOs with finance education background are having a difficult time in managing the organization's portfolio as well as gaining short-term returns. CEOs with finance education background are further criticized to an extent by management researchers as the leadership of CEOs with finance education background are more towards empire building rather than a management practice. Hence, according to Ocasio (1999), this led to a temporary seize of control by any background. However, in the early 90s, the resource-based conception of firms become obvious. This ripple effect led to the rise of CEOs with education background in operations such as sales and marketing as they are regarded as the best in managing core-competence and capabilities (Wernerfelt, 1984). This is because it is believed that CEOs with a background in operations possessed a far superior understanding of the industry and business better than anyone thus allowing them to strategically place the company in an advantageous position in the market.

These changes are inevitable as Fligstein (1987, p. 44) states that the CEO's education background provides an insight of the strategy and the contingency in the business environment which the firm wants to pursue top up with the inevitable change in their corporate strategy and environment. Thus, as early as around the early 2010s as seen in Figure 1 we can see that business perceptions have once again change to favour CEOs with education background in STEM. This can be seen as STEM roles such as engineering is seen as superior due to their critical ability as well as their superior analytical skills (Forbes Asia, 2014; McGregor, 2018). As globalization take its course, we are now introduced to digitalization and automation. Hence, in the era of automation, STEM practitioners which was once considered as irrelevant in the

business landscape are starting to be favoured. This is because it is suggested that they are deemed to be more inclined to understand the digital landscape better top up with being cognitively trained to be directive, this will allow firms to make better decisions.

Therefore, it is inevitable that when the business and environment in the business changes, educational backgrounds which is deemed to provide added advantage in mitigating the problem will be deemed as favourable. This is because according to March et al (1962), businesses response to the environmental changes and the underlining problems that these changes brought.

Table 1 Background of CEO from 1961 to 1992. Source: Ocasio, 1999

Functional Background	1961	1971	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Production & Technical	24%	19%	20%	21%	22%	21%	22%	23%	23%	24%	25%	25%	25%	24%
Marketing & Sales	23%	22%	21%	23%	22%	22%	22%	20%	19%	18%	18%	18%	18%	18%
Finance & Legal	33%	31%	34%	30%	27%	26%	26%	23%	21%	21%	21%	22%	22%	21%
Finance	19%	19%	22%	20%	18%	18%	17%	17%	16%	16%	16%	17%	17%	16%
Legal	14%	12%	12%	10%	9%	8%	9%	6%	5%	5%	5%	5%	5%	5%
Operations & Others	20%	28%	24%	27%	29%	30%	31%	34%	37%	37%	36%	36%	36%	37%

### 1.1.2 Decision Orientation and Risk-Taking

Decision orientation is defined as the learned response of an individual, or in the case of Rowe and Mason a manager's approach to crucial decision making, primarily risk-taking (Driver,1979; Driver & Brousseau., 1993). Similar to the definition of decision orientation, Rowe and Mason (1987) argue that different individuals tend to take risks differently because they are trained to perceive information differently. This study examines how CEOs' educational backgrounds influence their risk-taking behaviours, using the concept of decision orientation to categorize these backgrounds.

A key factor in shaping a CEO's decision orientation is their background, particularly their educational background. For instance, CEOs with education in fields like STEM, finance, or commerce are trained to approach problems quantitatively. This means they tend to apply rationality, logical thinking, and data-driven decision-making. On the other hand, CEOs from fields like the arts, humanities, or social sciences are more likely to develop an intuitive decision orientation. They are trained to rely on qualitative information, often relying on intuition, past experiences, and emotions when making decisions.

While d

ecision orientation is influenced by various factors, including education, age, religion and gender to name a few. However, the key factor in how CEOs develop their decision orientation is their educational background. This is because training derived

from formal educational serve as a foundation that shapes an individual's cognitive approach to problem-solving and risk-taking. For instance, CEOs with an educational background in STEM, finance, or commerce are typically quantitatively focused, valuing rationality, logical thinking, and data-driven decision-making. On the other hand, those with backgrounds in qualitative disciplines are often more intuitive, relying on past experiences, emotions, and broader perspectives (Rowe and Mason, 1987). These educational differences lead to distinct decision-making styles that directly impact how risks are assessed and approached.

In the corporate environment, some of the most critical decisions a CEO makes are related to risk-taking as risk-taking is positively correlated with rewards (Lumpkin and Dess, 1996). Taking excessive risks may jeopardize the company, while being overly cautious could limit profitability and hinder growth (Bluhm and Krahn, 2014). Therefore, understanding the characteristics of the CEO, such as their educational background, allows us to better predict how they perceive and approach risk. As argued by Rowe and Boulgarides (1992), by identifying the key traits associated with a CEO's educational background, we can anticipate their behavior and decision-making patterns in risk-taking situations.

Given the multiple factors that contribute to decision orientation, this study emphasizes the role of educational background as a key determinant. While age, religion and gender are also important influences, education provides a structured framework that shapes cognitive development and decision-making style in a consistent manner. By focusing on educational background, this study aims to

understand how CEOs' foundational training influences their risk-taking behaviour and ultimately impacts firm outcomes.

### 1.1.3 Economic Policy Uncertainty and Risk-taking

In our research on education background of CEOs, we have also determined that country-specific external factors such as changes in the legal and financial systems (Djankow, Classens and Nenova, 2000) do in-fact play a role in how CEOs perceived risk-taking.

This is because, in a normal situation, risk-taking can be associated with the CEOs' profile such as their education background. One of the reasons being that in normal conditions, CEOs have more capacity to digest information and analyse risks and the situation, allowing CEOs to access the risks and rely on their cognitive decision orientation to make decisions. However, that may not be true especially in the times of uncertainty and panic, one's risk taking can be mist by irrationality. Therefore, in order to study the CEOs risk-taking in times of uncertainty, we have used the Economic Policy Uncertainty (EPU) as a proxy. Uncertainty is truly an important factor as in recent literature, it can be found that uncertainty on the future have an actual impact on the economic agents (Dixit,1989; Bloom,2009; Bernake,1983; Bloom, Bond & Van Reenan, 2007). Hence, the EPU is a good proxy for the real-world uncertainty (Li & Peng, 2017; Wang, Chen, & Huang, 2014; Li, Balcilar, Gupta & Chang, 2016)

The economic policy uncertainty (EPU) is defined as the uncertainty or anomalies caused by an entity's inability to predict the changes in economic policies accurately. This includes the news broadcast on uncertainty, changes in tax code and the Consumer Price Index dissent. The EPU is measured according to the index constructed by Baker et al. (2016).

This outcome can be seen in Figure 1 below as during a time of crisis on a global stage, such as during the 1997 & 1998 Asian Financial Crisis, 2001 9/11 Crisis, 2003 Gulf War, 2008 Global Financial Crisis, 2012 China Leader Transition, United States' Fiscal Fights, Eurozone Crisis, 2015 European Immigration Crisis and Brexit in 2016 the EPU index tends to rise drastically, indicating that there is a global uncertainty.

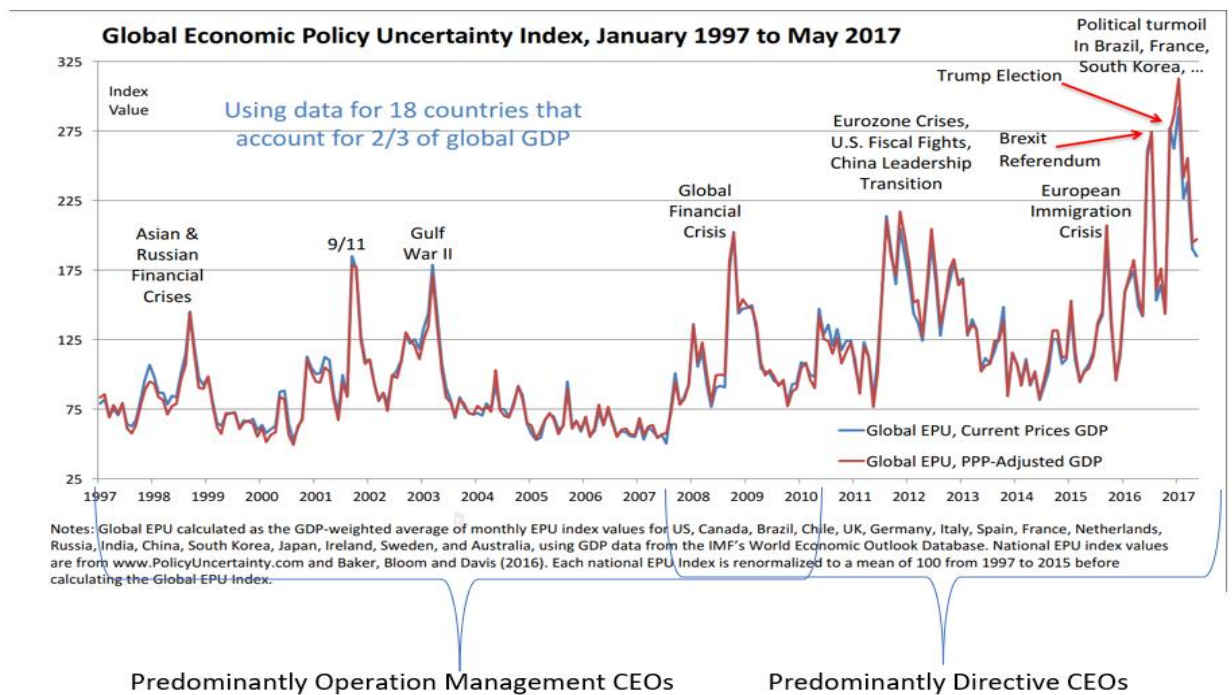


Figure 1 Economic Policy Uncertainty (2017). Global Economic Policy Uncertainty Index, January 1997 to May 2017

Ever since Baker et al (2016) introduced EPU, there has been a sea of research on how the EPU has affected the macroeconomic variables (Mohsen and Sujata, 2019). Through past literatures, it is commonly known that uncertainties do play a huge role in CEOs' risk-taking decisions in the aspect of the capital (Gulen and Ion, 2016) and cash (Phan et al., 2019). This is because, although CEOs are generally rational decision-makers, during times of chaos and uncertainty, their ability to make logical decisions may be compromised. Uncertainty can cloud judgment, making it difficult for CEOs to approach risk-taking with their usual level of rationality which is in align with the real option theory (Harris and Raviv, 1978; Amihud and Lev, 1981)

CEOs' risk-taking incentives are a crucial aspect to understand. This is because a well-designed risk-taking incentive can enhance the value of the firm. Especially around the early 2010s, where the world is experiencing a shift towards digitalisation and technology. As illustrated in Appendix 1, a study by Oh and Shim (2020) shows that, from 2007 onwards, the adoption of information technology by organizations increased significantly, with over half of the company's incorporating IT into their daily operations. The rise of technological advancements has compelled companies to adapt to these new norms by embracing digital tools and gaining access to big data and information quickly and easily.

Companies began prioritizing leaders who possessed specific characteristics that aligned with the effective implementation of technology. Logical decision orientation, a structured cognitive approach, and a focus on data-driven analysis became highly valued traits in corporate leadership. CEOs with educational

backgrounds is often characterized by a logical decision orientation seem to fulfil these requirements.

This growing preference for logical CEOs is evident in the increasing demand for leaders who can effectively use technology and data to make driven decisions. Notable examples include the rise of engineering CEOs, who have been at the forefront. Furthermore, as seen in Diagram 1, from 2007 and 2008 onwards, Economic Policy Uncertainty (EPU) has been on the rise, signalling a period of increasing uncertainty. In such times, logical CEOs, who rely on data-driven and logical approaches, were favoured for their ability to manage and make sense of complex challenges.

This thesis studies the effect of how CEOs decision orientation will affect the firm's risk-taking. The emphasis on CEO is a crucial aspect because CEOs are the figurehead of a corporation and the one that dictates the firm's management through a management board. According to Child (1972) and Lawrence et al (1967), it is the CEOs who oversee the decision making of the organisation, especially in terms of risk-taking of the firm.

## 1.2 Problem Statement

In past research, the relationship between the CEO's educational background and the firm's risk-taking has been explored, however, there is no consistent. At one hand, studies such as those by Barker and Muller (2002), Finkelstein and Hambrick (1996), and Tyler and Steensma (1998) indicate that CEOs with STEM backgrounds, including fields like mathematics, engineering, and sciences, are more likely to engage in risk-taking, often reflected in increased diversification and R&D spending (Sanders,

2001; Greve, 2003; Brookman & Thistle, 2009). These findings suggest that STEM-educated CEOs may be more willing to make strategic decisions that involve significant risk, fostering innovation and pursuing growth opportunities.

However, another strand of literature presents a contrasting perspective. For instance, Hayes and Abernathy (2007) argue that CEOs with scientific backgrounds tend to be less inclined towards risk-taking, largely due to their nature, which is often described as more rigid and calculating. These characteristics stem from their complex cognitive orientation, which may lead them to adopt a cautious approach in uncertain environments.

Despite the lack of empirical consensus, CEO education background has become a critical consideration when selecting leadership, contributing to an ongoing bias which favours STEM education background. In fact, a 2018 article by The Washington Post highlighted that thirty-four percent of the top 100 CEOs in the United States had a STEM background, primarily in engineering, compared to thirty-two percent from business fields, with an additional eight percent having dual backgrounds. This distribution reflects a growing emphasis on education background as a key factor in CEO selection, even in the absence of clear evidence linking educational background to specific risk-taking outcomes (Washington Post, 2018).

The fundamental challenge for organizations is determining whether a CEO's decision orientation, shaped by their educational background, truly leads to greater risk-taking. For example, Wan Zulkiflee Wan Ariffin, the former CEO of Petronas, whose background in chemical engineering played a significant role in driving growth and managing the energy giant through volatile times in the oil market. Whereas, the former CEO of Malaysia Airlines, Ahmad Jauhari Yahya, an engineer, has faced

criticism for taking significant risks during his tenure, which included ambitious expansion plans that ultimately led to financial strain on the company, especially in the aftermath of the MH370 and MH17 tragedies (Reuters, 2014). These contrasting examples illustrate the complexities in linking educational backgrounds to risk-taking behaviour, making it a crucial area for empirical investigation.

Furthermore, the intersection between cognitive complexity and risk-taking remains a critical but underexplored facet of CEO leadership. It is hypothesized that logical decision-oriented CEOs, especially those operating with a directive cognitive style, might exhibit a lower tolerance for uncertainty, focusing on systematic risk mitigation strategies (Hodgkinson & Sparrow, 2002). Conversely, CEOs with a high degree of intuitive cognitive orientation are often more willing to embrace ambiguity, potentially leading to greater risk propensity in pursuit of high-reward opportunities (Khatri & Ng, 2000). Exploring this subsection of CEO decision orientation will provide a clearer understanding of how different cognitive complexities influence strategic actions and risk dynamics, thereby contributing to literature on organizational behavior and executive decision-making in uncertain environments (Hambrick & Mason, 1984).

Besides, the global economic landscape is also becoming increasingly uncertain. Since the early 2010s, the Economic Policy Uncertainty Index has shown a steady rise in global uncertainty. Malaysia, for instance, experienced robust growth driven by ambitious development policies that enhanced its industrial sectors in the past. However, despite the success from the last three decades, Malaysia's growth has

stagnated between 4.2% and 5% since 2010, reflecting the challenges of a digitalized era characterized by rising uncertainty (World Bank, 2010). The World Bank further reported that the Malaysian economy would experience an even slower pace of growth in 2020 onwards due to increased global uncertainty (World Bank, 2019). Such volatility presents significant challenges, especially for logical CEOs with a complex cognitive complexity, who may struggle to navigate ambiguity and risk compromising their firm's competitive edge.

Therefore, this study aims to investigate whether, during times of uncertainty, does CEO's educational background affect firms risk-taking. Besides, by further examining both logical and intuitive cognitive complexities, this research seeks to fill the existing gap in understanding how CEO education impacts risk-taking behaviour, especially under conditions of high uncertainty. This research would also aims to fill the gap in understanding the impact of CEO education on risk-taking behaviour, especially in high uncertainty environments.

### 1.3 Research Questions

Based on the discussion in the problem statement, the following questions are raised:

1. Does CEO's logical decision orientation affect their risk-taking?
2. Is the effect of a CEO's logical decision orientation on their risk-taking affected by high economic uncertainty?
3. Does the complexity element in CEO's logical decision orientation affect their risk-taking in times of uncertainty?

4. Does the complexity element in CEO's intuitive decision orientation affect their risk-taking in times of uncertainty?

#### 1.4 Objective of Study

The research aims to study the influence of the CEOs' decision orientation and how it affects corporate risk-taking. Thus, the following objective can be achieved by consideration of the following. They are:

1. To examine if logical decision-oriented CEO decision take higher risk relative to intuitive orientation educated CEO.
2. To examine if logical decision-oriented CEO take higher risk in times of uncertainty relative to intuitive orientation educated CEO?
3. To examine if cognitive complexity moderate the risk taking of logical decision-oriented CEO in times of uncertainty?
4. To examine if cognitive complexity moderate the risk taking of intuitive decision-oriented CEO in times of uncertainty?

#### 1.5 Contribution of Study

This thesis contributes to the existing literature by exploring how CEOs decision orientation, derived from their education background influence risk-taking behaviour, particularly under conditions of uncertainty. While previous research has extensively studied the relationship between CEO education background and risk propensity, the findings have often been inconclusive and conflicting. This

inconsistency arises due to individual differences in how CEOs perceive, interpret, and respond to information and their environment (Stueart and Moran, 1993). By focusing on education background, this study aims to clarify the conflicting dynamics between logical decision-making and risk-taking behavior, thus providing new insights into this complex relationship.

Moreover, this study also examines the impact of uncertainty on CEO risk-taking, using the Economic Policy Uncertainty (EPU) index as a measure of uncertainty. By incorporating EPU, the research delves into how varying levels of economic uncertainty influence CEOs' willingness to take risks, providing a more nuanced understanding of the conditions under which risk-taking behaviour occurs.

The study further aims to understand how characteristics like cognitive complexity shape risk-taking behaviour among logical versus intuitive CEOs. Specifically, it investigates whether logical CEOs, categorized into directive and analytical types, exhibit different patterns of risk-taking compared to intuitive CEOs when faced with complex decision-making environments. This analysis helps bridge the gap in understanding how cognitive approaches impact strategic decisions at the highest levels of an organization.

Additionally, while most previous studies have focused on U.S. companies, this research broadens the scope by analysing Malaysian companies, contributing an international perspective to the existing body of work. By using data from Malaysian firms, this study enriches the understanding of CEO risk-taking behaviour in a

different cultural and economic context, allowing for comparative insights that have thus far been underexplored.

## 1.6 Structure of the Thesis

This thesis consists of 5 chapters. Chapter 1 consists of the introduction section of the thesis, which gives a preliminary view on the research background and problem statement of this research. This chapter also explains the overall flow of this dissertation.

In chapter 2, we will discuss the literature review section which contains adequate information on the literature done by past researchers providing information regarding the overview of the Upper Echelon Theory as well as comprehensive literature review of decision orientation.

Chapter 3 represents the data and methods used in this thesis. In this context, detailed explanation on how the data is extrapolated along with the method of conducting the thesis is being explained in detailed to ensure this thesis is conducted empirically and smoothly.

In Chapter 4, we analyse the results as well as discussion for the project. Detailed elaboration on the abstraction of data regarding CEO's decision orientation along with the risk-taking components were discussed extensively.

Finally in Chapter 5 we provide a summary based on the objectives of the project. Besides, recommendations for future studies are also presented in this section.

## **CHAPTER 2 LITERATURE REVIEW AND HYPOTHESIS**

### **2.1 Theoretical Background**

Upper echelons theory (UET) builds on the fundamental premise of bounded rationality (Hambrick & Mason, 1984). The CEOs' mental representation of reality is a product of their "orientations" and eventually translates into their strategic choices which involve risk-taking (Child, 1972; Carpenter et al., 2004; Finkelstein et al., 2009). In layman terms, the upper echelon theory states that an organisation's outcome, to some extent, can be predicted based on the background of its top executives (Hambrick & Mason, 1984). This is because the CEOs' value and characteristics plays a vital role of how the executives perceive problems.

Thus, based on the upper echelon theory, in a perfect world, we can conclude that CEOs will be characterised with rationality (Cyert & March, 1963). According to the findings of Hambrick & Mason (1984), it is said that the CEO's orientations are formed by two major dimensions of personal characteristics, making it affected by psychological as well as observable experience. Psychological experience can be conceptualised as CEO's decisions being influenced by their personal interpretation on the underlining scenario. Whereas, observable experience, come from the CEOs' personal experiences, values and personalities. Thus, this shows that CEOs make decisions based on their social, behavioural, and psychological characteristics (Hambrick and Mason, 1984; Orens and Reheul, 2013).

Supporters of the Upper Echelon Theory such as that of Child (1972) and Lawrence et al (1967) have all agreed that CEOs are involved in the strategic decision making which will in return affect the risk-taking of the firm. Therefore, CEO decision orientation such as the training derived from their educational background be it logical oriented or intuitive oriented matters as these traits are what will shape CEOs decision making. As Drucker (1954), an advocate of this theory states that in a competitive economy, the quality and performance of the managers is the utmost important factor to determine the success of a business.

We argue that different CEOs' decision orientation such as logical or intuitive will affect the CEO behavioural and cognitive ability thus influencing how the CEO perceive risks. In accordance to Sitkin & Pablo (1992), the interpretation of risks by an individual is formed from their perception and risk tolerance. For instance, if a CEO holds a great importance on the losses, the CEO will deemed any risks to be high risk (Sitkin & Weingart, 1995). Whereas on the other hand, if the said CEO emphasised greatly on the gaining outcomes, the CEO would perceive any policies to be of reasonable risks (March & Shapira, 1987). The Upper Echelon Theory has been utilised in prior studies to investigate how CEO education background affects company risk-taking. Sitkin & Pablo (1992) and Zhang, Yang and Liu (2021), for example, highlight how personal traits such as education influence CEOs' views on risk. A prime factor is because different education fields hold emphasis on different aspects, perspective, and cognitive paradigm. Ahmad and Saeed (2022) found that CEOs with analytical backgrounds tend to be more risk-averse in uncertain conditions, aligning with UET's claim that educational experience shapes decision-making.

Given our focus on the role of CEO decision orientation whether logical or intuitive in determining risk-taking behaviours, The UET framework provides the best lens to understand how decision orientation affect risk-taking decisions, particularly during times of high uncertainty. UET studies the influence of an individual's characteristics on decision making, which allows us to investigate how CEOs' decision orientation affect the corporate risk-taking behaviour whereas Agency Theory primarily focuses on mitigating conflicts between shareholders and managers, emphasizing monitoring and incentive alignment rather than examining the personal attributes that drive decision-making processes.

## 2.2 Decision Orientation

This thesis studies the CEOs decision orientation and its effects on the risk-taking. This study hypothesised that the CEOs' decision orientation can affect the behavioural and cognitive aspects of CEOs which in turn affect how CEOs take risks.

Risk-taking involves making decisions based on the available choices and their respective alternatives. Different CEOs will approach risk-taking differently due to their ability to perceive and interpret information and their surrounding environment. Whereby some CEOs are trained to rely on intuition, subjective experiences, and gut feelings, while others are drawn to rational thinking, emphasizing hard facts and logical reasoning backed by quantifiable evidence before making a risk decision.

These distinctions in characteristics lead to different decision orientations, which are shaped by various factors such as sex, age, religion and education.

A CEO's decision orientation is influenced by multiple factors such as educational background, age, gender, and cultural upbringing. These factors contribute to the intellectual development and cognitive processes that ultimately shape how risks are perceived and approached. Ali (1989) supports this perspective, concluding that underlying variables such as a manager's age, field of education background, region of childhood, gender, and management function play a role in shaping risk-taking behaviour.

Age is a key determinant of decision orientation and risk-taking behaviour among CEOs. Research suggests that younger CEOs are generally more risk-taking due to differences in risk perception, life stage, and cognitive flexibility (Serfling, 2014). Younger CEOs tend to be more willing to explore unconventional opportunities, which results in a higher tolerance for risk. In contrast, older CEOs are more likely to exhibit risk-averse behaviours, prioritizing stability and caution, reflecting their accumulated experience and a desire to protect their legacy (Hambrick & Mason, 1984). These age-related tendencies are pivotal in shaping decision orientation where younger CEOs are more inclined towards intuitive decision-making, older CEOs often lean towards a logical approach to mitigate potential risks.

Gender is another important factor that influences decision orientation and risk-taking among CEOs. Studies indicate that male CEOs generally demonstrate higher risk-taking behavior compared to female CEOs, which can be attributed to differences in social conditioning and gender norms (Faccio, Marchica, & Mura, 2016). Male CEOs are often more inclined to pursue aggressive growth strategies, whereas female CEOs tend to prioritize caution, thorough analysis, and a focus on long-term sustainability (Palvia, Vähämaa, & Vähämaa, 2015). These differences can be largely attributed to gender-specific experiences, where female leaders often adopt a more risk-averse stance due to heightened sensitivity to potential negative outcomes and a greater sense of accountability.

Last but not least, educational background stands out as one of the most influential factors in shaping CEO decision orientation, contributing significantly to how risks are perceived and managed (Stueart and Moran, 1993). James Boulgarides and Moonson Oh (1985) provided empirical evidence that cultural differences and educational backgrounds play a vital role in corporate risk-taking behavior. Additionally, research by Yousef (1998) in the United Arab Emirates also highlights education as a critical factor that influences CEO risk-taking propensity. This is because education plays a foundational role in shaping cognitive frameworks and problem-solving approaches that CEOs employ. CEOs with education training in fields such as finance, economics, or STEM are more likely to adopt a logical decision orientation, relying heavily on structured data and reasoning (Stueart & Moran, 1993). In contrast, CEOs with backgrounds in the humanities or arts are often more inclined towards an intuitive approach, which emphasizes broader perspectives and creativity. Education thus serves as the foundation for developing cognitive habits and