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UNVEILING GENDER DYNAMICS IN STRATEGIC RISK-TAKING AND RISK-AVERSION AMONG INDONESIAN EXECUTIVES

Steven[1], Dewi Hanggraeni[2]
[1,2] Faculty of Business and Economics, University of Indonesia, Indonesia
Email: silasteven10@gmail.com

ABSTRACT

In this research, we aims to examine how gender disparities among corporate leaders (executives) and their level of risk aversion can impact the organization's strategic risk-taking. A questionnaire survey method was employed to collect data from executives in Indonesia holding minimum positions of senior manager (BOD-1), director or commissioner (C-Level). Standard behavioral economics expected utility approach is employed to quantify the degree of risk aversion, while respondents will also make investment choices to assess their inclination towards strategic risk-taking. The research employed the t-test and linear logistic regression analysis to examine the hypothesis. The research findings indicate that female executives exhibit a higher degree of risk aversion compared to their male counterparts. In line with most st udies, risk averse executives prefer to engage in more cautious strategic risk-taking. Nevertheless, there are no discernible disparities between female executives and male execautives when it comes to engaging in strategic risk-taking.

KEYWORDS CEO Decision-Making, Risk Aversion, Strategic Risk-Taking, Risk Management, Strategic Management, Executive.

INTRODUCTION

In this modern age, businesses need to be nimble and decisive in deal with VUCA (Volatility, Uncertainty, Complexity, Ambiguity). Those in charge of making decisions for businesses must be comfortable with uncertainty and risk. Executives, and particularly in corporations, need to proceed with caution and thoughtful deliberation

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while taking risks because such risks might lead to monetary or non-monetary losses. The gender of the decision maker is an important consideration that can impact corporation performance and its risk-taking regarding decision (Han, Hsu, & Lee, 2009).

When making decisions, men and women typically lean toward different levels of risk which taking chances is more commonly associated with men than women (Byrnes, Miller, & Schafer, 1999; Croson & Gneezy, 2009). Taking risks is more commonly associated with men because of the gender stereotype that men are inherently more courageous (Eagly & Wood, 2012). Men are more likely to be considered for CEO roles in firms because they are perceived as having the qualities of innovation and resilience. Due to the reduction in performance seen in organizations led by men, more and more companies are considering hiring women for senior roles (Kristof, 2009). According to Forbes.com (2023), the percentage of female CEOs in the Fortune 500 is projected to rise from 8% to 10% in the following year. There is a presumption that women, especially those in C-suite positions, will be more cautious and avoid making decisions with a lot of potential downsides (Jeong & Harrison, 2017). In contrast to the findings, according to studies done by Nelson in 2016, men and women do not differ significantly when it comes to their risk preferences. During economic downturns, women are more likely to be conservative decision-makers who put the welfare of others first by making careful managerial choices. The choices aren't drastically different, though, if neither gender cares about the welfare of others (Dunn, Gilbert, & Wilson, 2011). Asides from gender, the results for the firm and its strategic leadership might be significantly affected by investigating if risk aversion influences strategic risk-taking.

To delve further into the topic of strategic risk-taking, the upper echelon theory reveals that the backgrounds of CEOs and other executives impact their understanding of information and, consequently, their decisions, particularly when it comes to strategic decisions (Hambrick & Mason, 1984). The risk aversion of CEOs is shaped by their socioeconomic background and personal experiences, which influence how they interpret information about strategic choices (Kim & Lu, 2011). Those who are afraid of taking chances will usually go for the safer alternative, while those who are more adventurous would usually go for the riskier one. When deciding between a safe and a risky alternative, CEOs risk aversion, might impact strategic risk-taking.

Although prior research has shown a correlation between risk aversion and characteristics like overconfidence and orientation, it has ignored the individual's actual risk aversion level when deciding strategic risk-taking (Weissenbacher et al., 2009). Moreover, not all studies that take actual risk aversion levels into account are looking at how it relates to strategic risk-taking (Holt & Laury, 2002). Prior researchers associate actual risk aversion level to daily decision making and financial decision making such as choosing stocks and not using the sample of CEO or executive. This paper was conducted to address this knowledge gap and make contributions to the existing literature.

The objective of this research is to examine the difference of risk aversion level between male executives and female executives, examine if risk aversion influence strategic risk-taking and examine the difference of strategic risk-taking between male executives and female executives. While it's true that female CEOs end to be more risk averse than their male counterparts, it's important to note that this study mostly looked at western countries, which have quite different cultures and economies than eastern countries, particularly those in Asia. Possible factors that differ CEOs' risk aversion when it comes to gender is the personal experiences and socioeconomic background between Asia and the West. Also, the circumstances surrounding a regular person's and a CEO's risk aversion levels differ, particularly when it comes to the consequences for decision making (e.g. daily decisions and strategic decisions).

Literature Review and Hypothesis Development

Executive traits, according to the upper echelons theory (Finkelstein, 2009; Hambrick & Mason, 1984), impact information scanning, filtering, and interpretation, which in turn effect strategic decision-making. Because executives are only rational up to a certain point, the perspective through which they see strategic decisions is a reflection of their individual traits, persinal experiences (Simon, 1956). Implying from this, the demographic of executive able to serve as underlying differences in cognitions, values and perceptions especially for decision making (Carpenter, Geletkanycz, & Sanders, 2004).

Factors such as self-confidence, demography, narcissism, and five personality factors can impact executive characteristics (Lee & Moray, 1994). Executive decision-making is characterised not only by these objective features but also by the subjective traits and experiences of each individual. An executive's risk preferences in making strategic decisions are influenced by their social class background (Lewellen, 2006). People in the middle class are less willing to take risks than those in the top and lower classes. Over time, it reveals that a growing number of executive traits impact strategic decision-making (Crossland & Hambrick, 2007; Quigley & Hambrick, 2015). This study narrows down on gender as a characteristic of CEOs, risk aversion, and strategic risk-taking—though many other factors may also play a role in the decisions.

Gender as Executive Characteristics

John Money and Ehrhardt's (1972) cultural sexology distinguishes between biological sex (male and female) and social roles (domestic and feminine), framing gender as an executive trait. While male dominance in managerial positions is well-known, firms led by women often outperform those led by men and adopt better risk management practices, benefiting shareholders. Female-led commercial banks also maintain more conservative capital levels. This suggests female CEOs might perceive risk differently and consider a wider array of factors in strategic decisions.

Some researchers question the validity of the gender gap in executive roles, noting that stereotypes link leadership with male traits like decisiveness and risk-taking, while undervaluing female traits such as teamwork and empathy. These

stereotypes can change in crises, where communal attributes of women are seen more positively. Prior studies on gender differences in risk-taking indicate that males have a higher propensity for engaging in risky behaviour compared to females (Charness & Gneezy, 2012; Sapienza, Zingales, & Maestripieri, 2009). Recent research has shown that risk taking in a business setting does not support the notion that women are more risk averse than men (Tan, 2001). Examining the impact of gender and its propensity for risk-taking (therefore its risk aversion) on strategic decision-making provides new perspectives on the intricacies of strategic risk-taking and its management in firms. To evaluate the impact of gender, particularly at the executive level on risk aversion, the study relies on established evidence that suggests females are more risk averse than their male counterparts:

Hypothesis 1a: Female executives are more risk averse than male executives in Indonesia.

Hypothesis 1b: Male executives are more risk averse than female executives in Indonesia.

Risk Taking and Strategic Risk-taking

Risk-taking is integral to decision-making, associated with potential loss. Tulloch and Lupton (2003) define it as knowingly choosing between alternative actions with inherent risks. Strategic risk-taking involves deliberate decisions by CEOs that significantly influence an organization's success, entailing substantial, often irreversible investments with major consequences. Effective strategic risk management involves diversification and protective measures to mitigate uncertainty.

Poor management of strategic risk heightens vulnerability to external impacts, affecting firm performance. Women are believed to make lower-risk strategic decisions than men, leading to gender differences in decision-making. Inadequate management of strategic risk will heighten the firm's susceptibility to external events that have the potential to impact its performance, hence affect firm's outcome. The reason for this is that as the level of strategic risk increases, so does the level of uncertainty that is encountered. By analysing the authority to choose strategic risk-taking, shareholders may effectively oversee and adjust the decision maker to economic conditions and firm's resources. It is assumed that women tend to choose strategic decisions with lower levels of risk compared to men, leading to disparities in strategic decision-making between the two genders (Waddell, 1983). The study suggests that there are differences between male CEOs and female executives when it comes to strategic risk-taking:

Hypothesis 2a: There are significant differences in decisions between male and female executives in terms of strategic risk-taking.

Hypothesis 2b: There is no significant difference in decisions between male and female executives in terms of strategic risk-taking.

Risk Aversion and Influence on Strategic Risk-taking

Risk aversion, the tendency to avoid risks, is key in decision-making. It is measured by the difference between the outcome of a chosen decision and other certain outcomes. Individuals with high risk aversion prefer safer options with predictable outcomes. Bernoulli (1954) introduced concepts like declining marginal utility and expected utility to assess risk aversion. Expected utility theory and prospect theory are commonly used frameworks for analyzing risk aversion.

Extreme events, like the 2008 financial crisis and COVID-19 pandemic, can alter risk aversion levels. People may become more risk-averse after financial losses or more risk-loving if they exploit crisis opportunities. Risk-averse individuals favor low-risk choices, while ambitious goals drive risk-taking. The study evaluates how executives' risk aversion influences strategic risk-taking, particularly post-crisis. In order to be more relevant in the present time especially after epidemic and finansial crisis, the study will evaluate the influence of executives' risk aversion to the strategic risk-takling:

Hypothesis 3a: Risk aversion has a significant negative effect on strategic risk-taking.

Hypothesis 3b: Risk aversion has no significant negative effect on strategic risk-taking.

METHODOLOGY

The objective of this study is to examine the disparities in risk aversion between executives based on their gender and investigate how risk aversion affects their decision-making about strategic risk-taking. In addition, the study also examined potential disparities in strategic risk-taking between male and female executive. This study introduced a framework, as depicted in figure 1, and devised several sets of tests to evaluate hypothesis.

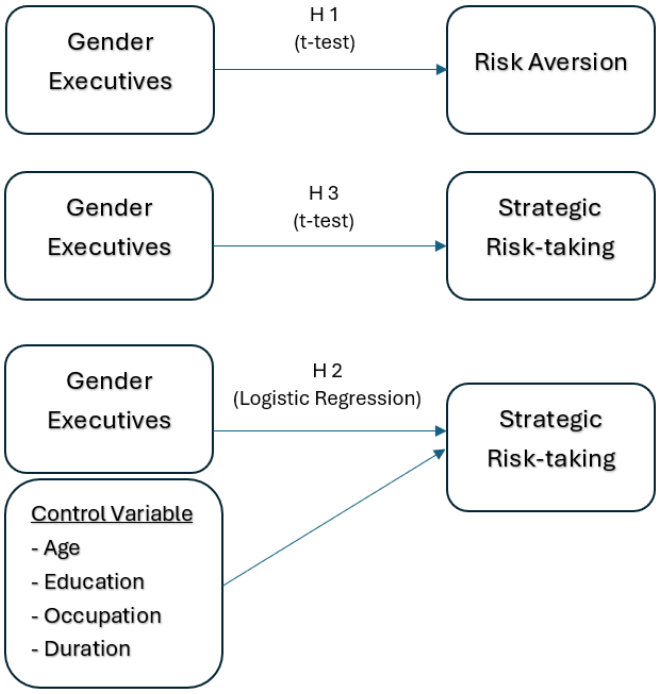

Figure 1. Research Framework

This research employed gender executives as independent variable (H1), risk aversion as dependenr variable (H2) and independent variable (H3) and strategic risk-taking as dependent variable (H2 and H3) based on prior studies (Faccio, Marchica, & Mura, 2016). Moreover, control variables are included to enhance the results to this research which are age, education, occupation and duration.

In order to verify and expand upon earlier findings, this research used an empirical study design. To facilitate observation and validation of the research, numerical and binomial data will be used for quantitative analysis. In order to confirm or refute each hypothesis, statistical tests like t-tests will be used on the collected data, as well as logistic regression analysis to determine the relative importance of variable.

Sample and Measures

This research uses non-probability sampling, specifically purposive sampling, to select participants who meet predetermined criteria for analysis. While non-probability sampling can limit population representation, purposive sampling addresses this by carefully choosing samples based on specific research needs.

Criteria for Purposive Sampling:

- Inclusion of both male and female genders
- Participants must hold authoritative positions (senior managers, directors, commissioners) with significant organizational impact
- Minimum of 2 years in their current position

Data is collected via a questionnaire, designed following behavioural economics methodology (Holt & Laury, 2002) to measure risk aversion and strategic risk-taking. The questionnaire consists of close-ended questions and is distributed in hardcopy or online formats. It takes approximately 10 to 10.15 minutes to complete.

Gender Measurement

In research, the gender variable is considered an independent variable, meaning it is not subject to influence from any other variable. The gender variable will be assigned a binary code, with the value of 1 representing men and 0 representing women. The sample will consist of 31 women and 69 men holding executive positions, specifically as decision makers in corporations. These positions include senior managers (BOD-1), directors (equivalent of CEO), and commissioners within a company. The gender sample employed adheres to pre-established prerequisites.

Risk Aversion Measurement

The risk aversion variable serves as dependent and independent variable in this research. To measure the risk aversion variable, respondents will be given a questionnaire with 10 question choices which employ standard behavioral economics expected utility based on Holt and Laury (2002) questionnaires. Respondents will be presented with two options, namely option A and option B where option A will be coded as 1 and option B as 0. The structure for each choice will be as follows: "A. x% chance of receiving IDR 65,000.00 and x% chance of receiving IDR 50,000.00" and "B. x% chance of receiving IDR 120,000.00 and x% chance of receiving IDR 3,500.00". Where each x% are different from each questions. The final question (10th) serves as a definitive filter and is designed as a trap question, with both options having a 100% likelihood of leading to the outcome where option B is larger than option A. Typically, the person who reads the question will choose option B as their answer for the last question. Respondents who select option A for the last question will be excluded from this research. Option A represent as a safe option and option B as a risky option. The respondent's level of risk aversion will be determined using the classification developed by Holt & Laury (2002).

Strategic Risk-taking Measurement

To measure strategic risk-taking, participants choose between two projects with predefined outcomes, including investment costs, probabilities of success and failure, and potential gains or losses. A high-risk project is coded as 1 (risky), while a low-risk project is coded as 0 (safe). Participants rate the risk level on a scale of 5, assess potential returns, and indicate their confidence in their decision.

Control Variable

Control variables provide additional context in the analysis. The study includes age (categorized as boomers, Gen X, Millennials, and Gen Z), education (ranging from high school to doctoral degree), occupation (senior manager, director, commissioner),

and tenure in executive roles (categorized as up to 5 years, 6-10 years, 11-15 years, and over 16 years).

Statistical Testing

This research employs a methodology that involves testing for differences and examining the influence between variables. In order to assess disparities, a t-test will be conducted for hypothesis 1 and hypothesis 2. In order to examine the relationship between variables (risk aversion, control variables and strategic risk-taking), a logistic regression test will be conducted to assess hypothesis 3. The normality test will be employed to assess the normality of the acquired sample data distribution. The normality testing will employ the Chi-Square and Kolmogorov-Smirnov procedures, with a significance level of 0.05. Reliability testing will be used to assess the consistency of data and determine its dependability. The reliability testing will employ the Kuder-Richardson Formula 20 method (Wang, Pan, & Chen, 2006) to assess the alpha value for binomial data. The multicollinearity test will be employed to assess the presence of similarities among variables in the research framework. Identifying similarities between variables will offer insights into the correlation between them and enhance the interpretation of the regression test outcomes. The multicollinearity test utilises VIF (Variance Inflation Factor) values ranging from 1 to 10. Presence of multicollinearity in the research can be determined if the VIF score is less than 1 or greater than 10.

RESULT AND DISCUSSION

The respondents in this research were executives who met the predetermined criteria for purposive sampling and answer the questionniare “correctly” (refer to 3.1.2 about risk aversion measurement). The total number of respondents gathered via the questionnaire was 112, however 12 of them did not meet the stipulated technique and criteria, resulting in just 100 respondents being used as samples in the research. The research’s executive sample consists of 69 male executives and 31 female executives from diverse business sectors. The application of the Central Limit Theorem (CLT) in this research is supported by the sample size criterion of $n > 30$ for each subgroup, as recommended by statistical literature (Field, 2024; Howell, 1992). With 31 female executives in the sample, exceeding this threshold ensures that the sampling distribution of the sample mean approximates a normal distribution, enhancing the reliability of statistical inferences (Akpinar-Sposito, 2013).

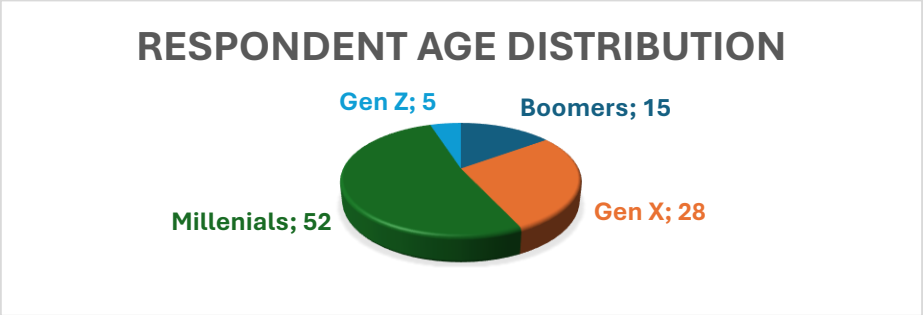

Figure 2. Respondent Age Distribution

One of the requirements for the research is that participants must hold a senior managerial position, such as a director or commissioner, or a position corresponding to one level below the Board of Directors or Board of Commissioners. It is essential to assess the consequences and managerial factors involved in implementing strategic risk-taking. Out of the total respondents, 16 belong to the financial industry while 84 belong to the non-financial business.

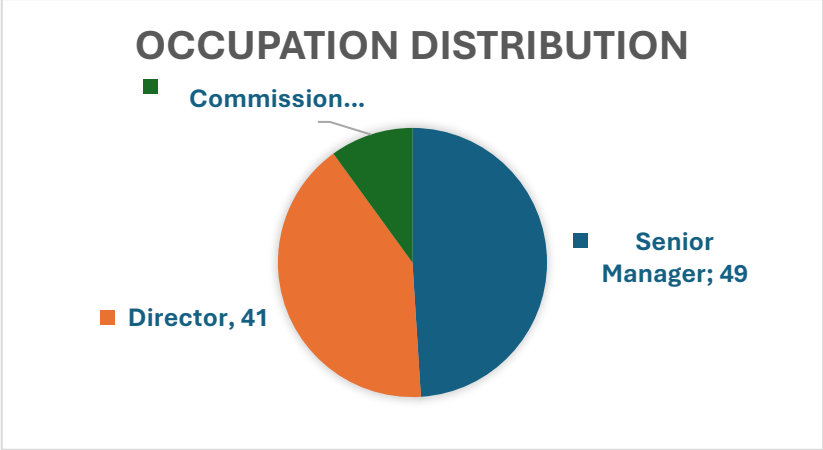

Figure 3. Occupation Distribution

In this research, education serves as a control variable, acknowledging its potential impact on decision-making processes. There are studies that finds education may influence decision making in daily decision (Martin, McNally, & Kay, 2013) and economics rationality decision (Weber & Johnson, 2009). This research tries to enhance understanding of how education interacts with other aspects under consideration by including it as a control variable.

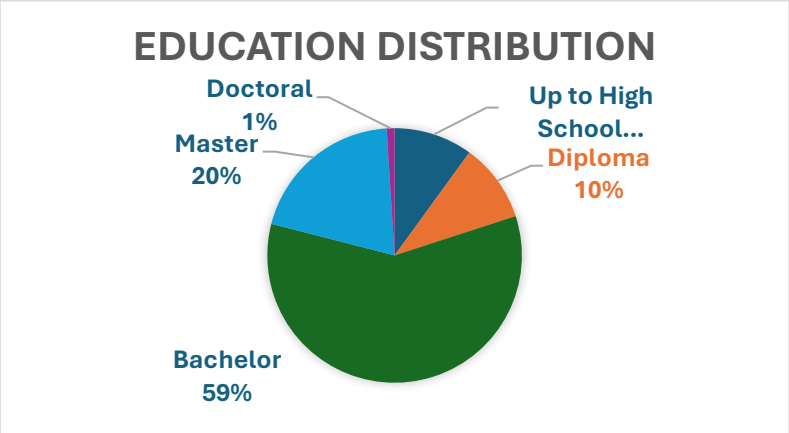

Figure 4. Education Distribution

Along with other control variables, duration of occupation serves as a control variable. This research acknowledged that duration or experiences may affect how executives do decision making especially regarding finansial decision making Undoubtedly, the length of time a person holds a position can have a significant influence on the strategies and willingness to take risks in the business world. Therefore, incorporating this variable as control variable into analyses may provide valuable insight to the research.

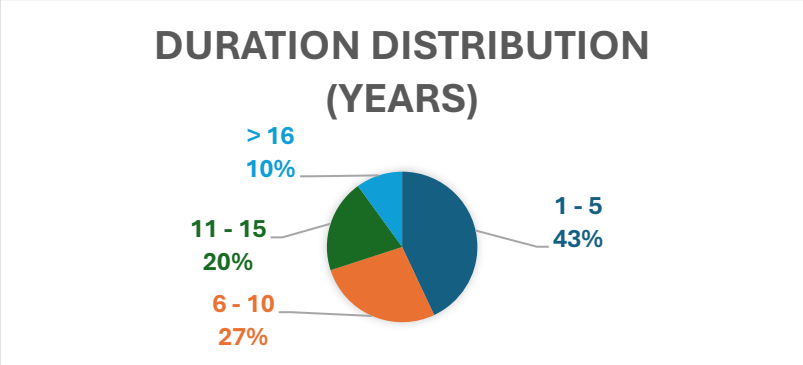

Figure 5. Duration Distribution

Descriptive statistics can be used to provide a comprehensive overview of the research sample by presenting statistical measurements such as the mean, maximum, minimum, and median of the variables. This research incorporates three variables: gender, risk aversion, and strategic risk-taking. Out of these three variables, gender and strategic risk-taking variables utilize binomial data processing.

Table 1. Descriptive Statistics

Variabel	Mean	Mode	Standar Deviasi

Risk Aversion	2,04	3	0,8671
Strategic Risk-taking	0,4	0	0,49237

According to the data (table 4.1), the descriptive statistical analysis of 100 respondents shows that the risk aversion variable has an average value of 2.04, with a standard deviation of 0.88671. The maximum frequency observed is 3, indicating a risk preference of risk averse. The variable strategic risk-taking has an average value of 0.4 and a standard deviation of 0.49237. The most frequent value is 0, which represents the safe strategic option.

Normality Test

The normality test is a statistical procedure used to assess whether the distribution of research data adheres to the normal distribution model, and it examines the distribution of random variables. Various methodologies exist for conducting normality testing, which vary based on the given data type. The chi-square teast can be applied to analyze binomial data (values of 1 and 0) in questionnaire questions numbered 1 to 11. The output of the chi-square test conducted using the R programming language is presented below:

Table 2. Chi-Square Normality Test

Column	Chi-Squared Value	Degrees of Freedom	p-value	Result
1	38,44	1	5,65E-10	Significant (p < 0,05)
2	38,44	1	5,65E-10	Significant (p < 0,05)
3	31,36	1	2,14E-08	Significant (p < 0,05)
4	4,84	1	0,02781	Significant (p < 0,05)
5	1,96	1	0,1615	Not Significant (p > 0,05)
6	12,96	1	0,0003182	Significant (p < 0,05)
7	29,16	1	6,66E-08	Significant (p < 0,05)
8	54,76	1	1,36E-13	Highly Significant (p < 0,001)
9	54,76	1	1,36E-13	Highly Significant (p < 0,001)
10	NA	NA	NA	N/A
11	4	1	0,0455	Significant (p < 0,05)

The chi-square test findings indicate that only question number 5 has a p-value greater than 0.05, while the remaining questions have p-values less than 0.05. However, it is important to note that question number 5 is unique in its measurement of the respondent's level of risk aversion, therefore cannot be expelled from this questionnaire. Question 10 is marked as N/A because it is a question used to test the validity of the data. If the respondent selects option A, which has a 100% probability and a value of Rp. 65,000.00 (binomial 1), their answer is considered invalid because option B has a 100% probability and a value of Rp. 120,000.00. Questions 12 to 14 of the questionnaire are rated on a Likert scale ranging from 1 to 5, where 1 represents a

very low rating and 5 represents a very high rating. The Kolmogorov-Smirnov test can be employed to assess the normalcy of Likert scale data. The output of the Kolmogorov-Smirnov test conducted in R is presented below:

Table 3. Kolmogorov Smirnov Normality Test

Column	D	p-value	Result
12	0,94725	< 2,2e-16	Significant (p < 0,05)
13	0,97865	< 2,2e-16	Significant (p < 0,05)
14	0,99865	< 2,2e-16	Significant (p < 0,05)

According to the findings of the Kolmogorov Smirnov test, all questions have a p value that is less than 0.05. The chi-square and Kolmogorov-Smirnov tests indicate that the questionnaire's p-value is less than 0.05, suggesting that the data is not regularly distributed.

Reliability Test

Reliability testing is a procedure conducted to determine if the data employed can be consistently and dependably used to quantify something in research. An applicable reliability test for binomial data is the Kuder-Richardson Formula 20, as mentioned by Foster (2021). The outcomes of the reliability assessment with R for the questionnaire are as follows:

Table 4. Reliability Test

Raw_Alpha	Std.Alpha	G6(smc)	Average_R	S/N	Mean	SD	Median_R
0.8	0.8	0.89	0.29	4.1	0.03	0.23	0.21

95% confidence boundaries

	Lower	Alpha	Upper
Feldt	0.74	0.8	0.85
Duhachek	0.74	0.8	0.86

The reliability test yielded an alpha coefficient of 0.8 and a G6 (smc) score of 0.89. The reliability test is measured on a scale from 0 to 1. A higher number indicates greater consistency and reliability of the obtained data. The reliability test yielded a coefficient of 0.8, which is considered high and indicates that the data is close to being completely reliable.

Multicollinearity Test

The purpose of doing a multicollinearity test is to determine if there is a significant correlation among the independent variables. To assess the connection between variables, it can utilise Variance Inflation Factors (VIF). If the VIF falls

between the range of 1 to 1.10, it indicates the absence of correlation between the variables. The output of the multicollinearity test conducted in R is presented below:

Table 5. Multicollinearity Test

Variable	VIF
Gender	1,0791
Risk_Aversion	1,1295
Strategic_Risk-taking	1,0702

According to the findings of the multicollinearity test, the Variance Inflation Factor (VIF) value for each variable falls between 1 and 10. The test confirms the absence of multicollinearity in the data.

Hypothesis Testing and Analysis

Hypothesis 1

Aligning the proportion or composition of executives with the company's profile, particularly in relation to risk profile, can lead to more effective decision-making outcomes and meet the desires of shareholders/stakeholders. If the organisation has a risk-averse risk profile, then executives with a risk-loving risk profile are likely to make judgements that do not align with the preferences of shareholders. This can lead to a lack of coordination and communication between executives and shareholders, which can negatively impact corporate outcomes or performance. The t-test is a statistical test used to identify differences between two groups of variables. The first hypothesis of the research is stated as follows:

H1a: Female executives are more risk averse than male executives.

H1b: Male executives are more risk averse than female executives.

The results of the t-test using R are as follows:

Table 6. Gender and Risk Aversion t-test

Test	t-test
Test Statistic	t = -2,5466
Degrees of Freedom (df)	df = 64,324
p-value	p-value = 0,01328
Confidence Interval	(-0,81420322, -0,09837275)
Mean (Group 0)	mean in group 0 = 1,898551
Mean (Group 1)	mean in group 1 = 2,354839
Significance	*

The t-test will analyse the variables of gender and risk aversion to determine if there is a disparity in risk aversion between the male (0) and female (1) groups. The t-test results indicate a significant difference in risk aversion between men and women (p value < 0.05). Specifically, at the executive level, women exhibit higher levels of

risk aversion compared to males (1.898551 < 2.354839). Based on the aforementioned findings, it can be inferred that H1a is supported while H1b is refuted, indicating that female executives exhibit a higher degree of risk aversion compared to their male counterparts.

The findings unequivocally support established theories and empirical evidence that demonstrate women's inclination towards risk aversion, as extensively documented by researchers such as Croson & Gneezy (2012) and reinforced by recent study like that of Shropshire et al. (2021). When applied by top-level management, this finding offers shareholders significant insights for precisely adjusting the mix of executives to match the unique profile and strategic needs of the organisation. By recognising the tendency for different genders to be more cautious when it comes to taking risks, shareholders may carefully select executives who not only bring diversity to the leadership team but also share the same risk tolerance and goals as the organisation. Strategic alignment improves the ability of an organisation to adapt and respond to changes, ensuring long-term value generation and a competitive advantage in rapidly changing market environments.

Implementing the principle of gender diversity is a strategy to diversify and mitigate risk inside the firm. By assessing the gender distribution, particularly among CEOs, it can yield a favourable outcome compared to displaying a bias towards specific genders. When women are involved in the decision-making process, the resulting decisions are likely to be less aggressive and, consequently, less inclined to take bold steps in pursuing available chances. Conversely, an overrepresentation of men in decision-making roles leads to more aggressive decision-making, with less consideration for the dangers involved. In order to confront unpredictable economic issues, it is imperative to reallocate or recruit executives who are aligned with the company's objectives.

Shareholders have the authority to decide whether to redistribute or recruit executives based on the prevailing economic or political circumstances in a country. If the country encounters economic or political turmoil that hampers economic operations, the corporation can modify its risk profile and implement restructuring measures in line with the executive's risk aversion. Conversely, in a situation when the country is undergoing consistent and favourable economic or political advancement, the company has the flexibility to modify its risk profile more boldly. This allows for the involvement of executives who are inclined towards taking risks, enabling them to make strategic decisions that can enhance the company's profitability.

Hypothesis 2

Threat considerations and the lack of certainty regarding the future can influence the decision-making process. Each individual has varying perceptions on their inclination or readiness to embrace the hazards they may encounter or bear. There are individuals who perceive risk either as a negative occurrence or as a chance for advancement. Indeed, risk is a value-neutral concept that does not inherently connote positivity or negativity, but rather denotes the degree of uncertainty involved. If the

potential risk can be transformed into a favourable outcome, it has the capacity to yield financial gains for the individual. Conversely, if the risk manifests as an adverse consequence, it might lead to detrimental consequences or hardships for the individual. An individual's willingness and ability to take risks is determined by their level of risk aversion. Logistic regression is a statistical analysis technique employed to assess the influence of one variable on another. The second hypothesis of the research is stated as follows:

H2a: Risk aversion has a significant negative effect on strategic risk-taking.

H2b: Risk aversion has no significant negative effect on strategic risk-taking.

Logistic regression testing will use two variables, which are risk aversion and strategic risk-taking to see whether risk aversion which has been categorized (1: risk loving, 2: risk neutral, 3: risk averse) has a significant negative effect on strategic risk-taking. The results of logistic regression testing using R are as follows:

Table 7. Logistic Regression Test

Predictor	CoefSficient	Std. Error	z Value	p-value
(Intercept)	0,8612	0,7499	1,148	0,25080
Risk_Aversion	-0,7321	0,2837	-2,581	0,00985 **
Age1	0,6870	0,8123	0,846	0,39769
Age2	0,1980	0,5571	0,355	0,72231
Age 4	-1,2162	1,2507	-0,972	0,33085
Education1	0,8392	0,8824	0,951	0,34157
Education2	2,0173	0,8629	2,338	0,01940 *
Education4	1,1844	0,5938	1,995	0,04607 *
Education5	16,7533	1455,3980	0,012	0,99082
Occupation2	-0,7992	0,5010	-1,595	0,11067
Occupation3	-1,7041	0,9491	-1,796	0,07257
Duration2	-0,0937	0,5864	-0,160	0,87306
Duration3	0,4330	0,6559	0,660	0,50915
Duration4	-0,7006	0,9582	-0,731	0,46468
Signif.codes:	0 ‘***’ 0,001 ‘**’ 0,01 ‘*’ 0,05 ‘.’ 0,1 ‘ ’ 1			
Null deviance:	134,60 on 99 degrees of freedom			
Residual deviance:	113,16 on 86 degrees of freedom			
AIC:	141,16			

The risk aversion variable has a coefficient level of -0.7321, which is statistically significant at a p value of less than 0.05 (0.00985). This demonstrates that the risk aversion variable has a negative significant influence on strategic risk-taking. This means as the level of risk aversion increases, executives tend to choose for more

cautious strategic risk-taking (safer choice represented as 0). Based on the findings from the logistic regression analysis, it can be inferred that H2a is supported whereas H2b is not supported.

This findings supports previous studies that demonstrate how risk aversion can impact an individual's decision-making process, both in everyday situations and financial endeavours, particularly within the realm of business (Byrnes et al., 1999; Croson & Gneezy, 2009). As a person's risk aversion increases on a scale of 3, their preference of decision making inclined towards lower risk or more conservarive. This aligns with Bernoulli's (1954) theory of expected utility, which posits that individuals would experience more happiness when they make decisions that are in accordance with their personal characteristics, particularly their level of risk aversion.

From a business standpoint, risk aversion will also effect the process of making strategic decisions, which in turn affects the company's exposure to risks and potential outcomes (strategic risk-taking). Senior managers, directors, and commissioners, who hold executive roles, frequently have the task of making strategic decisions within the organisation. Executive risk aversion has an impact on strategic risk-taking, as demonstrated in table 4.7, therefore confirming hypothesis 2a. Executives with a greater degree of risk aversion tend to favour strategic risk-taking that involves lower hazards, which is seen a safer alternative.

One of the control variables shows the influence on strategic risk-taking. The education control variable exhibits statistically significant p-values of less than 0.05 for education2 (0.01940) and education4 (0.04607). This demonstrates that education has an impact on the tendency of executives to take strategic risks. Specifically, executives with higher education levels beyond high school exhibit a noteworthy influence on their inclination to engage in strategic risk-taking. This finding aligns with the research conducted by Kim et al. (2018), which revealed that higher levels of education can enhance rationality, leading to an improved capacity for decision-making.

Hypothesis 3

Shropshire (2021) asserts that decision orientation and risk choice might impact managerial decisions, such as strategic risk-taking, especially during adverse economic circumstances. Both males and females will exhibit a propensity for making more daring choices when confronted with personal interests. When confronted with a decision that affects others, female executives will choose for a choice that carries least risk. However when considering their own well-being, male executives tend to choose an aggresive choices. Typically, the gender of executives does not have an impact on managerial decisions, unless there is a specific focus on strategic risk-taking. In this research, there is no specific focus on strategic risk-taking, therefore the research wants to clarify by testing the third hypothesis. The third hypothesis of the research is stated as follows:

H3a: There are differences in decisions between male and female executives in terms of strategic risk-taking.

H3b: There is no difference in decisions between male and female executives in terms of strategic risk-taking.

The t-test will analyse the relationship between gender and strategic risk-taking by comparing two variables: gender (male: 0, female: 1) and the choice between a safe option (0) and a hazardous option (1). Its purpose is to determine if there is a statistically significant difference between the two gender groups in terms of their strategic risk-taking. The output of the t-test analysis conducted in R is presented below.

Table 8. Gender and Strategic Risk-taking t-test

Test	t-test
Test Statistic	t = -0,6912
Degrees of Freedom (df)	df = 56,023
p-value	p-value = 0,4922
Confidence Interval	(-0,2915625 0,1419599)
Mean (Group 0)	mean in group 0 = 0,3768116
Mean (Group 1)	mean in group 1 = 0,4516129
Significance	*

The questionnaire and assessment categories employed are derived from Shropshire's (2021) research, which aims to assess strategic risk-taking. According to the t-test results, the p-value is more than 0.05, suggesting that there is no statistically significant difference between male executives and female executives in terms of strategic risk-taking. Based on these two findings, it can be inferred that H3b is supported and H3a is refuted, indicating that there is no disparity in decision-making between male and female executives with regards to strategic risk-taking.

The results of hypothesis testing in table 4.8 indicate that the third hypothesis (H3a), which suggests significant disparities in decisions between male and female executives in terms of strategic risk-taking, has been rejected. According to these findings, this research accept the hypothesis H3b, which states that there is no notable disparity in decision-making between male and female executives when it comes to taking strategic risks. This finding aligns with the research findings of Professor Shropshire (2021), which indicate that there is no discernible disparity in strategic risk-taking between male leaders and female executives.

Furthermore, these findings indicate that highlighting gender disparities in managerial choices is not essential, particularly within the executive cohort. As time advances, it is crucial to study the concept of gender equality and diversification in firms to ensure that gender does not play a decisive role in managerial decision-making. Emphasising that gender does not play a decisive role, these findings offer a fresh viewpoint that suggests the existence of additional factors to take into account. Shareholders should be mindful of several factors and variables related to executives that can impact decision-making, including risk aversion, as demonstrated in hypothesis 2a.

CONCLUSION

The research aims to explore disparities in risk aversion between male and female executives, analyze the impact of risk aversion on strategic risk-taking, and assess gender differences in strategic decision-making. Using t-tests and logistic regression with control variables, the study found that female executives are more risk-averse than males, confirming the belief that women generally exhibit higher risk aversion. This higher risk aversion negatively impacts their willingness to take strategic risks, favoring safer options, while risk-loving executives prefer riskier strategies. Education also influences strategic risk-taking. Despite these findings, there is no significant difference in strategic risk-taking between male and female executives, indicating that gender does not decisively influence these decisions.

Theoretical and practical implications suggest that gender composition in executive teams influences organizational risk-taking, with male-dominated teams being more aggressive and female-dominated teams being more cautious. Companies and shareholders can manage risk by adjusting executive gender composition based on the firm's risk profile and conditions. Promoting gender equality among executives can enhance performance and efficiency, though other factors like orientation and risk aversion should also be considered.

The research faced limitations, such as potential bias from purposive sampling and the non-sector-specific sample. Future studies should consider additional factors influencing strategic risk-taking, like education, and aim for larger, more representative samples. Further research should also explore sector-specific differences to refine and generalize findings.

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