

CHAPTER III

RESEARCH METHODS

3.1 Overview of Research Object

The research object of this research comprises of Generation Z who are in their 6th and/or 8th semester of university and are studying at Jakarta-based university with the intent of seeking employment in Jakarta. The reason for choosing this research object has been thoroughly explained in the research background, which includes:

1. Generation Z possesses several behavioral tendencies due to the events at the time of their upbringing (Dolot, 2018). Such behavioral tendencies include entrepreneurial tendencies (Schawbel, 2014), new approaches to multiple ways of work in the workplace (Madden, 2019), unrealistic wages and flexible work expectations (Racolța-Paina & Iriani, 2021), preference for social environment in the workplace (Ozkan & Solmaz, 2015), and preferences in job security and money (Dwidienawati & Gandasari, 2018).
2. Generation Z is the dominating population in the world and Indonesia (United Nations, 2022; BPS Indonesia, 2020).
3. Generation Z is projected to dominate the global workforce at 27% by the year 2025 (United Nations, 2022).
4. Employment opportunities in Jakarta are relatively high at 92,43% (BPS Indonesia, 2023).
5. Unemployment in Indonesia and Jakarta is dominated by the Generation Z population (Indonesian Ministry of Manpower, 2023; BPS Indonesia, 2022).

3.2 Research Method & Research Design

According to Malhotra (2020), there are 2 classifications of research methods based on the primary data of the research, which include:

1. Qualitative Research

Qualitative research can be defined as a research method that aims to obtain an understanding of the phenomenon using non-quantitative methods. Hence, the data collection methodology is rather unstructured, and non-statistical analysis is involved.

2. Quantitative Research

Quantitative research can be defined as a research method that aims to utilize quantifiable data and statistical analysis to generate insight or results regarding the phenomenon. Quantitative research results can be utilized to generate more conclusive and useful suggestions based on statistical data. Quantitative research is generally more structured and is able to be applied to a larger sample of a population.

Based on the explanation above, this research will implement a quantitative research method as the aim of this research is to understand a certain phenomenon utilizing statistical analysis to generate suggestions that can be implemented to the research object.

Research design can be defined as a framework that lays out the details of research to ensure the proper and effective execution of the research itself (Malhotra, 2020). Properly determining what research design is to be implemented will help the researcher ensure a successful execution of the research (Thattamparambil, 2020). A research design will help researchers ensure proper determination of data collection and implementation of data analysis techniques.

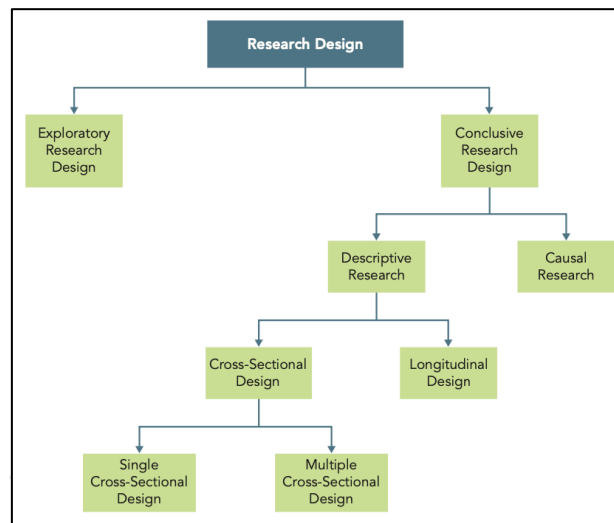


Figure 3.1 Research Designs Classifications

Source: Malhotra, 2020

As seen in Figure 3.1, research design can be classified into 2 main classifications: exploratory and conclusive research. Conclusive research itself will be further classified into descriptive and causal research. Descriptive research is classified into cross-sectional and longitudinal design. The explanations regarding these classifications of research design will be discussed further below.

1. Exploratory Research

Exploratory research aims to present insight and comprehension regarding the problem of the research. The nature of exploratory research is to increase understanding of the phenomenon further. Henceforth, this research tends to be more flexible and unstructured. The sample of this research also tends to be smaller in size, and this research design is highly related to qualitative analysis. The results of exploratory research are often used as a base for further research.

2. Conclusive Research

Conclusive research aims to assess particular hypotheses and investigate relationships related to the problem being researched. Hence, the nature of conclusive research tends to be more formal and structured.

The sample of this research tends to be bigger in size, and this research design is highly related to quantitative analysis. The results of conclusive research can be utilized in decision-making regarding the phenomenon.

Conclusive research can be further classified into 2 categories, which includes:

i. Descriptive Research

Descriptive research aims to obtain certain information through research in order to describe certain business phenomena or functions. This research can be identified with the presence of formulated hypotheses and is highly related to quantitative analysis.

ii. Causal Research

Causal research aims to identify and prove causal relationships (cause-and-effect) regarding the phenomenon being studied. Generally, causal research involves an experiment method to analyze the causal effect and, therefore, usually implements manipulation of variables.

Descriptive research is then classified further into 2 categories, which includes:

a. Cross-Sectional Research

Cross-sectional research is a type of descriptive research that involves a one-time data collection from a sample of a population. Single cross-sectional research only concerns a one-time data collection from one population sample. Whereas multiple cross-sectional research involves a one-time data collection from two or more population samples. Data collection between samples can be obtained at different times and might allow comparison between the data obtained at an aggregate level.

b. Longitudinal Research

Longitudinal research involves a repeated measurement of certain variables in the same sample population. Through longitudinal

research, researchers can be given an insight into the situation and how it changes across different time stamps as the measurement is done more than once.

Based on the explanations given above, thus this research is implementing a conclusive research design. This research design aligns with the chosen research method of quantitative analysis. As the results of a conclusive research is often implemented in making a decision based on the obtained understanding. More specifically, a descriptive single-cross-sectional research design as this research aims to describe the behaviors of Generation Z in regards to their intention to apply to companies through the utilization of survey research and quantitative analysis to test the formulated hypotheses. There will only be a one-time data collection for the population sample, which is 6th and 8th semester university students in 5 different universities based in Jakarta.

3.2.1 Research Data

According to Schindler (2022), research data can be classified into 2 general classifications:

1. Primary Data

Primary data can be referred to as the data obtained directly from the data source by the researcher. This data is uninterpreted and still in its original form by nature. Primary data generally can be sourced from interviews, observations, or through the utilization of questionnaires.

2. Secondary Data

Secondary data can be referred to as the data obtained indirectly from the data source by the researcher. In other words, secondary data has undergone some kind of interpretation before being utilized by the researcher in research. Secondary data generally can be sourced from reviewing reports, literature, or databases.

The research data utilized in this research consists of both primary and secondary data. The primary data of this research is sourced from the utilization of questionnaires filled by 6th and 8th-semester university students in 5 different universities based in Jakarta. Secondary data of this research is sourced from literature reviews and other data that will complement and further strengthen the primary data analysis in order to fulfill the intended research objectives.

3.3 Population and Sample

3.3.1 Population

According to Sekaran & Bougie (2016), population can be defined as the unit of analysis being studied in research, which can consist of people, groups, organizations, or any unit of interest of the researcher. Schindler (2018) explains population as something that can be drawn from the problem of the research and as something that can provide the answers to the research questions being investigated. The target population of this research will consist of Generation Z in Jakarta, who are also 6th or 8th-semester university students in five Jakarta-based universities with the intent of pursuing employment in Jakarta after graduating.

3.3.2 Sampling Technique

According to Sekaran & Bougie (2016), a sample can be defined as a part of the population selected to be the focus of the research. Sampling is usually implemented due to a large population size, which hinders the researcher's ability to investigate the whole population. In determining a population sample, implementing the proper sampling technique is essential to help ensure optimum research results as intended in the research question and objectives.

According to Schindler (2018), there are 2 general sampling technique classifications:

1. Probability Sampling

Probability sampling refers to a sampling technique in which the elements of the population are known. Therefore, each element will have the same chance of being chosen as a sample in the research. This sampling technique is based on a random sampling selection. There are several probability sampling techniques, as follows:

a. Simple-random Sampling

In simple random sampling, each population element will have the same opportunity to be randomly selected as a research sample.

b. Systematic Sampling

Systematic sampling is the selection of a sample from the population that is conducted in a certain sequence/interval. In other words, every population element will be chosen as a sample.

c. Stratified-Random Sampling

Stratified sampling is a 2-step sample selection. It first divides the population into sub-sample groups based on certain criteria, which is then continued with a random sampling from those groups.

d. Cluster Sampling

Cluster sampling is a sampling technique that involves dividing the population into sub-sample groups randomly and choosing several sub-sample groups to represent the population as a sample.

2. Non-Probability Sampling

Non-probability sampling is a sampling technique in which elements of the population are unknown and, therefore, have different chances

of being selected as a sample in the research. The subjectivity of the researcher influences the sample selection in this sampling technique.

a. Convenience Sampling

Convenience sampling is a sampling technique that is based on the researcher's convenience – whichever element of the population is conveniently available for the researcher to become a sample in the research.

b. Judgment Sampling

Judgment sampling is a sampling technique that involves determining certain criteria/judgments from the researcher to be chosen as a sample of the research. In other words, elements of the population are chosen based on certain criteria determined by the researcher.

c. Quota Sampling

Quota sampling is a sampling technique that ensures every population characteristic is represented in the chosen sample based on a pre-determined standard.

d. Snowball Sampling

Snowball sampling is a sampling technique that is highly similar to a referral method. In which, sample selection is based on the referral from the previous sample into the next.

Based on the various sampling techniques explained above, this research will implement simple random sampling as the samples of this research are randomly selected from the population, and each population element will have the same opportunity to be a sample.

3.3.3 Sampling Size

Determination of a proper sampling size is needed to help ensure that the conclusions drawn from the research are scientifically valid (Memon et al., 2020). According to Kline (2023), the sufficient sample size for PLS-SEM analysis is 10 times the number of indicators used in the research. As this research has 24 indicators in the developed questionnaire, therefore the sample size of this research is 24 times 10 which is 240 respondents.

3.4 Data Collection Technique

3.4.1 Data Sources and Collection Method

As mentioned before, this research will utilize both primary and secondary data. The researcher will obtain primary data for this research through the distribution of a questionnaire filled out by Generation Z, who is a 6th or 8th-semester university student studying in the selected 5 Jakarta-based universities with an intent of pursuing employment in Jakarta. Secondary data of this research will be sourced from the review of literature, previous studies, and other databases that will complement and further support the analysis of the primary data in this research.

3.4.2 Data Collection Method

According to (Zikmund et al., 2012), there are 3 general data collection methods:

1. Survey Research

The data collection method in survey research involves direct data collection from the researcher to the sample of the research object. Methods included are interviews and questionnaires.

2. Observation Research

The data collection method in observation research generally involves a systematic process of observing and recording patterns of incidents as they occur. There is no direct communication between the observer and the observed.

3. Experiment Research

The data collection method in experiment research is often related to the manipulation of independent variables in order to analyze the causal effect between the variables.

Based on the explanations above, this research implements survey research as its data collection method. This research will utilize the distribution of a self-administered questionnaire that is distributed to the intended sample of the research object in order to obtain the primary data needed to be further analyzed in this research.

3.5 Research Period

The research period is conducted by the writer from February 2024 until May 2024. This research will investigate the intention to apply of Generation Z in Jakarta who are currently in their 6th or 8th semester in university as per the execution of this research and the distribution of the research questionnaire.

3.6 Scale Measurement

As stated by Joshi et al. (2015), the Likert scale is considered to be one of the most basic and most used scales in research. Thus, this research will implement a 5-point Likert scale measurement with this answer categorization:

Table 3.1 Likert Scale Measurement

Category	Scale
Strongly Disagree	1
Disagree	2
Neutral	3
Agree	4
Strongly Agree	5

Source: Joshi et al., 2015

3.7 Operationalization of Variable

According to Sekaran & Bougie (2016), a variable can be defined as anything that is able to carry values that can be utilized to draw certain

conclusions or interpretations from it. Whereas, Schindler (2018) defines a variable as a measurable symbol of the research object or phenomenon.

3.7.1 Independent Variable

As stated by Sekaran & Bougie (2016), the independent variable can be defined as the influencing variable to the dependent variable of the research. The influence of the independent variable can be positive or negative. Schindler (2018) added that the independent variable can be considered as the predictor and stimulus of the dependent variable. Furthermore, in

This research has 2 independent variables present in the determined hypotheses, as follows:

1. Employer Brand Attractiveness (EBA)

Berthon et al. (2005) define employer brand attractiveness as “the envisioned benefits that a potential employee sees in working for a specific organization” (p. 156). Employer brand attractiveness is also seen as the result of implementing employer branding strategies that allow companies to attract new talent and increase the probability of that talent joining the company (Junça Silva & Dias, 2022).

2. Organizational Reputation (OR)

Organizational reputation can be defined as the collective image of an organization in the eyes of its internal and external stakeholders (Fombrun et al., 2000). Organizational reputation can also be seen as the company’s historical representation in executing its values in the eyes of its current and potential employees (Hanu et al., 2021; Kimpakorn & Tocquer, 2009).

3.7.2 Mediating Variable

Sekaran & Bougie (2016) define a mediating variable as a variable that emerges from the independent variable’s operating function on its dependent variable. The existence of a mediating, often called

intervening variable, will help researchers to conceptualize the connection between the independent and dependent variables of the research.

This research has 1 mediating/intervening variable present in its determined hypotheses, which is:

1. Organizational Reputation (OR)

Organizational reputation can be defined as the collective image regarding an organization in the eyes of its internal and external stakeholders (Fombrun et al., 2000). Organizational reputation can also be seen as the company's historical representation in executing its values in the eyes of its current and potential employees (Hanu et al., 2021; Kimpakorn & Tocquer, 2009).

3.7.3 Dependent Variable

Sekaran & Bougie (2016) explain the dependent variable as the variable that becomes the main focus of the research. In other words, research is being conducted to comprehend and explain the dependent variable and its relation to the research phenomenon. Through proper analysis of the dependent variable, a researcher will be able to obtain the solution for the research problem. Schindler (2018) added that the dependent variable is a response predicted from the independent variable that influences it.

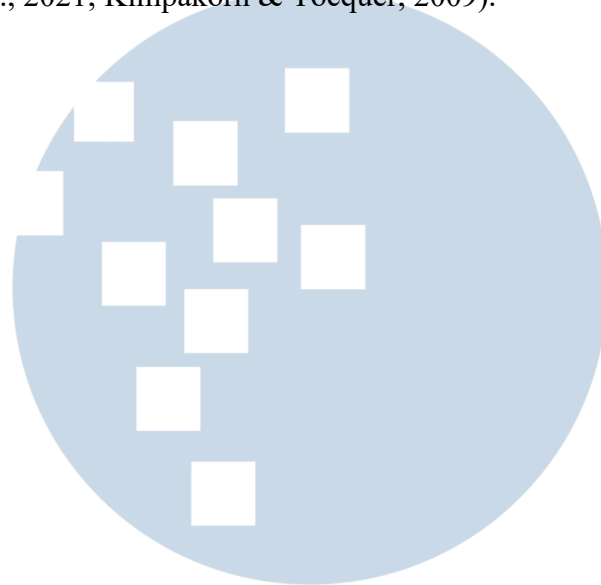
This research has 2 dependent variables present in the determined hypotheses, as follows:

1. Intention to Apply (ITA)

Highhouse et al. (2003) defined intention to apply as an applicant's thought regarding a company that directly indicates their future intent in applying for a job in that company. Barber & Roehling (1993) stated that the intention to apply is an influential factor in job seekers' behavior at the early stages of recruitment.

2. Organizational Reputation (OR)

Organizational reputation can be defined as the collective image regarding an organization in the eyes of its internal and external stakeholders (Fombrun et al., 2000). Organizational reputation can also be seen as the company's historical representation in executing its values in the eyes of its current and potential employees (Hanu et al., 2021; Kimpakorn & Tocquer, 2009).



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Table 3.2 Operationalization of Variable

No.	Variable	Definition	Category	Code	English Original	Measurement Item	Reference	Scale
1.	Employer Brand Attractiveness (EBA)	“The envisioned benefits that a potential employee sees in working for a specific organization” (p. 156) (Berthon et al., 2005)	Interest Value	EBA1	Innovative employer – novel work practices/forward-thinking	I am attracted to a company that implements innovative work practices and forward-thinking.	(Berthon et al., 2005; Junça Silva & Dias, 2022)	Likert Scale 1-5
			Social Value	EBA2	Having a good relationship with your colleagues	I am attracted to a company that enables a good relationship with your colleagues.		
				EBA3	Happy work environment	I am attracted to a company that provides a happy work environment for me.		
			Economic Value	EBA4	An attractive overall compensation package	I am attracted to a company that provides an attractive overall compensation package.		
				EBA5	Good promotion opportunities within the organization	I am attracted to a company that provides good promotion opportunities for me within the organization.		

			Development Value	EBA6	Feeling more self-confident as a result of working for a particular organization	I am attracted to a company that makes me feel more confident about myself as a result of working for this company.		
				EBA7	Gaining career-enhancing experience	I am attracted to a company that allows me to gain career-enhancing experience.		
				Application Value	EBA8	Humanitarian organization – gives back to society	I am attracted to a company who cares about humanitarian issues and gives back to society.	
2.	Organizational Reputation (OR)	A collective image regarding an organization in the eyes of its internal and external stakeholders (Fombrun et al., 2000).	Emotional Appeal	OR1	I admire and respect the company.	I am attracted to a company that I admire and respect.	(Soeling et al., 2022; Fombrun et al., 2000)	Likert Scale 1-5
				OR2	I trust this company.	I am attracted to a company that I am able to trust.		
			Products and Services	OR3	Stands behind its products and services.	I am attracted to a company that is confident about its products and services.		

			OR4	Offers high quality products and services.	I am attracted to a company that offers high quality products and services.		
		Vision and Leadership	OR5	Has excellent leadership.	I am attracted to a company that has excellent leadership.		
			OR6	Has a clear vision for its future.	I am attracted to a company that has a clear vision for its future.		
		Workplace Environment	OR7	Looks like a good company to work for.	I am attracted to a company that create a good impression as a company to work for.		
			OR8	Looks like a company that would have good employees.	I am attracted to a company that has competent and professional employees.		
		Social and Environmental Responsibility	OR9	Supports good causes.	I am attracted to a company that supports good causes.		
			OR10	Is an environmentally responsible company.	I am attracted to a company that is an environmentally responsible company.		

			Financial Performance	OR11	Has a strong record of profitability.	I am attracted to a company that has a positive financial performance.		
			Financial Performance	OR12	Looks like a company with strong prospects for future growth.	I am attracted to a company that has a strong prospect for future growth.		
3.	Intention to Apply (ITA)	Applicant's thoughts regarding a company that directly indicates their future intent in applying for a job in that company. (Highhouse et al., 2003)	N/A	ITA 1	I would accept a job offer from this company.		(Highhouse et al., 2003; Junça Silva & Dias, 2022)	Likert Scale 1-5
				ITA 2	I would make this company one of my first choices as an employer.			
				ITA 3	If this company invited me for a job interview, I would go.			
				ITA 4	I would exert a great deal of effort to work for this company.			

Source: Author's Primary Data, 2024

3.8 Data Analysis Techniques

3.8.1 Descriptive Analysis

According to Sugiyono (2018), descriptive analysis aims to describe the obtained data without generating any applicable conclusions to the research. Descriptive analysis does not aim to create any generalization; therefore, any form of significance test is not needed. The results of a descriptive analysis can be presented in the form of tables, graphs, mean calculations, etc.

3.8.2 Pretest Analysis

Before conducting the main test of the research, which involves a large number of respondents and data, a pretest is needed to ensure that the respondents understand the indicators used to measure the research variables (Sekaran & Bougie, 2016). Performing a pretest can avoid errors in the research and, therefore, develop valid results (Hashim et al., 2022). If there are measurement items that are found to be statistically unfitting, pretesting allows the researcher a chance to make the necessary modifications to fix them (Hair et al., 2019).

Perneger et al. (2015) stated that the number of 30 respondents is an adequate minimum number of respondents needed in pretesting analysis. The number of 30 respondents is said to be able to grant enough power to detect problems if they were to exist in the questionnaire. Therefore, this research's pretest will involve 30 respondents that are in accordance with this research's determined sample (i.e., Generation Z who is a 6th or 8th-semester university student studying in the selected 5 Jakarta-based university who have an intent of pursuing employment in Jakarta). This research will utilize SPSS version 29.0 to conduct the pretest analysis.

Referring to Hashim et al. (2022), commonly, a pretest will assess the validity and reliability of the research's questionnaire as its measurement item. According to Sekaran and Bougie (2016), validity indicates the preciseness of the measurement instrument when measuring

a certain concept. On the other hand, reliability refers to how consistent and stable the measurement instrument is in measuring a variable. Hereby are the measures for the validity and reliability test in the pretesting analysis:

3.8.2.1 Pre-Test Validity Test

There are several validity measures applied to assess the validity of the measurement items, as follows:

1. Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy

Validity measure that assesses the suitability of factor analysis. KMO with a value of 0.5 or more ($KMO \geq 0.5$) indicates a suitable factor analysis (Malhotra, 2020).

2. Bartlett Test of Sphericity

Tests and measures the existence of a correlation between the variables. A statistically significant correlation among the variables will result in a significance level of < 0.05 in the Bartlett test of sphericity (Hair et al., 2019).

3. Measure of Sampling Adequacy (MSA)

Measures the entire correlation matrix between variables and individual variables. An adequate MSA is at the value of 0.50 or above for the entire test and individual variables (Hair et al., 2019).

4. Factor Loadings of Component Matrix

Represents the correlation between variables and the factors, with higher factor loadings indicating a higher representation of the variable by the regarded factor. Factor loadings of 0.50 or greater indicate a practical significance of the correlation (Hair et al., 2019).

3.8.2.2 Pre-Test Reliability Test

Hair et al. (2021) state that internal consistency reliability can be measured using Cronbach's alpha. Which, a Cronbach's alpha (α) greater than 0.70 to be considered reliable. Hence, the measurement items of this research must have a Cronbach's alpha (α) greater than 0.70 to be considered reliable.

Table 3.3 below summarizes the pretest validity and reliability criteria that need to be fulfilled in order to ensure that this research implements a valid and reliable measurement.

Table 3.3 Pretest Validity & Reliability Criteria

Validity / Reliability	Criteria	Value	Reference
Validity	Kaiser-Meyer-Olkin (KMO)	$KMO \geq 0.50$	Malhotra (2020)
	Measure of Sampling Adequacy		
	Bartlett Test of Sphericity	$Sig < 0.05$	Hair et al. (2019)
	Measure of Sampling Adequacy (MSA)	$MSA \geq 0.50$	
Factor Loading of Component Matrix	≥ 0.50		
Reliability	Cronbach's Alpha (α)	$\alpha > 0.70$	Hair et al. (2021)

Source: Malhotra (2020); Hair et al. (2019); Hair et al. (2021)

3.9 Data Analysis Method using PLS-SEM

SEM (Structural Equation Modeling) is a data analysis technique which enables researchers to analyze relationships between multiple independent and dependent variables while also modelling the relationships (Hair et al., 2021). There are 2 generally known SEM methods: covariance-based SEM (CB-SEM) and partial least squares SEM (PLS-SEM). In this research, a PLS-SEM approach will be implemented.

PLS-SEM approach is a data analysis method which considers both the relationship between variables and its indicators as well as between variables itself (Hair et al., 2019). It emphasizes predicting and explaining the variance

of the dependent variables. PLS-SEM can be utilized in both exploratory and confirmatory research. Because this research aims to assess previously specified hypotheses that are derived from previous research, it aligns with the principles of confirmatory research and, therefore, is a suitable data analysis method to implement. The PLS-SEM approach allows researchers to compute a conclusion based on the “statistical significance of relationships, relative influence of antecedents, explained variance, effect sizes, and prediction as they relate to proposed hypotheses” (Hair et al., 2019, p. 769).

The data analysis will consist of 3 main evaluations: measurement (outer) model evaluation, structural (inner) model evaluation, and model’s goodness of fit evaluation. In which each evaluation and its measures will be explained further below.

3.9.1 Measurement (Outer) Model Evaluation

Measurement model evaluation is considered to be an evaluation of the outer model, which explains the association between variables and their measurements (Hair et al., 2021). Measurement model evaluation aims to ensure the validity and reliability of the measurements used in order to obtain valid and reliable results from the entire research.

3.9.1.1 Validity Test

According to Hair et al. (2021), several validity criteria need to be assessed and fulfilled in order to qualify the validity of the measurement model as explained below:

1. Convergent Validity

Convergent validity represents the correlation between a variable and its measurement or indicators. A high correlation indicates that the measurement of a variable is able to measure the variable accurately. Convergent validity can be assessed with 2 criteria: outer loadings and average variance extracted (AVE).

Outer loadings, also known as loading factors, indicate the correlation between indicators and their variables. An outer loading greater than 0.7 is considered to be valid. Meanwhile, the average variance extracted (AVE) indicates the extent to which the construct (variable) explains the indicators' variance. An acceptable value of AVE is 0.50 or more.

2. Discriminant Validity

Discriminant validity represents the degree to which a measure of a specific construct is not related to the measure of other constructs. In other words, discriminant validity ensures that the measurement of a construct measures that particular construct precisely and not the other constructs. Discriminant validity can be assessed with several measures, such as cross-loadings, Fornell-Larcker criterion, and heterotrait-monotrait (HTMT) correlation ratio (Hair et al., 2017).

Cross loadings measure discriminant validity by comparing the outer loadings of each variable's indicators to ensure a high correlation between the indicators of the same variable and a low correlation with the other variables (Hair et al., 2017). In other words, the measurement of a particular variable must highly measure that specific variable and not the others. According to Hair et al. (2021), the Fornell-Larcker criterion measures discriminant validity by ensuring the shared variance between the model's variables is not larger than the square root average variance extracted (AVE) values of each variable. The heterotrait-monotrait (HTMT) ratio of the correlation criterion measures the similarity between latent variables. An HTMT value < 0.90 indicates discriminant validity being fulfilled.

3.9.1.2 Reliability Test

According to Hair et al. (2021), 2 reliability criteria must be fulfilled to achieve internal consistency reliability. Such criteria are Cronbach's alpha (α) and composite reliability (ρ_c). Cronbach's alpha (α) with a value greater than 0.70 indicates an internal consistency reliability. In other words, the indicators measuring the same construct highly correlate with each other. Another reliability criterion that needs to be fulfilled is composite reliability, with a ρ_c value greater than 0.70, which indicates composite reliability. Table 3.4 below summarizes the measurement model evaluation criteria.

Table 3.4 Measurement (Outer) Model Evaluation Criteria

Validity / Reliability	Criteria	Value	Reference
Convergent Validity	Outer Loading	≥ 0.70	Hair et al. (2021)
	Average Variance Extracted (AVE)	≥ 0.50	
Discriminant Validity	Cross Loading	High correlation with its own variables, low correlation with other variables	Hair et al. (2017)
	Fornell-Larcker Criterion	Each variable's square root AVE is larger than the shared variance of the model's variables	Hair et al. (2021)
	HTMT	< 0.90	
Internal Consistency Reliability	Cronbach's Alpha (α)	> 0.70	
Composite Reliability	ρ_c		

Source: Hair et al., 2021 & Hair et al., 2017

3.9.2 Structural (Inner) Model Evaluation

Structural model evaluation is considered to be an evaluation of the inner model, which explains the association between the variables (Hair et al., 2021). The structural model evaluation covers the collinearity test and path coefficients' significance and relevance. The results of this evaluation serve as the base for the research's analysis, including its hypothesis testing.

3.9.2.1 Collinearity

Collinearity is a situation in which a high correlation exists between the independent variables that are affecting the dependent variable (Hair et al., 2021). The existence of collinearity in a structural model may result in an inaccurate estimation of the path coefficients of the model. Low collinearity or multicollinearity of the independent variables must be ensured to increase the likelihood of generating accurate and unbiased path coefficients, which will impact the research's hypothesis testing and results interpretation. The collinearity of the structural model can be measured using the inner variance inflation factor (VIF). A VIF value below 5 must be achieved for the structural model to be considered low in collinearity.

3.9.2.2 Significance and Relevance of Path Coefficients

The path coefficient represents the standardized regression coefficient that explains the influence of an independent variable on a dependent variable (Hair et al., 2019). In Hair et al. (2021), the path coefficient is said to be the indicator of the changes in a dependent variable caused by a particular independent variable with the exclusion of the other independent variables' influence. The significance and relevance of the model's path coefficients must be fulfilled to achieve accurate hypothesis testing and research results.

The significance of path coefficients can be assessed using t-values and p-values. A t-value greater than 1.96 (in two-tailed tests) is

considered to be significant at a confidence level of 95%. Meanwhile, a p-value of 0.05 or lower indicates a significant path coefficient. The relevance of the path coefficient can be assessed through the values of the path coefficient itself, with an accepted value of the path coefficient ranging from -1 to +1. A negative value indicates a negative relationship between variables, and a positive value indicates a positive relationship between variables Hair et al. (2021).

All the inner model evaluation criteria are summarized in Table 3.5 below.

Table 3.5 Structural (Inner) Model Evaluation Criteria

	Criteria	Value	Reference
Collinearity	Variance Inflation Factor	VIF < 5	Hair et al. (2021)
Significance and Relevance of Path Coefficient	t-statistics	t-value > 1.96	
	p-value	p-value ≤ 0.05	
	Path Coefficient	-1 < β < +1	

Source: Hair et al., 2021

3.9.3 Model's Goodness of Fit Evaluation

A model's goodness of fit in a PLS-SEM context can be conceptualized as a measure of how well the model is in predicting the dependent variable being assessed in the model (Hair et al., 2017). Therefore, a good model fit in a PLS-SEM context is indicated by the model's predictive capability by assessing how independent variables predict the dependent variables. According to Hair et al. (2019), a model's predictive capability can be assessed using R^2 , f^2 , and Q^2 .

3.9.3.1 Model's Explanatory Power (R^2)

The coefficient of determination, also known as R-square (R^2), constitutes the total amount of variance in the dependent variables explained by all the independent variables altogether. R^2 indicates the

model's explanatory model as a whole (Hair et al., 2021). The explanatory power can be classified into 3 levels: weak, moderate, and substantial. The R^2 values for each level are 0.25, 0.50, and 0.75, respectively.

3.9.3.2 Model's Effect Size (f^2)

F-square (f^2) effect size represents an independent variable's influence on a dependent variable at a structural level (Hair et al., 2019). The model's explanatory power is expressed through the value of f^2 by assessing the changes in the R^2 value when an independent variable is not included in the model analysis. According to Cohen (1988), there are 3 levels of f^2 effect size: small (0.02), medium (0.15), and large effect (0.35). It is worth noting that such f^2 effect size measure only applies in measuring direct effect.

In terms of measuring the effect size of indirect effects, v effect size is applied. According to Ogbeibu et al. (2021), the v effect size is categorized into 3 levels: small (0.01), medium (0.075), and large indirect effect size (0.175). The effect size value can be obtained by multiplying the squared direct effect size of each path in the mediation path.

3.9.3.3 Model's Predictive Relevance (Q^2)

Q^2 value is a known measure of a model's predictive relevance, also known as predictive power. A Q^2 value larger than zero is the acceptable value for indicating a model's predictive relevance (Hair et al., 2019). A Q^2 value is calculated for the dependent variables of the model, and a $Q^2 > 0$ for a particular dependent variable indicates that the path model has a predictive relevance in predicting that variable.

All the criteria for the model's goodness of fit evaluation are then summarized in Table 3.6 below.

Table 3.6 Model's Goodness of Fit Evaluation Criteria

	Criteria	Value		Reference
Model's Explanatory Power	R ²	0.25	Weak	Hair et al. (2021)
		0.50	Moderate	
		0.75	Substantial	
Effect Size	f ² For direct effects	0.02	Small	Cohen, 1988; Hair et al., 2017
		0.15	Medium	
		0.35	Large	
	v For indirect effects	0.01	Small	Ogbeibu et al. (2021)
		0.075	Medium	
		0.175	Large	
Model's Predictive Relevance	Q ²	Q ² > 0		(Hair et al., 2019)

Source: Cohen, 1988; Hair et al., 2017, 2019, 2021; Ogbeibu et al., 2021

3.10 Hypothesis Testing

Hypothesis testing is a critical part of the research process as it involves a systematic procedure to analyze the research's data using statistical techniques in order to formulate a decision on whether to accept or reject the formulated hypotheses and draw an appropriate conclusion (Malhotra, 2020). In this research that implements a PLS-SEM-based data analysis method, hypothesis testing involves several parameters assessed in the inner model previously discussed (Hair et al., 2021). To be more specific, such parameters and their relevance in hypothesis testing are discussed further below:

1. P-Values

P-value is one of the indicators for assessing the significance of a path coefficient. A p-value of 0.05 or less indicates a significant path coefficient

at a significance level of 5% (Hair et al., 2017). Hence, a p-value ≤ 0.05 needs to be obtained for a hypothesis to be proven significant.

2. T-Statistics (T-values)

T-statistics is a commonly used statistical measure to measure the significance of a path coefficient. A t-value larger than the critical value (t-table value) indicates a significant path coefficient. The critical value depends on the t-test type and the intended significance level. As this research will implement a two-tailed test with a 5% significance level, the critical value is 1.96. Therefore, t-statistics > 1.96 will indicate the significance of the path coefficient (Hair et al., 2017).

3. Path Coefficient

Path coefficient is a standardized measure that represents the relative size and the effect's direction of a particular independent variable to a dependent variable. A relevant path coefficient ranges between -1 and +1. A positive path coefficient indicates a positive relationship between the variables and vice versa (Hair et al., 2017).

3.10.1 Mediation Testing

Mediation can be defined as an effect in the dependent variable caused by an independent variable that previously affects a mediating variable in advance (Hair et al., 2017). Mediation can be assessed using indirect effect, in which, within a path diagram, it will be represented with a path involving two or more direct effects. Figure 3.2 below entails the procedure of mediation analysis as stated by Hair et al. (2017), as follows:

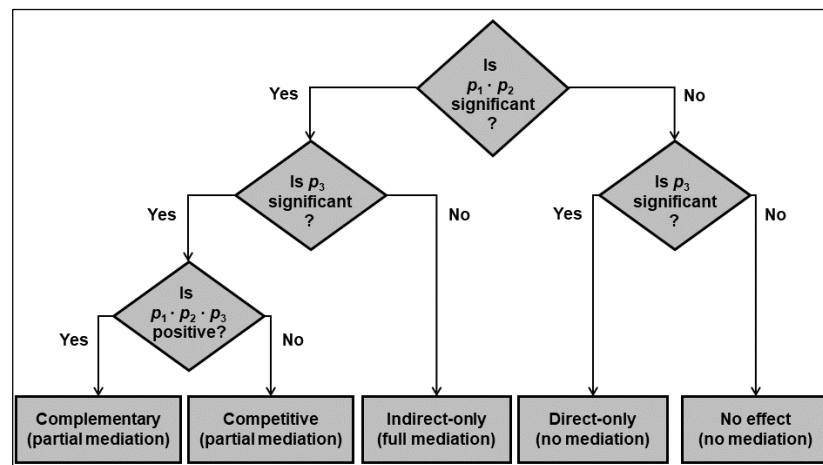


Figure 3.2 Procedure of Mediation Analysis

Source: Hair et al., 2017

Based on the procedure chart in Figure 3.2 above, there are some noteworthy points of description to comprehend regarding mediation analysis:

1. Complementary/Partial Mediation

Occurs when both indirect and direct effect of a path model is found significant in the same direction (positive/negative).

2. Competitive/Partial Mediation

Occurs when both indirect and direct effect of a path model is found significant but point in opposite directions.

3. Indirect-Only/Full Mediation

Occurs when the indirect effect is found to be significant but the direct effect is found to be insignificant.

4. Direct-Only/No Mediation

Occurs when the direct effect is found to be significant, but the indirect effect is found to be insignificant.

5. No Effect/No Mediation

Occurs when neither the direct nor the indirect effect is significant.