CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Object

The object of this study is finding the impact of covariate of supply chain management to the performance of supply chain management on Music Studio MSME in Bandung and Yogyakarta regarding to MSME Music Studio life sustainability. The supply chain impact on this research objective can be measured in subjective and objective measurement. The objective measurement of the impact of supply chain is using all of four variables as object of research. In accordance to the previous research stated that four variables that will affect the supply chain life sustainability on MSME (Ariani et al., 2013). In addition, the research object for subjective measurement is interview result on the perspective of owner to the job that has been done (Hill et al., 1992). In defining object of study, the researcher uses purposive sampling technique to find object (in this case is MSME music studio) which can and are willing to provide the information by virtue of knowledge or experience (Etikan, 2016).

3.2. Research Subject

The subject of research is MSME Music Studio in Bandung and Yogyakarta. The research has conducted to 100 MSME Music Studio (50 both Bandung and Yogyakarta). The number of populations has been fulfilled the requirement for direct measurement research is minimum 15 respondents (Gay & Diehl, 1996).

1. All studios have the salary about under 1 billion per month.
2. All studios have maximum 5 subcontractors/staffs.
3. The asset is about 0 -10 billion rupiahs

4. All studios have income about 0 - 50 billion rupiahs
5. All studios have been opened for more than 3 years.
6. All studios income come from at least 2 different sectors, which are music studio rent, and recording studio.

3.3. Collecting Data Method

3.3.1. Type of Data

There are two types of data used in this study. The description for each type described below:

a. Primary

   Primary data are data obtained directly from the research subjects which conducted by employing questionnaire and direct interview. The data that obtained in primary data are the result of likert questionnaires, Supply Chain questionnaires and interview in order to measure the impact of Information Sharing, Cooperation, Long Term Relationship, and Process Integration to Supply Chain Performance in MSME Music Studio.

b. Secondary

   Secondary data obtained from sources related to the researches that have been done before such as theoretical study that can support the research. For examples, such as published journals/papers, books, and information obtained through the internet. Then, the secondary data on this study are researches or articles obtained from article, book, journal and any other internet-based sources

3.3.2. Research Instruments

Research Instrument refers to the tools used in this study in order to collect or process the data. Instrument in this study includes:

1. Supply Chain Management Theory

2. Purposive sampling technique
3. Likert scale questionnaires in order to measure the effect of indicators in refers to supply chain effectiveness.
4. Multiple Linear Regression

3.3.3. Location

The research conducted in several places in Yogyakarta and Bandung as follows:

3.3.3.1. In Yogyakarta

Table 3.1 Yogyakarta's MSME Music Studio

NO	MSME MUSIC STUDIO's Name
1	HERVEST RECORDS
2	INTAN STUDIO MUSIC
3	GILANG RAMADHAN STUDIO MUSIK
4	GEGANA MUSIC STUDIO
5	CHARLIE STUDIO MUSIC AND RECORDING
6	AVILA STUDIO MUSIC AND RECORDING
7	LEXROST MUSIC STUDIO
8	RMP MUSIC STUDIO
9	OLIVINE MUSIC STUDIO
10	VOZ STUDIO
11	SPIDER MUSIC STUDIO
12	COLUMBIA MUSIC STUDIO
13	5150 MUSIC STUDIO
14	BUANA STUDIO
15	AGUSTA MUSIC STUDIO
16	PRINGGADING STUDIO MUSIK
17	FLOW STUDIO
18	LIBRA MUSIC STUDIO
19	NEO 2000 MUSIC STUDIO
20	RESOUL THE ART CENTRE
21	TUGU MUSIC STUDIO

22	AL MUSIC STUDIO
23	BC MUSIC STUDIO
24	ANDISA STUDIO
25	ORENZ MUSIC STUDIO
26	5150 MUSIC STUDIO
27	PARADIGMA MUSIC STUDIO
28	SEBELAS MUSIC STUDIO
29	HELIAWAN MUSIC STUDIO
30	DIBI MUSIC STUDIO
31	BEAT MUSIC STUDIO
32	SA MUSIC STUDIO
33	ARF MUSIC PRODUCTION
34	ROCKSTAR MUSIC STUDIO
35	STUDIO ONE
36	ANT-TRAX MUSIC STUDIO
37	GM MUSIC STUDIO
38	KOENTJI MUSIC STUDIO
39	BEATUS MUSIC STUDIO
40	BLUE MUSIC STUDIO
41	FOG
42	14 MUSIC STUDIO
43	ALDO MUSIC STUDIO
44	EROS MUSIC STUDIO
45	MY STUDIO FUSION
46	INTEREST STUDIO
47	BTP STUDIO MUSIK
48	SHALLY MUSIC STUDIO
49	ZALAZA
50	NEVERLAND

3.3.3.2. In Bandung

Table 3.2 Bandung's MSME Music Studio

NO	**MSME MUSIC STUDIO's Name**
1	Xiphos
2	Hitam Putih

3	Taz Studio
4	Licko
5	Stand's
6	Flux Inc
7	Remix Record
8	Matrix Musik
9	Killstudio
10	Sonick
11	R-9
12	Aru
13	Melodia Music
14	Santana
15	M-16
16	Cressendo
17	Riodic
18	Duff
19	Gils
20	dR-One
21	Az
22	Freedom Cell
23	MM
24	Airwaves
25	Feel
26	Soffa Music
27	M3 Studio
28	MJ
29	Shiver Music Studio
30	Hanggar
31	BSKY
32	Music Land
33	Kasuari
34	Lantai Dua
36	Pivot
37	Elsa
38	Bilik
39	Heaven Records
40	Bass
41	Triumph
42	Escape
43	Hole

NO	**MSME MUSIC STUDIO's Name**
44	Masterplan Recording
45	Studio 8 Audio
46	G - Musik
47	Holis
48	Albyara
49	Tali
50	Abbey Rode

3.3.4. Data Collection Method

Data collection methods that used in this research are consist of:

1. Interview

   Direct interview is conducted to the studios owner or people who related to the subject or object of research. Deep interview is conducted to understand the real condition of the studio. It is also for understanding the effect of supply chain indicators toward music MSME studio's withstanding. Any complaints and suggestions may have gathered to be an input for analysis and recommendation.

2. Questionnaire

   In purposive Sampling, subjects are selected based on study purpose with the expectation that each participant will provide unique and rich information of value to the study. The use of likert scale questionnaire in this research is in order to be more specific in gathering research's data. The different type of data needed for covariates and *y*, impact the decision of the use of likert scale questionnaire.

3.3.5. Data Collection Procedures

The data were collected by objective and subjective measurement. The data sample determined by Purposive technique sampling that satisfy all requirements explained

and performing all four variables of supply chain management. Firstly, the respondents are investigated and determined so that the respondents have to satisfy all requirements that has been mentioned. The data collection was conducted for the owner of the Music MSME as the respondent. Then, researcher convince that respondents are relatable to the objective of this research and has willingness to participate on this study. Moreover, respondents allowed to complete the prior to supply chain effect in order to sustain their MSME Music Studio as owner's responsibility and do the job naturally. Then, all data of objective measurement (supply chain variable) was collected. In addition, the respondents are allowed to take a rest before interviewed and subjective measurement. Moreover, the subjective measurement using standard questionnaire were measured. Before subjective assessment, researcher convince that owner has to be in motivation condition (Jex, 1988). It means that they have no private problem, conflict or forced while doing assessment. If the respondent is not in this condition, researcher rearrange the schedule for subjective measurement. Then, the subjective measurement was collected by using standard homogenous questionnaire (attached in appendices). Respondents do likert scale questionnaire for four variables and give rating scale for each indicator. When the likert scale given, the open interview is following the question to identify the problem and exact effect of supply chain effect toward their music MSME life sustainability. Lastly, to identify the exact problem, unstructured interview was assigned so that respondents can freely express their feelings and researcher can perform analysis on the deeper problem expressed. The interview protocol has been attached on appendices even it is not in arrangement for data collection. This interview includes MSME problem experience, psychological force felt, value stream perspective, some of theories or knowledges and opinion. Finally, it was closed by recapitulation on all data obtained in objective and subjective measurement.

3.4. Processing and Analysis

3.4.1. Questionnaire

This study uses primary data obtained by distributing questionnaires to selected samples where the questionnaire was filled in by self-enumeration. The research instrument given to respondents in this study is a list of questions covered in the six blocks of questions in this study consisting of:

1. Section I, namely the respondent's information which includes Studio Name, Phone Number, gender, along with Validation questions.
2. Section II, which is a section that contains 6 Information Sharing questions on supply chain management performance.
3. Section III, which is a section that contains 6 Long Term Relationship questions on supply chain management performance.
4. Section IV, which is a section that contains 6 Cooperation questions on supply chain management performance.
5. Section V, which is a section that contains 6 Process Integration questions on supply chain management performance.
6. Section VI, namely the block that contains questions about financial factors on supply chain management performance.

3.4.2 Variable Conceptual and Operational Definition

The following describes the conceptual and operational definitions of the variables used:

Table 3.3 Conceptual and Operational table

Research Variable	Operational Definition	Indicator
Supply Chain management Performance	SCM performance is a performance about the quality of activities related to the flow and transfer of	1) Financial (Wu et al., 2014)

Research Variable	Operational Definition	Indicator
	goods, from raw materials to end consumers, including those related to information and funds. (Desi Ariani, 2013)	
Information Sharing	Information Sharing (information sharing) is a continuous flow of communication between work partners both formal and informal and contributes to a better planning and supervision in a series (Desi Ariani, 2013)	1. Information disclosure (Kurniawan., 2017); 2. Information Flow; (Chang et al., 2013) 3. Information Quality (Chang et al., 2013)
Long Term Relationship	Long term relationship is the ability of a company to establish relationships with consumers because the company considers the relationship will bring cost benefits (Desi Ariani, 2013)	1. Maintenance of relationships with suppliers (Prajogo and Olhager, 2012); 2. The suppliers see the relationship as a long-term alliance; (Prajogo and Olhager, 2012) 3. View the suppliers as an extension of our company (Prajogo and Olhager, 2012).
Cooperation	Cooperation (cooperation) is actions that are coordinated equally or complementary	1. Advantages of problem solving; (Kurniawan, 2017)

Research Variable	Operational Definition	Indicator
	carried out by the company in collaborative and interdependent relationships to achieve joint results or single results in the reciprocation that is expected to be continuous (Desi Ariani, 2013)	2. Supplier involvement; (Kurniawan, 2017)
		3. Partner Relationship (Chang et al., 2013).
Process Integration	Process Integration is a combination of parts or activities to form a whole, integration can improve relationships in each value chain, facilitate decision making, allow value creation and transfer processes from suppliers to end customers to operate the flow of information, knowledge, equipment, and physical assets (Hamidin and Surendro, 2010).	1) Customer integration (Wong et al., 2011); 2) Internal integration (Wong et al., 2011); 3). Supply chain integration (Wong et al., 2011)

3.4.3 Research Instrument Grid

Based on conceptual definitions and operational definitions, it is then compiled in the form of a research instrument grid. In preparing statement items, research uses references from previous research and develops from understanding the concepts that have been built in this study. The research instrument grid is based on variables, indicators and division according to the type of question. As for the instrument grid in this study as follows:

Table 3.4 Research Instrument Grid Table

Variable	Indicator	BLOCK	Question Item		Number of Question
			Positive	**Negative**	
(1)	(2)	(3)	(4)	(5)	(6)
Information Sharing	Information disclosure (Kurniawan., 2017	**SEC II**	1,2,		
	Information Flow; (Chang et al.,2013)		3,4,		
	Information Quality (Chang et al., 2013		5,6		
		Total			6
Long Term Relationship	Maintenance of relationships with suppliers (Prajogo dan Olhager, 2012)	**SEC III**	7,8,		
	The suppliers see the relationship as a long-term alliance (Prajogo dan Olhager, 2012)		9,10,		

Variable	Indicator	BLOCK	Question Item		Number of Question
			Positive	**Negative**	
(1)	(2)	(3)	(4)	(5)	(6)
	View the suppliers as an extension of our company (Prajogo dan Olhager, 2012)		11,12		
		Total			6
Cooperation	Advantages of problem solving (Kurniawan, 2017)	**SEC IV**	13,14,		
	Supplier involvement (Kurniawan, 2017)		15,16,		
	Partner Relationship (Chang et al., 2013).		17,18		
		Total			6
Process Integration	Customer integration (Wong et al., 2011);	**Sec V**	19,20		
	Internal integration (Wong et al., 2011);		21,22		

Variable	Indicator	BLOCK	Question Item		Number of Question
			Positive	**Negative**	
(1)	(2)	(3)	(4)	(5)	(6)
	Supply chain integration (Wong et al., 2011)		23,24		
		Total			6
Supply Chain Performance	Financial (Wong et al., 2011)	**Sec VI**	25,26,27,28,29		5

3.4.4 Measurement Variable

The measurement scale used in this study is the Likert Scale. Likert scale is a measurement scale with five response categories that ranged from "strongly disagree" to "strongly agree" which requires respondents to determine the degree of agreement or their disapproval of each statement regarding the object under study (Malhotra, 2009). The scores given from Likert scale items are:

Table 3.5. Likert scale.1

No	Positive Item	Score	Negative Item	Score
1	Strongly agree	5	Strongly agree	1
2	Agree	4	Agree	2
3	Quite Agree	3	Quite Agree	3
4	Not Agree	2	Not Agree	4
5	Strongly Disagree	1	Strongly Disagree	5

Likert scale on the table 3.5 is used on questionnaire section II-V.

Table 3.6 Likert scale.2

No	Item Positive	Score	Item Negative	Score
1	Very good	5	Very good	1
2	Good	4	Good	2
3	Less good	3	Less good	3
4	Not good	2	Not good	4
5	Very not good	1	Very not good	5

The likert scale on the table 3.6 is used on section VI

3.4.5. Validity test

Validity is a measure that shows the levels of validity or an instrument (Arikunto, 2006). An instrument is said to be valid if it is able to measure what should be measured and can reveal data from variables that are properly examined. So that validity can show the extent to which a measuring device measures what you want to measure (Singarimbun and Sofian, 1995).

Validity is divided into three forms of measurement, namely content validity, predictive or concurrent validity and construct validity (James and Dean, 1999). Each type of expertise shows different ways of interpreting the degree to which a measuring instrument measures what is measured.

Content validity is also called face validity or logical validity. Content validity is used when the researcher wants to know the extent to which the contents of the measuring instrument represent all aspects considered as aspects of the conceptual framework (Silalahi, 2009). The more items or indicators that represent concepts or measured variables, the greater the level of content validation. Furthermore, predictive validity or kokuren is also called criterion validity or paragmetic validity. Predictive validity is related to external or more (Agung, 1992). While the validity of the construct is validity that shows the extent to which the test results are able to show a theoretical construct to be measured. In this study the validity used is content validity.

In this paper, the researcher uses more detail questions on the questionnaire because the researcher still doesn't know if the question is valid or not. In order to minimize the chance to have zero valid question, the research gives minimum four questions each based on the indicator of each variable.

3.4.6. Reliability test

Synonyms of reliability are stability, consistency, predictability, and accuracy or accuracy of a measure Silalahi (2009). Reliability refers to trustworthy means that the instrument can provide the right results. The instrument measuring instrument is categorized as reliable if it shows the measurement results, so it is proven that the measuring instrument can really be justified. According to (Arikunto 2006, p. 178) stated that reliability can show that an instrument is quite reliable to be used as a data collection tool.

Therefore, a reliable instrument will produce reliable data so that the data can be relied upon. The testing of this instrument aims to make the results of the research scientifically accountable.

The Cronbach Alpha coefficient is between 0 and 1. The correlation assessment criteria are:

Table 3.7 Assessment criteria

No	The Value of Cronbach's Alpha	Interpretation
(1)	(2)	(3)
1	0,000	Not reliable
2	0,000 – 0,199	Reliability is very low
3	0,200 – 0,399	Low reliability
4	0,400 – 0,599	Reliability is quite high
5	0,600 – 0,799	High reliability
6	0,800 – 1,000	Reliability is very high

Meanwhile there are also references that say that the minimum value of α for accepting reliability or reliability is 0.60-0.70 (Usman and Sobar, 2009)

3.4.7 The classic assumption test

The classic assumption test is a prerequisite that must be performed before carrying out multiple linear regression analysis, which is to determine the condition of the data used in the study. It is said to pass in each of these assumption tests if it meets the value limits that have become the provisions of each assumption test. The classic assumption tests that must be carried out in multiple linear regression include normality test, multi collinearity test and heteroscedasticity test.

3.4.7.1 Normality Test

Normality test aims to test and find out whether the information sharing variable regression model, long-term relationship, cooperation, process integration, and financial have a normal distribution or not, because according to Ghozali (2006) the regression model is good if it is normally distributed or the distribution of statistical

data on the axis diagonal from the normal distribution graph or its significance value> 0.05.

3.4.7.2 Multi collinearity test

Multi collinearity test aims to test and find out whether there are correlation or relationship between independent variables (product and price variables) (Ghozali, 2006). The multi collinearity test can be seen from the tolerance value and the VIF value that has been obtained through SPSS software which is said to be a regression model that passes the multi collinearity test if the tolerance value is greater than 0.1 and the VIF value obtained is not more than 10.

3.4.7.3 Heteroscedasticity test

Heteroscedasticity test aims to test and find out whether there are differences in residual values that are not the same from one observation to another in the regression model (Ghozali, 2006). The regression model is said to be free from the heteroscedasticity test if the significance value for each independent variable (product and price variables) is greater than 0.05.

3.4.8 Multiple Linear Regression Analysis

Multiple linear regression analysis can be used to determine how much influence the independent variable or the independent variable is the information sharing variable (X1) and the long term relationship variable (X2) the cooperation variable (X3) the process integration variable (X4) on the dependent variable or the dependent variable that is financial (Y). In this case the multiple linear regression equation is as follows:

$$Y = a + b1X1 + b2X2 + b3X3 + b4X4$$

where: Y: Dependent variable or dependent variable (financial) a: Constant b1: Information sharing regression coefficient b2: Long term relationship regression coefficient b3: cooperation coefficient b4: process integration coefficient x1: Information sharing variable x2: Long term relationship variable x3: Cooperation variable x4: Process integration variable

3.4.8.1 The coefficient of determination test (r2)

The coefficient of determination test (r2) is used to find out and predict how much the dependent variable (financial) is influenced by independent variables (information sharing, long term relationship, cooperation, process integration).

3.4.8.2 F Test

The simultaneous significant test (F test) is used to find out whether the independent variables (information sharing variables, long term relationships, cooperation, and process integration) have a significant effect on the dependent variable simultaneously or together. The significant value used is 5% (0.05). F test can be done by comparing the significance value and the comparison between the calculated F value and F table. Where is the formula to determine the F table, namely k; n-k (n is the number of respondents, and k is the number of independent variables in the study) using a significance level ($\alpha = 0.05$). The explanation for each test is as follows:

Make a hypothesis by comparing significant values:

a. Ho : b1, b2, b3, b4 = 0, meaning that there is no significant effect of the independent variables (information sharing variables, long term relationships, cooperation, and process integration) simultaneously on the dependent variable (financial variables)

b. H1 : b1, b2 > 0, this means that there is a significant influence between the independent variables (information sharing, long term relationships, cooperation,

and process integration variables) simultaneously on the dependent variable (financial variables).

2. Perform comparisons of F arithmetic and F tables (with 95% confidence level or 5% significance level ($\alpha = 0.05$)) a. If F arithmetic> F table then Ho is rejected and H1 is accepted, meaning that the independent variables (information sharing, long term relationships, cooperation, and process integration variables) simultaneously or together have a significant effect on the dependent variable (financial variable) b. If F arithmetic <F table then Ho is accepted and H1 is rejected, meaning that the independent variables (information sharing, long term relationships, cooperation, and process integration variables) simultaneously or together do not have a significant effect on the dependent variable (financial variable).

3.4.8.3 t Test

Partial test (t test) is used to determine the effect of variable X partially or individually on the Y variable. The hypotheses used in this t test are: Ho: $b1 = 0$, meaning independent or independent variables (information sharing variables, long term relationship, cooperation, and process integration) does not have a significant influence on the dependent or dependent variable (customer satisfaction variable) H1: $b1 \neq 0$, meaning that the independent or independent variables (information sharing variables, long term relationship, cooperation, and process integration) has a significant effect on the dependent variable (financial variable)

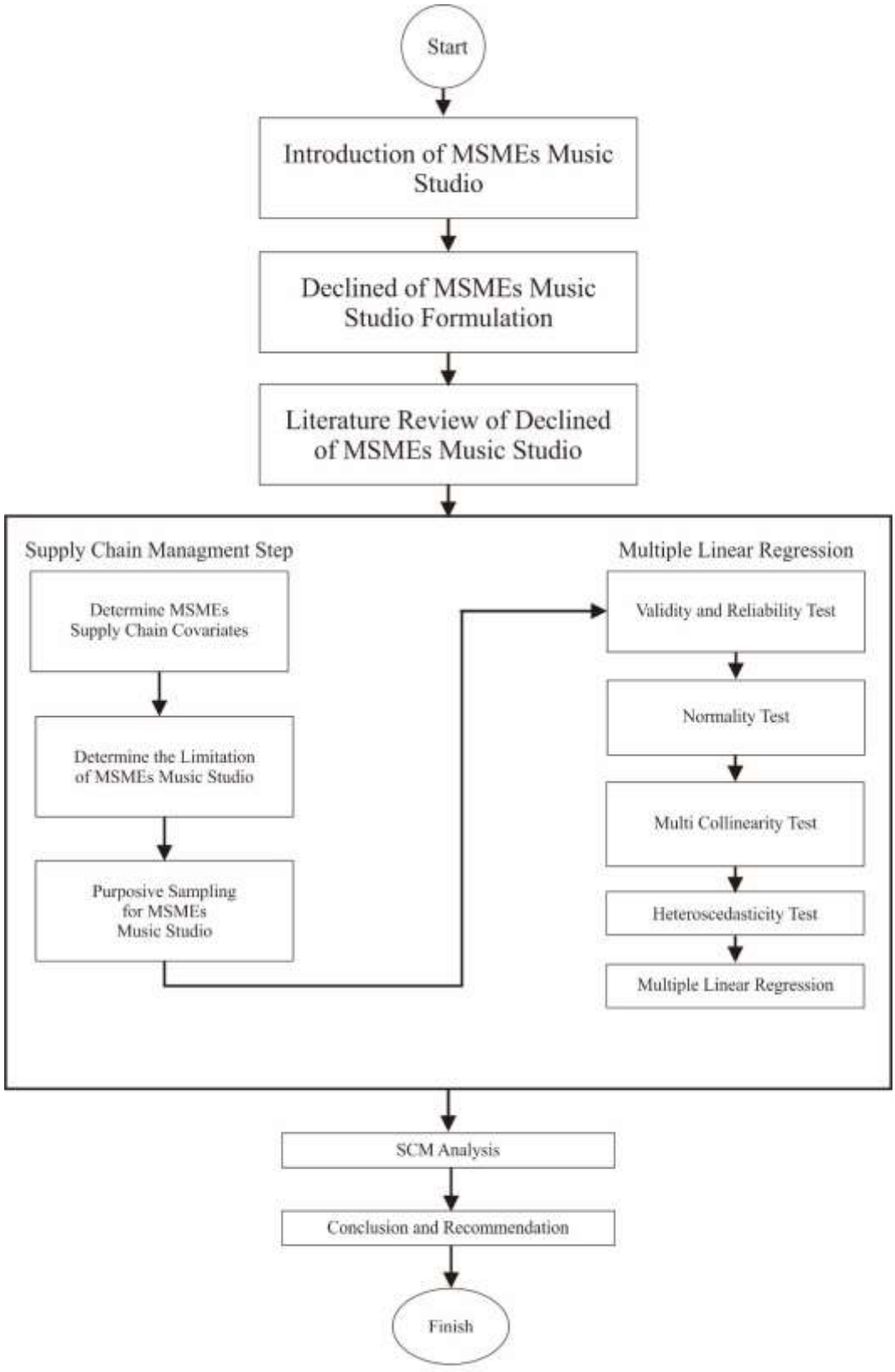
3.4.8.4 Partial Correlation

Partial correlation is used to analyze whether a variable has a significant relationship with other variables, if there is a relationship then how close the relationship is, and how far the variable affects other variables. The following is Table 3.4 to find out the relationship between variables according to (Sujarweni, 2014):

The basis for decision making in the partial correlation test is if the significance value (2-tailed)> 0.05, it can be interpreted that Ho is accepted and H1 is rejected, which means that the variable x does not have a significant relationship with the other variables. Meanwhile, if the significance value (2-cocktailed) <0.05, it can be interpreted that Ho is rejected and H1 is accepted, which means that the variable x has a significant relationship with other variables. Other decision making can be done by looking at the Pearson correlation value or r count with the value of r table in Table 3.4 above.

3.5. Research Flow Chart

After describing overall method, here is construction the flowchart from the beginning until the end of research. Flowchart of research shown on Figure 3.1 as follows



3.1 Flowchart Diagram

The analysis steps begin by analyzing the characteristics of MSME Music Studio in Bandung on December 2018 and Yogyakarta on January 2019 by limitating according to the MSMEs category. Then determine the influential variable and do purposive sampling technique. Next, to determine the Multiple Linear Regression model to obtain supply chain factors that influence the survival of MSME Music Studio. The first step is to test the significance of the parameters simultaneously and partially, then determine and interpret the ordinal logistic regression model. Next, to test the significance of the parameters individually, then determine and interpret the regression model. The next step is to test the suitability of the model by using a deviance test and calculate and interpret the accuracy of the classification of the model.