

CHAPTER 3

RESEACRH METHODOLOGY

This chapter explains about the methodology used by the researcher to do the research. The methodology is started from problem identification, literature review, marketing condition interview, find the weakest criteria using Pairwise Comparison, make the marketing strategy using SWOT, determine the marketing strategy criteria, sub criteria and the relation using Forum Group Discussion (FGD), decide the priority strategy using Analytic Network Process (ANP) and the last is conclusion. These required steps are explained in figure 3.1:

3.1 Problem Identification

Problem identification was the first step taken by the researcher to find the topic of the research. Problem identification consists of problem formulation, definition of research objectives and definition of research scope and limitations.

The author was found this problem from author's Supervisors project. Their project was about deciding disaster recovery program for women of Mount Merapi eruption victims in 2013 (Purnama, *et al.*, 2014). Therefore this project is continuation of theirs. This project take the same object with theirs but this research is talk about its marketing strategy. This research also using the same method with its previous research that is Analytic Network Process (ANP). Problem identification is discussed in Chapter 1 of this research.

3.2 Literature Review

After identify the problem, the next step was literature review. In this section, author reviewing papers on Marketing Strategy of Small Medium Enterprise for innovative product. After that author identify the criteria and sub criteria as the basic question of interview. One book of Lovelock & Wirtz (2011) is telling about marketing mix incorporated in 7P, i.e. product, price, place, promotion, people, physical evidence, and process. The 7Ps is used as the basic criteria of this research. Literature review and theoretical background is presented in Chapter 2 of this research.

3.3. Identify the Marketing Condition

The first step of data collection is doing the interview of object's marketing condition. The objective of this interview is due to get real information about the

situation and condition of this object. This real situation and condition would help author to make a decision about the alternative solution.

3.4. Find the weakest P of 7Ps using Pairwise Comparison

a. 7Ps Relation Interview

After know about the marketing condition, author did interview about the relationship of 7Ps. In this interview, researcher explained to the respondents the definition of each criteria and the respondents will decide which number of Pairwise Comparison value that described the situation of their SME.

b. Pairwise comparison

The first analysis would be identifying the weakest criteria of 7Ps using Pairwise Comparison. This process was being done manually by using Ms. Excel. There are two steps of this process i.e. calculation and consistency checks. In this analysis process the 7P would be determined each weight and ranked. First was determined the weight, the Fundamental Scale used for the judgments is given in Table 2.3. Judgments are first given verbally as indicated in the scale and then a corresponding number is associated with that judgment. The vector of priorities is the principal eigenvector of the matrix. This vector gives the relative priority of the criteria measured on a ratio scale. That is, these priorities are unique to within multiplication by a positive constant. However, if one ensures that they sum to one they are then unique and belong to a scale of absolute numbers.

The second is consistency check. Inconsistency may be thought of as an adjustment needed to improve the consistency of the comparisons. But the adjustment should not be as large as the judgment itself, therefore small that it would have no consequence. Thus inconsistency should be just one order of magnitude smaller. On a scale from zero to one, the overall inconsistency should be around 10 %. The requirement of 10% cannot be made smaller such as 1% or .1% without trivializing the impact of inconsistency. But inconsistency itself is important because without it, new knowledge that changes preference cannot be admitted (Saaty & Ozdemir, 2005). The third lowest ranking would be chosen to be continued to the next steps.

3.5. Make the marketing strategy using SWOT

a. Alternatives Solution Interview

The next data collection is about the alternatives solution interview. Researcher asked the comment of the respondents about the alternatives that author suggest to their SME based on the marketing condition interview. Researcher and respondent did a brainstorming due to get alternatives solution.

b. SWOT analysis

In this step, the alternatives solution of the third lowest weight of pairwise would be identified. SWOT Matrix is one of the well-known techniques in strategic management which is used to adapt internal strengths and weaknesses with external opportunities and threats. Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis is a commonly used tool which examines strengths and weaknesses (internal factors) of a company or industry together with opportunities and threats (external factors) of the marketplace environment. SWOT analysis provides the basic outline in which to perform analysis of decision situations (Görener, Toker, & Uluçay, 2012). Based on the strengths, weaknesses, opportunities, and threats of its SME, the alternatives would be identified. The strengths, weaknesses, opportunities, and threats known based on the interview in of marketing's condition of each SME.

3.6. Determine the marketing strategy criteria, sub criteria and the relation using Forum Group Discussion (FGD).

a. FGD of Criteria and Sub criteria

After the alternatives known, author and author's supervisors did a FGD to design the clusters and components of Analytic Network Process (ANP) method. In that FGD, the relationship between clusters, components in the same clusters, and components from different clusters identified. The FGD's material is based on the literature review in Chapter 2 and the last interview was about the scale of ANP between clusters, components in the same clusters and components from different clusters is determined.

b. Relationship of Criteria and Sub criteria

The last data collection was interview about the relationship of positive impact of alternative solution. This interview did to fulfill the ANP's pairwise comparison in Super Decisions software. The data collection will be presented in Chapter 4.

3.7. Decide the priority strategy using Analytic Network Process (ANP).

a. Make a model structure

The ANP model consists of clusters of elements connected by their dependence to one another. A cluster therefore allows one to think about grouping elements that share a set of attributes. The marketing mix is an example of a cluster whose elements are: price, product, promotion and location. The basic requirement when identifying clusters and their elements is that the elements be similar. The structure of the model is described by its clusters and elements, and by the connection between them. These connections indicate the flow of influence between the elements.

b. Pairwise comparison matrix

The assessment of pairwise comparison value is done subjectively by individuals who will evaluate the ANP's weighting. To minimize the level of one's subjectivity, the assessment can be done by a small group to evaluate the ANP. The results of this matrix will be used to perform the weighting towards the goal, cluster, sub-elements, and alternatives.

c. The Unweighted Super matrix, Cluster Matrix, Weighted Super matrix and Limit Matrix

The unweighted super matrix is constructed from the priorities derived from the different pairwise comparisons. The column for a node contains the priorities of all the nodes that have been pairwise compared with respect to it and influence it with respect to the control criterion market share.

The cluster themselves must be compared to establish their relative importance and use it to weight the corresponding blocks of the super matrix to make it column stochastic. A cluster impacts another cluster when it is linked from it, that is, when at least one node in the source cluster is linked to nodes in the target cluster. The clusters linked from the source cluster are pairwise compared for the importance of their impact on it with respect to market share, resulting in the column of priorities for that cluster in the cluster matrix.

The weighted super matrix is obtained by multiplying each entry in a block of the component at the top of the super matrix by the priority of influence of the component on the left from the cluster matrix. Each column in the weighted super matrix has a sum of 1, and thus the matrix is stochastic.

The limit super matrix is obtained from the weighted super matrix. To obtain the final answer the average of the progression of successive limit vectors was formed.

d. Synthesize

The last analysis is synthesize the result, extracting the raw numbers from the limit super matrix, idealizing and normalizing them.



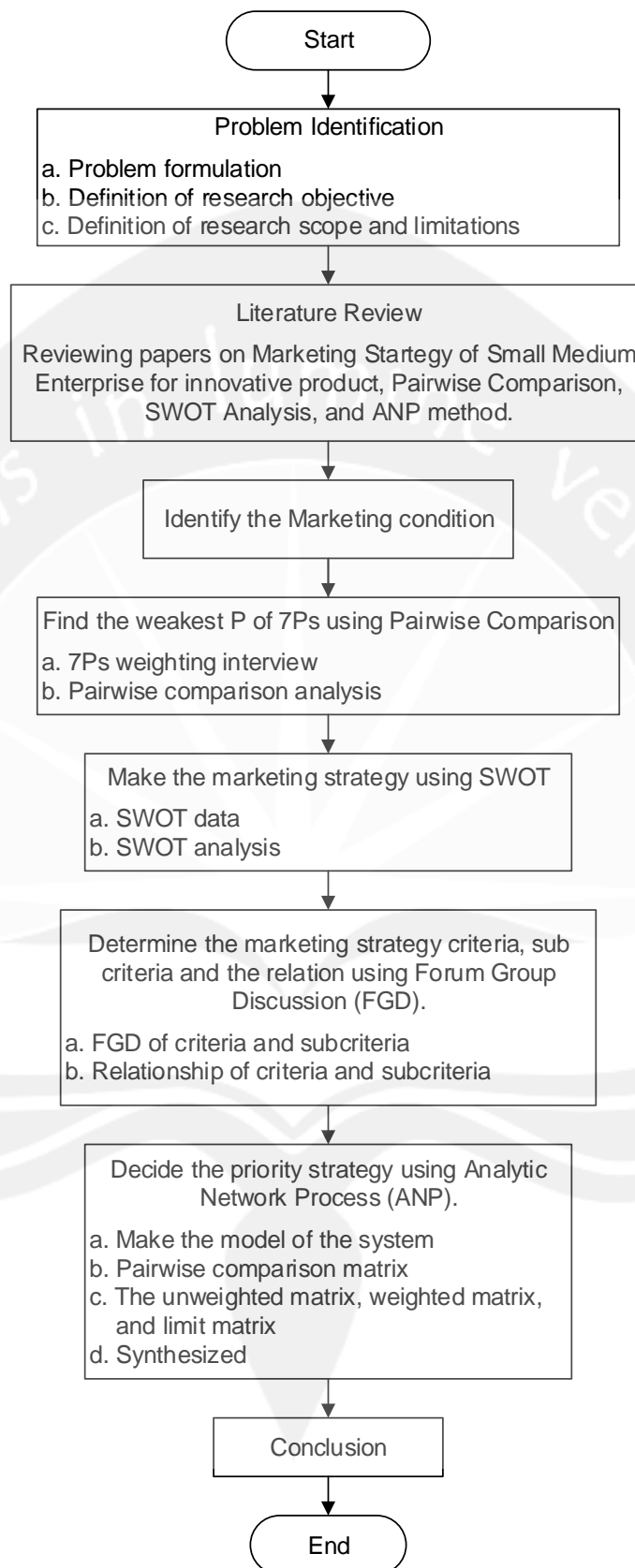


Figure 3. 1 Research Methodology