

CHAPTER II

METHODOLOGY

2.1 Conceptual Framework

In order to process this research, there are 7 components in a framework. Those consist the study of (1) marketing channels for mangoes in Kunming, (2) Hedonic Price Model, (3) Suggested Price for Thai Mangoes (in relation to consumer characteristics) Model, (4) Ranking Preference of Mangoes Model, and (5) Quality and Health Consciousness Model, (6) trade routes, exporting cost, and (7) import regulations (figure 2.1). After obtaining information from all 7 components, SWOT analysis was utilized to examine the strength, weakness, opportunity, and threat (qualitatively and quantitatively). Finally, conclusion will be drawn to show if Thai mangoes have potential to export to Kunming market.

2.2 Data Collection.

The conduct of data collection was processed in micro level – Kunming City, Yunnan Province. Primary data was derived from interview with five groups of people i.e. consumers, retailers at the fresh markets, retailers at the supermarkets, a wholesaler, and importers.

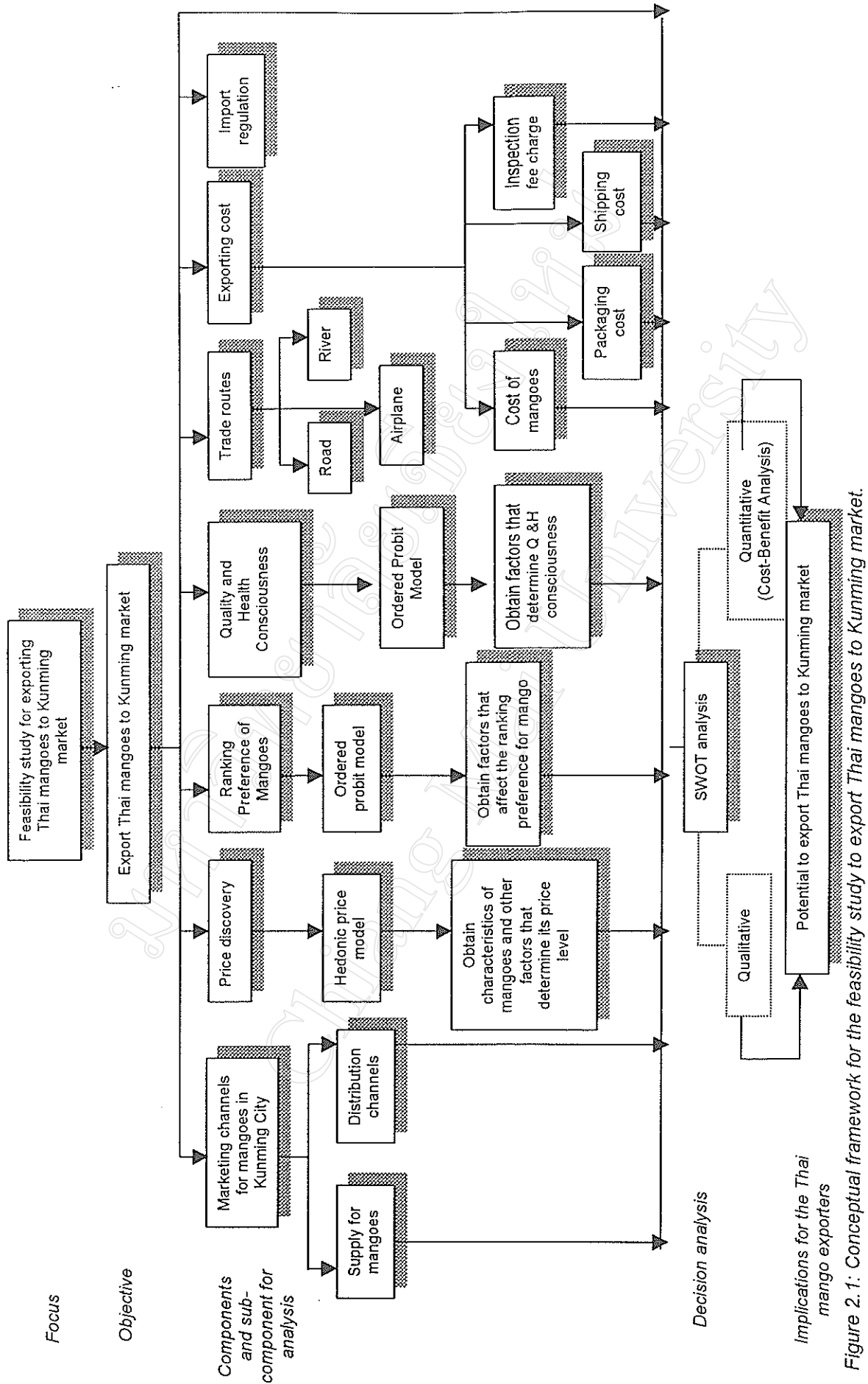


Figure 2. 1: Conceptual framework for the feasibility study to export Thai mangoes to Kunming market.

2.2.1 The Interview.

Questionnaires were constructed for personal interview with a group of respondents. The purposes of this survey are to (1) identify mango varieties in Kunming market; (2) investigate consumer preferences for fruits; (3) investigate difficulties in importing fruits; and (4) describe marketing channels for fruits in Kunming market.

1) The Interview with Households.

A sampling of the respondents based on zip codes in order to eliminate a biased selection. These areas cover Guandu, Xishuan, Dongchuan, An-ning, Fumin, Wuhua, Panlong, Chenggong, Jinning, and Fumin. Ten respondents from each area were selected randomly, totaling one hundred. Ten undergraduate Chinese students were employed to interview this group of respondents.

2) The interview with retailers at the fresh markets and supermarkets, and a wholesaler at the wholesale fruit market.

To interview retailers, Chinese students were hired to do the personal interview. Fresh markets selected included Dagan fruit store, Linjiaotang food market, Hongliang fresh market, West Station food market, Kunming Station food market, Longsiang Street fruit store, Xihua fresh market, West People's food market, Fengyu Street fruit store, Ma Street fruit store, Tudui

fresh market, Yangjiadi fresh market, Zong Shu Ying fresh Market, Xihua Block fresh market, Baima Block fresh market, and Yong Chang fresh market - a total of forty. Regarding supermarkets, though not every supermarket provides a fruit area/ section, there are four leading supermarkets which are now either have fruit sections or intend to do so in the near future. These four supermarkets are Sakura shopping center, Golden Dragon Department Store Co. Ltd., and Price Smart. Sales managers from each department store are in the position to provide relevant information. Apart from interviewing retailers at the fresh markets and the supermarkets, sales manager at the only one fruit wholesale market in Kunming – East Bus Station, was also consulted.

2.2.2 Questions for the Interview.

For interviewing households, questionnaires comprised household characteristics (i.e. family members, sex, age, education, household income), fruit and market place preferences, frequency of shopping, and purchasing behavior for fruits. In addition to household questionnaires, retailers were questioned regarding the availability of fruits each month, varieties of mangoes, sources of imported mangoes, wholesale and retail prices of mangoes, and percentage of market share of mangoes during the high season. In contrast, questionnaires assigned to interview with wholesalers were slightly different from retailers'. The main theme of the questions was to discover the sources and trade routes of imported fruits, market trend for mangoes, attitudes towards Thai mangoes and Kunming government policies on international trade, other Thai

fruits that Kunmingnese prefer, and market expansion of the wholesale fruit market.

2.2.3 Sampling Method.

Data obtained from the interviews with these five groups of people and preference testing with customers was broken through by applying a descriptive analysis, Hedonic Price Model (Polmquist and Munn, 1999) and Ordered Probit Model (Pindyck and Rubinfeld, 1998), and SWOT Analysis (Kotler, 1997).

2.2.4 Preference Testing

Preference testing is needed for this study. To obtain an unbiased estimation, Kunmingnese students were assigned to interview one hundred customers. The Thai mangoes, Choke Anan, were used to test consumer preference. This variety of mango is an all-year-round. Its thickness of peel is an advantage in terms of long distance transportation. Thus, this variety was selected for sample testing (see chapter 3). The testing directed to get a feed back from each respondent to realize the preferences of Kunmingnese.

2.3 Analytical Methods.

The Analytical methods will be explained, part by part, as follows:

The analytical method for the first objective: For the first objective, an investigation of the marketing channels for fruit was taken action by interviews a fruit wholesaler, retailers and importers.

The analytical method for the second objective: An ordered probit model (Pindyck and Rubinfeld, 1998) was employed to analyze ranking preferences of the Thai mangoes.

$$Y = f(\text{market, real, income, age, famsize, price, sex, u}) \text{-----} (2.1)$$

Where

1. Y is the ranking of mango preference

Y= 0 if mango is ranked as either 1st or 2nd choice among other fruits

= 1 if mango is ranked as the 3rd choice among other fruits

= 2 if mango is ranked as either 4th or 5th choice among other fruits

2. Real is the reason each respondent revealed from this question – “why do you purchase mangoes when there are other fruits available at the market?”

Questionnaire provided 4 alternatives – cheap, easy to buy (availability in the market), good taste, and good for health. They gave reasons by ranking (1= the most consideration, 4 = the least consideration)

Real = 1 if gives 1st and 2nd rank to good taste and good for health, respectively, and vice versa; 0 otherwise

3. Income = Household income (Yuan per month)

4. Age = age of each respondent (years)

5. Purchasing place = 1 if supermarket, 0 if fresh market

6. Famsize = number of family members (people)

7. Price = offered price for Choke Anand variety (Yuan / kg.)
8. Sex = 1 if female; 0 if male
9. U = error term

Seven factors are hypothesized to determine consumers' preferences for Thai mangoes (i.e. reason, income, family size, age, purchasing place, and price). According to economic theory business strategy that income influences a purchasing power (Pindyck and Rubinfeld, 1992) and purchasing behavior (Baye, 1997). As long as income increases, people are likely to prefer luxury goods to inferior goods. Since prices of high quality imported mango is higher than lower quality ones, purchasing power of household is a significant factor in decision making in buying. Not only does income reveal purchasing power, but also family size. The more members, the more expenditure, and thus the less purchasing power. Age reflects reasons of different generation behind purchasing mangoes. Real, which is good taste and good for health, was brought together find out expected benefits of consumers from mangoes. Sex, in addition, was united to find out if gender has relationship with ranking preference. Beyond this, the purchasing place is another relevant factor. Fruit sold in the supermarkets was more expensive than in the fresh markets. Income, market place, and real were supposed to show positive signs, while age and family size were expected to have negative signs.

The analytical method for the third objective: A hedonic price model (Polmquist and Munn, 1999) was employed to analyze the mangoes' characteristics that determined the price.

With reference to a utility function, it is consumer's pleasure derived from buying and using a product or service. Utility has an important psychological component. It is subjective depending on the taste and needs of the particular person (Pindyck and Rubinfeld, 1998; and Shim and Siegel, 1995). This Hedonic Price model quantifies offered prices based on consumer preferences of mango quality (i.e. size, color, taste, texture, and thickness of peel).

$$P = f(\text{size, color1, color2, taste1, taste2, taste3, texture1, texture2, peel, } u)$$

----- (2.2)

Where

1. P = a suggested price of Choke Anand (Yuan/ kg.)
2. Size = continuous variable (small size ~ 250 grams / fruit; medium size ~ 330 grams / fruit; and large size ~ 450 grams / fruit)
3. Color1 = 1 if yellow-orange; 0 otherwise
Color2 = 1 if yellow-green; 0 otherwise
(note that if both color1 and 2 are zero, it implies a reddish yellow)
4. Taste1 = 1 if sweet + sour + juicy; 0 otherwise
Taste2 = 1 if sweet + juicy + aroma; 0 otherwise
Taste3 = 1 if sweet + sour + juicy + aroma; 0 otherwise
(Taste will be sweet-sour-juicy-without aroma if all taste1, 2, and 3 are zero)
5. Texture1 = 1 if soft; 0 otherwise
Texture2 = 1 if moderate; 0 otherwise
(In case that texture1 and 2 are zero, it means hard texture)
6. Peel = 1 if thin, 0 if thick
7. U = Error term

The explanatory variables relate to mango attributes, market place, and consumer characteristics. According to a strategy to attract consumer attention (Wilkie, 1994), packaging is one alternative which reflects appearance of that product. Skin color and size are comparable to packaging, which defines consumer perception. What inside the product, such as texture, taste, and thickness of peel, are pursued.

Since most mangoes, imported from Myanmar and Laos and even domestic production, are yellowish green peel, while the rest are yellowish orange peel. It, therefore, was expected positive sign of color1 and 2. Since existing mango varieties in Kunming markets are thick peel with both sweet and sour taste and soft texture to moderate texture, hence forth, taste2 and 3, texture1 and 2, and peel were expected to have a positive relationship with the offered price. Apparently, purchasing place (i.e. supermarket) was hypothesized to have positive sign. (See explanation for income from 2.2)

Further than the Hedonic Price Model, Suggested Price for Thai Mangoes (in Relation to Consumer Characteristics) Model was invented to explain the relationship of consumer characteristics with the offered price.

$$P = f(\text{famsize, occupation, income, edu1, edu2, pos1, pos2, real, sex, u})$$

----- (2.3)

Where

Occupation = 1 if a respondent has business related; 0 if otherwise

Pos1 = 1 if husband; 0 if otherwise

Pos2 = 1 if wife; 0 if otherwise

Pos1 = Pos2 = 0 if progeny or grandparents

Edu1 = 1 if finished high school; 0 if otherwise

Edu2 = 1 if finished bachelor's degree or higher; 0 if otherwise

Family size, occupation, and income were foreseen to have positive sign, while the rest were unexpected.

The analytical method for the fourth objective: The fourth objective aims at studying the characteristics of consumers who tend to think of health and quality as a prior consideration for buying mangoes. An Ordered Probit was employed again to run an equation by using maximum likelihood estimation. Dependent variable relevant for this model is one of the independent variables from the Ranking Preference model (i.e. reason) (see 3.2.2). The reasons given for purchasing mangoes could be a proxy to measure health and quality consciousness of consumers.

$$Y = f(\text{edu2, famsize, sex, age, price, income, u}) \text{ ----- (2.4)}$$

Where

1. Y = 0, if a given reason is cheap and/or easy to buy
 - 1, if a given reason is good health
 - 2, if a given reason is good for taste
2. Sex = 1 if female; 0 if male
3. Price = offered price to Choke Anand variety
4. U = error term

Education and age reflect consumer rationales. The higher the educational level, the more quality and health consciousness. Gender has a potential in this

model. Generally females, particularly housewives, are more conscious about food nutrition than males (i.e. husbands). In contrast to 2.3, price was treated as explanatory variable. Offered price was expected relating with price/ purchasing place consciousness ($Y = 0$ from equation above).

As mentioned in 2.2, each respondent was asked to rank the given reasons for purchasing mangoes. This model was established to find out characteristics of consumers who are conscious of health and quality that be prior factors concerned for purchase. The more the score, the more a consumer was likely interested in quality of mangoes.

The analytical method for the fifth objective: The potential of exporting Thai mangoes to Kunming market was assessed by using SWOT⁷ analysis (Kotler 1997). Both qualitative and quantitative analysis was combined in SWOT analysis.

1. calculate the cost of producing mangoes and post harvest activities for one kilogram of mangoes
2. estimate the cost of domestic transportation, shipping cost to Kunming City by various types of trade route, certification price from a Thai Plant Quarantine, and import tariff imposed by Kunming Government
3. collect primary data of the wholesale prices of imported mangoes
4. compare the total cost with the discovered prices at Kunming market to determine the potential of exporting Thai mangoes

⁷ Strength, weakness, opportunity, and threat