CHAPTER 2

RESEARCH METHODS

In this chapter, the author will introduce the research methods as the following: the definitions of key terms and variables, conceptual framework, data and sampling procedure, data collection and data analysis.

2.1 Definitions of Key Terms and Variables

In this study, some terms and variables maybe unfamiliar to many readers, the following explains give correspondent introductions or definitions in needs.

Rural area

It is difficult to give a distinct definition of *rural* and *urban.* In my study, villages and rural towns of a few thousand or more inhabitants are included in the rural area, because their primary functions include agricultural processing, marketing, various other agro-based activities, and the provision of goods and service to the rural population.

Rural labor

By definition, the rural population is frequently confines to those persons living in farm households and in the small village settlements. Accordingly, the rural labor in my study refers to the labor among rural population.

Rural enterprise (RE)

Rural enterprise is defined here to refer to small town and village industry owned by townships or villages or private groups or individuals. It is distinguished from

state-owned enterprises and the factories operated at provincial and county levels, which are usually situated in larger towns and cities. Also it is distinguished from private industries in those urban areas. Generally, urban industry enterprises impact directly on urban employment. By contrast, rural industrial enterprises mainly hire rural labors.

Agricultural industrialization

In China, agricultural industrialization refers to a complex system, which includes all activities concerned with agriculture among all stages of pre-production, production and post-production (see Figure 1.2 Agricultural industrialization system). The purpose of rural industrialization is to build up a modern systematic industrialized agriculture to optimize the allocation of resources, improve the market efficiency and productivity of agricultural products, and finally to benefit the farmers as well as consumers of agricultural products.

Market intelligence is a concept broader than customers' verbalized needs and preferences in that it includes an analysis of exogenous factors that influence those needs and preferences.

Market orientation (Y_1) is the organization wide *generation* of market intelligence pertaining to current and future customer needs, *dissemination* of the intelligence across departments, and organization wide *responsiveness* to it.

Market intelligence Generation (Y2) is a process in that one or more departments engaging in activities geared toward developing an understanding of customers' current and future needs and the factors effecting them.

Market intelligence Dissemination (Y3) refers to the sharing, horizontal

communicating, even marketing the generated market intelligence across departments.

Market orientation Responsiveness (Y_2) is the action taken by various departments in response to market intelligence that is generated and disseminated to meet select customer needs.

Top management emphasis on market orientation (X1) refers to the degree of top management reinforcement of the importance of a market orientation.

Top management risk aversion (X2) refers to the proclivity of top management on risks that need to taken during a business decision-making process.

Interdepartmental conflict (X3) refers to the tension among departments arising from the incompatibility of actual or desired response.

Interdepartmental connectedness (X4) refers to the degree of formal and informal *direct* contact among employees across departments.

Organizational Formalization (X5) represents the degree to which rules define roles, authority relations, communications, norms and sanctions, and procedures.

Organizational Centralization (X6) refers to the inverse of the amount of delegation of decision-making authority throughout an organization and the extent of participation by organizational members in decision-making.

Organizational Departmentalization (X7) refers to the *number of departments* into which organizational activities are segregated and compartmentalized.

Reward system orientation (X8) refers to the instruments or measures used in shaping the working behaviors of employees.

Competitive intensity (X9) refers to the perceived intensity of the competition in certain industry.

Pressure from substitute (X10) refers to the measurement of the pressure from substitute product in certain category.

Product quality (X11) refers to the expectation of the product quality by evaluating several causal features.

Supplier power (X_{12}) refers to the degree of bargaining power of suppliers scored by an empirical detection.

Buyer power (X13) refers to the degree of bargaining power of buyers according to an empirical detection.

Entry barrier (X14) refers to the measurement of the threat of new entrants by detecting several causal factors.

Market turbulence (X15) refers to the frequency and diversity of the changes of the customers' demand on specified products.

Technological turbulence (X16) refers to the inventive changes in the areas of technology that affect the market of specified products.

2.2 Conceptual Framework and Concept Tables

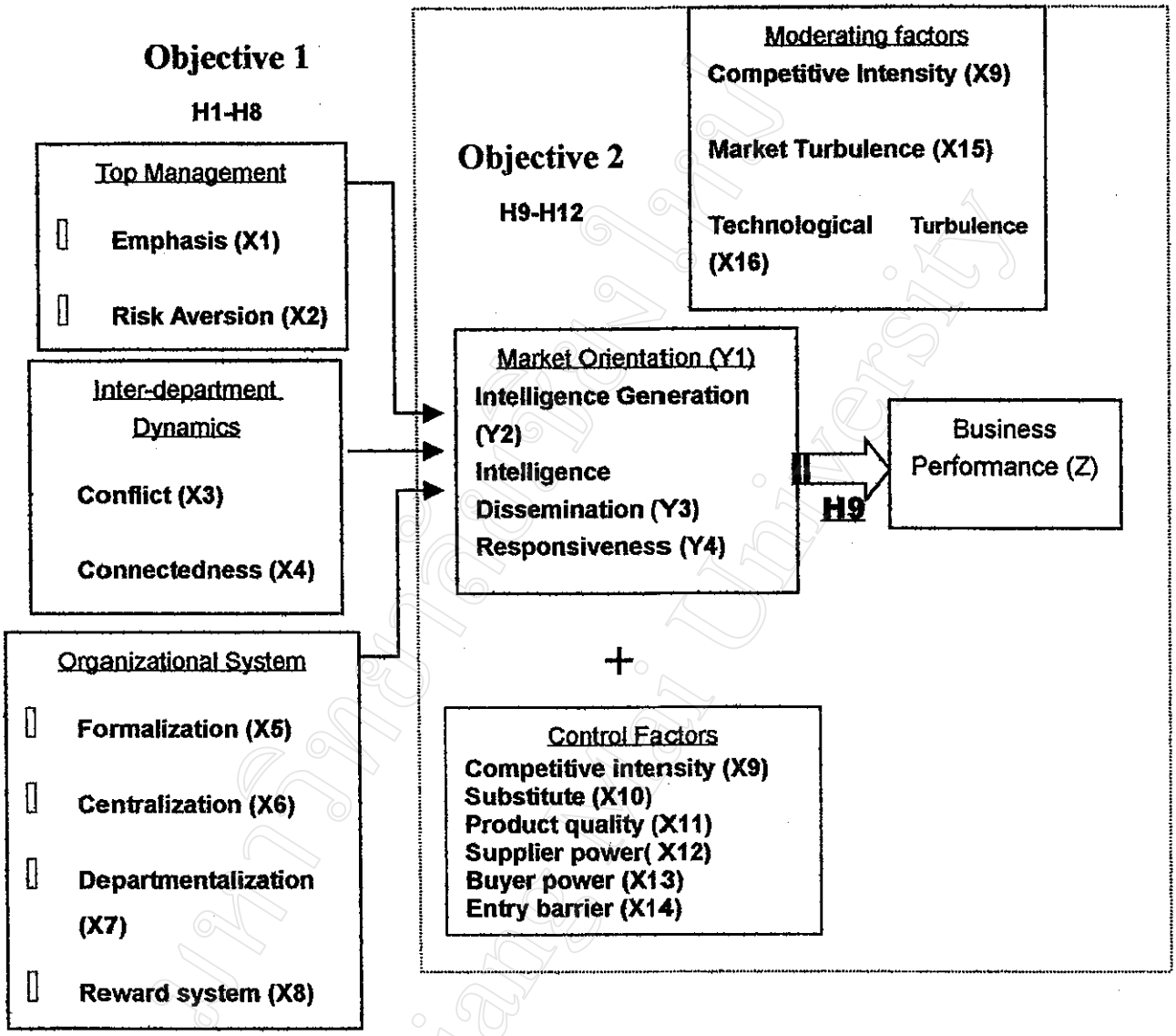

Figure 2.1: Framework of Market Orientation Analysis

To illustrate the whole MOM analysis framework more clearly, the concept tables are presented respectively as follow.

2.2.1 *Concept table for* Objective 1

The following is the concept table for objective 1, to test the preconditions of implementing MOM in rural enterprises. This table showed the proposed the effects

of those preconditions on the three aspects of MOM in RE.

Table 2.1 Proposed preconditions' effects on the three aspects of market orientation management in RE.

Proposed Preconditions (eight factors)	*1) Market Intelligence Generation (Y2)*	*2) Market Intelligence Dissemination (Y3)*	*3) Responsive-ness of the Organization (Y4)*	*Overall Market Orientation (Y1)*
Top management emphasis on MO X1 (4-item scale)	+	+	+	+
The risk aversion of top management X2 (6-item scale)	-	-	-	-
Interdepartmental conflict X3 (7-item scale)	N	-	-	-
Interdepartmental connectedness X4 (7-item scale)	?	+	+	+
Organizational Formalization X5 (7-item scale)	-	-	+	?
Organizational Centralization X6 (5-item scale)	-	-	+	?
Organizational Departmentalization X7 (dummy)	-	-	+	?
Reward system orientation X8 (6-item scale)	+	+	+	+

2.2.2 *Concept tables* for objective 2

In terms of market orientation effectiveness on business performance, Table

2.2 shows the brief introduction of regression analysis to test it.

Table 2.2 Independent variables and their proposed sign in regression analysis

Independent variables (7 factors)	*Dependent variable:* Business Performance (BP)
	Proposed sign on BP
Y_1 Overall market orientation, (sum value of 32-item score)	+
X_9 Competitive intensity (sum value of 6 items' score)	+
X_{10} Substitute (sum value of 5 items' score)	-
X_{11} Product quality (sum value of 5 items' score)	+
X_{12} Supplier power (sum value of 4 items' score)	-
X_{13} Buyer power (sum value of 5 items' score)	-
X_{14} Entry barrier (sum value of 7 items' score)	?

Note:

1) About units: based on 5-point scale scoring in the questionnaire, the unit of each variable is the sum value of the original corresponding item scores.

2) Notation: + positive; - negative; ? unknown;

Table 2.3 shows the analysis method for the tests of the three moderating factors on the linkage between market orientation and business performance.

Table 2.3 Three moderating factors' hypothesized effects on the linkage between market orientation and business performance

Three moderating factors	Hypothesized effects on the linkage between MO and BP
X_9 Competitive Intensity (sum value of 6 items' score)	+
X_{15} Market Turbulence (sum value of 6 items' score)	+
X_{16} Technological Turbulence (sum value of 5 items' score)	-

Note:

1) About units: based on 5-point scale scoring in the questionnaire, the unit of each variable is the sum value of the original corresponding item scores.

2) Notation: + positive; - negative

2.3 Data and Sampling Procedure

Cross-sectional data were used in this market orientation analysis. The secondary data were collected from government issues, publishes, and academic journals. The primary data were collected as following procedure.

An anonymous and confidential conduct was employed in the sampling process. Firstly, local academic experts and relevant officers were interviewed to refine the questionnaire. Secondly, several managers were visited to pre-test the questionnaire; then a well-designed questionnaire was achieved basing on the responses. Thirdly, a copy of the questionnaire, together with a reference letter and a return envelope, were distributed to some students to interview the rest REs. Finally, a total of 41 samples were used in the analysis. (See Table 2.4 on next page that shows the details of sampling process)

2.4 Data Collection

Secondary data: some relevant publishes and reports of government and institutions were reviewed to fulfil the general objective.

Primary data: the informal interview and formal questionnaire techniques were conducted to collect information for the analysis of the first and second objectives.

Sampling process: See table 2.4. The sample size is 54, the return rate is 92.6%, so a total of 50 middle and large sized rural enterprises (in which 11 were obtained from self-survey and 39 from student-survey) were drawn in Henan province with two criteria:

Employee number>=50;

Fixed asset (original value) >= 500,000 CNY (~ 2 million THB).

Table 2.4 Data sampling and collection

Original sample size	54	Sample criteria
Self-survey	**11**	1. Agri-related REs are preferred.
Student-survey	**43**	2. Fixed asset>=500,000 CNY
Retrieved sample number	50	3. Employee Number >= 50
(Return rate %)	(92.6%)	4. The informants at the key positions in the
Cause of sample-disposing	9	sampled REs are preferred in the interviews.
Duplicated sample	**5**	
Data missing	**4**	
Total sample used	41	

2.5 Data Analysis

2.5.1 How to quantify the data?

Since all primary data are cross-section data, the score of all multi-item constructs were computed by equally weighting and adding the corresponding item scores.

a) As a result, for the convenience of data handling, the overall market orientation score (Y_1) is the *unweighted sum score* of the three components of generation(Y_2) , dissemination(Y_3) , and responsiveness(Y_4) .

b) In this paper, the business performance was measured *by subjective perceived scoring*, which is defined as *the informants' perceived RE business performance*, and *measured by the informants' subjective evaluation*. The quantifying method is also *unweighted sum score*. The following are the reasons why the subjective measures are employed, but not the objective ones.

1) *Data collection difficulty:* in the data survey process, since the business performance data collection requires some business secrets, i.e. profit, cost, market share, etc. Most informants are reluctant to offer the real data, cause the deficiency of these samples.

2) *Measuring accuracy:* although the REs are sampled in one province, the objective data are collected from a different base in terms of RE location, industry, business environment, and data resource. That results in the variance of the objective data. Furthermore, the profitability of each industry is various. All these cause more doubts to the reliability of objective measures than that of subjective ones.

3) *Data handling variance:* because of the extremely broad size range of the sampled RE (fixed asset original value between *0.34* million Chinese yuan and *160* million CNY, and employee number between 35 and 4,000 person). If using objective data, there will be *multicorrelation and/or heteroskedasticity problem* in the regression analysis. It can not be corrected while only small number of samples are involved.

2.5.2 Antecedents of implementing MOM in RE (1st objective)

Related to the identification of the preconditions of implementing market orientation management, a set of linear regression equations will be constructed to conduct regression analyses.

$$Y_1=\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\beta_6X_6+\beta_7X_7+\beta_8X_8+\varepsilon_1$$

$$Y_2=\beta_1X_1+\beta_2X_2+\beta_5X_5+\beta_6X_6+\beta_7X_7+\beta_8X_8+\varepsilon_2$$

$$Y_3=\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\beta_6X_6+\beta_7X_7+\beta_8X_8+\varepsilon_3$$

$$Y_4=\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\beta_6X_6+\beta_7X_7+\beta_8X_8+\varepsilon_4$$

In which, ε_i ------Random error term

Dependent Variables:

Y_1------Overall market orientation

Y_2------Market intelligence generation

Y_3------Market intelligence dissemination

Y_4------Market intelligence responsiveness

Independent Variables:

X_1------Top management emphasis on market orientation

X_2------Top management risk aversion

X_3------Interdepartmental conflicts

X_4------Interdepartmental connectedness

X_5------Formalization

X_6------Centralization

X_7------Departmentalization

X_8------Reward system orientation

2.5.3 Consequences of market orientation management (MOM) on business performance (BP)

Pertaining to the effect of a market orientation on business performance, the employed linear regression equation is as following,

$$Z = \beta_0 + \beta_1 Y_1 + \beta_2 X_9 + \beta_3 X_{10} + \beta_4 X_{11} + \beta_5 X_{12} + \beta_6 X_{13} + \beta_7 X_{14} + \varepsilon$$

In which,

Z --- Subjective Business performance (sum value of 6 items' score)

Y_1 --- Overall market orientation (sum value of 32-item score)

Xs --- Refer to Table 2.2 above.

2.5.4 The test of three moderating factors' effects on the relationship between MOM and BP

For evaluating the proposed effects of the three moderating factors, including *competitive intensity, market turbulence, and technology turbulence.* The same linear regression equation, which has been used in section 2.5.3, will be conducted again, but this time the three factors were added into the regression equation as the

other three independent variables. It is through detecting the significance of the three factors' coefficient values to test the moderating effects of them.

$$Z = \beta_0 + \beta_1 Y_1 + \beta_2 X_9 + \beta_3 X_{10} + \beta_4 X_{11} + \beta_5 X_{12} + \beta_6 X_{13} + \beta_7 X_{14} + \beta_8 X_{15} + \beta_9 X_{16} + \varepsilon$$

In which,

Z --- Subjective Business performance (sum value of 6 items' score)

Y_1 --- Overall market orientation (sum value of 32-item score)

Xs --- Refer to Table 2.2 and 2.3 above.