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Quota Sampling Design Using Self-administered Questionnaire for Brand Loyalty Study in the Agriculture Retail Industry in Malaysia

Abaidullah Mustaffa[1], Faridah Hj. Hassan[2], Rosidah Musa[3] and Mariati Abdul Rahman[4]

[1,2,3] *Faculty of Business Management, Universiti Teknologi MARA Shah Alam, Malaysia*
[4] *Faculty of Arts and Science, Universiti Utara Malaysia, Sintok, Malaysia*
E-mail: ubaidi_westfield@yahoo.co.nz

ABSTRACT

Brand loyalty research involving quantitative approach using self-administered questionnaires needs respondents which are sampled from consumers from the proposed industry. Quota sampling which is non-probability sampling can be used to sample respondents from the population. This paper elaborates the quota sampling design strategy to sample consumers from the agriculture retail industry in Malaysia. The questionnaire was developed based on survey instrument development to identify the dimensional structure of attitude and brand loyalty in the agriculture retail industry in Malaysia.

Keywords: *Quota sampling, tripartite model of attitude, brand loyalty, attitudinal loyalty, affective loyalty, cognitive loyalty, conative loyalty.*

INTRODUCTION

Quota sampling has been selected to identify the dimensional structure of attitude and brand loyalty in the agriculture retail industry in Malaysia. This strategy could draw a large sample and representative sample from the population of agriculture retail industry in Malaysia to measure the attitude-behavior and characteristics of the sample. Tripartite model of attitude involving affective, cognitive and conative will be used during the deductive approach to analyze results statistically following the theoretical application. Since this theory has been used by several previous researchers then the results can be compared with current studies.

Quota sampling bears certain resemblance to stratified sampling (Bornstein, Jager & Putnick, 2013). In stratified sampling which is a probability sampling, the target population is first separated into mutually exclusive homogenous segments (strata) and then a simple random sample is selected from each segment (stratum). On the other hand, quota sampling is a nonprobability sampling procedure where the population is divided into mutually exclusive sub-categories and the data collectors solicit participation in the study from members of the sub-categories until a target number of elements to be sampled from the sub-categories have been met (Panacek & Thompson, 2007).

In quota sampling design the allocation of the number of elements to be selected for each quota category is based on their proportions in the target population. Statistical data on the Malaysian population from the Department of Statistics Malaysia will be used to determine the proportions in the target population involving proportions of sex, age, religion, race, marital status, income, educational levels, family size, amount spent and occupation. The researcher selects respondents according to some fixed quota, so that the total sample has the same distribution of characteristics assumed to exist in the population being studied. A sample involves a selection of a representative subset of a population in order to draw inferences to the population. Collecting data from a sample of a large population is far less costly and less time consuming as compared to a census.

Quota sampling enables the researcher to investigate a trait or characteristics of a certain subgroup (Bornstein, Jager & Putnick, 2013). It also allows the researcher to observe relationships between subgroups especially if traits of certain subgroup interact with other traits of another subgroup. When performing quota control over two or more variables, then

the fixed quota must be pre-defined to avoid sampling error (Burmeister & Aitken, 2012). That means, if the researcher wishes to get a sample of 400 respondents by using two fixed quota variables sex (50% male: 50% female) and age (below 50 years old: over 50 years old) then the fixed quota will be 100 male respondents below 50, 100 male respondents over 50, 100 female respondents below 50 and 100 female respondents above 50. If not properly defined the fixed quota can be 200 male respondents over 50 and 200 female respondents below 50 or otherwise.

BACKGROUND OF STUDY

Brand Loyalty

Brand loyalty is a psychological commitment to repeatedly re-purchase a preferred product or service brand and/or at a particular retailer in the future regardless of convenience or price (Jamaluddin, Hanafiah & Zulkifly, 2013). It is an intangible asset residing in the consumers' mind that defies situational influences to cause switching or defective behaviour (Jung & Yoon, 2012; Park & Jang, 2014). When consumers become committed or loyal to a brand then they will make repeat purchase over-time.

Agriculture Retail Industry in Malaysia

In the distribution channel, retailing is where the customer meets the product and exchange occurs especially for fresh agriculture produce. Consequently, retailing creates value by providing employment and money exchanged in retail sales and utilities provided by retailers create value for customers (Park & Jang, 2014). This research is timely to address the nation call for strategic direction to promote agriculture in the context of agri-food at domestic and international level. The Malaysian Ministry of Agriculture and Agro-based Industry had for the first time launched a National Agri-food Policy (2011-2020) emphasizing on the importance of transformation program for sufficient and safe agri-food to cater for local needs and eventually for export market. This paper will focus on the fresh agriculture produce marketed by the retailers in various retailing formats.

Table 1: Distributive Trade (Retail) in Malaysia

	2010	2011	2012	2013
Value of Sales (RM million)	205,358	216,821	239,395	264,933
Number of Workers ('000)	836	862	909	924
Salaries & Wages (RM million)	10,040	11,017	11,964	16,470

Note: Department of Statistics, Malaysia

According to the Ministry of Housing and Local Government of Malaysia, branded agriculture retailers for fresh produce are located at the hypermarket, superstore, departmental store, supermarket and mini-market.

SELF-ADMINISTERED QUESTIONNAIRE

There are many survey-based methods for collecting data such as personal interviews, telephone interviews, mail surveys, fax surveys, online surveys and self-administered questionnaire (Szolnoki & Hoffmann, 2013). Testing the hypotheses formulated for this study required a large sample size, therefore interview methods (personal or telephone) were deemed inappropriate due to cost and time consideration. Online, mail and fax surveys were also not suitable for this study because personal information is not easily released by respondents. Thus, this research used a self-administered questionnaire, a survey in which respondents assume the responsibility for reading and responding to the questions. This method enables the researcher to distribute numerous questionnaires to many respondents in different places simultaneously. Collecting data from various agriculture retailers at different locations can be done in a relatively short time period.

Research Objectives

The research objectives are: (i)To identify the dimensional structure of attitudinal loyalty in the agriculture retail industry; (ii)To examine the relationship between attitudinal loyalty and brand loyalty in the agriculture retail industry in Malaysia; (iii) To develop and test attitudinal loyalty measuring scale as independent variables (IV) in the agriculture retail industry in Malaysia consisting of affective, conative and cognitive loyalties; and (iv) To develop and test determinants measuring scale as mediating variables (MV) in the agriculture retail industry in Malaysia.

Research Questions

1.   What is the attitudinal loyalty and brand loyalty **dimensional structure** for agriculture retail industry in Malaysia?

2.   Which sub-dimension of attitudinal loyalty (affective, conative or cognitive) influence brand loyalty?

3.   What are the **relationships** between attitudinal loyalty and brand loyalty in the Malaysian agriculture retail industry?

4.   Which mediating variable/ determinant influenced the relationship of attitudinal loyalty and brand loyalty?

Theoretical Framework

This paper proposes using Tripartite Model of Attitude to explain attitudinal loyalty and brand loyalty in the agriculture retail industry in Malaysia. The Tripartite Model of Attitude (Han, Kim & Kim, 2011) is depicted below:
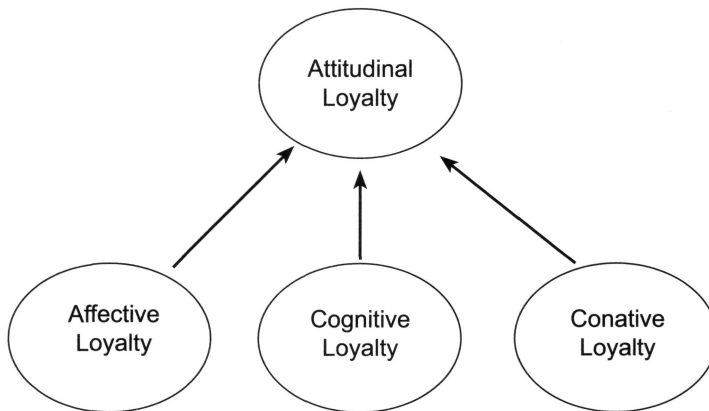

Figure 1: Tripartite Model of Attitude for Brand Loyalty

Brand loyalty is not only about the physical characteristics of a brand but about addressing the intangible components of a brand which is abstract and socio-psychological in nature. Tripartite Model of Attitude (TMA) has

its origin since the ancient Greek and had received widespread adoption and almost no criticism except criticisms on the nature of relationships among the three hypothesized components.

The self-administered questionnaires used in this quota sampling consist of measuring scales developed for attitudinal loyalty as the main dimension with three sub-dimensions. The measuring scales were also developed for the sub-dimension of attitudes namely affective loyalty, cognitive loyalty and conative loyalty. The measuring scales for brand loyalty were also developed as a single dimension. The assumption is that individual's attitudes predict their behavior which in this case attitude influences brand loyalty (Bobâlcă, Gătej & Ciobanu, 2012). The objective of this research is to unravel how attitude influences brand loyalty and which sub-dimension significantly influences attitude towards brand loyalty in the agriculture retail industry in Malaysia.

Mutually Exclusive Sub-categories

- The mutually exclusive sub-categories designed for this research are customers from branded hypermarket, superstore, departmental store and supermarket.
- Based on the literature review a sample size of 400 respondents is sufficient for this study (Burmeister & Aitken, 2012). Sample size of 100 respondents will be selected from each mutually exclusive sub-category.
- The selected variables were sex, age, educational level, occupation, income, race, religion, marital status, family size and spending amount.
- The fixed proportion or quota used will be similar to the population of Malaysia obtained from the Department of Statistics Malaysia. Accord to the Demographic Indicators of Malaysia 2013, the percentage of male is 51.46% as compared to female 48.54%. Racial percentage 2013 was 62.3% Bumiputera, 22% Chinese, 6.7% Indian, and the remaining was others (7.6%).
- Four branded agriculture retailers were selected and each branded retailer (each mutually exclusive sub-group) will be given a quota of 100 respondents.
- The quota sampling proportion used will be male (52 respondents) and female (48 respondents). The male and female respondents will have the quota proportion of Bumiputera (62%), Chinese (22%), Indian (6.7%) and others (7.6%).

- The age quota proportion will be simplified into below 40 and above 40 years old in equal proportion for male and female respondents.
- The religion quota will be similarly proportioned for male and female according to Islam (61%), Buddha (20%), Christian (10%), Hindu (6%) and others (3%).
- The quota proportion for not married will be 35%, married will be 60% and others 5%. The same proportion will be used for male and female.
- The quota proportion for educational background will be certificate (20%), Diploma (30%), Bachelor Degree (35%), Master Degree (10%) and Ph.D (5%).
- The quota proportion for occupation will be clerical (5%), Technician (5%), Accounting/Finance (5%), Manager (5%), Admin & HR (5%), Media & Communication (5%), Engineering (5%), Healthcare (5%), Computer IT (5%), Education (5%), Hotel & Restaurant (5%), Manufacturing (5%), Sales & Marketing (5%), Agriculture (5%), security/arm force (5%), legal (5%), Aviation (5%), Biotechnology (5%), Geology (5%) and government servant (5%).
- The quota proportion for income will be: RM1,000 – RM2,000 (10%), RM2,001- RM3,000 (10%), RM3,001 – RM4,000 (10%), RM4,001 – RM5,000 (10%), RM5,001 – RM6,000 (10%), RM6,001 – RM7,000 (10%), RM7,001 – RM8,000 (10%), RM8,001 – RM9,000 (10%), RM9,001 – RM10,000 (10%) and RM10,001 and above (10%).
- The quota proportion for family size is: 1 – 3 (40%), 4 -6 (40%), 7 and above (20%).
- Quota sampling involves approaching respondents to answer the questionnaire. However, if the quota already met the respondents will be excluded from the sample.

SELECTED RETAILERS' GEOGRAPHICAL LOCATION

This is a quota sampling research design and not a census (Panacek & Thompson, 2007). The selected geographical location is Klang Valley which includes Kuala Lumpur as the capital of Malaysia and the adjacent towns bordering Kuala Lumpur and Selangor. Klang Valley is the heartland of Malaysia's industry and commerce. As of 2013, the Klang Valley population is approximately 7.5 million people comprises of Malaysians and migrants.

For the purpose of this research Klang Valley will include Federal Territory of Kuala Lumpur, Federal Territory of Putrajaya, Shah Alam, Petaling Jaya, Subang Jaya, Klang, Gombak, Selayang, Ampang Jaya and Kajang.

The choice of Klang Valley as the selected retailers' geographical location is appropriate and the chosen demographic variables will perfectly mirror the population as a whole because Klang Valley is also the place where most Malaysians from all states migrated for employment.

Selected Retailers

The selected retailers are as follows:

1. Hypermarket which is a stand-alone self-service distribution store with sales floor area of 5,000 sq. metre or more retailing agriculture fresh produce e.g TESCO and MYDIN.

2. Superstore which is a self-service distribution store with sales floor area of 3,000 sq. metre to less than 4,999 sq. metre retailing agriculture fresh produce e.g GIANT and CARREFOUR.

3. Departmental store which is a distribution store with sales floor area of varying size engaging in retailing of agriculture fresh produce through self-service or with sales assistance e.g Sogo.

4. Supermarket sales floor area less than 3,000 sq. metre retailing agriculture fresh produce e.g Econsave.

Survey Procedures

Although random sampling is preferred over non-probability sampling for the generalization of the finding but random sampling is not a viable option for this research. In addition, the main research objective of this research is to test the tripartite model of attitude towards brand loyalty including the sub-dimensions of attitude – affective, cognitive and conative loyalty. Non-probability sampling is an acceptable method for a theoretical study to test hypotheses on how variables relate to brand loyalty and it could provide evidence in supporting or rejecting the theory tested (Mohammad Salehi & Chang, 2005).

Ethical Consideration

Respondents' consent is required to survey and measure their attitudes. Therefore, only customers who give their consent can be selected as respondents. This approach is essentially a non-random sampling. In order to minimize the drawback of using quota sampling, data were collected from different agriculture retailers and a non-bias test was conducted before analyzing the data.

Invitation to participate in this research were sent to five (5) hypermarkets, five (5) superstores, five (5) departmental stores and five (5) supermarkets. The letter contains information about the aim of the research and its significance to the agriculture retail industry in Malaysia. The retailers were ensured confidentiality and seek voluntary participation.

CONCLUSION

There are circumstances where researchers cannot uphold with the probability sampling technique such as not to access to a list of respondents. Unlike consumers of the retail industry, respondents are normally not registered. This situation does not permit the researchers to conduct random sampling procedures. When probability sampling is impossible, researchers have to opt for non-probability sampling like quota sampling. Despite being a non-probability sampling technique, quota sampling actually resembles stratified sampling which is a probability sampling technique. Statistically speaking, a large sample from quota sampling will produce a data set which is approximately a normally distributed data.

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