

Factors affecting buying behavior of consumers with loyalty cards

Research Project

By

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Declaration

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Abstract

The main objective of this research is to identify the factors that affect the consumer behavior, once the consumers are given loyalty cards. Recently many supermarkets, insurance companies, and similar products or service providers started giving loyalty cards to their consumers as a marketing strategy to retain their loyal customers.

Now a day, a single customer holds several loyalty cards and therefore, the basic idea of retaining loyal customers by issuing a loyalty card has arrived in to a complex situation. Therefore the need to find what factors that affects the customers buying behavior has risen and this study was able to provide many interesting findings.

The findings revealed that, customers who concerns mostly about the budget moves towards closer shops, low price products, free offers, and promotions and if they are having one loyalty card their attitudes towards above are higher. However male customers preferred buying free products and searching for discounts more than females. Further findings also showed that customers have different preferences towards trendy and new products, respect and friendliness shown on them and also about the time factor. Among these, many customers preferred to visit the shops that respect their customers and provide a friendly service and then the preference is towards the new trendy items. If customers have one loyalty card it is seen that if the above factors are same in all shops they prefer to move towards the shops that gives easy access and have less transaction time.

Factors such as responding to the place where the first loyalty card was given, responding to a famous place, or respond to a place where attendants show concern were unaffected by the gender or number of cards that the customer holds. When considering the promotional factors, customers preferred to have promotions on, vegetable/ fruits or grocery items the most.

Key words: Loyalty cards, Customer loyalty, Customer satisfaction, Customer buying behavior, Effects on loyalty.

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Abbreviations

Abbreviation	Description
SPSS v. 17	Statistical software for social sciences version 17
Df	Degree of freedom
R ₁	which is closest to me
R ₂	which offers low prices
R ₃	where the shop offers additional products, services for free
R ₄	which offers regular sales promotion or Discounts
R ₅	which sells current, fashionable or trendy goods
R ₆	where I'm treated with respect and in a friendly manner
R ₇	where I spend less time during transaction
R ₈	which is located where transportation, transiting is easier
R ₉	where the needed items can be easily located
R ₁₀	which has the best rewards for the loyal customers
R ₁₁	which has granted me with a loyalty card
R ₁₂	which granted me the first loyalty card
R ₁₃	where they are experts in the area of business
R ₁₄	where attendants show concern about my problem
R ₁₅	Vegetables/Fruit
R ₁₆	Beverages
R ₁₇	Grocery
R ₁₈	fish/meat
R ₁₉	Bath-ware



Chapter 1

Introduction

1.1 Background of the Study

Many industries in the market have a common set of target customers, therefore to succeed in the market; they try to gain a large customer base. To increase the share of the customer base, many marketing strategies are tested by the businesses frequently. But having a large number of customers attending to the business only once does not make a business stronger and stable. The strength and the stability of the business can be increased by retaining a large customer base within the business.

For the above purpose of attracting and retaining customers, many strategies are implemented by marketers. However in most cases of these implemented strategies, customers show their negative feedback due to their confusion rather than complimenting. The above situation arises when the customers think that they have become the victims of another marketing strategy which tries to trap them. Due to this fact, many strategies implemented by the marketers for the purpose of attracting and retaining customers within a business itself ends with reducing its potential group of customers (Berry, 2001). Human psyche and their preferences also have a direct relationship towards the success or failure of a business, but due to the fact that the human psyche and their preferences are changing, factors that affects the buying behavior also changes according to different customers and different times, and in order to remain stable in the market, businesses search for different methods to approach customers and attract them towards their products and services by market researches and trials in a repeated and a timely manner.

In Sri Lanka one of the most recently used and widely spreading marketing strategy, to attract, retain and identify the regular customers is the issue of a loyalty card, which gives the customer a value and many benefits in return for being loyal. In a broader manner if an industry has many businesses in different categories they design a single loyalty card that links all of its businesses with the idea of retaining the customers within their network in the market. This marketing strategy, known as a defensive marketing strategy is now being widely used by many businesses and therefore a single customer may own several loyalty cards. When a customer has several loyalty

cards, the basic idea of issuing a loyalty card to retain customers within the business is now being questioned.

Considering the above factors, this study tries to identify what are the factors affecting the buying behavior of customers with loyalty cards, in the region of southern province Sri Lanka.

1.2 Research Problem

Loyalty card concept has now become a widely used common strategy by many businesses, and the basic idea of customer being loyal to the business or the industry that has issued them a loyalty card is now being questioned. Therefore the newly immersed problem is that in a situation where a customer has several loyalty cards issued by different issuers, what are the other factors that affect them when selecting a particular business to buy products or services?

For the above identified problem, it was seen that there is a need to determine the factors affecting buying behavior of consumers with loyalty cards.

1.3 Objective of the Study



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In Sri Lanka several businesses such as supermarkets, insurance companies, and hotels issue loyalty cards to strengthen their customer base by providing benefits to the card holders. They do most often have a database of the loyal customers which helps them to study on their behavioral patterns. But the basic idea of issuing a loyalty card is not strongly valid in the present due to the fact that a customer may have many loyalty cards. Therefore for the purpose of determining the factors affecting buying behavior of consumers with loyalty cards, the objectives of this study are set to,

- Classify the factors in to several groups that possibly influence the buying behaviors of customers with loyalty cards.
- Find out whether those grouped factors are influenced by gender or number of loyalty cards and if so what factors are influenced the most.

1.4 Research Questions

Based on the above discussed problems and objectives. The questions for the research are identified as follows.

1. What factors can be categorized in to similar groups according to the buying behavior of customers with loyalty cards?
2. Does the gender affect the above factors in a considered group? If so, what are the most prioritized factors?
3. In a situation where a customer has two or more cards, does the number of cards affect the factors in a single group? If so, what factors are influenced the most?

The above research questions are answered in the final section and used to explore a valid conclusion.

1.5 Scope of the Study

This study has produced several meaningful and also interesting findings on the behavior of customers who holds loyalty cards.

The scope of this study is mainly related with the factors that affect buying behavior of customers with loyalty cards. It also relates with other assumed factors such as gender biasness on buying behavior.

For this study, loyalty card holders from southern province of Sri Lanka were chosen and a questionnaire which includes 18 different questions were given to answer and by analyzing the provided answers with proven statistical methods, several meaningful and interesting findings were concluded.

1.6 Chapter Outline

This thesis consists of five chapters and this section provides an outline of each chapter.

- **Chapter 1: Introduction**

This chapter gives an idea about the background of the study and includes an overview of the problem of this research, the objectives, the questions and scope.

- **Chapter 2: Literature Review**

The literature review provides a theoretical background which is being used for the purpose of making this research a valid research backed by proven theories. Many research findings which relates to this study and how this research has taken guidance out of them were discussed under this chapter. It also discusses on decision making process of customers, factors affecting buying behavior, loyalty programs, customer satisfaction, customer retention, and treating customers with respect, etc.

- **Chapter 3: Research Methodology**

This chapter concerns on providing necessary information on how the research has been conducted, it discusses in detailed on the spreading and usefulness of the questionnaire, the statistical techniques used to analyze the gathered raw data in to meaningful results. And also it discusses on the validity and reliability of the data and its effects on the research.

- **Chapter 4: Analysis and Results**

After all the data gathered from the questionnaire has been uploaded to SPSS v.17 (statistical package for social sciences). The data were analyzed and initially the basic statistics were obtained to summarize the data, and other useful analytical results which help to provide meaningful conclusions based on the study, the description and the meaning of each of the results are provided under this section.

- **Chapter 5: Conclusions, Suggestions and Recommendations**

This is the final chapter of this study and it provides the conclusions made out from the statistical analysis in the previous chapter. This chapter answers the research problem in relation to the findings of the study. Furthermore the limitations and, Recommendations and suggestions for further researches were provided under this chapter.

Chapter 2

Literature Review

2.1 Introduction

This chapter explains the theories used for the purpose of carrying out this study in a more successful manner. Many previous researches written on similar problems were studied and the most important theoretical factors were taken into consideration and pointed out in this section. Mainly this chapter consists of the theories behind loyalty programs, buying behavior of customers, their decision making process, factors affecting the customer satisfaction, and customer retention. Majority of the questions in the questionnaire were designed with the use of factors identified under this chapter.

2.2 Past Findings about Customer Loyalty and Loyalty Programs

Customer loyalty can be generally described as repeated purchasing behavior from a particular place, a product or service. In order to succeed the objective of loyalty, not only the efforts taken by the businesses but also the commitment of the customers play a major role, but however most of the work towards loyalty is done by the businesses, especially the brand or the store. Customer loyalty has a direct link with the degree of satisfaction that a customer has towards a product or a service. This results in more repeated purchases or more visits to receive the service, which implies that the customer has become more loyal to the product or service and the business has gained a strong loyal relationship with the customer.

Loyalty programs are widely being used as a strategy to retain potential customers for a longer period of time within a particular brand or store. The main idea of loyalty programs is to promote repeated purchases of a particular brand or service, from a particular business, and to build a long term relationship by providing benefits in return for the customers who are being loyal (McIlroy & Barnett, 2000).

Loyalty programs such as loyalty cards and loyalty points are used to encourage the customers on repeated purchasing, but it should not be considered as a strategy which makes a customer automatically loyal. Sometimes customers try to get advantages of the discounts given for their loyalty and they repeatedly visit shops just to get

discounts, when such situations occurs they affect to the business in an unfavorable manner (McIlroy & Barnett, 2000).

Researches also points out that, customers become loyal when they are informed that, being loyal towards a business would let them gain future rewards. And also a customer may also be influenced to buy loyalty program holders products or brands repeatedly by providing incentives towards their products (Peter C. 2003). Another important point that the marketers should aim at under loyalty programs is to award benefits considering the duration of being loyal towards the program, in this situation the customers would not easily switch to another program. But this reflects the same drawbacks towards the business also, because new consumers would feel reluctant to join the loyalty program since they are new and the rewards will be less. Therefore it should be done in a balanced manner.

Loyalty programs can also be recognized as a defensive marketing strategy which involves in customer retention, it provides a positive influence on protecting potential customers within the business (Peter C. 2003).

In Sri Lanka also it was found that loyalty cards have become a successful tool to retain the customers by providing them rewards for being loyal (Pieris D. and Udunuwara M. 2012).



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The loyalty cards are similar in appearance with bank debit/credit cards. They create value for the card holder by granting them many different special offers for being a holder of such a card. Loyalty cards offer many discounts and promotions and also some have point based bonus or reward systems, which gives bonus points for the card holder for their purchases.

The idea of loyalty cards is to retain the customer loyalty towards the business which leads to a long term strong relationship. It was seen that the implementation of the loyalty cards for the purpose of building a behavioral and altitudinal loyalty towards particular businesses were successful in Sri Lanka (Pieris D. and Udunuwara M. 2012), and this implies that people tend to have multiple loyalty cards. However, in some situations, customers can move to another product or service if they are not satisfied with the current product or service even if they have a loyalty card. This suggests that special offers or bonus points are only few factors out of the others that make a customer loyal towards a business. Because, economic factors are only under

a single category of what customers expect from a business (Boedeker, 1997). Due to the above reasons, this research tries to find, what other factors influence the buying behavior of customers in order to become loyal to a particular business.

2.3 Past Findings on Other Factors that Influence the Loyalty towards Businesses

It is a known fact that the success of a business depends on its loyal customer base and therefore identifying the factors that influence the loyalty of a customer towards a business, other than the loyalty cards, also helps the businesses to be stable rather than just issuing a loyalty card and waiting for the customers to be loyal. It was identified that customer buying behavior, decision making process, and satisfaction towards business clearly relates with their loyalty towards a business.

A similar research was conducted in Finland and the researcher determined that there exist other factors such as price, respect, closeness, emotions, and promotions which affect the buying behavior of customers, and the effect of the cards issued to the customers to become loyal was limited. (George Asamoah, 2012)



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2.3.1 Buying Behavior and Human Psyche towards Loyalty

Identifying customer buying behavior properly and delivering what they expect would result in securing its customer base by increasing the number of loyal customers that affects the stability of the business.

The consumer buying behavior is a complex and a continuous changing aspect and hence it is approached differently according to the situation it is considered. Main reason for this complexity is that it directly relates with the human psyche. Human psyche is also rapidly changing according to economic, social and emotional factors (Clark & Goldsmith, 2006). Due to the above reason it is necessary for the business to identify what are these changing behaviors of their customer base and provide them the expected satisfaction to make them loyal. There is a direct relationship between the success of a product or service and positive human psyche related to buying. Also the negative effect would lead to failure or unsuccessful product or service. This suggests that to implement a successful product or service it would be necessary to study and have a proper idea about the target groups' expectations for the purpose of

making them loyal. Therefore, human psyche plays a major role on customer loyalty towards a business.

The buying process of a human being basically starts from the childhood and it continues thereafter through teen, adult and matured ages. Due to the change in needs and wants at different stages of the lifecycle basic preference towards products or services changes and these preferences are also affected by various factors such as family background, cultural background, feelings, attitude, society, etc. This indicates why not all the consumers are having similar buying behaviors and why a better understanding about the market and the human psyche are important for the success of a product or service for the purpose of making the customers loyal.

2.3.2 Decision Making towards Loyalty

Buyer decision making process towards a product or service can be categorized mainly in to the following stages. But it has to be noted that at some situations not all the stages are undergone by the buyers, rather they skip or neglect few stages according to the situation and availability of products and services. These stages are summarized as in figure 2.1

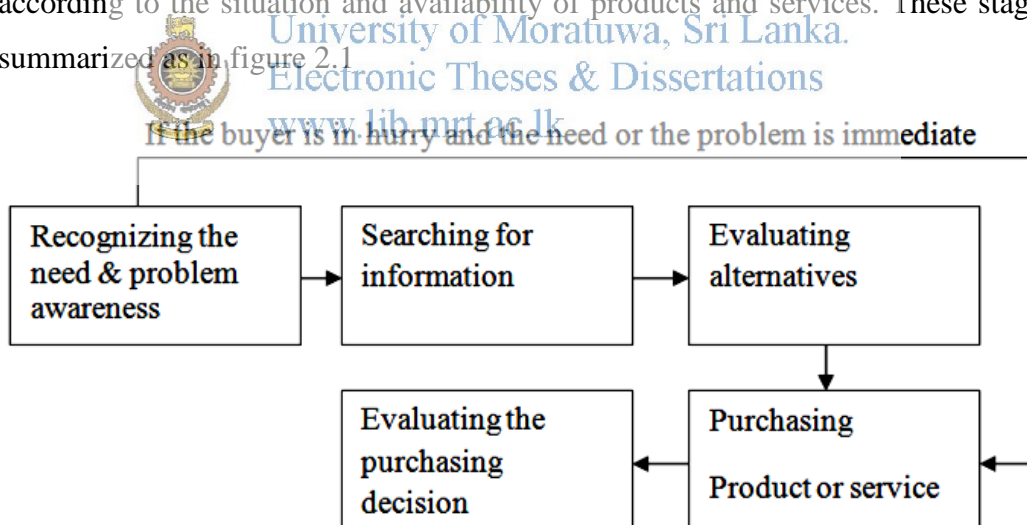


Figure 2.1: Decision making process of the buyer

Source: adapted from (Kotler. P, 1998)

The decision making process of a buyer starts with a proper identification of the need or the problem. Due to this need or problem being immediate or not the next stage is decided. If the need or problem is immediate and a product or service is nearby to satisfy it, buyer makes a quick decision to make the purchase. If it is not immediate buyer starts gathering information about products or services and if many alternatives

are available they will also be evaluated. For these two stages buyer receives the help of many sources such as personal, commercial, and public. Here personnel sources can be considered as relatives, coworkers, friends and other close companions. Commercial sources include sales people, advertisements, product packaging and etc. Public sources can be such as television, radio, newspapers, World Wide Web and etc.

The effective influence that these information sources create on the buyers' decision, varies depending on the buyer, but many researches show that they value personal sources the most. This includes word of mouth, and previous buyer experiences.

During the evaluation process alternatives will be compared and if the buyer feels an importance towards a particular choice of brand with respect to the perceived benefits upon others, purchasing of the particular brand is made (Jobber, 2001). And also high cost products or services increase the evaluation process while low cost products or services would reduce this evaluation process. However the marketers have to keep the competitive advantage of product or service by properly improving or marketing the products' important characteristics. More purchases of a product mostly occurs if the quality of product or service satisfies the consumer (Jobber, 2001). During the evaluation stage of the customers, marketers have the advantage of introducing new brands. Sometimes free trials of the product will attract new customers towards the brand and make them loyal towards it.

After the purchasing is made, the final stage explains the evaluation and making judgments on the decision. If the purchase was made among several other alternatives sometimes the buyer will feel that an alternative would have been better. This is known as "cognitive-dissonance". If this situation arises the customer holds the repurchasing of the same brand and will tend to try an alternative. Cognitive-dissonance increases in a situation when the alternatives have its unique benefit to the buyer. But this can be reduced by informing the customers that they have made the correct choice using the communication sources such as advertisements (Jobber, 2001).

The above decision making process indicates several important factors affecting the loyalty of customers. It indicates that during the stages of searching for information and evaluating alternatives, customers would consider about the benefits they will

receive if they purchase it from a shop that has offered them loyalty card. And if they have multiple loyalty cards then the same information search would be undergone to determine from what business they would get the maximum benefits.

2.3.3 Customer Satisfaction towards Loyalty

Customer satisfaction also affects the loyalty of customers towards businesses. It can be briefed as the measure of up to which extent a product or service satisfies the expectation of the customer with respect to the customers' level of expectations towards the particular product or service. If the satisfaction is high, the customer will decide to make a repeat purchase and will become loyal towards the product or service.

Many businesses try to motivate customers in order to make regular sales of their products and services, and they extend this to build a long term relationship with the customers so that the customers would not move towards competitors. This process is known as customer retention (Jobber, 2001). By providing a loyalty card many information about the customers buying behavior can be collected to a large database and through them the businesses can identify the changing needs of the customers and be ready to provide solutions to them, that is when a customer is ready to make a purchase of a product or service, businesses have to be ready with solutions that the customer expects from them to fulfill their needs or wants. In this approach businesses can maintain a strong long term relationship with their customers without losing them for competitors.

In many purchasing situations customer satisfaction has become a highly volatile factor which means that even though a customer is satisfied with a particular product or service they will tend to buy from other competitors if they feel that they give more quality and better valued products and services. Due to this, it can be clearly suggest that, although customer satisfaction is a major fact affecting buying behavior, it cannot be effectively related with customer loyalty. Therefore customer satisfaction towards a product or service is not a good indicator to measure or promote customer loyalty. Other factors such as convenience, location, and price are also identified to be influencing customers' choice in addition to customer satisfaction (McIlroy & Barnett, 2000). These factors cause some businesses to be rejected and some to be concerned. Why customers choose businesses in the above manner over another is

difficult to determine. However many responses suggests that most of the customers visit a particular business because the services and products are better. But, most of the times they come to this conclusion only by listening to their trustful sources and not by their own experience.

Creating a customer value and satisfying them for the purpose of making them loyal is not an easy task for the businesses; this is due to the fact that customers change their needs and wants according to the situation and they even differ from customer to customer. Researches show that, businesses which effectively operate in accordance with the five “pillars” shown below, end up with satisfying current customers, attracting new customers and retaining them all within the business (Berry, 2001). Therefore these five pillars are chosen as some of the variables that need to be tested on this research through the questioner. These five pillars are

- Determining and solving customers’ problems
- Treating the customers with respect
- Paying attention on customers’ emotion
- Notifying the fairest prices on goods
- Concern on customers’ valuable time

Source: (Berry, 2001)

2.3.4 Determining and Solving Customers’ Problems

Customers usually purchase a service or a product for a reason and that is to satisfy a need or to solve a problem. Therefore businesses have to concentrate on understanding the customers and selling them solutions with their services or products. For this matter businesses have to understand that only the high quality products are not enough, they have to recognize what customer needs and how it should be satisfied better than the competitors who are also concerned on satisfying the customers (Berry, 2001).

2.3.5 Treating the Customers with Respect

A fair treatment or respect should be shown towards all the customers regardless of any matter. Most importantly marketers also have to concern that hidden policies or costs would spoil the good image of the customer towards the business. Businesses should maintain competence and also sense of respect when treating the customers at

all times (Berry, 2001). If customers have undergone any bad experience or distrust they will not make further purchases from the particular business and will easily switch between alternatives (Debelak, 2006).

2.3.6 Paying Attention on Customers' Emotion

Businesses should try to pay concern on customers by showing them the feelings of closeness, care, and affection (Berry, 2001). Most customers prefer repurchasing from businesses which tell them the truth, concern on their emotions, and impress them with the service or products (Debelak, 2006). Customers are more attracted towards the businesses that have maintained a reputable name in the area of business. And also they search for friendlier, caring businesses that have the sense of being related towards them (Debelak, 2006).

2.3.7 Notifying the Fairest Prices

Setting the prices for any product or service should be done very carefully. The minimum price is not always expected by customers, because in cases of minimum pricing they might doubt that the product or service is of low quality. What customers really concern for is the fairest price for quality products. If customers feel the price is fair they tend to repurchase. Therefore a positive long term trusted relationship can be built with customers through fair pricing (Berry, 2001). If however customers get the impression that the business is taking a monetary advantage from the products or services by providing unfair prices they most often reject the seller because they start to suffer from psychological cost. Another important fact is that, if the potential customers felt that there would be a price reduction within near future, they do not feel comfortable on buying things hurriedly.

2.3.8 Concern on Customers' Valuable Time

Time is a crucial factor for potential buyers. In order to save the valuable time of the potential customers, businesses must provide adequate facilities such as easy access and parking, convenient and quick searching facilities of products and services, availability of demanding products at all the time, less queues, quick and accurate billing (Berry, 2001). The location of the business is also a major factor that is affecting its customer base, because most customers tend to visit shops that can be easily located, with less cost (Debelak, 2006).

2.4 Population, Sampling Techniques and Sample

Southern province Sri Lanka has a population on distribution of 2,477,285 (Census of Population and Housing, 2012) and this population can be categorized in to sex and age as follows.

Sex		Age		
Male	Female	0 – 14	15 – 44	44 above
1,194,541	1,282,744	621,922	1,071,056	784,307

Table 2.1 population categorized by sex and age
(Source: Census of Population and Housing – 2012)

The population for this research was considered as the customers in the southern province.

There are several sampling techniques such as random sampling where all the members in the sample have an equal and also a known chance of getting selected, systematic sampling where every member is selected from a sample, stratified sampling where initially the population is divided into subsets that have unique characteristics and within the subset random sampling is done (David S. Walonick, 1997 – 2010). However as this research is conducted in the southern province where the population data are known, market sampling technique is used because the characteristics of the research variables are required to approximate the population it is selected from (www.businessdictionary.com).

This research is conducted by issuing a structured questionnaire and the questionnaires were distributed in a random manner, expecting a collection of more than 200 questionnaires in return to use as the sample to estimate the population, because similar researches also have used sample sizes near 200 (Pieris D. and Udunuwara M. 2012) , (George Asamoah, 2012).

2.5 Data Collection and Analysis

For the purpose of collecting data structured questionnaire has several advantageous. They are easy to distribute within a large sample, the data gathered are easy to

analyze, respondents are not interrupted by the research instruments, and less biasness (David S. Walonick, 1997 – 2010).

Some past surveys conducted on market researches based on loyalty were also dependent on structured questionnaires for the purpose of collecting data (Pieris D. and Udunuwara M. 2012), (George Asamoah, 2012) and with the theoretical findings the questionnaire used by George Asamoah was initially piloted and some variables were changed, some were removed and few new variables were added.

For the purpose of clustering data it was observed that hierarchical method have several strengths such as, its versatility and producing multiple nested partitioning. It results in a dendrogram which contains the nested groups and the distance that changes the groups known as similarity levels. This gives the opportunity to select the groups according to a desired similarity level. Under hierarchical clustering, using agglomerative method where, initially all the objects are considered to have a cluster of its own and then the clusters are merged successively up to a desired level (Lior Rokach & Oded Maimon, 2005).

For the purpose of testing the variables, when is needed to check the significant association of two categorical data within a single population chi squared test is applied (StatTrek.com, 2015) and for the purpose of comparing two groups and their variables a non parametric rank based test called Wilcoxon-Mann-Whitney U test was found to be useful. This test combines two groups, arrange data in ascending order and rank them, then it test for any rank difference between the groups with the test statistic (Rand R. Wilcox, 2009). If more than two groups are needed to be tested the best test that can be applied is The Kruskal-Wallis test it tests whether all the groups are identically distributed and provides rank scores for each group (Rand R. Wilcox, 2009).

Chapter 3

Methodology

3.1 Introduction

The methods used to conduct the study were discussed, explained and highlighted under this chapter. Basically, strategies used on collecting the primary data, selecting a suitable sample for the study and the variables concerned were discussed. Furthermore, sampling method, analytical methods, the significance level used for testing, and validity and reliability of the research findings were discussed and explained under this chapter.

3.2 Research Approach and Strategy

The aim of this study is to determine the factors affecting buying behavior of consumers with loyalty cards. Therefore, for the purpose of identifying the influencing factors, a quantitative approach was identified to be more appropriate. Quantitative approach was used in many studies effectively whenever several different variables are needed to be tested or compared. Considerable amount of factors under several existing theories were taken into consideration in the process of developing a proper strategy for this study, and they were tested using proven statistical methods for their significance, relativity, validity and influence on the concerned research topic.

There are few advantageous found to be important under quantitative study relative to this research and the main advantage is that, it uses numbers rather than words. Thus better conclusions can be made when the structured questionnaire is properly coded. Once the answers are coded accurately, necessary factors can easily be analyzed using appropriate statistical tests for their significance towards the goal. However the quantitative study also have some weaknesses, such as, the need of many participants, responds of the participants have to be minimized to a scale, to stop receiving overwhelmed results which would make the research more complicated. And only the factors that the questionnaire concerns can be tested.

3.3 Primary Data Collection

Studies shows that there are about six common methods used for the purpose of data collection, such as questionnaires, literatures searches, observation, interviews, focus groups, and telephone surveys (David S. Walonick, 1997 – 2010).

Primary and secondary are two different data categories. Primary data are the data that are gathered afresh directly, as they are gathered directly and afresh they can be assured as original and natural data. Once data has been effectively used for a purpose it becomes secondary. They are also useful in some studies but according to the objective of the study researcher decides which data are the most appropriate.

Delivering a questionnaire has the advantage of collecting primary data in large quantities without any personnel interaction with the correspondents. As they are written information the researcher can easily handle and even check for data accuracy whenever required. Questionnaires also give the advantage to the researcher to limit the responder to only provide answers within the study framework, but in this situation researcher has to make sure that the questionnaire is of high standards. Developing a high standard questionnaire consumes considerable amount of time and repeated pilot tests, once the researcher is confident with the questions after several tests, it can be finalized and used for the purpose of the research.

This study needs primary data gathered from large number of random correspondents, therefore survey method by questionnaire is found to be most appropriate and hence it was used as the data collection method. Finalized questionnaire was distributed randomly to respondents chosen at different shopping centers in southern province Sri Lanka and the returned fully filled questionnaires were collected with the intention of filtering and selecting the suitable responses under the considered target group.

3.4 Target Group

For the purpose of this study several restrictions had to be implemented to select the most appropriate target group.

The first restriction is that the responder has to have at least one loyalty card. This restriction was made to avoid the responses of non loyalty card holders affecting the final conclusions which would violate the research topic.

Secondly, the age barriers were set such as <18, 18 to 45, >45 and only the respondents between 18 and 45 were chosen for the analysis. This restriction was implemented because, respondents between 18 and 45 were assumed to be price sensitive and are willing to search for new brands and services without being stuck in to only one (George Asamoah, 2012).

The analysis and the final conclusions were made based on the results obtained from customers falling within the above mentioned target group. In this study, under the market sampling method, 400 questionnaires were distributed and out of which 236 questionnaires were received filled in full. But, 29 were declared not valid for the purpose of the study because they did not satisfy the target group requirements. Therefore the sample considered for the research had 207 accepted questionnaires.

3.5 Summary of Variables

Fourteen different variables affecting the buying behavior of consumers were tested using the questions from 4 to 17 in the questionnaire. They were tested under an ordinal scale where, 5 (strongly agree) to 1 (strongly disagree). The purpose of this is to let the respondents easily select their choice.

The 18th question was testing for a priority factor of customers where they would like to have more discounts on. It was tested under a nominal scale from 1 to 5, and also a tick would represent the 1st choice and no response meant that it was their last choice.

The basic information about respondents was gathered by the first 3 variables. Gender and number of loyalty cards were under the nominal scale, and age was given a range. To find whether the respondents fall within the accepted target group, number of cards and age range was tested.

3.6 Data Analysis

The data were analyzed using SPSS 17.0 v (Statistical package for social sciences) software, under the following appropriate statistical methods and the received outputs were displayed in relevant sections of this study. The significant level for the study was chosen as 5% significant level, which means that the probability of rejecting the null hypothesis in a wrongful manner, when it is initially assumed to be true, is only 0.05.

3.6.1 Chi- Square Test

Chi-square test is a measure of difference between observed frequencies and expected frequencies of several variables.

Chi- square test for several variables can be interpreted as,

$$x^2 = \sum_{i=1}^r \sum_{j=1}^c \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

Where,

O_{ij} : Observed frequency for the i^{th} row j^{th} column variable

E_{ij} : Expected frequency for the i^{th} row j^{th} column variable

r : Number of rows

c : Number of columns

Degree of freedom (df) of a Chi-Square distribution is considered as,

$$df = (r - 1) \times (c - 1)$$



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Chi-squared one variable test is used to test whether there is any difference under a certain significance level between expected and observed frequencies of one or more than one category.

Chi-squared one variable test,

$$x^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where,

O_i : Observed frequency for the i^{th} variable

E_i : Expected frequency for the i^{th} variable

Degree of freedom (df) of a Chi-Square distribution is considered as,

$$df = (k - 1)$$

3.6.2 Cluster Analysis

Cluster analysis is mainly used for the purpose of partitioning variables in to several different sub-groups according to their similarities. It is being used in this research to categorize the tested variables in to several groups according to the similarities shown due to the responses towards those variables.

Grouping of the variables was done using agglomerative hierarchical method. This method initially consider the variables that are close together and join them and then a third variable joins with first two variables or new two variables are join as a separate cluster, this continues until all clusters are joined into a single cluster observation. This process can be summarized as a diagram using a dendrogram, it represents the set of nested clusters arranged as a hierarchical tree.

In the above process, initially it is considered about the basic measure of similarity. By the same time theoretical justification for the considered clusters was also made so that a meaningful interpretation for each cluster can be stated.

As mentioned above it is needed to measure of the similarity between each pair of variables in order to move on in the clustering process. Therefore this study uses the method of Euclidean distance as it is one of the commonly used methods. The distance measure was made using,

$$D_{ij}^2 = \sum_{k=1}^n (x_{ik} - x_{jk})^2$$

Where,

D_{ij} – the distance between object i and j

x_{ik} – the value of k^{th} characteristic for the i^{th} object

x_{jk} – the value of k^{th} characteristic for the j^{th} object

n – the number of variables

3.6.3 Wilcoxon-Mann-Whitney U test

In order to compare two independent groups of ordinal level measurements, the Wilcoxon-Mann-Whitney U test can be used. In this study it was used as a non

parametric test, to test whether two samples are identically distributed or not. Hypothesis associated with this test is,

Null Hypothesis (H_0) : Two samples are identically distributed

Alternative Hypothesis (H_1) : Two samples are not identically distributed

Here the null hypothesis is tested with,

$$Z = \frac{U - \frac{n_1 n_2}{2}}{\sigma_u}$$

Where,

$$\sigma_u^2 = \frac{n_1 n_2 (n_1 + n_2 + 1)}{12}$$

$$\frac{n_1 n_2}{2} = \text{mean of } U (\mu_u)$$

σ_u = Population standard deviation of the data U

n_1, n_2 = Two sample sizes

For the above test the null hypothesis is rejected if $|Z| \geq c$, where c is $1-\alpha/2$



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3.6.4 The Kruskal-Wallis test

Kruskal-wallis test is an extension on Wilcoxon-Mann-Whitney U test. It is used for the purpose of comparing more than two independent groups which contains ordinal level measurements. It is being used in this study to test whether more than two considered samples are identically distributed, and hence to find whether there is a rank difference between groups. The hypothesis associated with this test is,

Null Hypothesis (H_0) : $\mu_1 = \mu_2 = \mu_3 = \dots \dots \dots \mu_k$

Alternative Hypothesis (H_1) : $\mu_i \neq \mu_j$: for at least 1 set of i and j where $i \neq j$

Initially all N number of observations in all the groups will be pooled and ranked. Ranks are assigned in such a way that the smallest observation gets a rank of 1, next smallest gets a rank of 2, and so on.

Then The sum of ranks for each group becomes $R_j = \sum_{i=1}^{n_j} R_{ij}$ (where $j = 1, \dots, j$).

Here, R_{ij} is the rank of the i^{th} observation in the J^{th} group (x_{ij}).

When there are tied values, mid-ranks are used. And the test statistic for Kruskal-wallis test is

$$T = \frac{1}{s^2} \left(-\frac{N(N+1)^2}{4} + \sum \frac{R_j^2}{n_j} \right)$$

Where,

$$s^2 = \frac{1}{N-1} \left(\sum_{j=1}^J \sum_{i=1}^{n_j} R_{ij}^2 - \frac{N(N+1)^2}{4} \right)$$

If there are no ties, then,

$$s^2 = \frac{N(N+1)}{12}$$

And the test statistic simplifies to,

$$T = \frac{12}{N(N+1)} \sum_{j=1}^J \frac{R_j^2}{n_j} - 3(N+1)$$

For large samples with a degree of freedom = k-1 for which k>2 where k is the number of independent samples, this statistic approximate to chi-square distribution with k-1 degrees of freedom, the critical value becomes approximately equal to 1- α . The null hypothesis of equal population is rejected if the test statistic is in the critical region which suggests that there exists a rank difference between groups.

3.6.5 Dunn's Test

Dunn's test is used whenever it is required to test the significant difference between each of two variables. Once it is found that there is a significantly difference within the group of variables.

This test is done by comparing the observed mean rank differences between groups i and j, $|R_i - R_j|$ with calculated critical differences (Δ_{ij}) between the same groups.

If $|R_i - R_j| > \Delta_{ij}$ then it is concluded that the pair wise test result is significant.

Here,

$$\Delta_{ij} = Z_{1-\alpha} \sqrt{\frac{N(N+1)}{12} \left(\frac{1}{n_i} + \frac{1}{n_j} \right)}$$

Where,

N – Total sample size

n_i – Sample size of group i

n_j – Sample size of group j

$Z_{1-\alpha}$ – critical value from the unit normal distribution considering $\alpha = 0.05/ k \times (k - 1)$
here k is the number of groups.

3.7 Validity and Reliability

A proper research should be able to provide valid, reliable and practical results out of any analysis. The validity refers to the accuracy of the research and reliability refers to the truthfulness. If both are valid for a test then the results obtained can be mentioned as credible results.

This research was based on a questionnaire which was distributed and gathered back from random customers. Therefore it plays a major role for the success of the research. Due to this reason the implementation of the questionnaire was carefully done after several pilot tests. In the questionnaire the designed questions were tested initially to check whether the responder understands exactly the same that the researcher meant. It was done by asking several correspondents to read and explain what they have understood by each question. It was also made sure that the correspondents mark all the questions so that their data can be considered as valid. The questions were made after studying many factors and hence the variables in the questionnaire test the most appropriate buying behavioral factors. All these efforts were taken to make sure that the most influencing questionnaire to be more effective on this study.

The data were coded and uploaded to SPSS and each questionnaire was numbered while inputting data so that at any time the accuracy could be checked.

The SPSS software provided the necessary tools to conduct the tests except Dunn's test. It was used effectively in the data analysis and necessary outputs were displayed under relevant categories. Dunn's test was conducted using Microsoft excel 2007 software.

Chapter 4

Data Analysis and Findings

4.1 Introduction

This chapter consists of analysis of original data collected from the survey questionnaire. The data were coded and uploaded to Statistical package for social sciences v. 17 (SPSS) and analyzed under its available functions. The outputs were carefully observed to obtain several findings.

Initially data were tested for the purpose of grouping variables using cluster analysis and variables under each cluster were explained. Then it was tested whether the preference scores given by the customers for each variable within the group have identical distributions using Kruskal-wallis test, if the variables are not identically distributed with respect to preferences, Dunn's test was used as a multiple comparison test between variables and then it was tested for the most influential variable which affects the consumer behavior under each cluster according to each variables rank score.



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Furthermore the cluster variables were tested for their distribution with respect to gender and also with respect to amount of loyalty cards that a customer holds. This tries to identifying whether there is a significant difference on each variable with respect to gender or number of loyalty cards that a customer holds.

Finally it was tested for the categories that the customers with loyalty cards wish to have discounts under a preference scale of 5.

4.2 Basic Descriptive Statistics

From the selected questionnaires, the basic description about samples is as follows.

Description		Frequency	Percentage (%)
Gender	Male	103	49.76
	Female	104	50.24
Number of loyalty cards	1	116	56.04
	≥ 2	91	43.96

Table 4.1: Frequency distribution – gender, Number of loyalty cards

4.3 Cluster Analysis

It was understood by the theoretical findings, that factors affecting buying behavior of consumers can be categorized into several categories. Hence to find whether the factors considered for this research has a similarity between them and whether they can be categorized in to groups, hierarchal cluster analysis was conducted. By hierarchal cluster analysis under agglomerative clustering the dendrogram was observed as in figure 4.1. The distances between groups were found by Euclidean distance method as mentioned in the methodology.

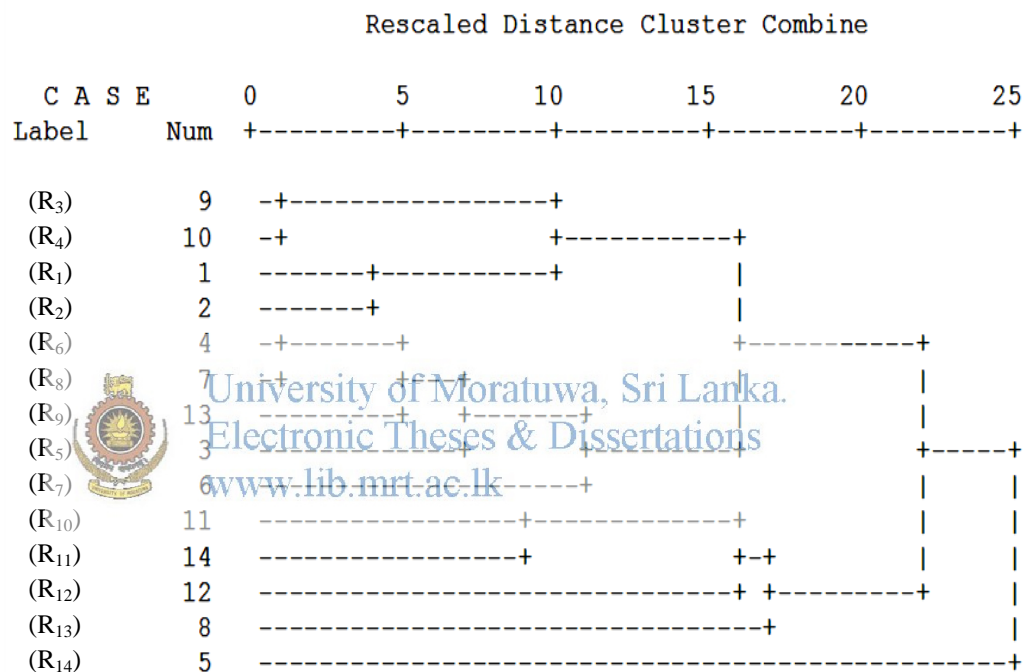


Figure 4.1: Dendrogram using Average Linkage (Between Groups)

By observing the Dendrogram it was clearly seen that the variables can be categorized in to several clusters under different distances between groups. It was clearly seen that the dendrogram categorizes the 14 variables in to 6 categories when we chose the distance level 11, and the selected variables for each category explains the theoretical findings also. Therefore, the 14 variables under six clusters are categorized as in table 4.2.

Table 4.2 shows us how the buying behavior of customers can be categorized in to six different groups according to the similarities of the variables and how those groups have been named according to the theoretical findings.

Cluster	Variables	Cluster Name
	I buy mostly from the shop,	
1	which is closest to me (R₁)	Cost concerned, Opportunistic customers
	which offers low prices (R₂)	
	where the shop offers additional products, services for free (R₃)	
	which offers regular sales promotion or Discounts (R₄)	
2	which sells current, fashionable or trendy goods (R₅)	Time concentric and trendy customers
	where I'm treated with respect and in a friendly manner (R₆)	
	where I spend less time during transaction (R₇)	
	which is located where transportation, transiting is easier (R₈)	
	where the needed items can be easily located. (R₉)	
3	which has the best rewards for the loyal customers (R₁₀)	Reward based loyal Customers
	which has granted me with a loyalty card (R₁₁)	
4	which granted me the first loyalty card (R₁₂)	Loyal Customers
5	where they are experts in the area of business (R₁₃)	Brand concentric customers
6	where attendants show concern about my problem (R₁₄)	Emotional customers

Table 4.2: variable categorization in to clusters

The first cluster contains four variables which relates to the customers who search for low cost, less price, free products and also more promotions. These customers were named as opportunistic or cost concerned customers, as their intention is to shop for low cost products or buy products whenever there is a promotion or to visit the shop which is closer to them.

The second cluster contains five variables and those are related with the customers that can be named as time concentric and trendy customers. According to the variables under this group, it was seen that their intentions are towards finding new trendy items that suits them, they are also concern about saving the time they spent on shopping and hence factors such as items arrangement, Easy billing process, parking and easy access may affect their loyalty.

The third cluster Contains variables regarding the reward based loyal customers. They search whether they being loyal to a particular shop is valued, hence they are in search for the factors whether their being rewarded. They may visit the shops that have issued them with a loyalty card.

Last three clusters contains one variable each and those are related with the customers who are loyal to the shop that has given them the loyalty card first, customers who are in search for a well experienced name, and also customers who likes to have the concern of the attendants towards them.

4.4 Preference of Cost Concerned, Opportunistic Customers

Under a 5 point scale of 5 - strongly agree, 4 - agree, 3 - don't know, 2 - disagree, 1 strongly disagree, the four variables of the first cluster were tested to find whether there is a difference in preferences.

Table 4.2 illustrates the frequencies and the respective percentages of each preference for the four variables.

I buy mostly from the shop	Preference	Frequency	Percentage (%)
where the shop offers additional products, services for free (R₃)	Strongly Disagree	7	3.4
	Disagree	33	15.9
	Don't know	16	7.7
	Agree	87	42.0
	Strongly Agree	64	30.9
	Total	207	100.0
which offers regular sales promotion or Discounts (R₄)	Strongly Disagree	3	1.4
	Disagree	29	14.0
	Don't know	23	11.1
	Agree	79	38.2
	Strongly Agree	73	35.3
	Total	207	100.0
which is closest to me (R₁)	Strongly Disagree	9	4.3
	Disagree	33	15.9
	Don't know	5	2.4
	Agree	102	49.3
	Strongly Agree	58	28.0
	Total	207	100.0
which offers low prices (R₂)	Strongly Disagree	8	3.9
	Disagree	34	16.4
	Don't know	22	10.6
	Agree	89	43.0
	Strongly Agree	54	26.1
	Total	207	100.0

Table 4.3: Frequency distribution and percentage preferences of variables for cluster 1

Figure 4.2 represents the graphical distribution of the above frequencies using a bar chart of percentage preference against Group variables.

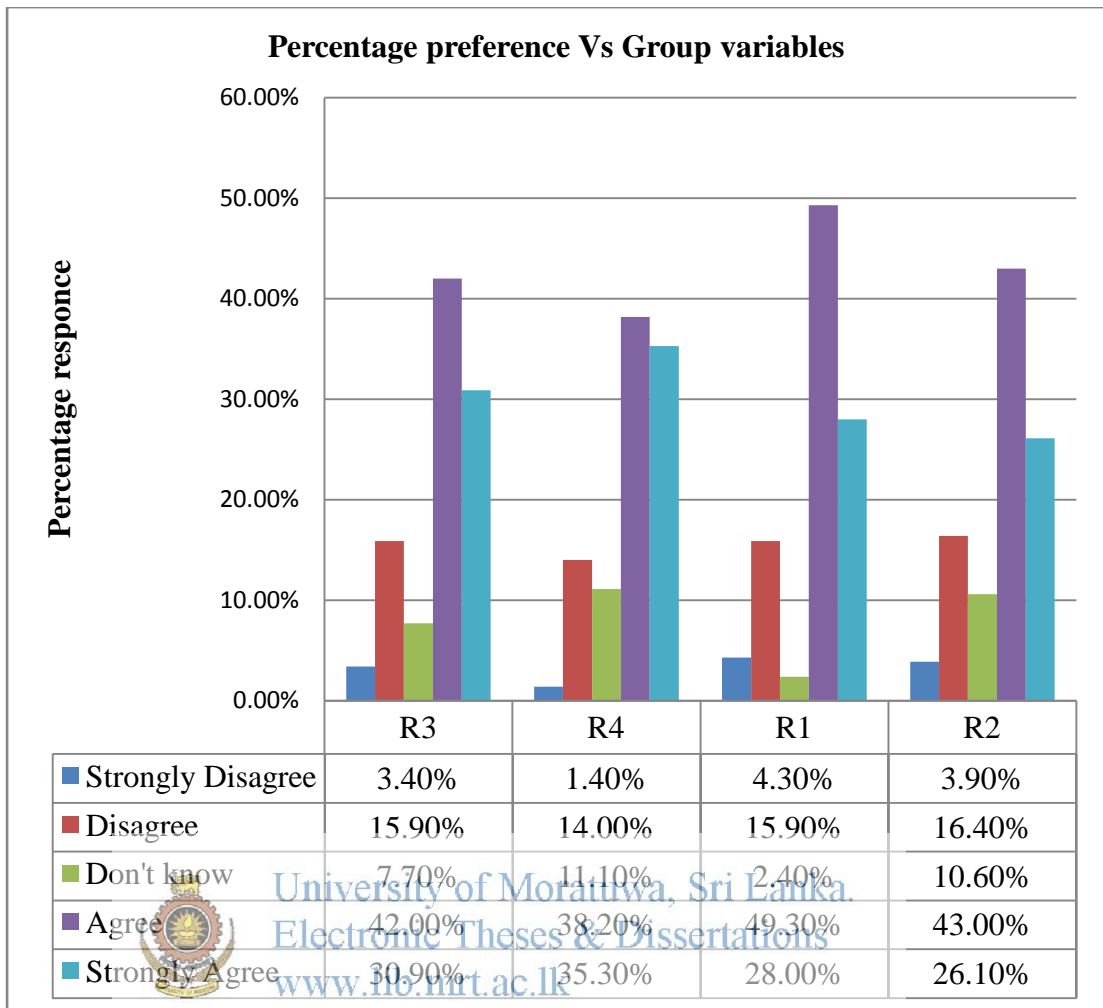


Figure 4.2: Percentage preference Vs Group variables for cluster 1

These descriptive statistics summarize the data gathered under the first group. But further analysis is needed to be conducted in order to provide a proper meaning to the analysis.

4.4.1 Distribution of Variables under Preference Scores

For the purpose of the testing whether the preference scores for the considered four variables are identically distributed or not, Kruskal-wallis test is used. It tests the following Null and Alternative hypothesis.

Null hypothesis (H_0) : All the variables are identically distributed with respect to the preference scores.

Alternative hypothesis (H_1) : Not all the variables are identically distributed with respect to the preference scores.

How do you decide on which shop to buy your goods and services.	N	Mean Rank	Df	Chi-Square	P value
I buy mostly from the shop, which is closest to me (R₁)	207	414.70	3	3.887	0.274
which offers low prices (R₂)	207	391.86			
where the shop offers additional products, services for free (R₃)	207	415.99			
which offers regular sales promotion or Discounts (R₄)	207	435.46			

Table 4.4: Kruskal-wallis test – Distribution of variables under first group with respect to the preference.

Table 4.4 shows us that the chi-square value obtained = 3.887 and $p = 0.274 > 0.05$. Thus the Null hypothesis which states that all the variables are identically distributed with respect to the preference scores is accepted and the alternative hypothesis is rejected.



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Since H_0 is accepted, we cannot exactly say which variable affects most for the buying behavior of the customers out of the considered four variables according to the preference scores. The conclusion that can be made is that all the four variables are identically distributed according to their preference scale, and hence the distributions do not significantly differ from each other. That is in other words all the four factors that influence the buying behavior under the category of cost concern, opportunistic customers are preferred identically.

4.4.2 Effects of Gender on Each Variable

To test whether there is a difference in the distribution of each variable according to the gender the Wilcoxon-Mann-Whitney U test was used. It used to test the following hypothesis.

Null hypothesis (H_0) : The considered two samples are identically distributed.

Alternative hypothesis (H_1) : The considered two samples are not identically distributed.

How do you decide on which shop to buy your goods and services. I buy mostly from the shop,	Gender	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	P (2-tailed)
which is closest to me (R ₁)	male	103	109.38	11266.50	4801.500	-1.392	.164
	female	104	98.67	10261.50			
	Total	207					
which offers low prices (R ₂)	male	103	107.48	11070.50	4997.500	-.878	.380
	female	104	100.55	10457.50			
	Total	207					
where the shop offers additional products, services for free (R ₃)	male	103	113.71	11712.50	4355.500	-2.459	.014
	female	104	94.38	9815.50			
	Total	207					
which offers regular sales promotion or Discounts (R ₄)	male	103	114.63	11807.00	4261.000	-2.684	.007
	female	104	93.47	9721.00			
	Total	207					

Table 4.5: Wilcoxon-Mann-Whitney U test – effects of gender on the variables of cluster 1.

Table 4.5 clearly shows that the p value of the first two variables R₁ and R₂ are greater than 0.05 ($P > 0.05$) which leads to the conclusion that they accept the null hypothesis. Hence it can be concluded that the first two variables R₁ and R₂ are identically distributed and therefore the gender has not affected on the first two variables significantly.

The last two variables R₃ and R₄ rejects the null hypothesis ($P < 0.05$) and hence accepts the alternative hypothesis which states that the two samples are not identically distributed. The change in distribution of the variables with respect to the gender suggests that, gender has an effect on the considered two variables. In other words, the two factors, consumers buy mostly from the shops that offers free products or services and the consumers buy mostly from the shops that have more promotions or

discounts depends on the gender. The mean ranks further suggest that mean rank of men are greater than women for the two samples.

4.4.3 Effects of the Amount of Cards on Each Variable

To test whether there is a difference in the distribution of each variable according to the number of loyalty cards that the customer holds, the Wilcoxon-Mann-Whitney U test was again used under the following hypothesis.

Null hypothesis (H_0) : The considered two samples are identically distributed.

Alternative hypothesis (H_1) :The considered two samples are not identically distributed.

How do you decide on which shop to buy your goods and services. I buy mostly from the shop,	Number of cards	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	P (2-tailed)
which is closest to me (R_1)	1	116	108.63	12601.50	4740.500	-1.360	.174
	≥ 2	91	98.09	8926.50			
	Total	207					
which offers low prices (R_2)	1	116	107.75	12499.50	4842.500	-1.075	.282
	≥ 2	91	99.21	9028.50			
	Total	207					
where the shop offers additional products, services for free (R_3)	1	116	103.91	12053.00	5267.000	-.027	.978
	≥ 2	91	104.12	9475.00			
	Total	207					
which offers regular sales promotion or Discounts (R_4)	1	116	108.53	12589.00	4753.000	-1.296	.195
	≥ 2	91	98.23	8939.00			
	Total	207					

Table 4.6: Wilcoxon-Mann-Whitney U test – effects on the variables of cluster 1 with respect to the number of loyalty cards.

Each and every variable of cluster 1 are identically distributed with respect to the number of cards that the customers hold. Hence it can be suggested that they were not affected in a significantly different manner according to the amount of cards that the customers have.

4.5 Preference of Time Concentric and Trendy Customers

To test the effects of preference scores on the second cluster variables, a 5 point scale of 5 – strongly agree, 4 - agree, 3 – don't know, 2 - disagree, 1 strongly disagree is used.

The summary of data gathered with respect to the second group are mentioned in the table 4.7



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I buy mostly from the shop	Preference	Frequency	Percentage (%)
where I'm treated with respect and in a friendly manner (R ₆)	Strongly Disagree	1	.5
	Disagree	6	2.9
	Don't know	8	3.9
	Agree	90	43.5
	Strongly Agree	102	49.3
	Total	207	100.0
which is located where transportation, transiting is easier (R ₈)	Strongly Disagree	2	1.0
	Disagree	13	6.3
	Don't know	9	4.3
	Agree	123	59.4
	Strongly Agree	60	29.0
	Total	207	100.0
where the needed items can be easily located (R ₉)	Strongly Disagree	2	1.0
	Disagree	14	6.8
	Don't know	20	9.7
	Agree	90	43.5
	Strongly Agree	81	39.1
	Total	207	100.0
which sells current, fashionable or trendy goods (R ₅)	Strongly Disagree	1	.5
	Disagree	13	6.3
	Don't know	19	9.2
	Agree	78	37.7
	Strongly Agree	96	46.4
	Total	207	100.0
where I spend less time during transaction (R ₇)	Strongly Disagree	1	.5
	Disagree	28	13.5
	Don't know	33	15.9
	Agree	72	34.8
	Strongly Agree	73	35.3
	Total	207	100.0

Table 4.7 Frequency distribution of preference scores of the variables.

The following figure 4.3 gives a graphical representation of the above frequencies

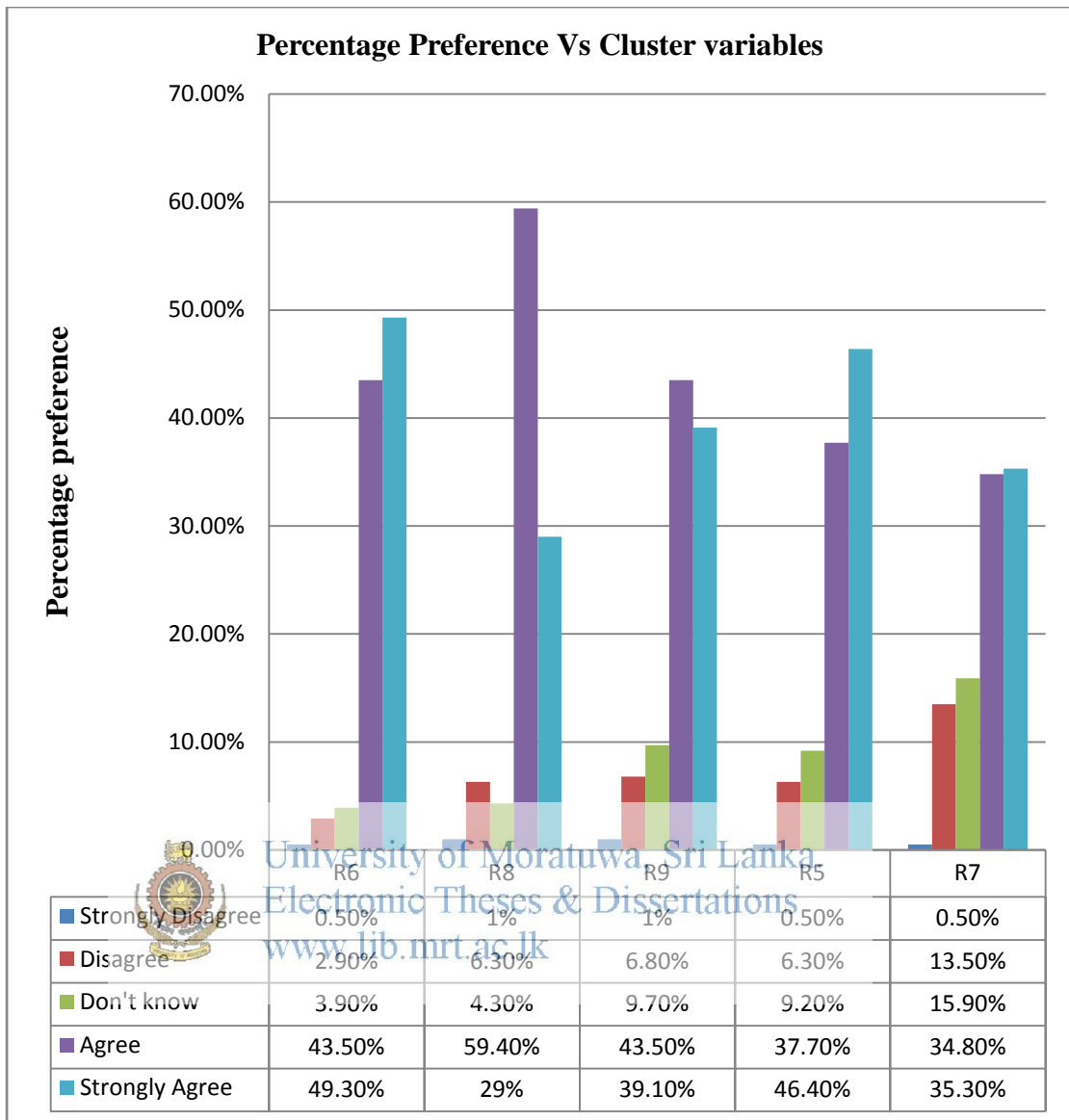


Figure 4.3: Percentage preference Vs Group variables for cluster 2

4.5.1 Distribution of Variables Due to Preference Scores

To test whether the preference scores for the considered five variables are identically distributed or not, Kruskal-wallis test is used under the hypothesis of,

Null hypothesis (H_0) : All the variables are identically distributed with respect to the preference scores.

Alternative hypothesis (H_1) : Not all the variables are identically distributed with respect to the preference scores.

How do you decide on which shop to buy your goods and services, I buy mostly from the shop,	N	Mean Rank	df	Chi-square	P-value
which sells current, fashionable or trendy goods (R₅)	207	548.67	4	29.012	0.000
where I'm treated with respect and in a friendly manner (R₆)	207	587.53			
where I spend less time during transaction (R₇)	207	456.74			
which is located where transportation, transiting is easier (R₈)	207	484.64			
where the needed items can be easily located (R₉)	207	512.42			

Table 4.8: Kruskal-wallis test. - Distribution of variables under second group with respect to the preference.

Chi-square value of 29.012 and $p = 0.000 (< 0.05)$ suggests that the null hypothesis should be rejected. Hence the alternative hypothesis states strongly that the variables are not identically distributed with respect to the preference scores. This shows that there is a significant difference in the distributions of the preferences among five variables. As the customer preference is different for the considered five variables R_5 to R_9 Dunn's test can be performed to identify which variables will be significantly different from another, so that the most influencing variables can be identified properly.

4.5.2 Test of Difference between Variables

As it is identified by the Kruskal-wallis test that the five variables are not distributed identically due to preference scores. Therefore to test which groups are significantly different from each other Dunn's test was used as a multiple comparison test between variables.

The observed mean rank difference of two groups i and j $|R_i - R_j|$ (where $i, j = 5, 6, 7, 8, 9$ and $i \neq j$) are stated in table 4.9 and then they are being compared with the

calculated critical differences (Δ_{ij}) between the same groups. R_i, R_j variables are defined in table 4.8. The test hypothesis is,

Null hypothesis (H_0) : The pair of variables is not significantly different.

Alternative hypothesis (H_A) : The pair of variables is significantly different.

H_0 is accepted if, $|R_i - R_j| < \Delta_{ij}$

Variable		R_5	R_6	R_7	R_8	R_9
	Mean rank	548.67	587.53	456.74	484.64	512.42
R_5	548.67	0	38.86	91.93	64.03	36.25
R_6	587.53	38.86	0	130.79	102.89	75.11
R_7	456.74	91.93	130.79	0	27.9	55.68
R_8	484.64	64.03	102.89	27.9	0	27.78
R_9	512.42	36.25	75.11	55.68	27.78	0

Table 4.9: The observed mean-rank difference of two groups i and j

$\alpha = 0.05 / (5 \times 4) = 0.0025$

$$1 - \alpha = 0.9975$$

$$Z_{1-\alpha} = 2.81$$

$$\Delta_{ij} = Z_{1-\alpha} \sqrt{\frac{N(N+1)}{12} \left(\frac{1}{n_i} + \frac{1}{n_j} \right)}$$

$$\Delta_{ij} = 2.81 * \sqrt{\frac{414(414+1)}{12} \left(\frac{1}{207} + \frac{1}{207} \right)}$$

$$\Delta_{ij} = 33.04987$$

Variable	R ₅	R ₆	R ₇	R ₈	R ₉
R ₅	0	significantly different	significantly different	significantly different	significantly different
R ₆	significantly different	0	significantly different	significantly different	significantly different
R ₇	significantly different	significantly different	0	Not significantly different	significantly different
R ₈	significantly different	significantly different	Not significantly different	0	Not significantly different
R ₉	significantly different	significantly different	significantly different	Not significantly different	0

Table 4.10: The significance between two groups i and j

Table 4.10 suggests that except between the variable R₇,R₈ & R₈,R₉ all the other variables are significantly different from each other. This gives us the opportunity to test their mean rank scores and identify how these factors influence. According to the mean rank values the most considered variables of the second cluster are R₆ and R₅, since the pair wise test suggests that they are significantly different from each other we can conclude that the most considered variable is R₆ as it has the highest rank score. It is namely; I buy mostly from, the shop where I'm treated with respect and in a friendly manner. Since R₅ and R₉ are significantly different the second most considered variable is R₅, that is, I buy mostly from, the shop which sells current, fashionable or trendy goods. But the next pairs of variable which has the highest mean ranks R₈, R₉ and R₇, R₈ are not significantly different and hence we cannot exactly say the highest influencing variable out of these three variables.

4.5.3 Effects of Gender on Each Variable

To test the difference in the distribution of each variable in second cluster according to the gender the Wilcoxon-Mann-Whitney U test was used under the following hypothesis.

Null hypothesis (H₀) : The considered two samples are identically distributed.

Alternative hypothesis (H₁) : The considered two samples are not identically distributed.

How do you decide on which shop to buy your goods and services. I buy mostly from the shop,	Gender	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	P (2-tailed)
which sells current, fashionable or trendy goods (R ₅)	male	103	102.66	10574.00	4801.500	-.348	.728
	female	104	105.33	10954.00			
	Total	207					
where I'm treated with respect and in a friendly manner (R ₆)	male	103	109.09	11236.50	4997.500	-1.363	.173
	female	104	98.96	10291.50			
	Total	207					
where I spend less time during transaction (R ₇)	male	103	106.91	11012.00	4355.500	-.731	.465
	female	104	101.12	10516.00			
	Total	207					
which is located where transportation, transiting is easier (R ₈)	male	103	108.19	11144.00	4261.000	-1.146	.252
	female	104	99.85	10384.00			
	Total	207					
where the needed items can be easily located (R ₉)	male	103	100.10	10310.50	4261.000	-1.007	.314
	female	104	107.86	11217.50			
	Total	207					

Table 4.11: Wilcoxon-Mann-Whitney U test – effects of gender on the variables of cluster 2.

Table 4.11 Shows us that under each and every variable $P > 0.05$. This suggests that all the variables are identically distributed with respect to the gender. This leads us to the statement that the gender has not significantly affected the distribution.

4.5.4 Effects of the Amount of Cards on Each Variable

To test whether there is a difference in the distribution of each variable in the second cluster according to the number of loyalty cards that the customer holds, the Wilcoxon-Mann-Whitney U test was used and it tests whether two considered samples are identically distributed or not under the following hypothesis.

Null hypothesis (H_0) : The considered two samples are identically distributed.

Alternative hypothesis (H_1) : The considered two samples are not identically distributed.

How do you decide on which shop to buy your goods and services. I buy mostly from the shop,	Number of cards	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	P (2-tailed)
which sells current, fashionable or trendy goods (R_5)	1	116	106.43	12345.50	4996.500	-.716	.474
	≥ 2	91	100.91	9182.50			
	Total	207					
where I'm treated with respect and in a friendly manner (R_6)	1	116	107.08	12421.00	4921.000	-.934	.350
	≥ 2	91	100.08	9107.00			
	Total	207					
where I spend less time during transaction (R_7)	1	116	111.28	12908.50	4433.500	-2.072	.038
	≥ 2	91	94.72	8619.50			
	Total	207					
which is located where transportation, transiting is easier (R_8)	1	116	109.14	12660.50	4681.500	-1.594	.111
	≥ 2	91	97.45	8867.50			
	Total	207					
where the needed items can be easily located (R_9)	1	116	114.08	13233.00	4109.000	-2.953	.003
	≥ 2	91	91.15	8295.00			
	Total	207					

Table 4.12: Wilcoxon-Mann-Whitney U test – effects on the variables of cluster 2 with respect to the number of loyalty cards.

For the variables R_5 , R_6 & R_8 , $P > 0.05$ and the Null hypothesis is accepted, this means that the amount of cards do not significantly change the distribution of these variable. But the variables R_7 and R_9 of cluster 2 are not identically distributed with respect to the number of cards that the customers hold. This statement is made due to fact that their $P < 0.05$ and for this reason the null hypothesis is rejected. Since the alternative hypothesis is accepted it can be suggested that the considered variables R_7 and R_9 of

cluster 2 are not having identical distributions. This further implies that there is an effect on the number of cards that the customers have toward the factors I buy mostly from the shop, where I spend less time during my transaction and where the needed items can be easily located.

4.6 Preference of Reward based loyal Customers

Using the same 5 point scale as in the previous groups the third cluster was tested for the significance with respect to the preference.

I buy mostly from the shop	Preference	Frequency	Percentage (%)
which has the best rewards for the loyal customers (R ₁₀)	Strongly Disagree	4	1.9
	Disagree	30	14.5
	Don't know	34	16.4
	Agree	69	33.3
	Strongly Agree	70	33.8
	Total	207	100.0
which has granted me with a loyalty card (R ₁₁)	Strongly Disagree	2	1.0
	Disagree	41	19.8
	Don't know	56	27.1
	Agree	59	28.5
	Strongly Agree	49	23.7
	Total	207	100.0

Table 4.13: Frequency distribution of preference scores of the variables in cluster three.

The above table shows a summary of the variables and their frequency and percentage frequency distribution.

The figure 4.4 gives a graphical representation of the above frequencies.

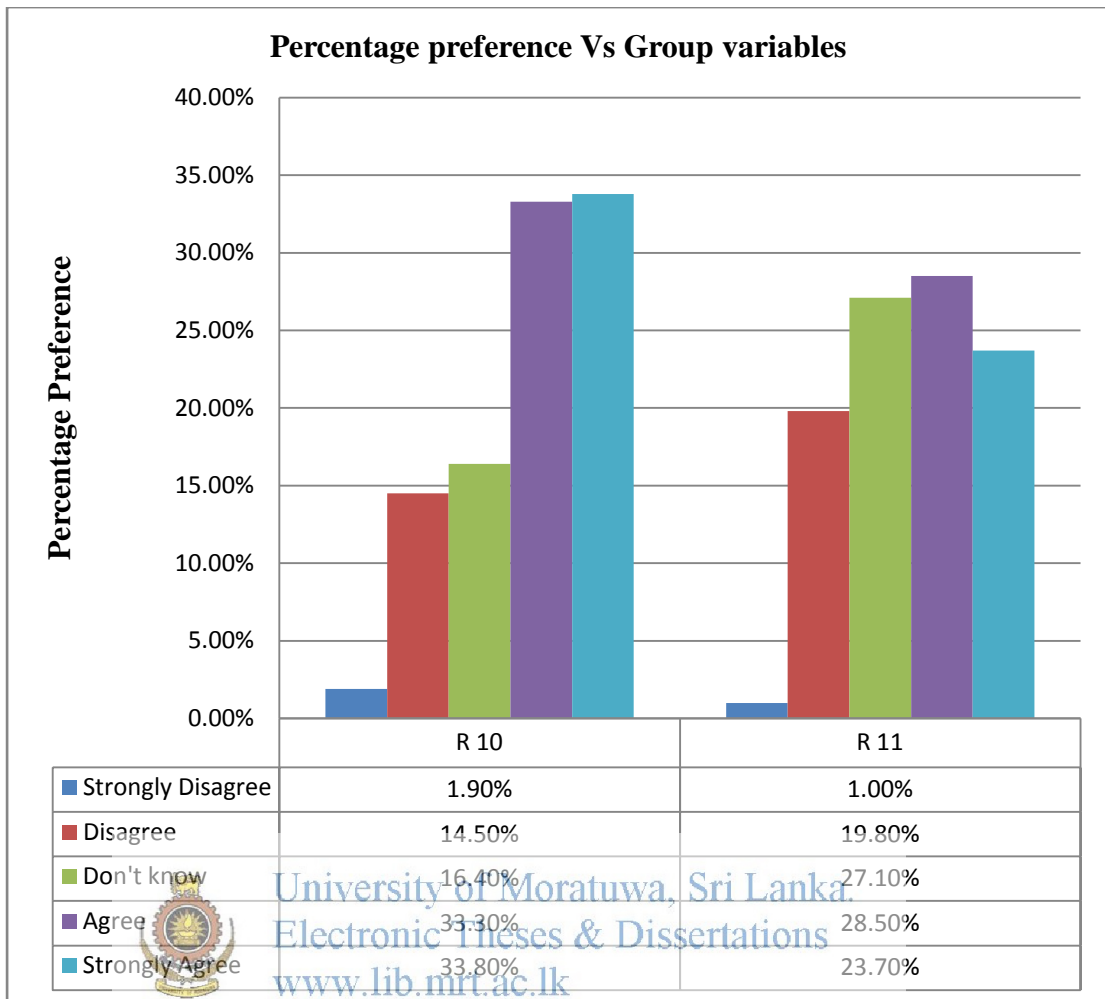


Figure 4.4: Percentage preference Vs cluster variables for cluster 3

4.6.1 Distribution of Variables under Preference Scores

To test whether the preference scores for the considered two variables are identically distributed or not, Kruskal-wallis test is used under the following hypothesis.

Null hypothesis (H_0) : All the variables are identically distributed with respect to the preference scores.

Alternative hypothesis (H_1) : Not all the variables are identically distributed with respect to the preference scores.

How do you decide on which shop to buy your goods and services, I buy mostly from the shop,	N	Mean Rank	df	Chi-square	P-value
which has the best rewards for the loyal customers (R₁₀)	207	223.49	1	7.938	.005
which has granted me with a loyalty card (R₁₁)	207	191.51			

Table 4.14: Kruskal-wallis test - Distribution of variables under third cluster with respect to the preference.

Chi-square value of 7.938 and $p = 0.005 (<0.05)$ suggests that H_0 should be rejected. This strongly suggests that the variables are not identically distributed with respect to their preference scores. Hence it shows that the preferences are different in the two variables. Further testing the mean rank values of two variables it can be stated that, the most considered variable is R_{10} and then R_{11} , thus we can conclude that the most considered variable in cluster 3 is namely; I buy mostly from the shop, which has the best rewards for the loyal customers.

4.6.3 Effects of Gender on Each Variable

To test effects in the distribution of each variable based on the gender the Wilcoxon-Mann-Whitney U test was used and it tests the following hypothesis.

Null hypothesis (H_0) : The considered two samples are identically distributed.

Alternative hypothesis (H_1) : The considered two samples are not identically distributed.

How do you decide on which shop to buy your goods and services. I buy mostly from the shop,	Gender	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	P (2-tailed)
which has the best rewards for the loyal customers (R ₁₀)	male	103	105.26	10842.00	5226.000	-.315	.753
	female	104	102.75	10686.00			
	Total	207					
which has granted me with a loyalty card (R ₁₁)	male	103	103.45	10655.50	5299.500	-.136	.892
	female	104	104.54	10872.50			
	Total	207					

Table 4.15: Wilcoxon-Mann-Whitney U test – effects of gender on the variables of cluster 3.

Table 4.15 suggests that the null hypothesis is accepted as $P > 0.05$. This suggests that the two variables are identically distributed with respect to the gender and therefore it has no significant effect on the variables.

4.6.4 Effects of the Amount of Cards on Each Variable

To test whether there is a difference in the distribution of each variable in the third cluster according to the number of loyalty cards Wilcoxon-Mann-Whitney U test was used under the following hypothesis.

Null hypothesis (H_0) : The considered two samples are identically distributed.

Alternative hypothesis (H_1) : The considered two samples are not identically distributed.

How do you decide on which shop to buy your goods and services. I buy mostly from the shop,	Number of cards	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	P (2-tailed)
which has the best rewards for the loyal customers (R ₁₀)	1	116	103.17	11967.50	5181.500	-.236	.814
	≥2	91	105.06	9560.50			
	Total	207					
which has granted me with a loyalty card (R ₁₁)	1	116	108.88	12629.50	4712.500	-1.366	.172
	≥2	91	97.79	8898.50			
	Total	207					

Table 4.16: Wilcoxon-Mann-Whitney U test – effects on the variables of cluster 3 with respect to the number of loyalty cards.



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This test also provides a p value which is greater than 0.05 ($P > 0.05$) so the null hypothesis can be accepted and it suggests that the variables are identically distributed with respect to the number of cards that the customers hold. Therefore, the distributions of the considered variables were not affected by the amount of cards that the customers have.

4.7 Preference of Loyal Customers

Under the same 5 point scale used in previous tests the variable of the fourth group was tested for its distribution under gender and number of loyalty cards.

The responses towards the variable were summarized in the following table 4.17.

I buy mostly from the shop	Preference	Frequency	Percentage (%)
which granted me the first loyalty card (R ₁₂)	Strongly Disagree	17	8.2
	Disagree	49	23.7
	Don't know	54	26.1
	Agree	56	27.1
	Strongly Agree	31	15.0
	Total	207	100.0

Table 4.17: Frequency distribution of preference scores of the variable.

4.7.1 Effects of Gender on the Variable

To test the effects of gender on the preference of the variable Wilcoxon-Mann-Whitney U test was used. It tests the following hypothesis.

Null hypothesis (H₀) : The considered two samples are identically distributed.

Alternative hypothesis (H₁) : The considered two samples are not identically distributed.

How do you decide on which shop to buy your goods and services. I buy mostly from the shop,	Gender	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	P (2-tailed)
which granted me the first loyalty card (R ₁₂)	male	103	105.78	10895.00	5173.000	-.437	.662
	female	104	102.24	10633.00			
	Total	207					

Table 4.18: Wilcoxon-Mann-Whitney U test – effects of gender on the variable of cluster 4.

Table 4.18 suggests that the distributions are identical, this suggestion was made due to the fact that its null hypothesis being accepted ($p > 0.05$) and therefore it is seen that gender has no significant effect on the distribution of preference of the variable.

4.7.2 Effects of the Amount of Cards on the Variable

Wilcoxon-Mann-Whitney U test was used in the same manner as above to test the effects of number of cards on the distribution of the preference towards the variable.

How do you decide on which shop to buy your goods and services. I buy mostly from the shop,	Number of cards	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	P (2-tailed)
1	1	116	101.25	11744.50	4958.500	-.768	.442
2	2	91	107.51	9788.50			
Total		207					

Table 4.19: Wilcoxon-Mann-Whitney U test – effects on the variable of cluster 4 with respect to the number of loyalty cards.

The Null hypothesis is accepted ($P > 0.05$) and hence it can be concluded that the distribution of preferences are identical with respect to the number of loyalty cards that the customers hold. This suggests that the preference of considered variable are identically distributed even if the amount of cards that the customers have differs.

4.8 Preference of Brand Concentric Customers

The summary of data gathered with respect to the fifth group are mentioned in table 4.20. According to the same five point scale.

I buy mostly from the shop	Preference	Frequency	Percentage (%)
where they are experts in the area of business (R ₁₃)	Strongly Disagree	18	8.7
	Disagree	35	16.9
	Don't know	36	17.4
	Agree	69	33.3
	Strongly Agree	49	23.7
	Total	207	100.0

Table 4.20: Frequency distribution of preference scores of the variables.

4.8.1 Effects of Gender on the Variable

To test whether there is a difference in the distribution of the variable according to the gender the Wilcoxon-Mann-Whitney U test was used in a similar manner as used in previous testing and the following results were obtained.

How do you decide on which shop to buy your goods and services. I buy mostly from the shop,	Gender	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	P (2-tailed)
where they are experts in the area of business (R ₁₃)	male	103	103.12	10621.00	5265.000	-.218	.827
	female	104	104.88	10907.00			
	Total	207					

Table 4.21: Wilcoxon-Mann-Whitney U test – effects of gender on the variable of cluster 5.

Table 4.21 suggests that the null hypothesis is accepted ($P > 0.05$). Hence it can be concluded that the variable is identically distributed in both male and female categories and therefore the gender has not affected the preference of variable significantly.

4.8.2 Effects of the Amount of Cards on the Variable

Wilcoxon-Mann-Whitney U test was again used for the purpose of testing the effects of number of cards on the distribution of the preference towards the variable and the following results were obtained.

How do you decide on which shop to buy your goods and services. I buy mostly from the shop,	Number of cards	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	P (2-tailed)
where they are experts in the area of business (R ₁₃)	1	116	102.98	11945.50	5159.500	-.286	.775
	≥2	91	105.30	9582.50			
	Total	207					

Table 4.22: Wilcoxon-Mann-Whitney U test effects on the variables of cluster 5 with respect to the number of loyalty cards.



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The Null hypothesis is accepted ($P > 0.05$) and hence it can be concluded that the variable is identically distributed with respect to the number of cards that the customers hold. This suggests that the considered variable do not significantly differ from the amount of cards that the customers have.

4.9 Preference of Emotional Customers

Cluster six is tested Under a 5 point scale in the same above manner to find whether there is a difference in preferences with respect to gender and amount of cards that the customer holds.

The summery of data gathered with respect to the sixth group are mentioned in the table 4.23

I buy mostly from the shop	Preference	Frequency	Percentage (%)
where attendants show concern about my problem (R ₁₄)	Strongly Disagree	11	5.3
	Disagree	29	14.0
	Don't know	31	15.0
	Agree	81	39.1
	Strongly Agree	55	26.6
	Total	207	100.0

Table 4.23: Frequency distribution of preference scores of the variable.

4.9.1 Effects of Gender on the Variable

To test whether there is a difference in the distribution of the variable with respect to the gender the Wilcoxon-Mann-Whitney U test was used. And the results obtained are as follows.

How do you decide on which shop to buy your goods and services. I buy mostly from the shop,	Gender	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	P (2-tailed)
where attendants show concern about my problem (R ₁₄)	male	103	108.33	11158.00	4910.000	-1.082	.279
	female	104	99.71	10370.00			
	Total	207					

Table 4.24: Wilcoxon-Mann-Whitney U test – effects of gender on the variable of cluster 6.

Table 4.24 suggests that the null hypothesis is accepted ($P > 0.05$). Hence it can be concluded that the variable is identically distributed with respect to gender and therefore the gender has not affected the variable significantly.

4.9.2 Effects of the Amount of Cards on the Variable

To test whether there is a difference in the distribution of variable according to the number of loyalty cards that the customer holds, the Wilcoxon-Mann-Whitney U test was used and it tests whether two considered samples are identically distributed or not under the following hypothesis.

Null hypothesis (H_0) : The considered two samples are identically distributed.

Alternative hypothesis (H_1) : The considered two samples are not identically distributed.

How do you decide on which shop to buy your goods and services. I buy mostly from the shop,	Number of cards	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	P (2-tailed)
where attendants show concern about my problem (R ₁₄)	16	91	102.09	1842.00	5056.000	-.543	.587
	≥2	91	106.44	9686.00			
	Total	207					

Table 4.25: Wilcoxon-Mann-Whitney U test – effects on the variable of cluster 6 with respect to the number of loyalty cards.

The Null hypothesis is accepted ($P > 0.05$) and hence it can be concluded that the variable is identically distributed with respect to the number of cards that the customers hold. This suggests that the considered variable do not significantly differ from the amount of cards that the customers have.

4.10 Preference of Discounts

Under a ranking scale of 1 to 5 where it was uploaded to SPSS as 5 – Preference 1, 4 - Preference 2, 3 – Preference 3, 2 - Preference 4, 1 Preference 5, the five discounted categories were tested to find whether there is a difference in choice.

The summery of data gathered are mentioned in the table 4.26

Category	Preference	Frequency	Percentage (%)
Vegetables/Fruit (R ₁₅)	Fifth Preference	45	21.7
	Fourth Preference	18	8.7
	Third Preference	19	9.2
	Second Preference	38	18.4
	First preference	87	42.0
	Total	207	100.0
Beverages (R ₁₆)	Fifth Preference	64	30.9
	Fourth Preference	50	24.2
	Third Preference	35	16.9
	Second Preference	24	11.6
	First preference	34	16.4
	Total	207	100.0
Grocery (R ₁₇)	Fifth Preference	32	15.5
	Fourth Preference	23	11.1
	Third Preference	39	18.8
	Second Preference	42	20.3
	First preference	71	34.3
	Total	207	100.0
fish/meat (R ₁₈)	Fifth Preference	52	25.1
	Fourth Preference	22	10.6
	Third Preference	46	22.2
	Second Preference	51	24.6
	First preference	36	17.4



	Total	207	100.0
Bath-ware (R ₁₉)	Fifth Preference	103	49.8
	Fourth Preference	31	15.0
	Third Preference	21	10.1
	Second Preference	17	8.2
	First preference	35	16.9
	Total	207	100.0

Table 4.26: Frequency distribution of preferences of the variables.

The figure 4.5 gives a graphical representation of the above frequencies.

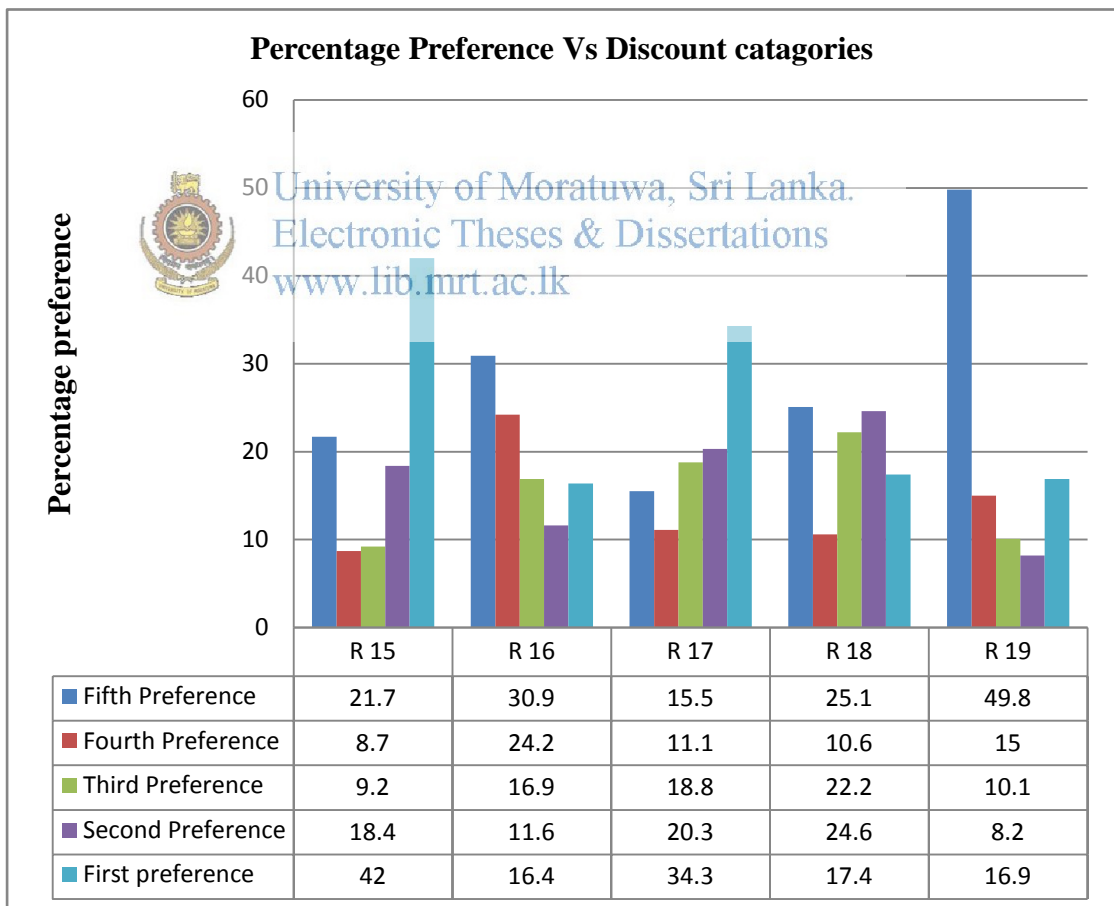


Figure 4.5: Percentage preference Vs Discount categories

4.10.1 Distribution of Variables under Preference Scores

To test whether the preferences for the considered five categories are identically distributed or not, Kruskal-wallis test is used. It tests the following Null and Alternative hypothesis.

Null hypothesis (H_0) : All the variables are identically distributed with respect to the preferences.

Alternative hypothesis (H_1) : Not all the variables are identically distributed with respect to the preferences.

Category	N	Mean Rank	df	Chi-square	P-value
Vegetables/Fruit (R_{15})	207	618.07	4	95.941	0.000
Beverages (R_{16})	207	451.01			
Grocery (R_{17})	207	611.32			
fish/meat (R_{18})	207	518.49			
Bath-ware (R_{19})	207	391.11			

Table 4.27: Kruskal-wallis test - Distribution of variables with respect to the preferences.

Chi-square value of 95.941 and $p = 0.000 (<0.05)$ suggests that the null hypothesis should be rejected. Hence the alternative hypothesis states strongly that the variables are not identically distributed with respect to the preferences. Therefore it can be concluded that there is a significant difference among five discounted product categories according to the preferences.

4.10.2 Test of Difference between Variables

The above test suggested that five variables are not distributed identically with respect to their preferences; therefore to test which variables are significantly different from each other Dunn's test was used as a multiple comparison test between variables.

The observed mean rank difference of two groups i and j $|R_i - R_j|$ (where $i, j = 15, 16, 17, 18, 19$ and $i \neq j$) are stated in table 4.27 and then they are being compared with the calculated critical differences (Δ_{ij}) between the same groups. R_i, R_j (for $i, j = 15, 16, 17, 18, 19$) variables are defined in table 4.27. The test hypothesis is,

Null hypothesis (H_0) : The pair of variables is not significantly different.

Alternative hypothesis (H_1) : The pair of variables is significantly different.

H_0 is accepted if, $|R_i - R_j| < \Delta_{ij}$

Variable		R_{15}	R_{16}	R_{17}	R_{18}	R_{19}
	Mean Rank	618.07	451.01	611.32	518.49	391.11
R_{15}	618.07	0	167.06	6.75	99.58	226.96
R_{16}	451.01	167.06	0	160.31	67.48	59.9
R_{17}	611.32	6.75	160.31	0	92.83	220.21
R_{18}	518.49	99.58	67.48	92.83	0	127.38
R_{19}	391.11	226.96	59.9	220.21	127.38	0

Table 4.28: The observed mean rank difference of two groups i and j

$$\alpha = 0.05 / (5 \times 4) = 0.0025$$

$$1 - \alpha = 0.9975$$

$$Z_{1-\alpha} = 2.81$$

$$\Delta_{ij} = Z_{1-\alpha} \sqrt{\frac{N(N+1)}{12} \left(\frac{1}{n_i} + \frac{1}{n_j} \right)}$$

$$\Delta_{ij} = 2.81 * \sqrt{\frac{414(414+1)}{12} \left(\frac{1}{207} + \frac{1}{207} \right)}$$

$$\Delta_{ij} = 33.04987$$

Variable	R ₁₅	R ₁₆	R ₁₇	R ₁₈	R ₁₉
R ₁₅	0	significantly different	Not significantly different	significantly different	significantly different
R ₁₆	significantly different	0	significantly different	significantly different	significantly different
R ₁₇	Not significantly different	significantly different	0	significantly different	significantly different
R ₁₈	significantly different	significantly different	significantly different	0	significantly different
R ₁₉	significantly different	significantly different	significantly different	significantly different	0

Table 4.29: The significance between two groups i and j

Table 4.29 suggests that except for the two variables R₁₅ and R₁₇ all other pairs are significantly different from each other. According to the mean rank values the most considered variables are also R₁₅ and R₁₇, therefore we cannot suggest that according to the preferences of discounts which variable would be the first. In other words out of vegetables/fruits and grocery we can't conclude which category would be the most preferred, but it can be suggested that vegetables/fruits and grocery are the highest preference for discounts. However, according to the rank scores, third, fourth, and fifth preferences on discounts were for, fish/meat, beverage and bath ware respectively.

Chapter 5

Discussions and Conclusions

5.1 Introduction

This chapter discusses the evaluation of the research, the factors that has been found during the analysis, summarizes them and points out the conclusions made out of this research with respect to the research problem.

5.2 Discussion

The main objective of this research is to identify the factors affecting buying behavior of consumers with loyalty cards. For this purpose a thorough search on theoretical findings about consumers' buying behavior, satisfaction, loyalty, loyalty cards, consumer relationship management, post purchase behavior, etc. were initially conducted and with respect to the theoretical findings pre assumptions were made and those pre assumptions were tested using a five point preference scale questionnaire in order to achieve the goal of this research.

The questionnaire contained 14 variables which are used to test the buying behavior of different types of consumers. The initial goal was to separate the variables in to several clusters. This was done by hierarchal cluster analysis under agglomerative clustering, a dendrogram was developed using SPSS (v17) and it was observed as in figure 4.3. The distances between groups were found by Euclidean distance method and by observing the Dendrogram it was clearly seen that the variables can be categorized in to six clusters by selecting the maximum distances between cases as eleven. This distance was chosen also because the six variables categorized under this distance were able to explain the theoretical findings as well. This finding partially answered the first research question.

To find answers for the first research question completely, further analysis were conducted under each category. It was tested whether the variables under each category are identically distributed with respect to their preference scores defined as 5 – strongly agree, 4 - agree, 3 – don't know, 2 - disagree, 1 strongly disagree. For this

propose Kruskal-wallis test was used which tests the following Null and Alternative hypothesis.

Null hypothesis (H_0) : All the variables are identically distributed with respect to the preference scores.

Alternative hypothesis (H_1) : Not all the variables are identically distributed with respect to the preference scores.

If it is found to be not identically distributed then further analysis was conducted using Dunn's test to test which pairs of variables are significantly different from each other. By considering the mean rank values it was also tested whether the variables can be ranked if they are found to be significantly different from other variables. Thus the final result of this analysis under each category made it possible to answer the first research question.

In order to find out whether the number of loyalty cards that a customer holds depends on their buying behavior and if so what factors were affected the most was also tested using Wilcoxon-Mann-Whitney U test. It was also tested whether the variables also differ significantly with respect to the gender using Wilcoxon-Mann-Whitney U test.

Finally it was tested whether the discounts preferred by the customers who have loyalty cards are identically distributed using a 5 point ranking scale and Kruskal-wallis test. And as it was found not identically distributed, Dunn's test was used to check whether the categories are significantly different from each other for the purpose of testing what category does the consumers prefer most.

This study has successfully archived its aims by its findings. And those findings can be mentioned as follows.

Initially it was found that the theoretically defined fourteen variables were able to categorize in to six clusters using the dendrogram and theoretical explanations. Thereafter each of the variables in the group was tested to find there dependency based on gender and number of loyalty cards.

It was found that men prefer mostly than women to visit the shops that provide more discounts or free items. This result was achieved by comparing their mean rank scores after identifying that preferences are significantly different with respect to gender on those factors.

It was also found that single card holders highly prefer to visit when the businesses treat them with respect and in a friendly manner, provides new and trendy products, do not waste customers' time in transactions and while searching or locating products, provides easy access, and gives the best rewards for the loyal customers.

Finally, the highest preference on having promotions were for the vegetables/ fruits or grocery items and third, fourth, and fifth preferences were on for, fish/meat, beverage and bath ware respectively.

5.3 Summery of Findings and Conclusions


The findings of this research under the above descriptions for the six clusters are summarized in the table 5.1.



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Cluster	Variables (I buy mostly from the shop,)	Findings	Conclusions
<p>Cost concerned, Opportunistic customers</p>	<p>1. which is closest to me 2. which offers low prices 3. where the shop offers additional products, services for free 4. which offers regular sales promotion or Discounts</p>	<p>1. The four variables are found to be Identically distributed with respect to preference scores. 2. First two variables are identically distributed, and 3rd and 4th variables are not identically distributed under gender wise comparison 3. All the variable are identically distributed with respect to the number of cards</p>	<p>1. The four variables were preferred by the customers in the same manner. 2. Men tend to prefer visiting more towards the shops that provides free products and services and many promotions or discounts 3. Having several cards do not significantly make a difference on selecting a product or a service under these four variables.</p>



<p>Time concentric and trendy customers</p>	<p>5. which sells current, fashionable or trendy goods 6. where I'm treated with respect and in a friendly manner 7. where I spend less time during transaction 8. which is located where transportation, transiting is easier 9. where the needed items can be easily located</p> 	<p>1. All the variables are not identically distributed with respect to the preference scores. 2. Except between 7th & 8th and 8th & 9th all the other variables are pair wise significantly different and the 6th variable had the highest mean rank, next highest was 5th and then 9th 3. All the variables are identically distributed with respect to gender 4. Variables 5, 6, 8 are identically distributed with respect to the amount of cards 5. Variables 7, 9, are not identically distributed with respect to the amount of cards</p>	<p>1. Customers have different choices on the considered five variables. 2. Customers highest preference is towards the businesses that treat them with respect and in a friendly manner. Then they prefer to buy from the shop which sells current, fashionable or trendy goods. But then after further ranking is not possible as the 9th variable is not significantly different from 8th. 3. The buying preferences towards the variables are similar between the customers according to their gender. 4. Number of cards that the customer holds does not change the preference of the 5th, 6th and 8th variables significantly 5. Customers with single loyalty cards prefer buying from the shops where they spend less time during transactions and find the products easily.</p>
<p>Reward based loyal Customers</p>	<p>10. which has the best rewards for the loyal customers 11. which has granted me with a loyalty card</p>	<p>1. The two variables are not identically distributed with respect to the preference score. 2. Two variables are significantly different from each other and 10th variable has the highest mean rank</p>	<p>1. Customers have different choices on the considered two variables. 2. customers visit more toward the shop which provides the best rewards for the loyal customers 3. Gender or the amount of loyalty cards do</p>

		3. Distributions are identical with respect to gender and number of loyalty cards	not affect significantly on the preferences towards the two variables.
Loyal Customers	12. which granted me the first loyalty card	1. Distributions are identical with respect to gender 2. Distributions are identical with respect to the number of loyalty cards	Gender or the amount of loyalty cards do not affect significantly on the preferences towards the variable.
Brand concentric customers	13. where they are experts in the area of business	1. Distributions are identical with respect to gender 2. Distributions are identical with respect to the number of loyalty cards	Gender or the amount of loyalty cards do not affect significantly on the preferences towards the variable.
Emotional customers	14. where attendants show concern about my problem	1. Distributions are identical with respect to gender 2. Distributions are identical with respect to the number of loyalty cards	Gender or the amount of loyalty cards do not affect significantly on the preferences towards the variable.

Table 5.1: Summary of findings and conclusions

The findings and conclusions of this research under the above descriptions for the Discount preferences are summarized in the table 5.2.

Discount type (Variables)	Findings	Conclusions
15. Vegetables/Fruits 16. Beverages 17. Grocery 18. fish/meat 19. Bath-ware	1. The five variables are found to be not identically distributed with respect to preferences. 2. Except between 15 th & 17 th all the other variables are pair wise significantly different 3. 15 th variable had the highest mean rank but it is not significantly different from the 17 th variable	1. The choice of preference to have discounts are different 2. The highest preference for discounts are either vegetable/ fruits or grocery. But a proper preference cannot be concluded as these two are not significantly different from each other 3. Third, fourth, and fifth preferences on discounts were for, fish/meet, beverage and bath ware respectively.

Table 5.2: Summary of findings and conclusions for the Discount preferences



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5.4 Limitations

The study was based on the buying behaviors of consumers with loyalty cards in Sri Lanka. For the purpose of this study the sample was considered as loyalty card holders in southern province of Sri Lanka. Although the study produced interesting and meaningful findings, the limitations of the study need to be discussed.

The main limitations affected the study are, time constraints and limited access. Time constraint was the key limitation of this research it is because the researcher had a limited period of time to collect data and information from the available sources

It was also understood that it would have been better if the survey was conducted in several provinces to provide a much reliable conclusion. Geographical factor also became a limitation for this research because this research was conducted in Southern province, Sri Lanka only.

The Questionnaire method was used for the study which also had a preference scale and therefore answers are mostly controlled by the researcher and only the variables understood by the researcher were tested. Even though this becomes a limiting factor, it is done due to the fact that otherwise the researcher will be supplied with overwhelmed number of information that cannot effectively be analyzed.

5.5 Further Recommendations

The field of marketing has a vast area which changes with time. Therefore continuous studies are required to make sure that the new trends and strategies are available.

This study has only concerned on highly effective fourteen variables, but there are many factors that affect the consumer behavior which can be tested for their degree of relevance towards the appropriate study.

This study has also tried to test the behavior of customers with multiple loyalty cards as just a sub category. But it can be extended to a study in a manner that if a customer has many loyalty cards what would influence them on selecting a proper business.

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Appendix A

Please, Answer The Following Questions As Thorough as Possible.

1. Gender: Male Female
2. Age: 0 – 18 18 – 45 45+
3. How many regular Loyalty cards do you have? 0 1 2+

How Do You Decide On Which Shop To Buy Your Goods And Services?

Question	Preference				
	Strongly agree	Agree	Don't know	Disagree	Strongly Disagree
I buy mostly from the shop,					
4. Which is closest to me.					
5. Which offers low prices.					
6. Which sells current, fashionable or trendy goods					
7. Where I'm treated with respect and in a friendly manner					
8. Where attendants show concern about my problem					
9. Where I spend less time during transaction					
10. Which is located where transportation, transiting is easier					
11. Where the shops are experts in the area of business					
12. Where the shop offers additional products, services for free					
13. Which offers regular sales promotion or discounts.					
14. Which has the best rewards for the loyal customers.					
15. Which granted me the first loyalty card					
16. Where the needed items can be easily located.					
17. Which has granted me with a loyalty card					

18. What type of products would you like to have the regular discounts? (Rank your preference using numbers 1-5, same rank can be given to many)

- a) Vegetables/Fruits b) Beverages c) Grocery d) fish/meat
- e) Bath-ware

Give one major reason why you buy mostly from a particular shop.

.....

Thank you!