The influence of store environment on customer satisfaction across different customer demographic segmentations within Australian supermarkets

Quoc Buu Duong

Southern Cross University

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THE INFLUENCE OF STORE ENVIRONMENT ON CUSTOMER SATISFACTION ACROSS DIFFERENT CUSTOMER DEMOGRAPHIC SEGMENTATIONS WITHIN AUSTRALIAN SUPERMARKETS

DUONG QUOC BUU
B.E., Ho Chi Minh City University of Technology, Viet Nam
M.E., Ho Chi Minh City University of Technology, Viet Nam

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In partial fulfilment of the requirement for the degree of
Doctor of Business Administration

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STATEMENT OF ORIGINAL AUTHORSHIP

I, Duong Quoc Buu, hereby declare that the contents in this thesis are my own work. All of the support from others and all sources used have been acknowledged accordingly in the thesis.

I also certify that the substance of this thesis has not been previously submitted for any degree and is not currently being submitted for any other degree.

Signed: ........

Duong Quoc Buu
Name: ..........................................................

June 2016
Date: ..........................................................
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ABSTRACT

Despite the proliferation of online shopping, traditional store-based or bricks-and-mortar retailing plays an essential role in the retail industry and in society. Therefore, the main objective of this research is to establish the relationship between store environment factors and customer satisfaction across different customer demographic groups. While the key concepts of store environment, customer segmentation and customer satisfaction have been the subject of extensive research, there is a lacuna of attention paid in the literature to the relationship between them.

Building on a review of existing literature on retailing, this study sets up a theoretical model to clarify the relationship among store environment, demographic segmentation and customer satisfaction. This framework includes three main store environment factors, (ambience, physical design, and social factors) and four demographic characteristics (age, gender, family size and income combined with shopping frequency) as independent variables. Customer satisfaction is regarded as the dependent variable.

This study used quantitative survey methodology with a descriptive and deductive approach. Approximately 300 respondents from different areas in Queensland and New South Wales, Australia, were surveyed by means of a hand-delivered questionnaire along with mall interception. The questionnaire was designed to collect data to be analysed with a 7-point Likert scale to measure variables. The statistical software program, SPSS 22.0, was used to analyse the data.

Analysis of the data sought to generate descriptive statistics - cross tabulation, factor analysis, Pearson’s correlation coefficient, analysis of variance (ANOVA), multiple regression analysis, cluster analysis to analyse the data. Findings were as follows:

- Music, lighting, assortment, employees influenced customer satisfaction positively. Scent, layout, interior design and other customers’ factors had no influence on customer satisfaction.
There are differences between the age, family size, income, shopping frequency variables and customer satisfaction. Gender had no influence on customer satisfaction.

The levels of satisfaction were different among customer demographic groups.

The influence of store environment factors on customer satisfaction varied among different customer demographic groups. Each customer demographic group had different relationship store environment factors and customer satisfaction.

The outcomes of this study are noteworthy as this study is likely to be the first one to mention and create an equation for the prediction of customer satisfaction from store environment factors for specific customer demographic groups. In addition, findings from this study can help to enhance retail management practices. Stores and supermarkets may apply the findings from this research to increase customer satisfaction and create efficient policies as regards target segmentation, in order to present suitable offerings to meet the requirements of the different customer groups.

The benefit for customers and the community would be better services from retailers.

**KEY WORDS:** Retailing, Supermarkets, Store environment, Ambient factor, Design factor, Social factor, Service quality, Customer demographics, Customer satisfaction
LIST OF ABBREVIATIONS

ABS: Australian Bureau of Statics

ACMA: Australian Communications and Media Authority

ACSI: American Customer Satisfaction Index

ANOVA: Analysis of Variance

GDP: Gross Domestic Product

HREC: Human Research Ethics Sub-Committee

PC: Productivity Commission

PCA: Principal Components Analysis

RAPS: Retail and Personal Services Training Council

SPSS: Statistical Package for the Social Sciences

SCU: Southern Cross University, Australia
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CHAPTER 1  INTRODUCTION

1.1 Introduction

The retailing industry has played a vitally important role in meeting the needs of a modern society. As noted by Bawa et al. (2013), the retailing industry is regarded as being a highly significant component of a nation’s economy. In Australia, for example, the retail industry contributed 4.5 percent of Gross Domestic Product (GDP) (2013) and 10.7 percent of the workforce (2014) with over 1.2 million workers. According to the Retail and Personal Services Training Council, in Australia retailing has become the second largest employing industry (RAPS 2014). In response to global economic challenges, retailing also evolves and changes with the times; indeed, as the online world prospers, consumers have alternatives to choose from such as e-retailing or ‘click and brick’ retailing. Consequently, the traditional retailers must look for different ways to compete. In a study concerning the store of the future, namely a report from National Retail Federation (NRF 2000), the authors emphasised that retailers need to re-evaluate the use of store space to meet the customer expectations and make shopping more enjoyable.

Differing from e-retailers, traditional or physical retailers must consider restricted store space as a critical aspect of the store environment. Each square metre of shop space needs to provide a return to the retailer (Li et al. 2009). Thus, a thorough understanding of store environment factors and their effects as regards getting benefits from shoppers is necessary. Retailers have always been interested in examining the demographic factors and use the demographic information to understand customers better (Zeithaml et al. 2013; Iqbal et al. 2013). According to previous researchers, there are links between store environment factors and customer satisfaction (Machleit et al. 2005; Yalch & Spangenberg 2000) as well as demographic variables and customer satisfaction (Homburg & Giering 2001; Seiler et al. 2013). Besides, in the retailing industry, supermarkets still have a salient role, not only because a huge number of retailers are supermarkets, but also since this kind of retailer now has widespread effects on society. However, the interrelationships among store environment factors, demographic
variables and customer satisfaction have not been sufficiently researched, especially with regard to Australian supermarkets (Mortimer & Clarke 2011). Thus, this study sought to examine these relationships within Australian supermarkets.

This chapter introduces the research on retailing and its relevant issues. It also presents background information as context for the study. Then, the chapter presents an overview of the literature in three main areas: retail store environment, market segmentation and customer satisfaction. The chapter then describes the research problem, research gaps, research questions, theoretical framework, and hypotheses. Justification of the research is discussed, followed by a summary of methodology for the research. Definitions of key terms are provided, and limitations of the research are discussed. An outline of Chapter 1 is provided in Figure 1.1.

**Figure 1.1 Structure of Chapter 1**

![Diagram](image)

Source: Developed for this research
1.2 Background to the research

In the modern society, the retailing industry has become more diversified and dynamic. In such an environment, it is not surprising that there is an increasing demand for skills and education (Ihtiyar et al. 2014; Kumar & Kim 2014; Ogden 2005). This is especially important, because although retailing evolves and changes with the times, never have the changes been as rapid as they have been in the past decade (Grewal et al. 2013). This industry has become increasingly global in scope with the integration of technology, economic, demographic changes. Along with technological innovation, e-tailing or e-commerce has become much more interactive. Consequently, e-tailing is growing and contributing progressively to the current retailing industry. In the first four months of 2014, Australia’s online retail spending increased by 6.4% to $15.25 billion for the year to April 2014, representing approximately 6.5% of traditional retail spending (RAPS 2014).

Traditional retailing outlets such as supermarkets maintain an essential role in Australian society. However, to exist and develop in the competitive world of retailing, bricks-and-mortar or physical/store-based retailers need to look for suitable, long-term strategies. While a large number of retailers usually use traditional methods to push sales and attract customers, such as huge promotions or deep discounts (Hu & Jasper 2006), these strategies are appropriate only for the short-term, and retailers cannot hope to increase profits by these means in the long run (Liao et al. 2012). Therefore, one important way to develop traditional (store-based) retailing is to make full use of the store environment. Research shows that aspects of the store environment such as ambience, design, and social factors, have a strong influence on customer behaviours and perceptions (Baker et al., 2002; Liao et al. 2012; Seock 2009). Specifically, store environment impacts not only on impulse buying but also patronage (Mohan et al. 2013; Seock 2009). Meanwhile, Liao et al. (2012) found that consumers’ potential profit and perceived value are influenced by store environment cues. More importantly, according to Demirgünes (2014), Turley and Milliman (2000) and others, the store environment significantly affects sales and customer satisfaction, indicating that it is most important in helping stores develop and grow.
Having established the importance of store environment, this study addresses the second major concept underpinning the research - customer satisfaction and its significance for retailing. Dineshkumar and Vikraman (2012) noted that the critical factor in any successful retail store is to ensure customer satisfaction. This feature can be used as the main competitive weapon in most businesses. How to know, understand, research and meet customer satisfaction appears to be the main purpose of all companies (Anderson et al. 1994). Aydin and Özer (2005) concluded that satisfied customers tend to purchase more, and agree to higher prices; moreover, they are likely to have positives attitudes that lead to positive word of mouth recommendations to their relatives or friends about the business and its products or services. In light of these studies, Chu and Lam (2002) and Demirgünes (2014) go further, concluding that there is not just a one-to-one correlation between satisfaction and profitability. This emphasises the fact that customer satisfaction needs to be considered in the context of the demographic characteristics of the customers.

According to Punj and Stewart (1983), market segmentation is the process of dividing a market into subsets of potential buyers and customer demographics is the cornerstone of market segmentation. In demographic segmentation, buyers are classified into groups on the basis of variables such as gender, age, family size, income, and other characteristics. In previous research in retailing, demographic variables like age, gender or income were important predictors of customers shopping behaviours. However, most researchers have given their attention to investigating the relationships between consumer demographics and choice of store format (Fox et al. 2004; Hansen & Solgaard 2004). As suggested by Shim and Bickle (1994), retailers need to analyse customer demographic variables since this may help retailers know customers better in order to find the appropriate way to reach them.

In the United States, in 2013, offline retailer sales amounted to $4.3 trillion, which accounts for 94% of total retail while, in 2012, Australian consumer’s online spending accounted for 6.3% of sales. 73% of shoppers still want to try on or touch merchandise before they make a purchase (US Bureau 2012; Frost & Sullivan 2012).
As mentioned above, store environment, demographics and customer satisfaction are very important to study and invest for any traditional retailers. In the study of store image attributes, Theodoridis and Chatzipanagiotou (2009) showed that store environment factors such as design features of colour, social factors or friendly employees influence customer satisfaction depending on demographic profiles. Nonetheless, prior authors seem to focus on the management aspect of store environment, customer satisfaction and customer demographics. Meanwhile, the technical and mathematical sides of the relationships, as well as effects among these three concepts are not likely to be investigated deeply. Thus, to understand this relationship in order to help retailers create long-term strategies, the present research examines the relationship between store environment factors and customer satisfaction across different customer demographic groups within Australian supermarkets.

1.3 Research problem, research questions, the theoretical framework

1.3.1 Research problem

The theoretical framework and research issues have been built on the findings of literature reviewed in Chapter 2. Likewise, the research problem has been synthesised from background theories in retailing, concerning store environment, market segmentation, and customer satisfaction. Findings from the literature suggest that future research needs to clarify the relationship between customer satisfaction and demographics (Ali & Dubey 2014), and investigate the effect of more aspects of customer satisfaction than have been studied to date (Huddleston et al. 2009). Moreover, a retailing study related to demographic segmentation and customer satisfaction revealed that different segments have differing satisfaction levels (Theodoridis and Chatzipanagiotou 2009). Based on these considerations, the research problem for the thesis was formulated as:

What is the relationship between store environment factors and customer satisfaction across different customer demographic groups?
1.3.2 Research questions

The research problems and research objectives have led to key research questions below:

1. What are the retail store environment factors that have significant positive correlations with customer satisfaction?
2. What are customer demographic variables influencing customer satisfaction in a retail store environment?
3. How different are levels of satisfaction in relation to customer demographic variables?
4. How does the influence of retail store environment factors impacting on customer satisfaction vary across different customer demographic groups?

1.3.3 Theoretical framework

In Chapter 2, the literature review explores three issues: store environment, customer demographic segmentation and customer satisfaction. For the first, the study explores three main elements of the store environment (ambience, design and the social). Each major element consists of factors proposed to be related to customer satisfaction. Specifically, there are four factors of ambience: music, lighting, scent and temperature. Design is broken down into three main factors: layout, assortment and interior design. Social factors refer to both customers and store employees. All of these factors are regarded as independent variables, proposed to be correlated positively with customer satisfaction, the dependent variable (Hypotheses 1, 2 and 3).

With regard to the second group of independent variables pertaining to customer segmentation, there are four main demographic characteristics: gender, age, family size and level of income. Shopping frequency across customer groups is also regarded as an independent variable. The study investigates the relationship of the above demographic and shopping frequency variables with customer satisfaction (Hypotheses 4, 5, 6, 7 and 8).
The third issue, the level of customer satisfaction in relation to customer demographic variables, is addressed. After that, the main purpose of the research, the potential relationship between store environment factors and customer satisfaction across different customer demographic groups is established. The proposed model in Figure 1.2 illustrates the theoretical framework for the study.

**Figure 1.2 Overall theoretical framework**

![Diagram of the theoretical framework](image)

Source: Developed for this research

**1.4 Justification for the research**

To date, there has been a great deal of attention paid in the literature to the recent trend in e-tailing and non-store-based retailers, and a huge number of studies indicate that it is highly valued (Hui & Wan 2006; Dunne et al. 2011; Bhatnagar & Syam 2014). However, store-based or bricks-and-mortar retailers remain as vitally critical in people's lives. Moreover, although online shopping has many competitive advantages, and physical retailers have to manage drawbacks such as high investment in infrastructure, limited opening hours, store-based retailing has a number of advantages (Enders &
Jelassi 2000; Bellman 2001), such as ownership of a long-term friendly brand, and the fact that people appear to enjoy ‘the shopping trip’. Going shopping in bricks-and-mortar stores or in supermarkets is a hobby and an interest for many people all over the world (Enders & Jelassi 2000; Bhatnagar & Syam 2014). Therefore, studying the format of retailing in general, and in supermarkets in particular, is necessary and useful for both practice and theory.

Indeed, most previous researchers have paid much attention to individual factors of the ambient, design or social factors, such as scent, signage or number of employees. Other studies have focused more widely on combining these individual factors. For example, scent and music (Mattila & Wirtz 2001) or layout and signage (Ang et al. 1997) have been studied. However, both of these approaches are likely to lack a comprehensive framework in order to achieve a detailed understanding of in-store environmental influences. To overcome this lacuna, the researcher has investigated the effect of all factors of the retail store environment on customer satisfaction.

In terms of customer segmentation, many studies have explored the link between demographics and customer satisfaction with one or two variables such as age or gender (Mittal & Kamakura 2001, Taylor 2003; Walsh et al. 2008). In addition, previous Australian studies in supermarkets just focused on the relationship of demographic and customer satisfaction without investigating other factors together (Beynon et al. 2010). Therefore, it is necessary and useful to research comprehensively the influence of store environment on customer satisfaction across different customer demographic segmentations within Australian supermarkets.

1.5 Research methodology

This section provides a brief overview of the research methods used to collect and analyse the data, as fully detailed in Chapter 3. The literature review was employed to explore factors of retail store environment, customer demographic variables and customer satisfaction. Arising from the literature review, the 10 hypotheses were developed. Testing these hypotheses and building the outcomes of the research, were
done in the context of a positivist paradigm, and quantitative methodology was adopted because the research problem is clear and can be easily measured (Easterby-Smith et al. 2002), and the descriptive and deductive approaches are aligned with all aspects of the research.

With regard to data collection, the survey method, using hand-delivered questionnaires along with mall interception, was selected. The questionnaire design was such that responses could be rated according to a 7-point Likert scale to measure variables. A pilot study with 30 respondents was conducted to check the questionnaire and associated issues to avoid problems. After the pilot study, an assessment of the structure of questionnaire was carried out. The target population size of 315 respondents was reached by selecting from shoppers who were asked to participate in the questionnaire survey after they had spent time in the supermarket. Steps were taken to ensure that ethical standards were maintained, and these are discussed in detail in Section 3.11.

For analysis of the data, the statistical package for the social sciences (SPSS), was employed. In this section, the validity of the questionnaire items were tested by conducting the item-to-total correlations between each variable. Meanwhile, the reliability for multipoint-scaled items were measured by using Cronbach’s coefficient alpha. In brief, the data analysis process itself focused on:

- Descriptive statistics - cross tabulations were applied to calculate the numbers of respondents falling into demographic groups such as age, gender, income. Moreover, descriptive statistics were also used to calculate the means, variance, standard deviation of composite variables (for store environment factors such as music, lighting, assortment).

- The preliminary examination of the data analysis, including cleaning and screening data, identifying outliers, testing for normality of distribution was calculated. At this stage, 09 cases of missing value and 4 cases of outliers were removed.
- Factor analysis was used to reduce and group data in a large number of factors (variables) into a smaller number of factors (variables).

- Independent-samples t-test, ANOVA, Pearson’s correlation coefficient and multiple regression analysis were employed to examine the relationship between store environment factors, customer demographic variables and customer satisfaction. Moreover, by using multiple regression analysis, the research intends to clarify the differences of the importance level of store environment factors (music, lighting, layout, assortment or store employees) influencing on customer satisfaction.

- Hierarchical cluster analysis was performed to investigate the possibility that different groups (customer segmentation) of respondents exist.

- ANOVA combining with the result of hierarchical analysis was applied to compare the level of customer satisfaction among customer groups.

- Multiple linear regression was used to indicate how much of the variance in the dependent variable explained by a set of independent variables. By using multiple linear regression, the researcher indicated which factor of store environment plays the most important on customer satisfaction through each customer group.

More details of the research methodology is described in Chapter 3.

1.6 Definitions of terms

Retailing refers to business activities involved in selling goods and services to consumers for their personal, family, or household use (Berman & Evans 2008, p.28).

Retailer is a merchant whose primary activity is to sell directly to consumers (Rosenberg 1993). A retailer can also be regarded as any establishment engaged in selling merchandise for personal or household consumption and rendering services incidental to the sale of such goods (Baker 1998, p.238).
**Store-based or bricks-and-mortar retailer** is the retailer that operates out of a physical building, or is based on a physical store where the vendor interacts with the customer (Enders & Jelassi 2000; Dunne et al. 2011).

**Non-store retailing** is a form of retailing in which sales are made to consumers without using physical stores or buildings (Berman & Evans 2001).

**Store environment** comprises ambient factors (e.g., lighting, scent, and music), design factors (e.g., layout, assortment, other elements: colour, signage, cleanliness as known as interior design) and social factors (e.g., number, presence and effectiveness of salespersons) which together create an image in the customers’ mind (Baker et al. 2002; Levy & Weitz 2009).

**A supermarket** is a business enterprise that provides a service. It does not produce a physical product of its own in the usual sense. Instead, it adds value by acquiring existing products from remotely-located suppliers, assembling them in regional warehouses, distributing them to local stores, and finally selling the supplier’s products to local customers (Steeneken & Ackley 2012).

**Customer satisfaction** is the degree of overall pleasure or contentment felt by the customer, resulting from the ability of the service provider to fulfil the customer’s desires, expectations and the needs in relation to the service (Angelova & Zekiri 2011).

**Service quality** is the outcome of comparing between expectations and the real service value that customers received or between expectations and their perception of the service performance in reality (Grönroos 1982).

**Customer demographic segmentation** refers to the division of customers into groups on the basis of variables such as age, gender, family size, income, education, religion and family cycle. This segmentation is often used because demographic variables can be easily identified and assessed (Levy & Weitz 2009).
1.7 Limitations of the research

This research focuses specifically on only one type of store-based retailer, namely, supermarkets. Therefore, findings may not necessarily apply to a broad array of all type of retailers in the retailing industry. Besides, because the researcher aimed to explore all main elements of factors of store environment, the findings may not be appropriate for small supermarkets or simple stores, for example, where not all elements of store environment such as music or scent are found.

With regard to the survey, the data were collected over 8 - 9 months, which may not have been long enough for assessing the impact of some elements of store environment, especially for ambient factors. The reason for this is that although most supermarkets are built in self-contained buildings, the weather also influences customers when they evaluate ambient factors such as temperature and scent.

1.8 Outline of the thesis

The thesis has five chapters as follows:

Chapter 1 introduces the research. The chapter begins with background to the research, research problem, research questions, research objective, theoretical framework and hypotheses. The chapter also discusses justifications of the research, explains definitions of terms and methodology used. The chapter ends with definitions of terms and the limitations of the research.

Chapter 2 presents the literature review on the parent discipline of retailing and on the immediate disciplines, namely, store environment, customer segmentation and customer satisfaction. Following the review, a theoretical framework of store environment factors influencing customer satisfaction and the relationship between store environment factors and customer satisfaction across different customer demographic groups is proposed. In addition, hypotheses related to the theoretical framework are developed.
Chapter 3 discusses the research methodology and its justifications. Research paradigms and research approaches are also justified in this chapter. This chapter explains the details of data collection and data analysis processes. Also, the statistical procedures of the SPSS programs used in the research are provided and discussed. The chapter ends with a discussion on the research output and ethical issues.

Chapter 4 describes the analysis of the data collected from surveys, including descriptive statistics on the demographics of the respondents and also addresses normality distribution. The validity and reliability of the factors are evaluated. Cross tabulation, factor analysis, Pearson's correlation coefficient, analysis of variance (ANOVA) and cluster analysis are used to examine the relationship between store environment factors and customer satisfaction across different customer demographic groups.

Chapter 5 presents the conclusions from the findings of the research. The chapter discusses findings and implications for academic field and practice. This chapter also describes the contributions and limitations of the research. Also, recommendations for future research are suggested.

1.9 Conclusion

This chapter presents the overall plan for the thesis: the background to the research, research problem, research gaps, research questions, theoretical framework and hypotheses in order to examine the influence of store environment factors on customer satisfaction across customer demographic groups in Australia. The justification for this research and the research methodology are presented. The chapter also explains definitions of the terms used in the research along with the limitations of the research. Finally, the outline of the five chapters in the research is described.

The next chapter, Chapter 2, reviews the literature on the retail industry as the parent discipline with three main areas: store environment, market segmentation and customer satisfaction in retailing as immediate disciplines.
CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature on retailing in general and on three main areas: store environment, market segmentation and customer satisfaction. Literature on factors of store environment: music, lighting, scent (called ambient factors); layout, assortment, interior design (called design factors); store employees, other customers (called social factors) and their effects on customers is investigated in depth. In addition, the relationship between demographic variables of gender, age, income, and family size of shoppers on one hand and customer satisfaction on the other, are also explored in the literature. The purpose of this chapter is to use the findings from previous studies to establish that an examination of the influence of store environment on customer satisfaction across customer demographic groups is required.

Chapter 2 is divided into seven sections, as outlined in Figure 2.1. Section 2.1 introduces the chapter. Section 2.2 presents the parent discipline of retailing. Next, the first immediate discipline of store environment is addressed in Section 2.3. Sections 2.4 and 2.5 review the market segmentation and customer satisfaction respectively. Section 2.6 demonstrates the proposed research being studied with a theoretical framework and related hypotheses for this research. A conclusion to the chapter is provided in Section 2.7.

2.2 Retailing

This section discusses retailing and its main issues; it is divided into 4 sections as outlined in Figure 2.2. First, the definitions of retailing is presented (Section 2.2.1). Second, the study focuses its attention on retailers in order to clarify the definition and category (Section 2.2.2). Because the research context is situated in Australia, the next step is to describe the retailing industry in this country (Section 2.2.3). The type of retailer researched, store-based retailers and supermarkets are mentioned in detail. Finally, challenges of this type of retailers are discussed (Section 2.2.4).
Source: Developed for this research
2.2.1 Retailing

Retailing affects most things that people do every day. Retailing is involved in everything from food to clothing provided from many kinds of stores. The definitions of retailing, therefore, have been studied by a number of authors. According to Berman and Evans (2001, p.28), retailing is conceptualised as ‘business activities involved in selling goods and services to consumers for their personal, family, or household use’. In a recent study, Dunne et al. (2011) proposed that retailing includes all final activities and procedures needed to distribute a product or provide a service to the consumer. Likewise, retailing can be defined as a set of business activities that adds value to the products and services sold to consumers for their personal or family use (Levy & Weitz 2009).

2.2.2 Retailer

2.2.2.1 Definitions of retailer

The definition of retailer has been discussed for a long time by many scholars. Table 2.1 shows some of these definitions which demonstrate some differences and similarities. Basically, retailers employ a set of final distribution channels to sell products or services directly to consumers. Importantly, retailers are to be contrasted with wholesalers who...
engage in buying, often storing and physically handling products in large quantities then selling them in smaller quantities to retailers or business users (Figure 2.3).

### Table 2.1: Definitions of retailer

<table>
<thead>
<tr>
<th>Source</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>James et al. (1981, p.5)</td>
<td>Retailer is a firm engaged primarily in retailing.</td>
</tr>
<tr>
<td>Baker (1998, p.238)</td>
<td>Retailer is any establishment engaged in selling merchandise for personal or household consumption and rendering services incidental to the sale of such goods.</td>
</tr>
<tr>
<td>Ogden (2005, p.6)</td>
<td>Retailer undertakes activities to sell goods or commodities in small quantities directly to consumers.</td>
</tr>
<tr>
<td>Levy &amp; Weitz (2009, p.7)</td>
<td>Retailer is a business that sells products and/or services to consumers for their personal or family use.</td>
</tr>
<tr>
<td>Berman &amp; Evans (2001, p.8)</td>
<td>Retailer often acts as the contact between manufacturers, wholesalers, and the consumer. Today, most large retailer operate both physical stores and websites to make shopping easier and to accommodate consumer desires.</td>
</tr>
<tr>
<td>Dunne et al. (2011, p.4)</td>
<td>Retailer is any firm that sells a product or provides a service to the final consumer regardless of whether the firm sells to the consumer in a store, through the mail, door to door, over the telephone or through a vending machine.</td>
</tr>
</tbody>
</table>

Source: Developed for this research

#### 2.2.2 Categories of retailers

There is no single method used to classify retailers. Some researchers distinguish retailers by the type of ownership, merchandise, price, assortment, location and service they sell such as general merchandise retailers, food retailers and services retailers (Bennet 1995; Miller 2008). Elsewhere, Levy and Weitz (2009) identified five commonly used schemes to categorise retailers. These are the codes used by the Census Bureau
(all retailers use digit codes to identify their information), number of outlets, margin/turnover, location and size. However, these methods seem to ignore some of the most important trends in the retail industry in recent times. For example, as commented by Turban et al. (2006) some of the above literatures seems to omit the subject of e-tailers who have no physical stores, only an online sales presence. For the purposes of this thesis, the author prefers Levy and Weitz’s definition because of its incorporation of the concept of value addedness.

Therefore, it is more appropriate to categorise retailers according to the influences on them of, for example, the integration of technology, economic and demographic shifts. According to a large number of researchers, the retail industry can be generally characterised by ownership status or by format (Berman & Evans 2007; Pentina et al. 2009; Peterson & Balasubramanian 2002). Retailer ownership type can be divided into independent retailers, chain retailers, franchisers, leased departments, vertical marketing systems and consumer cooperatives. In contrast, retailers can be categorised by format, as being either store-based or non-store-based. To be more specific, there are four basic types of store-based retailers: business districts, shopping centres and malls, free standing units and non-traditional locations. Meanwhile, street peddling, mail-order, automated merchandising systems, direct selling and internet are five main kinds of non-store-based retailers (Dunne et al. 2011). The type of retailer studied is discussed more in Section 2.2.4.

2.2.2.3 Retail mix strategy

In the present study, the researcher has created a retail mix strategy by combining store environment, customer segmentation and customer satisfaction. As suggested by Agarwal et al. (2011), regardless of categories of retailers, one of the important tasks for retailers to develop is to employ suitable strategies such as identifying the target market along with the various types of retail mix. The target market is the group or groups of customers for whom the retailer is seeking to provide products and services. It is useful for all types of retailers to study the different target markets that demand different product/service in an attempt to realise both retailers’ goals and customer satisfaction
(Athanassopoulos 2000; Theodoridis & Chatzipanagiotou 2009). With regard to the main purpose of the research, after examining the relationship between store environment factors and customer satisfaction across different customer demographic groups, the researcher applied the study’s findings and results to suggest the mix strategy for retailers.

2.2.3 Retailing in Australia

2.2.3.1 The history and importance of retailing industry in Australia

Researchers in retailing literature (McCann 2002; Webber et al. 2003) have pointed out that retailing in Australia evolved from traditional markets and fairs from the 1800s. The methods used to sell and purchase goods was ‘door-to-door’ peddling and house-stores. By the 1850s, the qualities and quantities of manufactured goods increased dramatically and therefore specialist retailers evolved to satisfy buyers in big cities. From the 1870s, Australian retailers were affected strongly by the appearance of department stores in Europe and America; retailers began to manage the stock into departments. This led to the development of multi-storey buildings and it became the typical trend for store-based retailers until the beginning of the 20th century.

Prior to the 1950s, Australian retailing emphasis had been narrowly focused on a small wealthy class market. After 1950, the emphasis moved to the growing middle class market and the use of mass-merchandising techniques such as catalogues, brochures. From the 1950s to the 1990s, Australia witnessed a dramatic transformation in the form of regional and community shopping centres developing and spreading from big cities to remote areas (Kingston 1994). In recent years, the number of shopping centres and supermarkets has grown along with the attention paid to satisfying many kinds of customer groups from retailers.
Importance of retailing

At present, the retail industry is increasingly contributing to the development of the Australian economy, with 4.1 percent of GDP and 10.7 percent of employment. The retail industry has become one of Australia’s largest employers, employing over 1.2 million workers as of February 2014, approximately 10 percent of the Australian workforce. Retail trade is the largest employing industry of workers aged 15-24 years, (34% compared with 16% through all industries, ABS 2014).

From 2012 to 2013, retailing made a significant contribution to economic output, contributing over AUD$ 68.5 billion of GDP. The number of companies in the retail industry grew by about 2,370 new retail businesses at June 2013. At this time, there were 143,895 retail businesses in Australia. Most of them were located in the big cities of New South Wales, Queensland and Victoria (RAPS 2014). The importance of the retailing industry also derives from benefits for investors since this attracts capital and increases impacts of retailing on society. In a survey of the industry by IBIS World (2011), the retailing industry brought the third biggest shareholders’ fund for its businesses with nearly 14 percent per year (based on top largest Australian companies).

**Figure 2.3 Return on shareholders’ funds after tax**

![Graph](source: Ruthven – IBIS World (2015))
2.2.3.2 The features and trends of Australian retailing

Features of Australian retailing

In practice, the Australian Bureau of Statics (ABS 2010) categorises retailers in Australia into the following main types: servicing and repairs (car dealers, motor showrooms); supermarkets and grocery stores (Coles, Woolworths and Aldi); convenience stores (7-Eleven, petrol station store); specialised food drink retailers (Red Rooster, Liquor Land and BWS); department stores (Myer and David Jones); discount department stores (Big W and Kmart); other variety stores (Reject Shop, Priceline); and specialty stores (Harvey Norman and Prouds). According to a report by the Productivity Commission (PC 2011), the largest retailing subdivisions are store-based retailing and food retailing with 29 percent and 51 percent, in that order, in the retail industry. In this classification, the largest sectors are the supermarkets and grocery stores. The top four, namely Woolworths, Coles, Aldi and IGA, hold over 90 percent of the supermarket and grocery store market, making this industry one of the most concentrated industries in Australia today (RAPS 2014).

One important feature of Australian retailing is the number of foreign owned businesses. There are some large international retailers such as IKEA, Zara and Aldi who have increased their investment and currently account for over 5 percent market share. Furthermore, in last few years, some other retail firms like Costco and Gap from America and Uniqlo from Japan, have been established, and intend to expand their businesses in many cities around Australia (ABS 2014).

Trends

Nowadays, Australian retailing is influenced by many trends such as economic conditions, consumer preferences, new technologies, the development of online retail facilities and demographic shifts. These trends impact dramatically on fundamental changes in the retail market (Jones et al. 2007). The impact of high technology in Australia is impressive. For instance, in many retailers such as Coles or Woolworths, customer self-services were used with a rate of development twice that of Europe and the United States (RAPS 2014). In addition, with regard to online retail, in the first four
months of 2014, Australians spent over AUD$15.25 billion for e-commerce through using internet and mobile phone. This number represents an increase 6.4 percent compared with last year. More importantly, it overtook 6.5 percent of traditional retail spending (RAPS 2014).

The move from traditional retailing into multi-channel operations has been occurring not only amongst online retailers but also amongst mortar shop-fronts, known as ‘clicks-and-mortar’ retailers, which combine store-based and non-store-based retail outlets (Bernstein et al. 2008). Another important trend is the development of retailers who focus on cheap prices, supplying low price products to customers (e.g. discount stores, discount warehouses). In a recent study, Conomos and Ingrey (2014) demonstrated that, because of the difficult and unfluctuating economic climate, Australians seem to be looking for value for money. As a result, home brand products were purchased increasingly. For example, discount or price-focused stores such as Reject and Priceline have emerged in many areas.

According to Bailey (2013), in Australia, most customers are females, accounting for 72.3% of shopping-centre customers. The highest proportion of consumers is aged from 50 to 59 years (18.0%). The main type of products and services that customers usually buy are clothing, shoes, jewellery and accessories (22%); and fresh food, liquor and groceries (56%). There are about 72% of consumers who go shopping as ‘purpose-or mission-driven’ and 28% of consumers go shopping as ‘leisure oriented’ (Summer 1994).

In sum, retailing is likely to be valued as a key to a successful economy, not only for Australia but also for any nation. However, because the retailing industry involves so many big issues, with retailers classified into many types and formats, the researcher has narrowed the scope of the inquiry as outlined in the following steps.
2.2.4 Type and challenge of retailer studied

2.2.4.1 Type of retailer studied

Based on the literature above, retailers can be categorised mainly by ownership or by format. For this study, the researcher paid attention to characterising by formats. As shown in Section 2.2.2.2, there are two types of retailer format: store-based and non-store-based retailers.

According to Dunne et al. (2011), non-store retailers are forms of retailer in which sales are made to consumers without using physical stores. By contrast, store-based or bricks-and-mortar retailers operate out of a physical building where the vendor interacts with the customer (Enders & Jelassi 2000). In this study, the researcher examined the relationship between store environment and customer satisfaction across the demographic variables. Hence, the physical store with its associated factors such as music, lighting, assortment and other customers formed the basic unit of study for this research. In particular, with regard to retail formats, this study focused on store-based retailers located in business districts and shopping centres, and shopping malls (as noted in Figure 2.5). Specifically, in these categories, the researcher selected supermarkets as the type of the retailer to be studied.

Figure 2.4 Retail format category

![Retail format category diagram]

Source: Adapted for this research from Dunne et al. (2011)
Supermarkets

A supermarket is a large self-service store that sells food and household products, or a business supplying a service to customers. According to Steeneken and Ackley (2012), supermarkets assemble existing goods from remotely-located suppliers, then keep them in stores and sell them to local customers. In a typical supermarket, products include baked goods, dairy, vegetables, fruit, meat, fresh produce, household accessories, pet supplies and pharmacy products. A supermarket is bigger and has wider selections than a traditional grocery store, but it is smaller than a hypermarket or super store Steeneken and Ackley (2012). The layout and square of a hypermarket is bigger than a supermarket. In terms of number of employees or staff, clearly hypermarkets are bigger than supermarkets, while the price of an item from a hypermarket is often cheaper than it is from a supermarket.

Figure 2.5 Market share of supermarkets in Australia

As described by Mills (2003), the supermarket sectors have become much more concentrated in many developed countries in recent years. Australian supermarkets can be taken as an example. In December 2013, the report from Roy Morgan Company, illustrated in Figure 2.6, showed that the top 4 supermarkets in Australian account for over 90 percent of all market share. In this number, Woolworths is the number one with
nearly 40 percent, while Coles is the second with around 33 percent. Aldi and IGA account for about 10 percent and 9 percent of market share in that order (as shown in Figure 2.6). As a result, most of places surveyed were Woolworths, Coles, Aldi and IGA supermarkets.

As suggested by Mohan et al. (2013), a supermarket’s materials and layout such as cluttered shelves and narrow aisles can result in a rise in the perception of crowding, which may lead to a negative effect. By way of contrast, Beatty and Ferrell (1998) revealed that variables such as positive mood and feelings of shoppers, can influence impulse buying and therefore contribute to unplanned purchases.

For this study, the researcher chose supermarkets in order to investigate the influence of store environment on customer satisfaction, because smaller stores such as family or convenience stores may not contain all factors of store environment such as music, scent, lighting or layout. Neither were hypermarkets selected for this study because hypermarkets or centralised malls consist of many smaller areas, which might have made it too difficult for respondents to remember the influence of store environment factors on them, when they were surveyed.

2.2.4.2 Challenges and advantages of store-based retailers and supermarkets

Challenges from e-tailing, non-store retailers

As mentioned in Section 1.4, much attention has been given to the study of e-tailing, and the majority of the research suggests that it is highly valued as a recent trend (Burt & Sparks 2003; Hui & Wan 2006; Bernstein et al. 2008; Pentina et al. 2009). It has to be granted that, along with the development of technology, e-tailing plays a critical role in society. The numbers of people using internet, smart phones or integrating them together has grown dramatically. In confirmation of this, there were over 7.5 million Australians using the internet via their mobile phone in June 2013, a rise of 33 percent compared with 2 012, and over 51 percent from June 2008 (Australian Government and Media Authority – ACMA a2013). Besides, customers spending for retail online in Australia went up 6.4 percent to AUD$ 15.25 billion in the first four months of 2014, reaching approximately 6.6 percent of store-based retail spending. This percentage was
over a threefold increase since 2010 (RAPS 2014; ABS 2010). More importantly, in 2003, 10 percent of shoppers who buy products online said that they go to a store less often. However, this number grew by 23 in the first 4 months of 2014. In addition, the largest age group of online shoppers was 35 – 44 years, followed by 25 – 34 (RAPS 2014). These kinds of customers will play a more critical role in purchasing in the near future.

The main challenges for store-based retailers come from the benefits which online or non-store retailers bring to customers. A number of authors (Sorce et al. 2005; Hui & Wan 2006; Conomos & Ingrey 2014) agreed that non-store retailers provide convenience of buying to customers 24 hours a day and seven days a week. Delivery at the location and time of the consumers’ requirements is especially useful for time-poor households. Similarly, non-store retail brings huge benefits for customers because of the reach of the whole internet community. In short, the options are exceptionally good for retailers owing to the digital nature of business with little infrastructure demands (Enders & Jelassi 2000).

Advantages for store-based retailers

Although online shopping has a competitive edge in many respects, and physical retailers face some drawbacks such as high investment in infrastructure and limited opening hours, store-based retailers enjoy a number of advantages as follows (Enders & Jelassi 2000; Bellman 2001):

- Strong bargaining power via suppliers: Online retailers provide low prices for customers mainly because of low infrastructures requirements. Meanwhile, store-based retailers can bargain with suppliers for cheaper prices because of large sales volumes. Actually, in many cases, products’ prices of physical stores, including supermarkets, are cheaper than online stores, especially for articles of daily necessity such as milk, bread, vegetables, meat and seasoning.

- Owning a long-term brand name: Shoppers may have been familiar with the brand name of store-based retailers or supermarkets for decades, and customers know these stores through frequent visits over the long-term. This is also one of primary
means of creating a famous name for many brands and companies. As a result, shoppers have a sense of closeness and loyalty. This is not easy and costs time to match by non-store retailers. Shoppers may have been familiar with the brand name of store-based retailers or supermarkets for decades, for example Coca-Cola (established in 1886) and Johnnie Walker (established in 1820).

- The shopping trip: This is the most salient benefit for physical retailers. Indeed, consumers can make full use of the time spent in the store to touch, smell, feel and try out the goods; furthermore, they can ask for information and receive direct feedback related to products from sales employees. Besides, going shopping in bricks-and-mortar stores or supermarkets is like a hobby and an interest for many people all over the world (Enders & Jelassi 2000; Bhatnagar & Syam 2014).

In summary, physical store spaces and store environment of store-based retailers may have advantages over online retailers in satisfying consumers and increasing profits. In the case of physical store or store-based retailing, store environment is one of the most critical effects (Baker et al. 2002; Morrin & Chebat 2005; Singh 2006) and thus, how to make full use of store environment factors becomes a necessary consideration.

2.3 Store environment

This section examines the main factors/elements of store environment and their influences on customer issues and satisfaction. The outline of this section is provided in Figure 2. 7

**Figure 2.6 Outline of store environment**

![Diagram showing the outline of store environment]

Source: Developed for this research
2.3.1 Definition and factors of store environment

2.3.1.1 Definition of store environment

In the retailing literature, definitions of the retail store environment are wide ranging and complicated (Liao & Liaw 2003). Typically, researchers have used concepts like physical and non-physical surroundings to identify store environment (Eroglu & Machleit 1990; Lam 2001). According to Lam (2001), store environment is conceptualised as the physical and non-physical surroundings of a shop/store, consisting of many elements such as lighting, music, layout, directional signage and human factors. Eroglu and Machleit (1990), however, have defined store environment as all the non-physical and physical factors of a store which are within the management of retailer in order to enrich customers’ shopping experience in the store.

With respect to the importance of the store environment, retailers realise that getting customers into a store plays a critical role in their existence and development, especially for bricks-and-mortar stores. Moreover, Seock (2009) and Khedri and Osman (2013) showed that the store environment is considered as the primary marketing instrument to rival increasing competition from online retailers. Therefore, one of the most important matters for retailers is to create a suitable store environment to excite customers so that they will spend more time and money (Dunne et al. 2011).

2.3.1.2 Factors of store environment

Based on several studies of retail stores by researchers such as Yoo et al. (1998), Baker et al. (2002), Kim and Kim (2012), store environment contains three main factors: ambience (e.g., music, lighting, scent, temperature); design (e.g., interior design such as colour, décor, scale shape, signage, assortment and layout); and social factors (e.g., other customers and store employees), as shown in Figure 2.8.

These cues influence customer perceptions differently; thus, retailers should learn about the importance of store environment factors and endeavour to develop an effective store environment in order to attract their target customers (Seock 2009). This
approach was used in the research to examine factors of store environment influencing customer satisfaction.

**Figure 2.7 Factors of store environment**

<table>
<thead>
<tr>
<th>Store Environment (1st Immediate Discipline)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient factors</td>
</tr>
<tr>
<td>- Music</td>
</tr>
<tr>
<td>- Lighting</td>
</tr>
<tr>
<td>- Scent</td>
</tr>
<tr>
<td>- Temperature</td>
</tr>
<tr>
<td>Design factors</td>
</tr>
<tr>
<td>- Layout</td>
</tr>
<tr>
<td>- Assortment</td>
</tr>
<tr>
<td>- Interior-design</td>
</tr>
<tr>
<td>- Color</td>
</tr>
<tr>
<td>- Décor</td>
</tr>
<tr>
<td>- Scale Shape</td>
</tr>
<tr>
<td>- Signage</td>
</tr>
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<td>- Merchandise</td>
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<td>Social factors</td>
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<td>- Other customers</td>
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<tr>
<td>- Number/Crowding</td>
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<td>- Social relations</td>
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<td>- Store employees</td>
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<tr>
<td>- Number of salespersons</td>
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<tr>
<td>- Physical attributes</td>
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<tr>
<td>- (Dress; Demographics; non-verbal cues)</td>
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<tr>
<td>- Behavioural attributes</td>
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<tr>
<td>(friendly, helpful employees)</td>
</tr>
</tbody>
</table>

Source: Adapted for this research from Baker et al. (2002); Kim & Kim (2012)

**2.3.2 Ambient factors**

Arising from the literature above, ambient factors are understood as a group of factors related to background conditions that effect the senses of individual customers, such as smell, sound and sight. Specifically, according to Baker et al. (2002), Kim and Kim (2012) and Yalch and Spangenberg (1990), ambient factors are considered as the non-visual elements of the store environment, including music, lighting, scent and temperature, as shown in Figure 2.9. The next section discusses the importance and the influence of each of these factors on retail customers.
2.3.2.1 Music

The importance of music in retail

Music plays an essential role in the marketing strategy of retailing stores, and retailers may utilise it to create a more pleasant atmosphere to encourage shoppers to stay longer (Reda 1998). In fact, music is one of the first environment factors that attracted researchers’ interest (Yalch & Spangenberg 2000; Levy & Weitz 2009; Seock 2009). According to Yalch and Spangenberg (2000), music in retailing influences customers through its attributes such as tempo, music type (classical music/ instrumental music), melody or types of song. Unlike other store environment elements, music can be easily managed and retailers can use it to control the pace of shop traffic or play at certain times to attract customers (Levy & Weitz 2009).

In addition, retailers must concern themselves about different seasons of the year or customer demographics in order to play suitable music for them. For example, Christmas music seems to be appropriate for Christmas and New Year season, or Hispanic people like to enjoy Latin music when they go to shopping (Seock 2009). This is an important focus for this research, to examine the relationship between music factors and customer demographic groups.
Music with customer issues

The influence of music on customer issues in retailing is presented in many studies. Researchers into retailing have often investigated the link between customer behaviour or customer perception and music (Morrin & Chebat 2005; Singh 2006). Some studies have found that customer mood and cognition can be affected by the music in shopping centres. Yet other studies, such as those of Stratton (1992) and Hui et al. (1997), have emphasised that music impacts emotional responses in consumers and reduces stress from waiting.

Sweeney and Wyber’s study (2002) indicated that music volume, tempo and type impact the perception process, and thereby influences the consumers’ behavioural intention as regards avoidance or approach. To be more specific, fast tempo and high volume music increase arousal levels (Holbrook & Anand 1990). Furthermore, there is a relationship between music and price perception; shoppers perceived higher prices for wine when classical music was played than when hip-hop music was played in the background (Areni & Kim 1994). In the same way, Grewal et al. (2003) and Wilson (2003) noticed the link between the genre of music and the length of stay, as well as the amount of money spent.

With respect to the influence of music on satisfaction, as noted by Hui et al. (1997) and Wakefield and Baker (1998), discussion of the impact of music on customer satisfaction expressed through shopping behaviours is common in the research. Meantime, Yalch and Spangenberg (2000); Babin and Attaway (2000) employed consumers’ in-store experiences to examine the relationship among customer satisfaction and music. The findings of most studies showed that there was a significant positive correlation between music and customer satisfaction. Furthermore, Theodoridis and Chatzipanagiotou (2009); Morrison et al. (2011) took the approach of examining the link between the positive impact of music and customer satisfaction. In light of these viewpoints, this study created and tested the following hypothesis:

H1a: There is a positive relationship between perception of music and customer satisfaction.
To test the hypothesis, the researcher created the items measuring the music factor such as: the store has a soothing melody; the music is played at the right volume; there are many types of songs played in the store; the music tempo makes me joyful; and the store just plays instrumental music. These items come from ideas of authors such as Morrin and Chebat (2005), Singh (2006) and Levy and Weitz (2009), in the retailing literature reviewed, and from the pilot study conducted for this research.

2.3.2.2 Lighting

The importance of lighting in retail
When stores or supermarkets are built, lighting is one of the most vital considerations for several reasons (Smith 1989). First, appropriate lighting in a store is more important than simply illuminating space. Second, well-designed lighting systems can create an added dimension to store environment. Third, it can be used to direct the consumers’ eyes to products. Fourth, it can create a feeling of excitement and induce a positive effect. Actually, according to Levy and Weitz (2009), there are two main functions of lighting in the retail industry: highlighting merchandise and mood creation. A good lighting system brings a sense of fascination to shoppers when they visit the store. Besides, retailers use lighting for focusing spotlights on special items or a feature area. Meanwhile, Dunne et al. (2001) found that attractive lighting can be used to lead customers strategically through the shop and enhance store sales.

Nowadays, saving energy and using eco-friendly environments are of high concern in society. As a result, energy efficient lighting has become an important matter for all retailers. Cutting energy costs and creating more natural light, but still creating a pleasant environment for shoppers represents an ideal way for retailers to use contrast and shadows, for example (Levy & Weitz 2009, Dunne et al. 2011).

Lighting with customer issues
There are a several studies examining the relationship between lighting and its influence on customer perception and behaviour (Mehrabian & Russell 1974; Smith 1989; Summers & Hebert 2001). In Mehrabian and Russell’s study (1974), the authors found that lighting can be the critical factor of store environment and
its effect on customer behaviour. Particularly, lighting can guide the customer’s eyes to key sales points (Smith 1989). Meanwhile, Summers and Herbert (2001) proposed that lighting supports store display by attracting and retaining customer patronage. In fact, lighting and other variables of store environment significantly impact on the emotional or cognitive perceptions of customers (Areni & Kim 1994; Aylott & Mitchell 1999; Baker et al. 1992). For example, Areni and Kim (1994) found that lighting positively affected customer buying.

Although many studies have investigated the link between lighting and its effect on customer issues, it is surprising that, only a few studies have studied the impact of lighting on customer satisfaction (Liao & Liaw 2003; Vieira 2010). As noted by Levy and Weitz (2009), there is a significant relationship between lighting and customer satisfaction; well-lit light and using more natural light seem to make shoppers more satisfied. Besides, in Martinez-Ruiz’s study (2013), ‘good store lighting’ was one of the most influential factors with regard to customer satisfaction. In general, along with development of technology, lighting seems to play more important influence on customer satisfaction, especially in retailing. In light of these viewpoints, this study created and tested an hypothesis:

H1b: There is a positive relationship between perception of lighting and customer satisfaction.

To test the hypothesis, the researcher created the items measuring the lighting factor such as: the store is bright enough; the store is well-lit; the light in the store is modern; the store uses more natural light to save energy; the store promotes a warm and cosy ambience. These items were built from the insights from authors Dunne et al. (2011), Levy and Weitz (2009) and Summers and Hebert (2001), in the retailing literature reviewed, and also from the pilot study conducted for this research.
2.3.2.3 Scent

The importance of scent in retail
Scent is regarded as one of the most salient factors of the retail store environment and many buying decisions are based on scent (Levy & Weitz 2009). In addition, scent has a big influence on customer emotions such as happiness, hunger, pleasantness and satisfaction. According to Dunne et al. (2011), the function of scent is more obvious in bakeries, popcorn vendors and coffee shops where retailers must use scent from products to attract consumers and store managers employ these smells as a marketing tool to put consumers ‘in the mood’ or develop a competitive advantage (Spangenberg et al. 1996). In some cases, retailers add a pleasant scent to their goods presentation to create positive consumer attitudes in order to tempt customers to buy products with a higher price (Michon et al. 2005). At the same time, the store needs to create a neutral zone where customers can recover their sense of smell, because each product contains a specific smell and this may make customers confused or stressed. The impact of scent on customer behaviours is rather complicated as discussed in the next section.

Scent with customer issues
A large number of studies have examined the effect of scent on customer perception and behaviour (Bone & Jantrania 1992; Mitchell et al. 1995 & Spangenberg et al. 1996; Fiore et al. 2000). The first group of studies found a direct positive correlation. Specifically, according to Bone and Jantrania (1992), some researchers have claimed that a pleasing scent created significant impacts on the perception of product and customer behaviour.

Furthermore, as concluded by Spangenberg et al. (1996), scent plays a positive impact on customer behaviour since this kind of store ambient factor makes shoppers feel like spending less time in the store, and increases the positive appraisement of the merchandise. The other group of studies showed that the ambient scent did not have a significant influence on customers’ issues, or that the impact of ambient scents may be mediated by other store environment factors (Fiore et al. 2000).
With regard to the relationship between scent and customer satisfaction in retailing, the scent factor proved itself to have a direct influence on satisfaction through shopping experience (Spangenberg et al. 1996) or pleasure levels (Morrison et al. 2011). Meanwhile, Spangenberg et al. (1996) focused on the positive effect of scent on store evaluation and shopping experience which in turn influences satisfaction. Moreover, Morrison et al. (2011) found that good scents increase shoppers’ pleasure levels and satisfaction. In light of this scenario, this study created and tested an hypothesis:

H1c: There is a positive relationship between perception of scent and customer satisfaction.

To test the hypothesis that scent has a significant positive relationship with customer satisfaction, the researcher created the following items: the store has a pleasant scent; the scent is suitable for the products in the store; the store has distinct fragrance; the store has appropriate smell in different areas. These items come from ideas of authors such as Morrin and Chebat, (2005), Levy and Weitz (2009), Theodoridis and Chatzipanagiotou (2009) in the retailing literature reviewed, and from the pilot study conducted for this research.

2.3.2.4 Temperature

The importance of temperature in retail

Temperature is one of four elements of the ambient factor in retail store environment. As proposed by Briand and Pras (2010), assessing the effect of temperature on store perceptions is of paramount importance, not only for shoppers but also for retailers and employees. In Briand and Pras’ study (2010), authors found that the temperature in store should be kept from 68°F (20°C) to 74°F (23.3°C) to make customers feel more comfortable.

The importance of temperature is rather different than other ambient factors because its impact is not easily recognised by customers and the temperature factor can be affected by other factors such as, scent or colour. Indeed, Stramler et al. (1983) showed
that non-physical elements can play a significant part in the feeling of thermal comfort even when the actual temperature is not changed. Moreover, according to Manay (2007), retailers can use a bright and cool colour to help customers feel more comfortable and have a sense of space. This is also a helpful method to economise on electricity costs since the price of energy increases every year and most retailers pay up to 20 percent of the spending on energy to heat and cool physical stores (RAPS 2014).

**Temperature with customer issues**

The impact of temperature on customers is rather different and complicated in literature and practice. In previous research, Wakefield and Baker (1998) found that there was no measurable effect of temperature levels on the time that shoppers spent in stores. It seems likely that shoppers do not always notice the level of temperature. However, other research suggests that temperature can affect consumer's sensation of comfort while shopping (Briand & Pras 2010). In previous literature, researchers have often combined temperature and other ambient cues such as scent, lighting or music to examine the relationship among these ambient elements in relation to customer perceptions (Briand & Pras 2010; Turley & Milliman 2000). For example, a high-density crowd of shoppers increases the mall ambient temperature and is likely to control the effects of scent. Similarly, high temperatures, loud music with overly bright lighting make for anxiety and pressure in shoppers (Aylott & Mitchell 1999). Bitner (1992) discussed that ambient factors, such as noise, temperature and air quality, impact people's physiological state (such as comfort) and hence affect whether people stay in or enjoy a particular environment. Besides temperature increases lead to aggressive behaviour, increasing negative influence in a crowded situation (Griffitt & Veitch 1971) and the negative impact goes up as the temperature goes below 16.6°C (Bell & Baron 1977).

With regard to the link between customer satisfaction and temperature factor, Turley and Milliman (2000) argued that temperature, lighting, and scent influence customer emotion and therefore satisfaction. Likewise, Theodoridis and Chatzipanagiotou’s study (2009) used temperature and air-cleaning systems to investigate their relationship with customer satisfaction and loyalty. These researchers did not examine the influence of
the temperature on customer satisfaction as a specific element of the ambient factors. Instead they examined customer satisfaction with other customer behaviours. As a result, the correlation between temperature and customer satisfaction was not strong. However, in the pilot study, this study created and tested the following hypothesis:

H1d: There is a positive relationship between perception of temperature and customer satisfaction.

To test the hypothesis, the researcher created the items measuring the temperature factor such as: the store had an appropriate temperature; the store had a very good air-cleaning system; the ventilation system worked well; the store used outside atmosphere; these items come from ideas of authors such as Theodoridis and Chatzipanagiotou (2009); Levy and Weitz (2009) as well as from the pilot study conducted for this research.

To summarise, the ambient factors are four in number: lighting, music, scent and temperature. Nonetheless, based on the literature, many researchers just focus on one or two of these factors. In some cases, scholars have combined some of these factors with a few other elements that belong to other factors such as design or layout. This style appears to be suitable for quick and concentrated conclusions or specific applications. As Lam (2001) pointed out, although a large number of studies have been carried out, there is still a lacuna of detailed understanding of specific factors affecting store environment. Therefore, to overcome this gap in the literature, the researcher intends to study four factors of store ambience (lighting, music, scent and temperature) and investigate their influence on shoppers in the context of customer satisfaction within different demographic groups.

In general, based on the literature review, it can be concluded that music, lighting, scent seem to have strong links with customer satisfaction. The story, however, is quite different for temperature because normally customers do not pay much attention to temperature and they just recognise it after spending long time (Pinto & Leonidas 1994). Hence, to save time and resources for collecting data, the pilot study examined the
influence of the temperature factor on customer satisfaction, in order to decide whether to accept or reject it before doing further analysis.

2.3.3 Design factors

Store design is the main factor in planning the store environment and its main objective is to create a distinctive and memorable store image. The primary objective of store design is to implement the retailer’s strategy by meeting the requirements of the target market and establishing a sustainable competitive advantage (Park et al. 2006). In addition, as proposed by Levy and Weitz (2009), another objective of store design is to impact customer buying behaviour. Specifically, stores need to be designed to attract shoppers to the store and encourage them to spend time in merchandise areas where they might make impulse purchases, but especially, to provide them with a satisfying shopping experience.

The components of store design vary in kind and complexity, depending on store type (Vazquez & Bruce 2002). While Dunne et al. (2011) proposed that store design should include both the exterior and the interior of the store, most studies focus on interior design. Levy and Weitz (2009) focused on layout, assortment, colours, cleanliness and signage as main design elements. Similarly, most authors consider that the main factors of store design are: layout, assortment and a group of other elements including cleanliness, colour, décor, scale shape and signage, now referred to as interior design (Machleit et al. 2000; Baker et al. 2002; Singh 2006). This approach was used in the research to categorise retail design factors, as illustrated in Figure 2.10.

Figure 2.9 Factors of design

Source: Developed for this research
2.3.3.1 Layout

The importance of layout in retail

Store layout refers to where both the merchandise and other structures and facilities are physically located, with the effect of creating a particular pattern of people traffic (Miller 2008). The retailer creates a store layout to guide customers through the store and help them in locating and finding information about products (Levy & Weitz 2009), assisting in displaying merchandise in the most positive and efficient way (Aghazadeh 2005). Most important, a layout not only improves the utilisation of the building but also may increase sales and profits. According to Dunne et al. (2011), layout in the retail industry consists of three principles: circulation, coordination, and convenience. The principle of circulation provides for arrangements that facilitate the control of traffic flow through the store; coordination refers to the arrangement of merchandise in such places to help in promoting sales, creating good will, and furnishing subject matter for publicity; and convenience is arranging items to furnish a high degree of convenience to the customer and personnel.

Some studies have explored the idea that store layouts can facilitate the efficient flow of shoppers and decrease the feeling of crowding (Aylott & Mitchell 1999; Titus & Everett 1995) which in turn eliminates the psychological costs of such negative feelings, and diminishes price perceptions. Similarly, retailers should focus on how to choose an appropriate store layout to create a pleasant atmosphere that induces customers to browse and buy products (Dunne et al. 2011).

Layout with customer issues

Baker et al. (2002) emphasised that an inconvenient layout reduces shopping efficiency, increases feeling of impatience and makes customers more angry, all of which may lead to decreases in repurchases from shoppers. A poor layout causes negative impact on customer behaviour and is not helpful for a customer to find information and goods easily. Spies et al. (1997) noted that a poor store design can make shopping time unpleasant and lead to negative feelings about buying in consumers. In contrast, a number of researchers have established that a good layout can make shopping more fun.
and more enjoyable by decreasing the stress and evoking a positive affect (Yoo et al. 1998; Baker et al. 2002). In the same way, a good layout can make store merchandise more impressive, giving the impression that more products are displayed than actually exist (Morales et al. 2005). Moreover, a spacious, well-designed layout is likely to enhance variety seeking behaviour (Mohan et al. 2013).

In studies on layout and its relationships, Bitner (1992) also found a link between positive experiences and store layout, and specifically, that suitable changes in layout can encourage shoppers to stay longer in the store. In a recent study, Martínez-Ruiz et al. (2013) concluded that store layout is one of the most influential factors in terms of customer satisfaction and behaviours. However, the influence of layout on customer satisfaction is complex. Cottet et al. (2010) have argued that there is, counter-intuitively, no link between store layout and satisfaction, and no interaction effect. In their study, the authors suggested that the direct effect of layout on satisfaction should be assessed by further research. Similarly, Cil (2012, p. 8623), noted that ‘New research should measure the layout impact on shopping satisfaction and impulse buying’. Therefore, a hypothesis concerning the correlation to layout with customer satisfaction was developed for this study.

H2a: There is a positive relationship between perception of layout and customer satisfaction.

To test the hypothesis, the researcher created the items measuring the layout factor such as: it is easy to move around in the store; it is easy to locate products in the store; the layout is appropriate with the merchandise; the directional maps and guides are clear; the corridors are spacious enough. These items come from the ideas of authors such as Dickson and Albaum (1977) and Singh (2006) in the retailing literature and from the pilot study for this research.

2.3.3.2 Assortment

The importance of assortment in retail
Store or product assortment, simply as known assortment, is the total set of items arranged and offered by a retailer (Baker et al. 2002). Assortment reflects the depth and the breath of a good market position (Mohan et al. 2013). In a study on assortment in retailing, Kök et al. (2008) explained that the goal of retail assortment design is to find a suitable assortment that maximises the firm’s profit within various constraints such as limited space and budget.

With regard to the importance of assortment in retail, assortment is a pivotal element of the design factor. Hence, retailers must invest store assortment in bringing the convenience for consumers and satisfying customer needs; otherwise, retailers are likely to be defeated in both current and future sales if they do not know how to provide the expected assortment to shoppers (Mantrala et al. 2008). Especially for bricks-and-mortar retailers, in order to attract customers, retailers should create an appropriate product assortment for their particular stores (Kumar & Steenkamp 2007; Bhatnagar & Syam 2013). For example, discount stores focus on fast moving goods to save time and money for consumers, while supermarkets need to create a range of products with different prices to satisfy many kinds of customers. As Kahn (1999) proposed, in assortment of products for stores, retailers need to determine how narrow or wide the breath of assortment is across the shop, and how deep or shallow the depth of arrangement is within each type, in order to satisfy customer requirements.

**Assortment with customer issues**

There has been a considerable amount of research into relationship between assortment and customer issues, including investigation of the relationship between demographics and assortment of products (Grewal et al. 1999; Fox & Sethuraman 2006). These studies showed that store assortment has relationships with some demographic variables such as age, size of family. For instance, in an area where the population with young families is in the majority, a large assortment of products for children should be included in the store. Similarly, drugstores with large assortments of incontinence goods for the elderly are popular in areas with a large elderly population.
As mentioned, a number of scholars have given their attention to customer perceptions and the capacity of assortment in retail stores to influence it (Mantrala et al. 2008; Simonson 1990). Simonson’s (1990) study indicated that consumers prefer a large assortment, since this means there are many options with range of products for shoppers’ choice. Alternatively, as concluded by Huffman and Kahn (1998) and Iyengar and Lepper (2000), in some situations, the very large assortment might arouse negative emotions in customers, because it may create frustration or ‘overload’. More importantly, this leads customers to decide not to return the shop (Fitzsimons et al. 1997). In general, whether the assortment is large or small is not the key consideration; the critical thing is supplying an abundance of information related to attributes of the products and the way of products arranged to satisfy shoppers (Mantrala et al. 2008).

Store assortment is also a determinant of variety seeking behaviour (Levav & Zhu 2009). In fact, some researchers, Morales et al. (2005) and Krishen et al. (2010) among them, have concluded that assortment has a positive influence on variety seeking behaviour. In particularly, there are two aspects of assortment structures impacting on customer perceptions: the organisation of the assortment and the ‘relative symmetry in the frequencies of items in the assortment’ (Hoch et al. 1999). Therefore, as suggested by previous studies, retailers should offer multiform assortments that keep up with customers’ requirements, in order to drive variety seeking behaviour (Levav & Zhu 2009).

Broniarczyk et al. (1998) have shown that assortments have a positive correlation on customer perceptions and satisfaction. To support this view, Huddleston et al. (2008) pointed out that assortment, along with store employees, quality service and price, influence customer satisfaction in spite of store type. Meanwhile, in a study by Mantrala et al. (2008), store assortment may lead to customer satisfaction if shoppers have enough options of products to meet their requirements. In brief, a good assortment has a positive effect on customer satisfaction. Hence, in an attempt to examine whether there is a significant positive relationship between customer satisfaction and assortment or not, the researcher created and tested the following hypothesis:
H2b: There is a positive relationship between perception of assortment and customer satisfaction.

To test the hypothesis, the researcher created the items measuring the assortment factor such as: the store has a wide variety of products; the store has different price ranges in different products; the height level of merchandise is easily reachable; it is easy to locate the products being sought. These items were developed from ideas of authors such as Broniarczyk et al. (1998) and Levy and Weitz (2009) in the retailing literature reviewed, and from the pilot study for this research.

2.3.3.3 Other design elements – interior design

The components of interior design

Based on the literature reviewed in Section 2.3.3, the classification of design factors may vary depending on researchers and the nature of the study (Vazquez & Bruce 2002). Generally, design in retailing comprises layout, assortment as two main factors (mentioned above) and other elements, namely, colour, cleanliness, décor, signage and merchandise, as known interior design factors. In previous studies, interior design is considered as the biggest factor, containing more elements than layout and assortment together (Turley & Milliman 2000). Therefore, in this research, the interior design factor includes elements related to design inside the store (colour, cleanliness, décor, signage and merchandise).

There are several studies of the importance of the design factor in the store presenting the positive effect, and the necessity of taking into account the effect of interior design on customers in a retailing environment (Yoo et al. 1998; Baker et al. 2002; Liao et al. 2012). For example, Yoo et al. (1998) and Baker et al. (2002) found that design factor can decrease the perceived stress and evoke positive affect in shoppers. Moreover, in a study in 2012, Liao et al. argued that interior design factors can satisfy the customers by providing convenience, and that design factors help shoppers to find the desired products quickly, and get in and out of the store quickly.
**Interior design and customer issues**

According to Spies et al. (1997), poor interior design may lead to a degradation of buying emotion and increase in stress in the shopper. More specifically, certain interior design cues such as signage and colour can affect customer’s emotions and cognitive evaluations in terms of perceiving merchandise, service quality and efficiency of the store (Singh 2006). Liao and Liaw (2003) pointed out that cleanliness of the store (an aspect of interior design) increases positive perceptions of customers. In addition, bright colours may attract customers’ attention and cool colours make shoppers feel more pleasant (Crowley 1993).

In a study on the impact of store environment on shopping mood and satisfaction, Liao and Liaw (2003) concluded that, along with other factors, design has an effect on patronage satisfaction through influencing shopping mood. Surprisingly, the literature fails to establish a direct relationship between interior design and customer satisfaction. Thus, the researcher created and tested the following hypothesis:

H2c: There is a positive relationship between perception of interior design and customer satisfaction.

To test the hypothesis, the researcher created the items measuring the interior design factor such as: the merchandise in the store is well-organised; the signage is logically located in the store; the colour is currently fashionable; in-store displays (texture, pattern) are impressive; the décor is suitable with the store image; the design of floor, ceiling and wall are comfortable; the store is clean. These items were developed from ideas of authors such as Miller (2008), Singh (2006) and Theodoridis and Chatzipanagiotou (2009) in the retailing literature reviewed and from the pilot study for this research.

In general, different from ambient factors which are related to intangible attributes and social factors which are concerned about human issues, design factors are more difficult
to categorise and distinguish (Vazquez & Bruce 2002). Thus, there is no general agreement on the classification of design factors. The researcher is inclined to choose layout, assortment and interior design as the main aspects of the design factor. Based on the literature review, all of main factors of store design play vitally important roles in the retail industry. However, findings in the literature concerning the relationship between design factors and customer issues is quite general. For example, most of issues mentioned above are related to customer perceptions and emotions. Therefore, the direct relationship between design factors and the specific customer phenomenon of satisfaction needs to be clarified.

2.3.4 Social factors

As mentioned above, store environment consists of 3 main factors: ambience, design and social factors. Differing from the first two factors, social factors are related to human issues. As shown in Figure 2.11, the social factors in retail environment also pertain to other customers and store staff (Kim & Kim 2012). Social factors comprise the crowdedness of the store, the number of staff, sales style and the interaction between store employees and customers (Aylott & Mitchell 1999; Baker et al. 2002; Liao & Liaw 2003). In short, the social factor contains two main factors: other customers and employees.

**Figure 2.10 Social factors**

![Diagram of social factors](Source: Developed for this research)
2.3.4.1 Other customers

When customers go shopping in stores or supermarkets, they make contact with not only store staff, but also other customers. As suggested by Eroglu et al. (2005) and Li et al. (2009), two aspects of contact with other customers are crowding and social relations.

Crowding

The number of customers in stores and shopping malls, known as ‘crowding’, has been well investigated by previous researchers. Machleit et al. (2000) and Mattila and Wirtz (2008) have indicated the importance of consideration of crowding in stores. If the store is extremely crowded or extremely uncrowded, customers seem to be unhappy, but a suitable number of customers may lead to customer satisfaction in the store (Eroglu et al. 2005). According to Machleit et al. (1994), perceived retail crowding in the literature on retail, should focus on the spatial issues. The spatial issues of crowding relates to the amount of merchandise, store equipment and their configuration in the store, which may enhance or suppress perceived crowding. For instance, as suggested by Mohan et al. (2013), store materials and layout such as cluttered shelves, narrow aisles can result in a rise of the perception of crowding, which may lead to a negative effect.

With regard to the influence of crowding on customer issues, a number of researchers pay much attention to investigation of perceived crowding and its effect on customer satisfaction (Machleit et al. 2000; Eroglu et al. 2005) and behaviour responses (Machleit et al. 2005; Pan & Siemens 2011). According to Mattila and Wirtz (2008) perceived crowding has a negative effect on unplanned buying. To be more specific, Hui and Bateson (1991), van Dolen et al. (2002) and Machleit et al. (2005) claimed that perceived crowding seems to have a negative influence on customers’ behaviours and responses leading to a decrease of purchases by customers. Indeed, in Aylott and Mitchell’s (1998) study, perceived crowding and queuing are identified as two main stressors for customers. As regards the relationship between crowding and satisfaction, Hui and Bateson (1991); Machleit et al. (2005) demonstrated overcrowding has a negative correlation with customer satisfaction if there are too many other customers at one time.
in the store. However, Eroglu et al. (2005) found a positive impact of perceived crowding on satisfaction. As noted by Eroglu et al. (2005), if there are sufficient numbers of customers in a store, shoppers seem to be more satisfied.

**Social relations**

Social relations refers to the interaction among customers in store when they are shopping. Based on Mehta’s (2013) study, retailers should find strategies for the management of good social relations in the store environment by using pleasant music, for example, or providing more salespeople in check-out counters at busy times. The interaction among customers appears to be targeted by few researchers. This is because other customers and their social relationships are not directly under the control of retailers (Mohan et al. 2013). In a study on social relations, Dickson and MacLachlan (1990) concluded that customers may avoid or quit stores if there are too many perceived differences between themselves and others. Furthermore, as suggested by Machleit et al. (2000) the social relationship among customers in the store, along with high density may lead to uncomfortable feelings, or lacuna of privacy.

Regarding the relationship between social relations and customer satisfaction, Harris et al. (1997) noted that customer satisfaction level may increase when shoppers have conversations with other customers while shopping because they may get useful information from them. In light of this study, Soderlund et al. (2014) realised that helpfulness from other customers and their interactions affect the evaluation of the store, and their level of satisfaction. These are some reasons why customers usually like to shop in stores where they have good social interaction. Arising from the literature review, the researcher created and tested the following hypothesis:

**H3a:** There is a positive relationship between perception of other customers and customer satisfaction.

To test the hypothesis, the researcher created the items measuring the other customers factor such as: there are enough (not crowded) customers in the store; the store has good communication between the customers; the other customers are kind (helpful);
the social relations among customers are cordial. These items were developed from ideas of authors such as Eroglu et al. (2005) and Li et al. (2009) in the retailing literature and from the pilot study for this research.

2.3.4.2 Store employees

Store employees include salespeople, service staff, cashiers and store managers. Liao and Liaw (2003) emphasised that the store employees are a primary factor affecting customers when they go shopping in a physical store. As suggested by Kim and Kim (2012), store employees’ issues comprise three elements: number of salespersons, physical attributes of employees and behavioural attributes of employees. Previous studies have concluded that store salespersons play an indispensable part in influencing consumers’ emotions, intentions and satisfaction (Baker et al. 2002; Mattila & Wirtz 2008; Jayawardhana & Farrell 2011).

*Number of salespersons*

The number of salespersons influences customer perception rather variously. Sharma and Stafford (2000) pointed out that, in discount ambient shops, the intention to purchase is likely to have a positive relation with the number of salespersons. Nevertheless, in the prestige ambient store, the consumers’ purchase intentions seem to be unaffected by changing the number of salespeople (Baker et al. 1994). In this study, the number of salespersons was considered in the context of supermarkets. The most suitable number of salespersons seems to bring good feelings and satisfaction to customers because the visibility of service staff may help customers feel that their waiting time will be shorter. Moreover, as noted by Grewal and Sharma (1991), the fewer the number of employees who work directly with customers, less is the amount of satisfaction that is experienced by customers. This is because shoppers spend more time and effort in finding the goods they want. Therefore, the impact of the number of salesperson on customer satisfaction also mentioned as an item in the questionnaire of the present research.
Employees’ physical attributes

In a study on human factors in retail stores, Kim and Kim (2012) concluded that employees’ attributes are significant in the relationship between employees and customers in stores. In fact, the social factor is very critical for store-based retailing because customers need to communicate with employees to satisfy their requirements concerning product information. Studies by Pettinger (2004) and Kim and Kim (2012) of the social factor in a retail environment showed that employees’ physical attributes or sales associates’ physical attributes consist of dress (uniforms, ties), and non-verbal cues (smiles, gestures). With regard to dress or attire, Halpern and Odell (2000) proposed that employees’ attire needs to be compatible with the store’s image, and that this is necessary to attract customer attention. Otherwise, with unprofessional dress, customers can easily become dissatisfied, especially when they experience mistakes or failures from retailers (Bitner 1990).

In their investigation of the effect of physical attributes on customer’s perceptions, Kim et al. (2010) found a link between employees’ appearance, such as staff uniform or the presence of non-verbal cues and customer’s purchases and satisfaction. Likewise, Mattila and Enz (2002) suggested subtle aspects of social interaction such as a smile or being easily available for customers, creates positive feelings in customers. Thus, by creating a good communication between customers and staff in the store environment, retailers will satisfy customers and attract shoppers into stores more frequently (Singh 2006; Kumar & Kim 2014). This is a dominant characteristic of bricks-and-mortar retailers as compared to non-store-based retailers. As mentioned above, there are two main elements of employees’ physical attribute namely dress and non-verbal cues. These elements became two items in the questionnaire to test the relationship between store employees and satisfaction.

Employees’ behavioural attributes

Store employees’ behavioural attributes include salespersons’ characteristics and sales interaction (Kim & Kim 2012). In many cases, the perception of store staff has a significant influence on customers’ attitudes towards service quality, as indicated in Hu and Jasper’ study (2006). For instance, the effect of negative perceptions as experienced
by customers will be reduced if they are served by friendly employees (Mattila & Wirtz 2008). According to Lin and Chiang (2010), employees’ communications and behaviours impact on customers’ behaviours not only when they meet, but also during the service process. Specifically, Hatfield et al. (1994) found that customers are likely to perceive employees’ behavioural attributes such as friendliness or helpfulness towards customers in a positive light and this in turn may induce a sense of pleasure in consumers. Bitner (1990) also found that customer responses are dramatically impacted by salespeople’s responses. Customers feel happy when their requirements receive quick and helpful responses from employees, suggesting that staff assistance may increase shopper’s level of satisfaction.

With regard to the relationship between employees and satisfaction in retail stores, Grewal and Sharma (1991) showed that the employees factor is one of the most important influences on customer satisfaction. They further suggest that selling and investing feedback policy should take into account employee behaviour to help retailers increase customer satisfaction. In the light of this study, Baker et al. (2002) and Jayawardhena and Farrell (2011) emphasised the importance of good customer relations in creating a positive mood and satisfaction in customers. In the light of these study, the researcher created and tested a hypothesis:

H3b: There is a positive relationship between perception of employees and customer satisfaction.

To test the hypothesis, the researcher created the items measuring the employees factor such as: the store has knowledgeable employees; the store has friendly employees; the store has helpful employees; the store has well-dressed employees; there are enough salespersons in the store; the store employees display good non-verbal cues; the responses to customer requests or complaints are useful. These items were developed from ideas of authors such as Lee and Dubinsky (2003), Shao et al. (2004), Kim and Kim (2012) and Mehta (2013) in the retailing literature reviewed and from the pilot study for this research.
Social factors, in brief, in the retail store environment include human attributes and the behaviours of both customers and employees. Nowadays, social factors appear to play a more important role in retailing, especially for store-based, bricks-and-mortar retailers, who cannot use promotion or discount prices to attract customers over the long-term. Therefore, one of the best short-term strategies to attract customers into stores is to create an attractive store environment by means of social factors. Indeed, as proposed by Hu and Jasper (2006), retailers need to have social factors that are relevant to customers’ lifestyle and keep customers coming back by means of friendly, helpful and courteous employees with appropriate physical attributes (Mattila & Enz 2002; Mattila & Wirtz 2008).

In summary, store environment contains three main factors (ambience, design and social factors) which play essentially important roles in the retailing industry. The literature review showed that store environment factors affect customer issues and satisfaction in different ways. Surprisingly, there have not been many previous authors mentioning the link between store environment and customer demographic characteristics. In the next section, market segmentation and demographic factors in retailing are discussed.

2.4 Market segmentation

2.4.1 Market segmentation definitions and criteria

According to Punj and Stewart (1983), market segmentation is the process of dividing a market into subsets of potential buyers. Kotler et al. (2009) explained that a market segment consists of a group of customers who share a similar set of needs and wants. In a study on retailing, Dunne et al. (2011) defined market segmentation as the method used by retailers to break down heterogeneous consumer populations into smaller, more homogeneous groups based on certain characteristics. Levy and Weitz (2009, p.116) conceptualised that ‘a retail market segment is a group of customers whose needs are satisfied by the same retail mix because they have similar needs’.
To be useful, market segments should conform to four important criteria (Kotler et al. 2009; Levy & Weitz 2009):

- **Actionable**: The definition of the segmentation clearly indicates what the retailer should do to satisfy customer needs. In other words, retailers may create the appropriate plans that can be formulated to attract and serve a particular segment.

- **Identifiable**: The segments are conceptually distinguishable and retailers can determine customers in the segment.

- **Substantial**: The profit from the segment is big enough to warrant segmenting the market.

- **Reachable**: Retailers can reach and serve the segment. For example, Coles targets homemakers who cook for their families with simple and cheap ingredients. Potential customers in this segment are reachable since they may read cooking magazines or look for the promotion advertisements every week.

### 2.4.2 The importance and benefits of market segmentation

A critical element for marketers in creating successful plans is to find the essential differences among customers and provide the appropriate products/services to them. Indeed, organisations with a segmenting market are often more effective than organisations that aim at the average consumer (Lake 2007). Since, market segmentation helps retailers understand their customers more clearly therefore retailers can satisfy their needs better.

In a study on customer segmentation in retailing, Seiler et al. (2013) concluded that effective customer segmentation can help retailers create a customised service that brings suitable offers for the different customer groups and enhances customer satisfaction and loyalty. Especially since retailing has become increasingly global in line with the integration of technology, economic and demographic changes, retailers need
to employ target marketing with the right segmentation to promote the right products and services to the right customers in order to save costs, space and effort for the business.

### 2.4.3 Approaches to market segmentation

In general, as suggested by a huge number of researchers such as Miller (2008), Kotler et al. (2009) and Godfrey et al. (2013), there are four main approaches for segmenting a market: geographic, demographic, psychographic and behavioural segmentation, as shown in Table 2.2.

#### Table 2.2: Major bases for market segmentation

<table>
<thead>
<tr>
<th>Market segmentation</th>
<th>Variables/Consumer characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographic</td>
<td>Suburb, cities, states, countries.</td>
</tr>
<tr>
<td>Demographic</td>
<td>Gender, age, family size, income, religion, education, occupation.</td>
</tr>
<tr>
<td>Psychographic</td>
<td>Lifestyle, personality, social status.</td>
</tr>
</tbody>
</table>

Source: Adapted for this research from Miller (2008); Kotler et al. (2009)

### 2.4.4 Demographic segmentation in retailing

#### 2.4.4.1 Demographic segmentation and customer issues

In an effort to examine influences of customer demographics segmentation in retailing, some researchers have proposed that there are a dramatic differences between the customer demographics groups (age, household size and income) of store shoppers and
non-shoppers in large department stores (Arnold 1997). In a study to understand the impact of customer demographics groups on retail stores, Fox et al. (2004) concluded that level of education, income and household size affect choices of store formats. In light of these studies, Stone (1995) pointed out that customers of warehouse clubs are likely to be younger, more educated and have higher incomes than supermarket shoppers.

A number of researchers have investigated the relationship between the choice of retailer format and demographic variables. For example, Fox et al. (2004) examined the effect of demographics on store format choice across three formats: grocery stores, mass-merchandisers, and drug stores. Elsewhere, Hansen and Solgaard (2004) looked at discount stores, hypermarkets and conventional supermarkets. But, in the current study, the research has considered the impact of demographic variables such as gender, age, family size, income and shopping frequency on the customer satisfaction within the supermarket context.

2.3.4.2 Relationship between demographic segmentation and customer satisfaction in retailing

Several authors have explored the link between demographic variables and customer satisfaction. According to Seiler et al. (2013), satisfaction surveys in retail should consider socio-demographic segmentation to get a differentiated view. Meanwhile, Homburg and Giering (2001) examined the impact of demographic groups on the relationship between satisfaction and loyalty. Moreover, Bolton and Myers (2003) showed that satisfaction levels are a convenient means for identifying and segmenting consumers in markets. A brief overview of some of the findings thought to be relevant to the present study follows.

In the retailing industry, age, income and gender are important customer demographic variables and are usually considered as predictors of consumers’ shopping behaviour (Seock & Sauls 2008). Furthermore, Seiler et al. (2013), in attempting to measure the impact of consumer demographics, cited one of the first studies by Zeithaml (1985), who
found influences of demographic characteristics such as income, age and gender on customer satisfaction in banking retailers. This suggests that, in the banking industry, for example, retailers should create a suitable strategy for each kind of customer depending on their characteristics. Concurring with this view, Seock (2009) urged retailers to abandon the ‘one-look-fits-all’ policy and try to segment stores that satisfy specific customer demographic groups.

With regard to the impact of specific demographic variables on customer satisfaction, Helgesen and Nesset (2010, p.114) reported that ‘females have higher satisfaction levels than males across the retail sector, but the satisfaction drivers are gender independent in the grocery store’. Moreover, a study implemented by Patterson Research Group (2014) found that gender did not influence customer satisfaction. Regarding other demographic variables, Walsh et al. (2008) showed the significant impact of income on satisfaction, but age and gender of customers did not have any effect. In contrast, Caruana (2002) argued that age plays a strong impact on customer satisfaction and customer loyalty.

In addition, Jones et al. (2010) revealed differences in satisfaction levels among different cultures. In fact, Lee and Dubinsky’s (2003) study demonstrated that shoppers tend to generate positive emotions if salespersons are similar to them. This leads to higher purchase intentions and levels of customer satisfaction. For example, Hispanics in America are likely to be more satisfied and enjoy their shopping in stores if staff or employees speak to them in Spanish (Fowler et al. 2007).

To sum up, according to Shim and Bickle (1994), retailers should pay attention to customer demographic characteristics in order to understand customer needs and develop appropriate strategies to reach them. However, while demographic characteristics such as gender, income and age have been taken as important variables, a recent retailing study related to demographic segmentation and customer satisfaction by Ali and Dubey (2014, p.11) suggests that ‘further analysis could be done for factors influencing satisfaction and the relationship between satisfaction and demographics’. In
In addition, as noted by Mortimer and Clarke (2011, p. 3), ‘previous Australian studies examined important supermarket characteristics and influencers of satisfaction, yet failed to consider the effect of gender, income and age’. Therefore, based on the literature concerning store environment (Section 2.3) and the literature on demographic segmentation in this section, the researcher has sought to fill gaps by investigating the relationship among store environment factors, customer demographic groups and customer satisfaction within the Australian supermarket context.

2.5 Customer satisfaction

This section considers customer satisfaction, beginning with a definition, followed by a discussion of the advantages of customer satisfaction, then factors relating to customer satisfaction, such as service quality and customer expectations. Finally, the section presents the level and measurement of customer satisfaction for this research.

2.5.1 Customer satisfaction and its advantages

2.5.1.1 Definition and two main concepts of customer satisfaction

Customer satisfaction is one of the most critical concepts in marketing, and for the past few decades has continued to attract the interest of researchers. In practice, there are many companies using a lot of resources to attain and manage customer satisfaction. Satisfying consumers has become the leading competitive strategy (Imran et al. 2013; Jaikumar 2013). Interestingly, as argued by Oliver (1997, p. 13), ‘everyone knows what satisfaction is until asked to give a definition. Then it seems, nobody knows’. Indeed, the customer satisfaction process is a complex phenomenon because of many elements that affect the decision of the customer to buy products or services. Today, the concept of customer satisfaction has become even more complex and even more salient in the retail industry. To illustrate this notion, the researcher has listed some typical definitions of customer satisfaction in Table 2.3.
In terms of some specific characteristics of customer satisfaction in Australia, Jones et al. (2013, p. 593) showed that ‘the strong moderating effect of culture on shopping satisfaction for both hedonic and utilitarian values, one that is greater for Australians than for Americans’. The application of high technology to satisfy customers in Australia is impressive. For instance, in many retailers such as Coles or Woolworths, customer self-services were used with a rate of development twice that of Europe and the United States (RAPS 2014).

### Table 2.3: Definitions of customer satisfaction

<table>
<thead>
<tr>
<th>Source</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnson &amp; Fornell (1991, p.274)</td>
<td>Customer satisfaction is a customer’s overall evaluation based on the entire purchase and consumption experience with a product over time.</td>
</tr>
<tr>
<td>Zins (2001, p.276)</td>
<td>Customer satisfaction is conceptualised as an overall post-consumption affective response by the customer.</td>
</tr>
<tr>
<td>Angelova &amp; Zekiri (2012, p.61)</td>
<td>Customer satisfaction is the degree of overall pleasure or contentment felt by the customer, resulting from the ability of the service to fulfil the customer’s desires, expectations and the needs in relation to the service.</td>
</tr>
<tr>
<td>Ubeja &amp; Bedia (2012, p.61)</td>
<td>Customer satisfaction, a term frequently used in marketing, is a measure of how products and services supplied by a company meet or surpass customer expectation.</td>
</tr>
<tr>
<td>Kotler et al. (2013, p.678)</td>
<td>Customer satisfaction is conceptualised as the customer’s evaluation of a product or service feature, or of the product or service itself.</td>
</tr>
<tr>
<td>Zeithaml et al. (2013, p.80)</td>
<td>Customer satisfaction is the customer’s evaluation of a product or service in terms of whether that product or service has met the customer’s needs and expectations.</td>
</tr>
</tbody>
</table>

Source: Developed for this research
As Table 2.3 shows, the definition of customer satisfaction is often likely to be quite abstract, and differs in various ways from person to person, and even from product to product and service to service (Ali & Dubey 2014). In general, there are two types of customer satisfaction, namely, transaction-specific and cumulative satisfaction Boulding et al. (1993). Johnson (2001) and Johnson et al. (2002) also noted that customer satisfaction research has developed around these two different types of customer evaluations: transaction-specific and cumulative. Transaction-specific satisfaction is an evaluation of customer experience with a specific service/product transaction. Specifically, transaction-specific satisfaction proceeds from the level of confirmation or disconfirmation that occurs when a customer evaluates their expectations, compared to the perceived value which they receive in each product or service encounter or episode transaction (Johnson & Fornell 1991). Transaction-specific satisfaction is an evaluation of customer experience with a specific service/product transaction.

Meanwhile, cumulative satisfaction is a customer’s evaluation of their overall experience with a service/product over time or different occasions. In this definition, satisfaction relates to the overall evaluation of customers after they buy and proceed to use the product or service (Johnson et al. 1995; Edvardsson et al. 2000).

In the past, the transaction-specific perspective was employed to examine the antecedents of satisfaction. Besides, Rust et al. (1995) mentioned that difference between perceived quality and expected quality is also a strong predictor or antecedents of customer satisfaction. However, in recent studies, cumulative satisfaction has been often used to capture the overall evaluation of customer satisfaction for their purchase and consumption experiences (Oliver 1997; Edvardsson et al. 2000). For example, in their study on banking, Olsen and Johnson (2003) noted that cumulative evaluations are better than a specific transaction where, based on a single episode, customers evaluate their shopping experience before making a buying decision. Although the two above concepts are somewhat different as regards the assessment of customer satisfaction, Johnson (2001) concluded that cumulative and transaction-specific satisfaction are complementary rather than competing concepts.
In this research, the cumulative perspective is employed to measure customer satisfaction because cumulative aspect should better predict the customers’ intentions and behaviour (Mittal & Kamakura 2001). Besides, cumulative satisfaction research seems to reflect a wide and growing preoccupation with understanding customer evaluations over time (Garbarino & Johnson 1999; Mittal et al. 1999). This approach provides a good view of the dynamics of service encounters or episodes over a period of time (Oliver 1997). In comparison, the transaction-specific model is rather weak and not suitable to evaluate the aggregated perceptions of shoppers over time. In addition, cumulative satisfaction can create a more reliable measure of customer satisfaction (Johnson et al. 2002).

2.5.1.2 The advantage of customer satisfaction and its relationship issues

One of the most important feature of marketing success is customer satisfaction. This feature can be used as the main competitive weapon in most businesses. How to recognise, understand, research and meet customer satisfaction is a major objective of all companies (Anderson et al. 1994). When customers are satisfied with goods or services, they are likely to become regular customers with the companies offering these products or services. It also makes it easier for these companies to gain satisfaction from these customers when introducing new products. In light of these viewpoints, Aydin and Ozer (2005) concluded that satisfied customers tend to purchase more. Moreover, equipped with these positive attitudes, satisfied customers tend to share their shopping experiences through word of mouth with their relatives or friends. Conversely, dissatisfied customers will switch to rival businesses as they look for alternative products or services (Anderson & Srinivasan 2003). Often, as these kinds of customers withdraw from the relationship between themselves and the firm, they tend to become independent of that provider.

There are additional benefits flowing out of increased customer satisfaction and these include changes in attitude and behavioural perceptions (Curtis et al. 2011; Mittal et al. 1999; Oliver & DeSarbo 1988). To be more specific, as suggested by Aranoff and Fitzpatrick (2008), customer satisfaction influences customer loyalty, market value and
profitability. Satisfied consumers are likely to be loyal to the companies and this brings a lot of benefits to the business (Bowen & Chen 2001). Indeed, the satisfied, loyal customer plays an important role in creating profits for companies. For example, Bain & Company reported an increase in profit from 25 percent to 95 percent with only about a 5 percent increase in loyal customers (Reichheld & Teal 1996). Similarly, research by Fazlzadeh et al. (2012) showed that the companies will achieve higher profits and market share if they know how to invest in and provide satisfaction to their customers. Moreover, in the satisfaction literature, many scholars noted the positive effect of customer satisfaction on purchase intentions (Oliver & DeSarbo 1988; Bolton & Drew 1999), retentions (Mittal & Kamakura 2001; Seiders 2005; Jaikumar 2013), and selected businesses’ financial performance or share-of-wallet (Rust & Zahorik 1993; Anderson & Mittal 2000). This body of research demonstrates that if the organisation understands and achieves customer satisfaction successfully, many advantages will be accrued to these businesses. In other words, customer satisfaction is the key weapon containing many positive influences thus focusing and measuring customer satisfaction. This frequently becomes an important aim in system development (Ali & Dubey 2014).

Some scholars such as Cronin et al. (2000), Bowen and Chen (2001) and Aranoff and Fitzpatrick (2008) considered customer satisfaction as the antecedent of customer loyalty, and hence, profitability. At the same time, service quality, customer expectation and customer experience are likely to be the antecedents influencing customer satisfaction (Cronin & Taylor 1992; Wu et al. 2014). The next section discusses service quality, customer expectations and their relationship with customer satisfaction.

2.5.2 Factors relating to customer satisfaction

2.5.2.1 Service quality

Grönroos (1982) conceptualised service quality as the outcome of a comparison between customer expectations and the real service value that customers received. Likewise, according to Wu et al. (2014), service quality is the result of the comparisons from the customers’ expectations and their perception of the service performance in reality. Zeithaml et al. (2013) emphasised that service quality is one of the most
important elements of customer perceptions, and service quality is a critical in determining customer satisfaction.

In the marketing literature, many scholars have investigated the relationship between service quality and customer satisfaction. It has been noted that service quality is a predictor of customer satisfaction (Brady et al. 2002; Cronin & Taylor 1992). Likewise, Kotler et al. (2009) proposed that satisfaction is reliant on the service quality and they are usually intimately connected. Therefore, if companies create a high level of service quality, the firm will receive the high level of customer satisfaction (Anderson et al. 1994; Curtis et al. 2011; Hui et al. 2013). There appears to be agreement that service quality has a strong impact on customer satisfaction.

It is important to note that some scholars often use service quality and customer satisfaction as two similar concepts, and sometimes the overlap between these two terms results in some confusion (Beneke et al. 2012). As mentioned by Zeithaml and Bitner (2006) and Zeithaml et al. (2013), there are differences between them. First, according to Caruana (2002) and Oliver (1993), satisfaction is a post-decision customer experience, while service quality is not. Second, the evaluation of customer satisfaction depends on the customer experience while service quality does not (Boulding et al. 1993). Finally, the customer satisfaction dimension is broader than service quality, and in some cases, satisfaction contains quality as well as price (as shown in Figure 2.12).

There are five dimensions of service quality, as follows. First, there are tangibles which pertain to physical equipment and facilities. Second, reliability reflects the promises of companies to the customer related to pricing, delivery, providing quality service, and solving problems for customers (Zeithaml et al. 2013). Third, responsiveness means the willingness to support the customers and supply fast and efficient service through prompt communication with the customer, using the internal process of the companies (Blery et al. 2009). Fourth, assurance is conceptualised as the employees’ knowledge and their willingness to satisfy customers. Assurance also refers to the trust relationship that develops between businesses and their customers. The fifth dimension of service quality is empathy, which refers to the caring and attention that is extended from the
employees to customers. Specifically, employees’ communications and behaviours need to meet not only the requirements of customers, but also consider customers’ feelings in helping to solve their problems or concerns (Blery et al. 2009). Figure 2.12 below describes these relationships between customer perception of quality and customer satisfaction with their issues.

**Figure 2.11 Customer perception of quality and customer satisfaction**

![Diagram of customer perception of quality and customer satisfaction](image)

Source: Adapted for this research from Zeithaml et al. (2013)

**2.5.2.2 Customer experience**

Customer experience can be conceptualised as a set of interactions from consumers (such as sense, feel) with a good or a branch/company which provokes a reaction (Fornerino et al. 2006). In retailing, customer experience is created by many independent touch points or contact points during the exchange journey (Srivastava & Kaul 2014).

*Customer experience and satisfaction:*  
Customer experience plays a vitally important role in retailing and retailers should spend sufficient time and resources to manage these issues. According to Kamaladevi (2011), the final aim of customer experience management is to bring consumers from ‘satisfied’ to ‘loyal’ and then from ‘loyal’ to ‘advocate’. Besides, some scholars such as Cronin et al. (2000), Bowen and Chen (2001) and Aranoff and Fitzpatrick (2008) considered customer satisfaction as the antecedent of customer loyalty, and hence, profitability. At
the same time, service quality, customer expectation and customer experience are likely to be the antecedents influencing customer satisfaction (Cronin & Taylor 1992; Wu et al. 2014). In this research, customer experience is used to distinguish between service quality and customer satisfaction. Indeed, first, satisfaction is normally considered as a post-decision of customer experience. This is not the case for service quality (Caruana 2002; Oliver 1993). Second, the evaluation of customer satisfaction depends on the customer experience while service quality does not (Boulding et al. 1993).

2.5.2.3 Customer expectations
Expectancy is conceptualised as the desire or need of consumers regarding not what the service provider could provide, but what the service provider should provide (Parasuraman et al. (1994). The authors argued that customers’ understanding of service quality came from the difference between their expectations and their real experiences. In their study of customer satisfaction, Zeithaml and Bitner (2003) showed that satisfaction is the customers’ evaluation of a product/service in terms of whether it has met their needs and expectations. Similarly, customer satisfaction is a measure of how products and services supplied by a company meet or surpass customer expectations (Ubeja & Bedia 2012). Besides, expectations are the anticipated performance of service or product by the customer, while in service quality, expectations refer to standard of customer needs (Boulding et al. 1993). Therefore customer expectations have a strong link with satisfaction and quality.

As noted by Kotler (2000), exceeding customer expectations is the critical element to customer satisfaction and loyalty. To be more specific, the balance between expectancy from consumers and their real experiences impacts customer satisfaction. In turn, satisfaction levels are mostly affected by such factors as psychological experiences, activities and physical environment (Xie et al. 2007).

The perceptions of customer regarding service quality and expectations are very important for this research because in the current study, the researcher uses items related to service quality and expectations of customers to measure the influence of store environment factors on customer satisfaction. In other words, the items used to
measure store environment in the questionnaire should be included in the service quality and customer expectation context. Consequently, findings from the literature in Section 2.3 concerning store environment, combined with insights from the literature on service quality and customer expectation, the following items were used to measure customer satisfaction: the store had a pleasant music, the physical facilities were attractive, and the store had helpful employees. These items are described in detail in the next chapter.

2.5.3 Level and measurement of customer satisfaction

Rope and Pollane (1994) suggested that level of customer satisfaction is formulated by two perceptions of customers, namely expectations and experiences as depicted in Figure 2.13 below.

**Figure 2.12 Levels of customer satisfaction**

![Diagram showing levels of customer satisfaction]

The level of customer satisfaction plays a vitally important role in forming customer attitudes and word of mouth communication (Sivadas & Baker-Prewitt 2000). These attitudes are instrumental in developing customer loyalty, which has a direct impact profit (Anderson et al. 1994; Oliver 2010). Level of customer satisfaction is a good indicator of the customers’ future purchase behaviour (Kasper 1988; Garbarino & Johnson 1999). It follows, therefore, that stores and supermarkets need to measure customer satisfaction frequently, even when there are low levels of customer satisfaction. Bruhn and Grebitus’ study (2007) concluded that customers with low level
of satisfaction may return to the store to buy more if the store or supermarket demonstrates a willingness to solve customer complaints. Based on this view, the present study creates and compares the level of customer satisfaction among customer segmentations to help retailers serve their shoppers better.

For this research, the researcher decided to adopt a cumulative approach to evaluate customer satisfaction because the customers were surveyed after their in-store experience. It was also decided to adopt the American Customer Satisfaction Index (ACSI) model as the instrument used to assess the customer satisfaction. The ACSI is an economic indicator that measures the satisfaction of consumers across the United States economy. In recent years, the model has been extensively used by different research groups, institutions and universities to create effective customer satisfaction indices (Ali & Dubey 2014). Usually, there are three satisfaction questions used in the ACSI model: first, an overall rating of satisfaction; second, the degree to which performance falls short of or exceeds expectations; and finally, a rating of overall performance relative to the customer’s ideal goods or services (Fornell et al. 1996). Arising from the literature above, the researcher created the following items measuring the customer satisfaction in this study: you were satisfied with the store; the store matched your expectations; the store was close to your ideal store.

In conclusion, customer satisfaction has become more complex, and even more essential for retailers than before (Ubeja & Bedia 2012). Thus, this section has explored the definitions and advantages of understanding customer satisfaction for retailers. Factors affecting customer satisfaction and their interrelationships, and literature concerning service quality and customer expectations have been discussed in this section. Literature concerned with store environment, and the items used to measure factors of store environment were presented in Section 2.3. In addition, arising from this section, the level of satisfaction and how to measure customer satisfaction for the research was also discussed. In the next section, the proposed research, research gaps, research questions, theoretical framework and hypotheses are described.
2.6 Proposed research

2.6.1 Research gaps in literature review

Based on the literature reviewed, store environment consists of three major elements, namely, the ambient, design and social. In particular, ambience contains four factors (lighting, music, and scent – temperature was removed in the pilot stage); design includes three factors (layout, assortment and interior design factors (such as décor, colour and cleanliness); and social factors (customers and employees). Most previous researchers have paid much attention to the individual factor of ambient or design factors such as scent or product assortment. Others focus more widely on the individual factor of store environment such as the ambience or social factors, including studies in music (Dube’ & Morin 2001; Beverland et al. 2006), lighting (Sweeney & Wyber 2002), layout (Morales et al. 2005), a combination of scent and music (Mattila & Wirtz 2001), or a combination of layout and signage (Ang et al. 1997). Both of these approaches seem to lack a comprehensive framework for providing a detailed understanding of the store environmental influences. To fill the gap, this research investigates the effect of all elements of all three factors of retail store environment on customer satisfaction.

With respect to the impact of demographics in retailing, most of the research studies set out to find out the link between demographics in specific store formats such as discount store or drugstore. Some of this research just uses one or two variables of demographics such as age or gender (Mittal & Kamakura 2001; Taylor 2003; Walsh et al. 2008). These approaches may make specific contributions in reality for business use. However, they do not create a complete picture about the influences of demographics in retailing, especially for both academic and practical purposes. Hence, the present researcher extracted demographic variables (gender, age, family size and income) from respondents’ data to explore the influence of the demographics on customer satisfaction in relation to store environment.

Several authors have investigated factors of retail store environment that impact on customer satisfaction, since, as noted by Oliver (1997), the majority of customer satisfaction literature is related to retail issues. However in most of this literature, scholars appear to neglect different customer groups and variables of demographics
when assessing the influence factors on customer satisfaction (Theodoridis & Chatzipanagiotou 2009). Another important point is that, according to Mortimer and Clarke (2011, p. 3), ‘previous Australian studies examined important supermarket characteristics and influencers of satisfaction, yet failed to consider the effect of gender, income and age’. Therefore, the researcher has sought to fill this gap by investigating the relationship between store environment factors and customer satisfaction across different customer demographic groups in Australia.

2.6.2 Research question, theoretical framework, research hypotheses

The background theories in retailing, customer segmentation and customer satisfaction have been reviewed in the previous sections. The knowledge derived from the review has helped to create the foundation for the present research and to build a theoretical framework. Thus, the following research problem was developed:

*What is the relationship between store environment factors and customer satisfaction across different customer demographic groups?*

2.6.2.1 Research questions

This research investigates three main areas: store environment, customer demographics and customer satisfaction. To assist in the realisation of this objective, research questions were developed as below:

1. What are the retail store environment factors have significant positive correlations with customer satisfaction?

2. What are customer demographic variables influencing customer satisfaction in retail store environment?

3. How different are levels of satisfaction in relation to customer demographic variables?

4. How does the influence of retail store environment factors impact on customer satisfaction vary across different customer demographic groups?
2.6.2.2 Proposed theoretical framework

Previous research has explored three separate issues: store environment, customer demographic segmentation and customer satisfaction. First are the factors of store environment (music, lighting, scent, temperature, layout, assortment, inner design, other customers and store employees) which are regarded as independent variables. It is proposed that the first issue, customer satisfaction, considered as the dependent variable, is correlated positively with store environment factors (Hypotheses 1, 2 and 3). Second, in terms of customer demographic segmentation, demographic characteristics used in this research includes four independent variables: gender, age, family size and income. Shopping frequency is also included as an independent variable. Arising from the literature review, these independent variables are proposed to influence customer satisfaction (Hypotheses 4, 5, 6, 7 and 8).

Third, the different levels of customer satisfaction among customer demographic groups need to be investigated (Hypothesis 9). After this step, the main purpose of the research is to find out the potential relationship between store environment factors and customer satisfaction across different customer demographic groups (Hypothesis 10).

The proposed theoretical framework developed from the literature review and research issues is presented in Figure 2.14 below.

2.6.2.3 Research hypotheses

Based on the research objectives, research questions and arising from the theoretical framework, 10 hypotheses were developed. By examining first three hypotheses, the research intends to explore the factors of store environment that impact on customer satisfaction. Meanwhile, the next five hypotheses are investigated to find out the relationships between demographic variables and customer satisfaction. The last one is examined to determine the relationship between store environment factors and customer satisfaction across different customer demographic groups.
With regard to store environment, the research examines store environment factors that have a significant positive correlation with customer satisfaction.

**Hypothesis 1**: There is a positive relationship between perception of ambient factors and customer satisfaction.

- H1a: There is a positive relationship between perception of music and customer satisfaction.
- H1b: There is a positive relationship between perception of lighting and customer satisfaction.
- H1c: There is a positive relationship between perception of scent and customer satisfaction.
- H1d: There is a positive relationship between perception of temperature and customer satisfaction.

**Hypothesis 2**: There is a positive relationship between perception of design factors and customer satisfaction.

- H2a: There is a positive relationship between perception of layout and customer satisfaction.
- H2b: There is a positive relationship between perception of assortment and customer satisfaction.
- H2c: There is a positive relationship between perception of interior design and customer satisfaction.

**Hypothesis 3**: Social factors have a significant positive correlation with customer satisfaction.

- H3a: There is a positive relationship between perception of other customers and customer satisfaction.
- H3b: There is a positive relationship between perception of employees and customer satisfaction.
Figure 2.13 Proposed theoretical framework

Store environment

Demographic groups

Customer satisfaction

Design factors

Ambient factors

Social factors

- Layout
- Assortment
- Interior design elements

- Lighting
- Music
- Scent
- Temperature

- Other customer
- Store employees

Source: Developed for this research
Hypothesis 4: There is a significant difference of levels of customer satisfaction between males and females.

Hypothesis 5: There is a significant difference of levels of customer satisfaction among customer age groups.

Hypothesis 6: There is a significant difference of levels of customer satisfaction among customer family size groups.

Hypothesis 7: There is a significant difference of levels of customer satisfaction among customer income groups.

Hypothesis 8: There is a significant difference of levels of customer satisfaction among customer’s shopping frequency groups.

Hypothesis 9: There are differences in the levels of satisfaction among customer demographic groups.

Hypothesis 10: The effect of store environment factors on customer satisfaction vary among different customer demographic groups.

2.7 Conclusion

In this section, the background of retailing was presented, including the definitions, functions of the retailing industry, retailing in Australia, types of retailers, and challenges of retailers. In the next steps of this chapter, three main disciplines, namely store environment and customer segmentation along with customer satisfaction were described in detail. The literature review showed that these disciplines are variously related, and gaps in the literature were identified. Based on the review of the literature, the researcher created the theoretical framework that served as the basis for the research hypotheses. The research model proposed that there are some factors of store environment influencing customer satisfaction through customer segmentation. As a result, 10 hypotheses were developed to examine the relationship between store environment factors and customer satisfaction across customers’ demographic groups.
By clarifying the relationship between each factor of store environment and customer satisfaction, the researcher has chosen factors which have significant positive relationship with customer satisfaction. These factors were entered into the next phase of analysis in order to set up causal relationships (using multiple linear regression as an example). After this stage, the study can use the name such as ‘influence’ or ‘effect’ for these factors (e.g. music, lighting, etc.) on customer satisfaction like the literature used above.

In the next section, Chapter 3, the research methodology is discussed with the justification of paradigm, research approach and research design used for this thesis. The process of data collection and data analysis are documented in detail.
CHAPTER 3 RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter reviewed the relevant literature on retailing, store environment, customer satisfaction and customer demographic groups. As a result, four questions and ten hypotheses have been developed to investigate the relationship between store environment factors and customer satisfaction across different customer demographic groups. This chapter outlines the methods used to collect and analyse data in order to test the ten hypotheses conducted. The chapter also describes and justifies the methodology employed for this research.

The chapter is divided into ten sections. Section 3.1 introduces the chapter. The theoretical framework is provided in Section 3.2, and Section 3.3 provides the justification of the paradigm and methodology adopted for the study. Data collection processes are discussed in Section 3.4, followed by the survey construction in Section 3.5. Section 3.6 presents the sampling issues, followed by presentation of the pilot study in Section 3.7. Section 3.8 and 3.9 present items for measuring variables and reliability and validity of data respectively. An explanation of data analysis procedures and techniques is provided in Section 3.10. Section 3.11 details the ethical considerations. The chapter is summarised in Section 3.12. This chapter structure is illustrated in Figure 3.1.

3.2 Review of the theoretical framework

Figure 3.2 summarises the proposed model (theoretical framework) derived from the literature review and research issues. In Chapter 2, the research studied factors of store environment; demographic variables of respondents and their satisfaction. The proposed model is to examine the relationship between the underlying factors of store environment (music, lighting, scent, layout, assortment and employees), considered as independent variables and customer satisfaction, considered as the dependent variable (Hypotheses 1, 2 and 3).
Figure 3.1 Structure of Chapter 3

3.1 Introduction

3.2 Review of the theoretical framework

3.3 Research paradigm, methodology & design

3.3.1 Research paradigm and justification of positivism paradigm
3.3.2 Research methodology and justification of quantitative research
3.3.3 Research design and justification of descriptive research

3.4 Data collection

3.4.1 Observation methods
3.4.2 Experimental methods
3.4.3 Survey methods

3.5 Survey construction

3.5.1 Type of survey
3.5.2 Questionnaire design
3.5.3 Measurement and scaling

3.6 Sampling

3.6.1 Target population
3.6.2 Sample size

3.7 Pilot study

3.8 Items to measure variables

3.9 Reliability and validity

3.10 Data analysis and techniques

3.10.1 Data analysis process
3.10.2 Data analysis techniques

3.11 Ethical consideration

3.12 Conclusion

Source: Developed for this research
The relationship between demographic characteristics (gender, age, family size and income), shopping frequency and customer satisfaction are investigated in Hypotheses 4, 5, 6, 7 and 8. Next, the level of customer satisfaction among different customer demographic groups is examined in Hypothesis 9. Finally, the main intention of the research, the relationship between store environment factors and customer satisfaction across different customer demographic groups is proposed in Hypothesis 10. The research hypotheses are aligned with the research questions in Table 3.1.

Figure 3.2 proposed model – theoretical framework

![Diagram](image)

Source: Developed for this research

3.3 Research paradigm, research methodology and research design

3.3.1 Justification of the research paradigm

According to Kuhn (1970, p. 175), paradigms are conceptualised as ‘the entire constellation of beliefs, values, techniques so on shared by the members of a given community’. As suggested by Guba and Lincoln (1994) and Healy and Perry (2000), there are four types of paradigm: positivism, constructivism, critical theory and realism paradigms. As illustrated in Table 3.2, comparisons of these paradigms shows that positivism is the most suitable paradigm for the research because the purpose of the present study is to examine the influence of store environment on customer satisfaction across demographic groups.
<table>
<thead>
<tr>
<th>Research questions</th>
<th>Research hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the retail store environment factors which have significant positive correlations with customer satisfaction?</td>
<td>H1: There is a positive relationship between perception of ambient factors and customer satisfaction.</td>
</tr>
<tr>
<td></td>
<td>H2: There is a positive relationship between perception of design factors and customer satisfaction.</td>
</tr>
<tr>
<td></td>
<td>H3: There is a positive relationship between perception of social factors and customer satisfaction.</td>
</tr>
<tr>
<td>2. What are customer demographic variables influencing customer satisfaction in retail store environment?</td>
<td>H4: There is a significant difference between gender subgroups and customer satisfaction.</td>
</tr>
<tr>
<td></td>
<td>H5: There is a significant difference between age subgroups and customer satisfaction.</td>
</tr>
<tr>
<td></td>
<td>H6: There is a significant difference between family size subgroups and customer satisfaction.</td>
</tr>
<tr>
<td></td>
<td>H7: There is a significant difference between income subgroups and customer satisfaction.</td>
</tr>
<tr>
<td></td>
<td>H8: There is a significant difference between shopping frequency subgroups and customer satisfaction.</td>
</tr>
<tr>
<td>3. How different are levels of satisfaction in relation to customer demographic variables?</td>
<td>H9: There are differences in the levels of satisfaction among customer demographic groups.</td>
</tr>
</tbody>
</table>

Source: Developed for this research
These relationships were tested by means of the collection and analysis of quantitative data generated by a survey questionnaire. As confirmed by Perry et al. (1999), the positivist paradigm is appropriate for research that involves finding a population, surveying a sample of that population, and statistically analysing the relationships between the variables.

Table 3.2: A comparison of research paradigms

<table>
<thead>
<tr>
<th>Element</th>
<th>Positivism</th>
<th>Constructivism</th>
<th>Critical</th>
<th>Realism</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ontology</strong></td>
<td>Reality is real and apprehensible</td>
<td>Multiple local and specific constructed Realities</td>
<td>“Virtual” reality shaped by social, political, cultural,</td>
<td>Reality is real but only imperfectly and probabilistically apprehensible and so triangulation from many sources is required to try to know it</td>
</tr>
<tr>
<td><strong>Epistemology</strong></td>
<td>Findings true – researcher is objective by viewing reality through a ‘one-way mirror’</td>
<td>Created findings – researcher is a ‘passionate participant’ within the world being investigated</td>
<td>Value mediated findings – researcher is a ‘transformative intellectual’ who changes the social world within which participants live</td>
<td>Findings probably true – researcher is value-aware and needs to triangulate any perceptions he or she is collecting</td>
</tr>
<tr>
<td><strong>Common methodologies</strong></td>
<td>Mostly concerns with a testing of theory. Thus mainly quantitative methods such as: survey, experiments,</td>
<td>In-depth unstructured interviews, participant observation, action research, and grounded theory research</td>
<td>Action research and participant observation</td>
<td>Mainly qualitative methods such as case studies and convergent interviews</td>
</tr>
</tbody>
</table>

Source: Guba & Lincoln (1994); Healy & Perry (2000)
3.3.2 Research methodologies – quantitative versus qualitative research

3.3.2.1 Quantitative research

A quantitative approach to research is concerned with statistical analysis or numerical measures from a large number of people or organisations (Zikmund 2003). This methodology rests on numerical evidence to test hypotheses or lead to findings and conclusions (Ticehurst & Veal 2000). In the quantitative approach, the researcher may employ primary or secondary data collected by means of observation, or a questionnaire survey. After collection, data are transformed into numbers and analysed with different levels of statistical manipulation to produce the results (Blaikie 2003). Different from qualitative approach, this approach requires large amounts of hard and quantifiable data (Easterby-Smith et al. 2002; Neuman 2006). Such data are often analysed by computer programme to check the reliability, validity of the results and then test hypotheses (Gall et al. 1996). In addition, a quantitative methodology is often used for descriptive and causal research which aims to test theories rather than build them (Veal 2005; Neuman 2006).

3.3.2.2 Qualitative research

In contrast to quantitative research, qualitative research is concerned with a great deal of information collected from a small number of people or organisations. The collected data is usually not described in numerical form but is rich in words, images and pictures from a small sample (Ticehurst & Veal 2000). In a qualitative approach, the researcher may use data from observation, in-depth interviewing secondary data or focus group (Neuman 2006). In comparison to quantitative methodology, the findings are often used in a specific context and are not readily generalizable (Lincoln & Guba 2000). As suggested by Gall et al. (1996), qualitative methodology is often used to explore phenomena by subjecting the collated data to analytic induction. Moreover, this kind of methodology is employed for exploratory research to build theories rather than test them. For these reasons, a qualitative approach was considered unsuitable for this study.

In the next step, Table 3.3 summarises the comparison between the two approaches.
Table 3.3: A comparison of qualitative and quantitative research approaches

<table>
<thead>
<tr>
<th>Comparison dimension</th>
<th>Qualitative research</th>
<th>Quantitative research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of questions</td>
<td>Probing</td>
<td>Limited probing</td>
</tr>
<tr>
<td>Sample size</td>
<td>Small</td>
<td>Large</td>
</tr>
<tr>
<td>Information per respondent</td>
<td>Much</td>
<td>Varies</td>
</tr>
<tr>
<td>Administration</td>
<td>Requires interviewer with special skills</td>
<td>Fewer special skills required</td>
</tr>
<tr>
<td>Type of analysis</td>
<td>Subjective, interpretative</td>
<td>Statistical, summarisation</td>
</tr>
<tr>
<td>Hardware</td>
<td>Tape recorders, video, pictures, video, pictures, discussion guides</td>
<td>Questionnaires, computers print outs</td>
</tr>
<tr>
<td>Ability to replicate</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Training of the researcher</td>
<td>Psychology, sociology, social psychology, consumer behaviour</td>
<td>Statistics, decisions models, decision support system, marketing research</td>
</tr>
<tr>
<td>Type of researcher</td>
<td>Exploratory</td>
<td>Descriptive, causal</td>
</tr>
</tbody>
</table>


**3.3.2.3 Justification of quantitative research methodology**

As suggested by Sekaran (2003), the quantitative research is often used to look for the causal relationships among variables. Therefore, the quantitative methodology is to be suitable for the current research. Two main objectives of this research were to examine the relationship among factors of store environment, and the effect of demographic variables on customer satisfaction. In addition, the theoretical framework in Chapter 2 generated 10 hypotheses to be tested, most of which were developed from the existing literature. The study is concerned with statistical analysis and is based on numerical evidence to draw conclusions. For these reasons, quantitative research was selected as most appropriate to the project.
3.3.3 Research design

There are three types of research: exploratory, descriptive and causal or explanatory. According to the aims of the research, the overall study needs to be designed in such a way as to give a direction for data collection and analysis (Emory & Cooper 1991; Neuman 2006).

3.3.3.1 Exploratory research

According to Zikmund et al. (2010) and Sekaran and Bourgie (2010), researchers often use exploratory design to understand the nature of a problem or the phenomena for which limited information is available. This type of study is employed when the researcher lacks a clear idea of the phenomena. In some cases, exploratory research is useful when some facts are understood, but more information is required to develop the theoretical framework. To sum up, an exploratory design is flexible and unstructured especially when the discipline area is vague or new (Emory & Cooper 1991).

3.3.3.2 Descriptive research

A descriptive study is conducted to ascertain and illustrate the characteristics or function of a population or phenomena (Malhotra 2010; Zikmund et al. 2010); Descriptive approaches rely on a previous knowledge of the problem or phenomenon in a given situation. Moreover, this type of research is used to answer the questions such as ‘when’, ‘where’, ‘how’ and especially the ‘what’ question (Zikmund et al. 2010). Regarding data collection, secondary data, surveys, observations and case studies are often employed by descriptive researchers (Zikmund 2003; Malhotra 2010). Basically, descriptive study helps researchers to comprehend and think systematically about the characteristics or aspects in a given situation (Sekaran & Bourgie 2010).

3.3.3.3 Explanatory/Causal research

Causal research is used to explain ‘why things are as they are’, and attempts to predict the cause and effect relationships between variables (Ticehurst & Veal 2000). In other
words, causal or explanatory research explores the relationship between variables in order to explain a phenomenon or a problem (Saunders et al. 2003). The explanatory or causal design is formalised and structured utilising hypothesis testing. Furthermore, this type of research differs from descriptive approach in controlling variables. The factors are often controlled or held constant in order to draw firm conclusions or findings (Emory & Cooper 1991; Cooper & Schindler 2006).

Table 3.4: A comparison of basic research designs

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Exploratory</th>
<th>Descriptive</th>
<th>Explanatory/Casual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of uncertainty</td>
<td>Highly ambiguous</td>
<td>Partially defined</td>
<td>Clearly defined</td>
</tr>
<tr>
<td>Characteristics</td>
<td>Flexible, versatile: often the front end of total research design</td>
<td>Prior formulation of hypotheses and research problems; pre-planned and structured design</td>
<td>Manipulation of one or more independent variables; control of other variables</td>
</tr>
<tr>
<td>Methods</td>
<td>Expert surveys</td>
<td>Secondary data</td>
<td>Experiments</td>
</tr>
<tr>
<td></td>
<td>Pilot surveys</td>
<td>Surveys</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Secondary data</td>
<td>Panels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Qualitative research</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When conducted</td>
<td>Early stages of decision making</td>
<td>Later stages of decision making</td>
<td>Later stages of decision making</td>
</tr>
</tbody>
</table>

Source: Adapted for this research from Malhotra (2010); Zikmund et al. (2010)

3.3.3.4 Justification of the descriptive research design

Descriptive research is suitable for the present study because of the following reasons. The research does not set out to establish new theories or concepts, and thus exploratory design was not considered appropriate. Factors or variables in the study were not controlled or held constant to analyse or predict results, therefore explanatory or causal research was deemed to be unfit for the research. As mentioned above, descriptive approach is used when previous knowledge of the phenomenon in a given
situation already exists, but the researcher wants to refine existing theories by adopting a fresh perspective. As a result, a descriptive research approach was chosen for the study, which sought to fill gaps in the literature concerning the relationship between store environment factors and customer satisfaction across different customer demographic groups.

3.4 Data collection

The kinds of data collection vary depending on authors and the kind of research design employed. Accordingly, data collection methods can be divided into three main types namely, observation, experimental, and survey methods (Ticehurst & Veal 2000; Sekaran 2003).

3.4.1 Observation methods

Observation is an unobtrusive technique (Emory 1995) which involves gathering information on the objects, or people’s behaviour, without their knowledge. In other words, the subjects or respondents do not know that they are being observed and no questioning or communicating is required. Observation is usually conducted when the researchers’ presence could become a problem to respondents, or may lead to unacceptable changes. Nevertheless, observation is useful for investigating a range of workplace behaviours or studying the way respondents make use of a site (Ticehurst & Veal 2000). According to Zikmund et al. (2010), in more recent times, observation methods can employ mechanical means (such as motion-picture cameras, time-lapse photography) rather than human observation. However, there are some drawbacks in using an observation approach, including the matter of ethical issues as well as cognitive phenomena such as preferences, attitudes, and motivations (Zikmund et al. 2010).

3.4.2 Experimental methods

Experimental methods have powerful logic, but researchers who use these methods may face some practical and ethical limitations, because in experimental studies, researchers manipulate some features of the phenomena and then investigate the
results. This type method of data collecting is appropriate for individual or small-group theoretical concerns at the micro level (Neuman 2006). An experimental method often helps researchers to test evidence of causal relationships. This method is normally conducted in artificial conditions such as in laboratory settings (Sekaran 2003). In other words, in an experimental method, researchers control one or a few independent variables to examine the impact of them on dependent variables (Aldridge & Levine 2001) but as mentioned by Neuman (2006), the method is not effective for investigating a large number of variables simultaneously.

3.4.3 Survey methods

Survey methodology involves data collection in order to identify the reasons for specific activities such as measuring customer behaviours, or gathering factual information to create a market plan (Zikmund et al. 2010). This method is very common and its main purpose is to collect primary data coming from the representative sample of some designated population (Sekaran 2003). Survey research is often used to gather information with a large sample of a population rather than a small sample or an individual. Generally, surveys help researchers have a quick, efficient and quite accurate means of evaluating data about a population (Zikmund et al. 2010). Some scholars categorise survey methods into two main types: interview and questionnaire-based surveys. These methods are best to be used when quantifiable information is required (Ticehurst & Veal 2000). As proposed by Zikmund et al. (2010), most survey research is descriptive study and suitable for quantitative analysis.

3.4.4 Justification of the survey method for data collection

Comparison of the three mentioned methods of data collection shows that survey methodology was most suitable for the present research for several reasons. First, arising from the previous sections, the quantitative approach was selected for the project, and a survey is commonly used when quantified information is required. Second, surveys are appropriate for gathering data to examine attitudes or behaviours of respondents, and aspects of the current research relate to customer satisfaction and
preferences. Finally, this method was considered effective for collecting data from large population with reasonable investment of cost and time.

3.5 Survey construction

3.5.1 Type of survey: hand-delivered questionnaire survey and mall interception

A comparison of the advantages and disadvantages of typical survey methods is illustrated in Table 3.5. The purpose of the study was to examine the effect of store environment on customer satisfaction. Therefore, respondents must be shoppers and they must have spent or experienced time in supermarkets. To collect data related to the topic, the researcher aimed to contact participants when they had just come out of the supermarket to ensure they were better able to recall the impact of the main factors of the store environment in terms of their satisfaction. Another matter to mention is that, arising from the literature review and pilot study, the researcher had a set of items established to be surveyed by shoppers. For these reasons, the hand-delivered questionnaire survey with mall interception was selected. The researcher met participants outside supermarkets after they had just finished their shopping trip, and asked them to participate in the research. If they fully agreed with ethics considerations presented (see Appendices 1a and 1b), then the researcher handed the questionnaire to them.

Two main concerns of a research questionnaire are nonresponse rate and possible lacuna of understanding of questionnaire of participants. The method adopted for this study ensured a low nonresponse rate and low respondent misconception (Zikmund et al. 2010). Indeed, as suggested by Melevin et al. (1999), different from other methods such as mail questionnaire or internet questionnaire, personal or hand-delivered questionnaire brings very high response rates when researchers contact and send directly to participants. Using a hand-delivered questionnaire survey on the spot (in supermarkets, mall interception), the researcher could guide or clear up queries from respondents. Moreover, it was considered that meeting respondents at the time when they came out of supermarket would lead to more accurate results, since participants still remembered the impact of main factors of the store environment on their
satisfaction. After distributing the questionnaire, the researcher waited for respondents to finish the survey, answering queries from respondents if they needed information.

Table 3.5: Advantages and disadvantages of typical survey methods

<table>
<thead>
<tr>
<th>Types</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door-to-door personal interview</td>
<td>Moderate speed of data; excellent respondent cooperation; low nonresponse rate; low respondent misconception; quite versatile.</td>
<td>High cost; low anonymity of respondent; difficult to call-back or follow up.</td>
</tr>
<tr>
<td>Mall intercept personal interview</td>
<td>Fast speed of data; moderate respondent cooperation; low nonresponse rate; low respondent misconception; high versatile.</td>
<td>High cost; low anonymity of respondent; difficult to call-back or follow up.</td>
</tr>
<tr>
<td>Telephone interview</td>
<td>Very fast speed of data; good respondent cooperation; low cost; easy to call-back or follow up; moderate to high anonymity of respondent.</td>
<td>Medium to low nonresponse rate; moderate to low versatility.</td>
</tr>
<tr>
<td>Mail questionnaire survey</td>
<td>Slow speed of data; low cost; high anonymity of respondent; easy to call-back or follow up.</td>
<td>Slow speed of data; poor respondent cooperation; high nonresponse rate; high respondent misconception; not versatile.</td>
</tr>
<tr>
<td>Hand-delivered questionnaire survey</td>
<td>Fast speed of data; good respondent cooperation; low nonresponse rate; low respondent misconception; quite versatile.</td>
<td>Medium to high cost; low anonymity of respondent; difficult to call-back or follow up.</td>
</tr>
<tr>
<td>Internet questionnaire survey</td>
<td>Fast speed of data; can be either anonymous or know; quite versatile; low cost; easy to call-back or follow up (if email address is known).</td>
<td>Respondent can be either anonymous or know; high respondent misconception; low nonresponse rate.</td>
</tr>
</tbody>
</table>

Source: Adapted for this research from Zikmund et al. (2010)

To sum up, a hand-delivered questionnaire combined with mall interception was used to collect data because it was deemed to be the most suitable for the aims and context of the research.
3.5.2 Questionnaire design

The questionnaire design plays an extremely important part in research process especially in collecting and analysing data (Burns & Bush 2003). According to Sekaran and Bougie (2010), there are three principles that should guide questionnaire design: wording, organisation of the questionnaire, and measurement as shown in Figure 3.3.

First, the wording of the questionnaire should match the level of understanding of participants. Besides, every content of question has to concern the research questions and hypotheses (Ticehurst & Veal 2000). Also the type and form of questions should be appropriate to the research background and context. For this study, the researcher selected closed questions, asking the participants to respond to a set of items developed from the literature and the pilot study. Also, questions needed to follow the order from general to specific and from easy to difficult (Festinger & Katz 1966).

Second, the questionnaire sheet should be attractive and neat. Respondents will be stressed or frustrated if they are asked to fill out an unmethodical questionnaire or a questionnaire with messy questions. As a result, respondents may decide to ignore these questions (Buckingham & Saunders 2004). By designing a simple and clear

---

**Figure 3.3: Principles of questionnaire design**

- **Principle 1 - Wording**
  - Content of question
  - Wording & language
  - Form of question
  - Sequence
  - Classification of personal data

- **Principle 2 - Organisation**
  - Appearance of questionnaire
  - Length of questionnaire
  - Introduction to respondents
  - Instructions for completion

- **Principle 3 - Measurement**
  - Categorisation
  - Coding
  - Scale
  - Reliability & Validity

Source: Adapted for this research from Sekaran & Bougie (2010)
questionnaire, a researcher can ensure that the response rates are optimal (Kumar 2005; Veal 2005). Furthermore, the questionnaire should have an appropriate instruction and introduction that fits the purpose of the research.

Third, the principle of measurement assists the researcher to organise and classify the data using appropriate coding units. In addition, the data collected needs to be in a form that is suitable for testing the research hypotheses. After data were obtained, the reliability and validity were assessed to check the ‘goodness of data’ (Sekaran & Bougie 2010). This approach has a bearing on elements of the data analysis process such as coding, scaling, reliability and validity. These are clarified in the next sections.

3.5.3 Measurement and scaling

As noted by Neuman (2006), in quantitative studies, researchers start with abstract ideas and finish with empirical data. Measuring variables precisely is an important part of research and plays the most salient role in the research design, because researchers cannot test hypotheses or discover findings without measuring variables in the theoretical framework (Sekaran & Bougie 2010). In the present study, the questionnaire contained 2 main sections. In the first, respondents’ opinions regarding the influence of main factors of store environment on satisfaction were surveyed. In the second section, participants were asked to provide information related to demographic variables.

The expected time to complete the questionnaire was about 5-7 minutes. The researcher waited to collect the completed survey as well as answering any questions from the participants. The Likert scale was chosen because this kind scale is simple to use and understand; besides, this scale help the researcher compute the means and the standard deviations, and calculate a total, summated score of the responses on the variables easily. Basically, Likert scales have three, five, seven, nine or ten points relying on how finely researchers want to measure the intensity of respondents’ opinions (Kumar 2005). On the one hand, while large Likert scales (nine, ten points) measure people’s opinions more accurately, they also may confuse respondents. On the other hand, five or three-point scales restrict respondents’ options. As a result, a seven-point
Likert scale was chosen for the present research since it balanced the need for clarity for respondents, and accuracy for the researcher.

The questionnaire consists of two main sections. Section 1 includes questions 1 and 2 concerning the importance of store environment factors for customer satisfaction. The seven Likert scale ranging from strongly disagree (1) to strongly agree (7) to reflect the degree of agreement was designed for examining the variables. Questions 3, 4, 5, 6, and 7 regarding demographic variables were designed by using a dichotomous scale, a nominal scale, and an ordinal scale in Section 2 of the questionnaire.

3.6 Sampling

As suggested by Ticehurst and Veal (2000), sampling is essential in most survey research because researchers cannot afford costs and time to survey or interview everyone in the population. Therefore, sampling is employed to select the right people, objects or events which are representative of the entire population (Sekaran & Bougie 2010).

3.6.1 Target population

The population for this research was Australian shoppers who had just spent time in a supermarket. After finishing their shopping and coming out of the supermarket, shoppers were surveyed about the influence of the store environment on their level of satisfaction. Three geographical areas were selected: Tweed Shire (to represent rural areas); Gold Coast (to represent tourist areas) and Brisbane (to represent a large urban environment) in Australia. Based on the report from Roy Morgan Company (2013), the top four supermarkets in Australian account for over 90 percent of all market share with Woolworths accounting for nearly 40 percent, Coles with 33 percent, while Aldi and IKEA hold about 10 percent and 9 percent of market share in that order (as presented in section 2.2.3). Therefore most places surveyed were Woolworths, Coles, Aldi and IGA supermarkets. The survey was conducted on different days and different times, from Monday to Sunday, covering the operating hours of the supermarkets in order to reduce response bias.
3.6.2 Sample size

Sekaran and Bougie (2010) indicated that probability sampling is employed when the representativeness of the sample is of importance in the interests of wider generalisability. This method was suitable for this research because demographic groups of respondents were examined. In order to apply probability sampling, every tenth person who came out of the store or supermarket was approached and asked to participate in the research.

As noted by Sekaran and Bougie (2010), sample size can be determined by the level of precision and confidence desired in estimating the population parameters and the variability in the population itself. Too large (over 500) or too small (less 30) sample size can lead to drawbacks. If the sample size is too small, as indicated by Gay et al. (2006), the results of the research may not represent the real population. On the other hand, if the sample size is too large, researchers may incur a lot of time and cost great expense. As a rule of thumb, a sample size larger than 30 and less than 500 is suitable for most studies (Roscoe 1975).

When researchers decide what sample size is appropriate for their research, three main determinants need to be considered: the level of precision of results required, the level of detail in the proposed analysis, and the budget (Ticehurst & Veal 2000). Probability sampling was chosen for the study because in a study of research methods for business, the purpose of this sampling method is to reduce bias since all members of the population have an equal chance to be mentioned in the sample.

Based on reasons above, the sample size for this research was 315 respondents. This number exceeded the prescribed target number of 300, to account for missing data and outliers. The hand-delivered questionnaire survey combined with mall interception is used to collect data. As discussed in Section 3.5.1, a high response rate and low respondent misconception level was achieved in this way.
3.7 Pilot study

A Pilot study was considered as a small-scale version of the research designed to do a pre-test or provide directions for the study before launching a full-scale operation (Zikmund et al. 2010). Moreover, Ticehurst and Veal (2000) claimed main purposes of the pilot study are to test questionnaire wording and layout or to estimate the response rate and time in order to gain familiarity with respondents.

For the current research, the pilot study was conducted with 30 shoppers who usually go to the supermarket, and who had time to share their experiences and knowledge about store environment. The sample size of the pilot study was 30 participants because Isaac and Michael (1995) noted that 10 to 30 respondents are suitable for a pilot study in survey research; or about 10 % of the main study sample size (Treece & Treece 1982).

The pilot interviews were carried out to assess the face of validity of the questionnaire items. As a result of the literature search, 46 potential items were identified for inclusion in the pilot study. Items thought to be measuring the same store environment factor were deleted. The researcher added more items as suggested by respondents. Hence there were 41 items used in the full survey (Tables 3.6, 3.7 and 3.8). Since the researcher employed these items from previous studies to measure main factors of store environment, this may have led to some differences between theory and practice, and between previous and current findings and conditions. In the present research, respondents in the pilot study were different from respondents in the full research. In the full study, participants just answered the closed questions (see Section 2.5.2), but in the pilot survey, respondents were interviewed and asked to make comments or suggest ideas, to recheck or supply new valuable information for the questionnaire and research. After conducting the pilot tests, the final version of the questionnaire was designed for the full study.

A pilot study was conducted with a sample of 30 respondents who were shoppers in the top 4 stores accounting for over 90 percent of all market share: Coles, Woolworths, Aldi and IGA. The pilot study and the main survey were undertaken in the Tweed area (New South Wales), Coolangatta (Queensland) and Brisbane (Queensland). These areas were
chosen because these areas contain different states, from rural areas to big cities, from local people, to tourists and immigrants. To be more specific, Tweed is a rural area, Coolangatta is a middle centre with many tourists, immigrants and local people living together, and Brisbane is one of the biggest cities in Australia. Furthermore, these places are located within a radius of less than 150 kilometres, and so were suitable with respect to the researcher’s costs and time.

The result of the pilot showed that there were four items related to the temperature factor which needed to be removed because these items had a very low factor loading coefficient (<0.5) and violated the reliability, with Cronbach alpha <0.7. Besides, the questionnaire’s layout of questions about demographic variables was rearranged to create a more friendly and comfortable impression for respondents. As a result, the demographic questions page was moved to the end of the questionnaire. In general, there were no major problems or issues in this pre-test stage, and after modifying the questionnaire, the final version was considered appropriate for a survey of 315 shoppers.

3.8 Items to measure variables

The 41 store environment factors taken from the literature and the pilot study, were arranged according to three main elements:

Ambient factors
According to Baker (1986) and Yalch and Spangenberg (1990), ambient factors are regarded as the non-visual elements of the store environment. As mentioned in Section 2.3.1, several scholars (Sweeney & Wyber 2002; Singh 2006) have reported that the elements of the ambient factor appear to impact consumers’ perception of service quality and customer satisfaction. In Table 3.6, items 1 to 14 from previous research and the pilot study were used to measure the ambient factor.

Design factors
Store design is the main factor in planning the store environment: creating a distinctive and memorable store image. In addition, as proposed by Levy and Weitz (2009) the store
needs to be designed to fascinate shoppers while they are in the store and enable them to spend time in merchandise areas or engage in impulse purchases. Design factors need to provide shoppers with a satisfying shopping experience. Liao et al. (2012) argued the design factors can satisfy customers by bringing convenience to them (e.g. help shoppers know how to get in and out of the store fast, as well as find the desired products quickly). There were 16 items employed to measure the design factor as noted in Table 3.7.

Table 3.6: Measures of ambient factors

<table>
<thead>
<tr>
<th>Factors</th>
<th>Items</th>
<th>Questionnaire items</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient</td>
<td>1</td>
<td>The store uses more natural light to save energy.</td>
<td>Smith (1989); Areni &amp; Kim (1994); Morrin &amp; Chebat (2005); Singh (2006); Theodoridis &amp; Chatzipanagiotou (2009); Levy &amp; Weitz (2009); Dunne et al. (2011).</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>The music is played at the right volume.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>The store has distinct fragrance.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>The store promotes a warm and cosy ambience.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>The store just plays the instrumental music.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>The store has a pleasant scent.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>The store is well-lit.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>There are many types of songs played in the store.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>The store has appropriate smell in different areas.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>The lighting in the store makes me comfortable.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>The scent is suitable for the products in the store.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>The light in the store is modern.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>The store has a soothing melody.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>The music tempo makes me joyful.</td>
<td></td>
</tr>
</tbody>
</table>

Source: Developed for this research
### Table 3.7: Measures of design factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Items</th>
<th>Questionnaire items</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>15</td>
<td>It is easy to move around in the store.</td>
<td>Dickson &amp; Albaum (1977); Broniarczyk et al. (1998)</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>The design of floor, ceiling and wall are comfortable.</td>
<td>Singh (2006); Miller (2008)</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>The colour is currently fashionable.</td>
<td>Singh (2006); Theodoridis &amp; Chatzipanagiotu (2009).</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>The store has different price ranges in different products.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>The store is clean.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>In-store displays (texture, pattern) are impressive.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>The directional maps and guides are clear.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>The signage is logically located in the store.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>It is easy to find out the products that are sought.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>The merchandise in the store is well-organised.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>The height level of merchandise is reachable easily.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>The layout is appropriate with the merchandise.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>The store has a wide variety of products.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>The décor is suitable with the store image.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>It is easy to locate products in the store.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>The corridors are spacious enough.</td>
<td></td>
</tr>
</tbody>
</table>

Source: Developed for this research

**Social factor**

The social factor involves human issues containing generally two main elements: store employees and other customers. Aylott and Mitchell (1999), Baker et al. (2002) and Liao and Liaw (2003) noted that social factors relate to the crowdedness of the store, the number of staff, sales style, and the interaction between store employees and
customers. Nowadays, social factors appears to play a more important role in retailing especially for store-based retailers attempting to meet consumer satisfaction (Jayawardhena & Farrell 2011). The items used to measure the social factor are shown in Table 3.8.

**Table 3.8: Measures of social factors**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Items</th>
<th>Questionnaire Items</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social</td>
<td>31</td>
<td>There are enough (not crowded) customers in the store.</td>
<td>Lee &amp; Dubinsky (2003); Shao et al. (2004); Eroglu et al. (2005); Li et al. (2009); Kim &amp; Kim (2012); Mehta (2013)</td>
</tr>
<tr>
<td></td>
<td>32</td>
<td>The store employees make good non-verbal cues.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>33</td>
<td>The store has helpful employees.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>34</td>
<td>The social relations among customers are cordial.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>The store has knowledgeable employees.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>36</td>
<td>The store has friendly employees.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>37</td>
<td>The store has well-dressed employees.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>38</td>
<td>The other customers are kind.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>39</td>
<td>There are enough salespersons in the store</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>The store has good communicated customers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>41</td>
<td>The responses to customer requests or complaints are useful</td>
<td></td>
</tr>
</tbody>
</table>

Source: Developed for this research

In conclusion, these 41 items in the questionnaire were used to run the factor analysis in order to create main factors which are hypothesised to have correlations with customer satisfaction.
Customer satisfaction

As noted in Section 2.5.3, this research adopted the cumulative measure of customer satisfaction rather than a transaction-specific evaluation. The American Customer Satisfaction Index (ACSI) was also incorporated into the study to measure customer satisfaction with three items as shown in Table 3.9.

Table 3.9: Measures of customer satisfaction

<table>
<thead>
<tr>
<th>Construct</th>
<th>Items</th>
<th>Questionnaire items</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer satisfaction</td>
<td>CS1</td>
<td>You are satisfied with the store.</td>
<td>Crosby &amp; Stephens (1987); Bryant &amp; Cha (1996); Fornell et al. 1996</td>
</tr>
<tr>
<td></td>
<td>CS2</td>
<td>The store matches your expectations.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CS3</td>
<td>The store is close to your ideal store.</td>
<td></td>
</tr>
</tbody>
</table>

Source: Developed for this research

3.9 Reliability and validity

After the data were collected, their reliability and validity were tested to assess the goodness of data. Reliability notes how consistently the items measure variables, while validity indicates how well an instrument, or technique measures a particular concept. Therefore, the quality of a survey depends on the result of measuring and assessing reliability and validity, which are important in establishing good measurement tools and the credibility of the research (Sekaran 2003; Zikmund et al. 2010).

3.9.1 Reliability

Zikmund et al. (2010) conceptualised reliability as the extent to which measures are error free which adds to the consistency of the results. In other words, reliability is considered to provide consistent results in repeated uses of the measuring instrument. The Cronbach’s coefficient is the most common statistical test to examine the reliability of data. The index of this statistical test is coefficient alpha or Cronbach’s alpha which ranges in values from 0 (no reliability) to 1 (perfect reliability). According to Manning and Munro (2007), values of Cronbach’s alpha above 0.70 constitute ‘acceptable
reliability’, above 0.80 means ‘good reliability’ and above 0.90 represents ‘excellent reliability’.

In this study, to increase the reliability, the researcher focused on developing clear items as demonstrated in the literature review. Hence, multiple indicators for each variable were developed to enhance the reliability of the survey instrument. The seven-point Likert scale which measures people’s opinions more accurately was employed in the questionnaire.

3.9.2 Validity

As defined by Zikmund et al. (2010, p.307), ‘validity is the accuracy of measurement used to measure what is supposed to be measured or the accuracy of a measure to which a score truthfully represents a concept’. There are several types of validity: content validity, criterion validity, and construct validity (Zikmund et al. 2010). Content validity refers to a measure of whether a scale logically appears to accurately reflect what it is intended to measure or refers to the measure that consists of an adequate and representative series of items (Sekaran 2003). Criterion validity is ‘the ability of a measure to correlate with other measures of the same construct’ (Neuman 2010, p.193). This type of validity relates to the criterion of the new measure that researchers try to assess. Construct validity is used to measure a network of related concepts developed from theory and set up during the statistical analysis (Zikmund et al. 2010).

In this research, to test validity of data, factor analysis was employed to create the main factors. For each factor, the item-to-total correlations and the inter-item correlations were calculated. As mentioned by Hair et al. (1998), the value of the ‘item-to-total correlations’ should exceed 0.5 to ensure that the data are valid or homogenous. Furthermore, the ‘inter-item-correlations’ between each item should be greater than 0.3 which reflects adequate homogeneity or internal consistency (Manning & Munro 2007, p. 30).
3.10 Data analysis and techniques

3.10.1 Data analysis process

After collecting the raw data, they must be edited to ensure the data collected are accurate, complete and appropriate for further analysis (Sekaran & Bougie 2010). Coding of the data and data entry are the next steps in the sequence required before the data can be analysed (Zikmund et al. 2010). First, editing is used to check and correct data because data collected from fieldwork usually contains mistakes. Researchers or editors who take responsibility for editing data should focus on illogical, inconsistent or illegal data to make them useful for the research (Sekaran & Bougie 2010). Second, coding data is undertaken to identify, classify the data from the questionnaire and transfer them into the numerical score or character symbols so that they can be entered into a database. Third, data are entered into the computer by using software programs such as SPSS or AMOS.

3.10.2 Data analysis technique

After the data were collected, edited, coded and imported into the computer by using SPSS 22 software, the process of data analysis was conducted. The main purpose of using data analysis techniques is to understand and interpret information collected (Zikmund et al. 2010). The researcher used factor analysis, Pearson’s correlation coefficient, independent samples t-test, Analysis of variance (ANOVA), cluster analysis and multiple regression analysis to analyse data and test research hypotheses.

Descriptive analysis

The researcher calculated the composite independent variable for main factors including the ambient, design, social factor and the composite dependent variable for satisfaction. Thus, descriptive statistical analysis was employed to compute and summarise the minimum, maximum, mean, deviation and variance of each composite variable derived from the data collected.

Apart from investigating store environment factors and their relationship to customer satisfaction, other main objectives of the research were to identify customer
demographic variables affecting customer satisfaction and to examine the relationship between levels of satisfaction and customer demographic groups. Therefore, a cross tabulation method was used to illustrate the demographic variables and compare the differences among group based on nominal (e.g. gender) and continuous (e.g. age, family size and income) categories.

**Factor analysis – principle component analysis**

Arising from the literature and pilot study, many items were used to measure main factors (variables) of store environment. These items address the research question concerning what are the important and meaningful factors that are interrelated and useful for testing the associated hypotheses. In this step, a factor analysis was employed to reduce the number of variables from a large amount of data into a number of variables (Rummel 1967). As suggested by Hair et al. (2006), factor analysis is a technique to define the underlying structure among a large number of variables; hence this technique is often used to reduce a large number of variables into a smaller number (Zikmund et al. 2010).

In the research, a principle component analysis (PCA) – a technique of factor analysis with a Varimax rotation – was undertaken to identify the internal structure of the composite variables. The purposes of conducting PCA was to minimise the number of variables and extract variables containing high loadings on each factor (Tabachnick & Fidell 2001). This is appropriate for the aims of the study which is to explore what potential factors influence customer satisfaction and what factors do not.

In this process, validity is established by evaluating the item-to-total correlations between each composite variable. If each questionnaire item is measuring the same thing as the total, the item-to-total should exceed 0.5 and then the scale is homogenous or valid (Manning & Munro 2007). Meanwhile, the Cronbach’s coefficient alpha was employed to assess reliability. The coefficient alpha seeks to be greater than 0.7 which means the composite variable is reliable. After testing validity and reliability, outliers and the normality of distributions were examined. In the next step, Pearson’s $r$,
independent samples t-test, one way - ANOVA, and multiple linear regression were used to test hypotheses.

According to Manning and Munro (2007) and Zikmund et al. (2010), Pearson’s r, independent sample t-test, ANOVA and multiple linear regression require the independent as well as dependent variables’ distribution to be normal. If the distribution of variables is not ‘normal’, some other techniques may be used to replace them. For example, instead of Pearson’s r, Spearman’s rho could have been used. Hence, before using these analytic techniques, normality’s issues of all composite variables need to be tested.

Pearson’s correlation coefficient
According to Ticehurst and Veal (2000), correlation can be measured by means of the correlation coefficient. In the research, Pearson’s correlation was conducted to investigate the relationship between two or more variables. SPSS programme was employed to calculate Pearson’s product-moment correlation (r). If r=0 there is no relationship. If r=1 or r=-1 that means perfect relationship with positive and negative effect in that order (Manning & Munro 2007). In sum, after factor analysis was conducted, each factor of store environment was tested for its relationship with customer satisfaction by using Pearson’s correlation coefficient (Hypotheses 1, 2 and 3).

Independent samples t-test
Independent sample t-test is a useful tool used to compare means between two groups. This test is often applied for a categorical variable containing only two categories (dichotomous) as an independent variable (Manning & Munro 2007). Therefore, to examine the significant difference between the gender (dichotomous variable) variable and customer satisfaction (Hypothesis 4), and independent samples t-test was employed.

Analysis of variance (ANOVA)
ANOVA is the analysis of variance which is used for comparing the means of each group. Researchers employ ANOVA to test the significant different means between one or more
independent variables on ordinal or nominal scales and one dependent variable on an interval or ratio scale (Manning & Munro 2007; Ticehurst & Veal 2000). In this study, ANOVA used to test the relationship between demographic variables: age, family size, income and shopping frequency with customer satisfaction (Hypotheses 5, 6, 7 and 8).

*Cluster analysis*

Cluster analysis is used to maximise the similarity of cases within groups (Manning & Munro 2007). Use of this technique was appropriate for the research because one of its main aims was to examine the relationship between demographic subgroups of customers. Besides, as suggested by Horvath and Michalkova (2012), cluster analysis refers to the grouping of records, observations or cases into classes of similar objects, and therefore, organisations may employ this technique to ensure satisfactory measurement of customers relative to customer categories. In the study, after using cluster analysis for the demographic segmentation, respondents were divided into groups and the level of customer satisfaction among the groups compared (Hypothesis 9).

*Multiple linear regression analysis*

The research purpose was to examine the relationship among store environment factors and customer satisfaction. Therefore, the multiple linear regression technique was undertaken because, as suggested by Sekaran and Bougie (2010), multiple linear regression indicates how much of the variance in the dependent variable is explained by a set of independent variables. For this study, this technique was employed to investigate the simultaneous impacts of several independent variables (store environment factors) on a dependent variable (customer satisfaction). Further, the result of multiple linear regression analysis also identifies the most important independent variables affecting the dependent variable. With regard to the current study, by using this technique, the researcher was able to indicate which factors of store environment has the most important effect on customer satisfaction. More importantly, after using cluster analysis, demographic groups were generated. At this step, multiple linear regression was used to create specific equations of prediction in relation to relationships between store environment factors for specific customer demographic groups (Hypothesis 10).
3.10.3 Overall research design

Table 3.10 demonstrates the overall design for the research, in which hypotheses, independent and dependent variables and analytical tools are aligned with research questions.

Table 3.10 Alignment of research questions, hypotheses, tools of analysis and variables

<table>
<thead>
<tr>
<th>Research questions</th>
<th>Hypotheses</th>
<th>Tools for analysis</th>
<th>Independent variables and types of variables</th>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the retail store environment factors which have significant positive correlations with customer satisfaction?</td>
<td>H1: There is a positive relationship between perception of ambient factors and customer satisfaction.</td>
<td>Pearson r (According to Manning &amp; Munro 2007, p. 87)</td>
<td>Music, scent, lighting factors (composite variables – ratio scale). Question 1 in the questionnaire (items: 1-&gt; 14)</td>
<td>Customer satisfaction (composite variable – ratio scales) question 2 in the questionnaire</td>
</tr>
<tr>
<td></td>
<td>H2: There is a positive relationship between perception of design factors and customer satisfaction.</td>
<td>Pearson r</td>
<td>Layout, assortment, Interior design factors (composite variables – ratio scale). Q1.cont (items: 15-&gt; 30)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>H3: There is a positive relationship between perception of social factors and customer satisfaction.</td>
<td>Pearson r</td>
<td>Employees, other customers factors (composite variables). Q1.cont (items: 31-&gt; 41)</td>
<td></td>
</tr>
<tr>
<td>2. What are customer demographic variables influencing on customer satisfaction in retail store environment?</td>
<td>H4: There is a significant difference of levels of customer satisfaction between males and females.</td>
<td>t-test, or ANOVA</td>
<td>Gender variable (dichotomous scale) Question 3 (Item: gender)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>H5: There is a significant difference of levels of customer satisfaction among customer age groups.</td>
<td>ANOVA</td>
<td>Age group variable (ordinal scale) Question 4 (Item: age)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>H6: There is a significant difference of levels of customer satisfaction among customer family size groups.</td>
<td>ANOVA</td>
<td>Family size group (ordinal scale). Question 5 (Item: family size)</td>
<td></td>
</tr>
<tr>
<td>Research questions</td>
<td>Hypothesis</td>
<td>Analysis methods</td>
<td>Independent and types of variables</td>
<td>Dependent variable</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------</td>
<td>------------------</td>
<td>------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>2. What are customer demographic variables influencing customer satisfaction in retail store environment?</td>
<td>H7: There is a significant difference of levels of customer satisfaction among customer income groups.</td>
<td>ANOVA</td>
<td>Annual income group (ordinal scale). Question 6 (Item: income)</td>
<td>Customer satisfaction (composite variable – ratio scales)</td>
</tr>
<tr>
<td></td>
<td>H8: There is a significant difference of levels of customer satisfaction among customer’s shopping frequency groups.</td>
<td>ANOVA</td>
<td>Shopping frequency group (ordinal scale). Q7 (Item: shopping frequency)</td>
<td></td>
</tr>
<tr>
<td>3. How different are levels of satisfaction in relation to customer demographic variables?</td>
<td>H9: There are differences in the levels of satisfaction among customer demographic groups.</td>
<td>ANOVA, cluster analysis</td>
<td>Customer groups created from the cluster analysis Item: groups/or clusters</td>
<td>Customer satisfaction (composite variable – ratio scales)</td>
</tr>
<tr>
<td>4. How does the influence of retail store environment factors impact on customer satisfaction vary across different customer demographic groups?</td>
<td>H10: The effect of store environment factors on customer satisfaction varies among different customer demographic groups.</td>
<td>cluster analysis, Multiple linear regression</td>
<td>Store environment factors (music, lighting, employees factors-composite variables) and customer groups created from the cluster analysis Item: groups/or clusters</td>
<td>Customer satisfaction (composite variable – ratio scales)</td>
</tr>
</tbody>
</table>

Source: Developed for this research
The main purpose of the study was to examine the influence of store environment factors on customer satisfaction for each of a number of demographic groups. Accordingly, the researcher used factor analysis to determine how many underlying dimensions or components (factors) were represented in the data. The study applied principle component analysis (PCA) – a technique of factor analysis with a Varimax rotation for both approaches, for the whole items of store environment (Section 4.3) and for each specific main factors such as ambient factors, design factors and social factors (Appendix 2) with similar outcomes of components. After that, cluster analysis and multiple linear regression were deemed to be suitable to illuminate the relationship between store environment factors and customer satisfaction for each demographic group. Whereas Structural Equation Modelling (SEM) is often used to ‘determine whether a certain model is valid, rather than to explore multiple relations’, it is more appropriate for testing a theory than developing it (Nidumolou 1989, p. 19). Therefore, the researcher did not attempt to apply it.

Data processing tool - SPSS 22.0

Because of the large amount of data collected in the survey, the researcher used computer programs to analyse the data. From many software programs such as Excel, STAPAK, SYSTAT or SPSS, SPSS was chosen as the preferred data processing tool. As mentioned by Sekaran (2003), SPSS is widely chosen owing to its simplicity and completeness.

3.11 Ethical considerations

Research ethics are essential when researchers conduct studies, especially when they are concerned with human subjects. They involve issues like honesty and respect for human rights (Ticehurst & Veal 2000). Ethical considerations direct and guide researchers to observe behavioural and moral standards. Research related to human beings must be reviewed and approved by an appropriate Human Research Ethics Committee. For the present research, ethics approval was granted by the Southern Cross University Human Research Ethics Committee (No. ECN-15-079).
With regard to this study, the researcher carefully considered ethical issues involving research participants such as privacy, confidentiality and anonymity. The researcher sought to ensure that the respondents’ identity would not be disclosed when they participated in the research study. In the questionnaire, participants remained anonymous. In addition, the researcher will keep the data safe and secure. The researcher guarantees to let participants know that participants have the right to stop or withdraw any time. At the outset, participants were informed about the purpose of the research. In short, the purpose of ethical considerations is to minimise all negative effects on participants (Ticehurst & Veal 2000; Zikmund et al. 2013).

3.12 Conclusion

This chapter presented the overall methodology for the research and chosen approaches to be used. A positivistic paradigm and quantitative methodology were selected. A descriptive and deductive approach was deemed to be suitable for the research. As regards data collection, a hand-delivered survey questionnaire along with mall interception was used. The questionnaire design was established and the research employed a 7-point Likert scale to measure variables. A pilot study was conducted to check and consider the efficiency of the questionnaire. Based on this study, a stage to assess the structure of the questionnaire was carried out. Then, the sample size of 315 respondents was selected from shoppers who were asked to participate in the questionnaire survey after they have spent and experienced time in a supermarket. Because the research involves human beings, steps were taken to meet ethical standards to protect respondents and comply with legal requirements.

To sum up, once data collection was finished, the statistical software program, SPSS 22.0 was used to analyse and assess data. In this section, factor analysis was employed to reduce the number of factors. At this step, the validity of the questionnaire items was tested by conducting the item-to-total correlation and the inter-item-correlation between each item. After that, the reliability for multipoint-scaled items was measured by using Cronbach’s coefficient alpha. After that, univariate and multivariate outliers of
composite variables (coming from factor analysis) were identified, then the normality issues of variables were tested. In the main points of data analysis process, the study employed Pearson’s correlation, independent sample t-test, ANOVA, cluster analysis and multiple regression analysis to test hypotheses. In Chapter 4, the results of statistical analysis are presented and discussed.
CHAPTER 4 ANALYSIS

4.1 Introduction
This chapter employs the research methodology as outlined in Chapter 3. SPSS software was used to analyse the data collected. The preliminary examination of the data analysis, including cleaning and screening data, checking for validity and reliability, identifying outliers, testing for normality of distribution is presented. The data are analysed in order to explore the relationship between two kinds of independent variables (factors of store environment such as music, lighting and assortment), demographic variables (gender, age and family size), shopping frequency and a single dependent variable – customer satisfaction. In the chapter, groups of customers are generated by cluster analysis to examine the different levels of satisfaction among them. At the end, the chapter presents results concerning the relationship between store environment factors and customer satisfaction across different customer demographic groups.

Chapter 4 consists of six sections. The first Section 4.1 mentions the introduction. A preliminary data analysis is presented in Section 4.2. Section 4.3 illustrates the examining variables with using factor analysis, reliability and validity of variables. Descriptive statistics composite variables are discussed in Section 4.4. In Section 4.5, Pearson’s $r$ correlation, independent $t$-test, ANOVA, cluster analysis and multiple linear regression analysis are applied to test research hypotheses. After that, the summary of the results and the conclusion of this chapter can be seen in Section 4.6. The structure of the chapter is illustrated in Figure 4.1.

4.2 Preliminary data analysis
Preliminary analysis guarantees that the collected data are translated into suitable forms for analysis, and are able to be interpreted to produce meaningful findings or results (Sekaren 2003). After editing and coding, data were transferred into SPSS 22.0 program for analysis. The first stage of this analysis was to screen and clean data.
Figure 4.1 Structure of Chapter 4

4.1 Introduction

4.2 Preliminary data analysis
   4.2.1 Cleaning and screening of data
   4.2.2 Demographic characteristic of respondents

4.3 Examining variables
   4.3.1 Factor analysis
   4.3.2 Reliability, validity

4.4 Descriptive statistics composite variables
   4.4.1 Composite variables
   4.4.2 Univariate and Multivariate Outliers
   4.4.3 Normality of distribution of variables

4.5 Hypothesis testing
   4.5.1 Relationship between store environment factors and satisfaction
       (Testing hypotheses 1, 2 and 3)
   4.5.2 Relationship between demographic variables and satisfaction
       (Testing hypotheses 4, 5, 6, 7 and 8)
   4.5.3 The structure relationship between store environment factors and
customer satisfaction across customer demographic groups
       (Testing hypotheses 9 and 10)

4.6 Conclusion

Source: Developed for this research
4.2.1 Cleaning and screening of data

Data cleaning and screening of data involved checking whether the data had been entered accurately or not and identifying inconsistent responses as well as missing data (Malhotra 2010). The main purpose of this stage is to increase the accuracy of the data and locate out-of-range values. As suggested by Malhotra (2010), before analysing data in depth, descriptive variables’ should be examined to identify missing observations, outliers and any other distribution issues. When entering data into SPSS software, the researcher looked for inappropriate responses such as percentages given for questions requiring numerical answers, or giving a wrong Likert rating (8 or 9), instead 7. As a result, the researcher found that there were no values of entered data out of the acceptable range.

Missing data needs to be examined and resolved since according to Tabachnick and Fidell (2007), if there is a significant amount of data missing, the results of data analysis may be distorted. The research employed the hand-delivered questionnaire survey combining with mall interception therefore the response rate is very high. The results showed that only nine out of 315 surveys had missing data, giving 306 appropriately completed questionnaires. This accounts for less than 3 percent of the total sample therefore the missing data were not a problem in this study. Since Hair and Anderson (2010) declared that if the missing data is bigger than 10 percent of the total respondents, the results of data analysis are likely to be inaccurate.

4.2.2 Demographic characteristic of respondents

Gender

As shown in Table 4.1, the majority of the participants (over 61%) were females despite the fact that nowadays, males engage in shopping more freely and frequently (Mortimer & Clarke 2010).
Age

21.6 percent of respondents were between the ages of 18 to 26. The largest number of participants (over 65 percent) were from 26 to 65 years old, including 35.9 percent for group of 26-40 and 30.4 percent for group of 41-65. The smallest group were respondents aged over 65 years old (12.1 percent of respondents).

Family size

The survey showed that families with 3-4 members were the largest group accounting for 47.4 percent of respondents. Families with 1-2 members and over 5 member make up about 30.7 percent and 21.9 percent in that other.

Annual income

The income of most respondents (66.0%) surveyed in the research was between AUD$ 30,000 to AUD$ 74,999, which aligns with the data from the Australian Bureau of Statics ABS (2015). Of that number, 36.9 percent of respondents had an income of AUD$ 30,000 to AUD$ 49,999, with 29.1 percent of respondents with an income level of AUD$ 50,000 to AUD $74,999, with 19.3 percent having an annual income less than AUD$ 30,000. Respondents with an income over AUD$ 75,000 accounted for about 14.7 percent of participants.

Shopping frequency

The largest group of respondents (40.5%) went shopping 3 or 4 times a fortnight. The next largest group accounts for 31.7 percent, shopping at the supermarket 1 or 2 times in a fortnight. Respondents who went shopping over 5 times in two weeks only make up less than 27.8 percent of participants.

Table 4.1 illustrates the demographic characteristics of respondents.
### Table 4.1 Demographic profile of respondents-shoppers:

<table>
<thead>
<tr>
<th>Item</th>
<th>Specific</th>
<th>Number of respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td>117</td>
<td>38.2%</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td>189</td>
<td>61.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td>306</td>
<td>100%</td>
</tr>
<tr>
<td><strong>2. Age</strong></td>
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<tr>
<td>18 – 25 years old</td>
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<td>66</td>
<td>21.6%</td>
</tr>
<tr>
<td>26 – 40 years old</td>
<td></td>
<td>110</td>
<td>35.9%</td>
</tr>
<tr>
<td>41 – 65 years old</td>
<td></td>
<td>93</td>
<td>30.4%</td>
</tr>
<tr>
<td>Over 65 years old</td>
<td></td>
<td>37</td>
<td>12.1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>306</td>
<td>100%</td>
</tr>
<tr>
<td><strong>3. Family size</strong></td>
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<tr>
<td>(only include your partner and children)</td>
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<tr>
<td>1 – 2 members</td>
<td></td>
<td>94</td>
<td>30.7%</td>
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<tr>
<td>3 – 4 members</td>
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<td>145</td>
<td>47.4%</td>
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<tr>
<td>5 members or over</td>
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<td>67</td>
<td>21.9%</td>
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<td><strong>Total</strong></td>
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<td><strong>4. Annual income</strong></td>
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<tr>
<td>Less than AUD$ 30,000</td>
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<td>59</td>
<td>19.3%</td>
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<tr>
<td>AUD$ 30,000 – AUD$ 49,999</td>
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<td>113</td>
<td>36.9%</td>
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<tr>
<td>AUD$ 50,000 – AUD$ 74,999</td>
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<td>89</td>
<td>29.1%</td>
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<tr>
<td>More than AUD$ 75,000</td>
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<td>45</td>
<td>14.7%</td>
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<tr>
<td><strong>Total</strong></td>
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<td>306</td>
<td>100%</td>
</tr>
<tr>
<td><strong>5. Shopping Frequency</strong></td>
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<tr>
<td>(in every fortnight)</td>
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<tr>
<td>1 – 2 time(s)</td>
<td></td>
<td>97</td>
<td>31.7%</td>
</tr>
<tr>
<td>3 – 4 times</td>
<td></td>
<td>124</td>
<td>40.5%</td>
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<tr>
<td>5 times or over</td>
<td></td>
<td>85</td>
<td>27.8%</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td>306</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research
4.3 Examining variables

4.3.1 Factor analysis

Arising from the literature and the pilot study, the questionnaire contains 41 items used to measure independent variables and 3 items employed to measure a dependent variable (Section 3.8).

Factor analysis was employed to reduce the number of variables from a mass number of data into economical description (Rummel 1967). As suggested by Hair et al. (2006), factor analysis is a technique to define the underlying structure among a large number of variables. This technique is often used to summarise data gathered in a large number of variables into a smaller number of factors (Zikmund et al. 2010). In the research, principle component analysis (PCA) – a technique of factor analysis with a Varimax rotation – was undertaken to examine the internal consistency of the composite variable. The purposes of conducting PCA are to minimise the number of variables and extract variables containing high loadings on each factor (Tabachnick & Fidell 2001).

4.3.1.1 Running factor analysis with principle component analysis (PCA) for factors of store environment (independent variables)

Factor analysis was applied to the 41 items developed from the literature review and the pilot study. The researcher used PCA with a Varimax rotation and KMO and Bartlett’s test to determine how many underlying dimensions or components (factors) were presented in the responses related to store environment factors, as demonstrated in Table 4.2 and Table 4.3.

Table 4.2: KMO and Bartlett’s Test for store environment factors

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | .761 |
| Bartlett’s Test of Sphericity Approx. Chi-Square | 4129.948 |
| df | 820 |
| Sig. | .000 |

Source: Data analysis developed for this research
Table 4.3 Rotated component matrix\textsuperscript{a} of store environment factors

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
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<th>8</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.645</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.567</td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis

Source: Data analysis developed for this research
As shown in Table 4.2, The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO = 0.761) was greater than 0.6, and Bartlett's test of sphericity was significant, (p<0.05), therefore it is suitable to apply PCA to this data (Manning & Munro 2007, p. 172).

Based on the PCA results, the rotated component matrix is represented in Table 4.3 above. There are 7 components with factor loading values which are bigger than 0.5 and the difference of factor loadings in every item is bigger than 0.3 (Hair et al. 1998). Components 8, 9 and 10 need to be removed because items with factor loadings need to be bigger than 0.5. Moreover, the difference of factor loadings in every item must be bigger than 0.3 (Hair et al. 1998). According to Manning and Munro (2007, p. 175), if a component has one or two items loading below 0.5 it often considered likely to be unreliable and the researcher may choose not to attempt to interpret it.

Thus, there are seven components - factors:

*Component 1- includes 7 items:
  + Item33: The store has helpful employees.
  + Item39: There are enough employees to serve customers.
  + Item35: The store has knowledgeable employees.
  + Item37: The store has well-dressed employees.
  + Item36: The store has friendly employees.
  + Item32: The store employees make good non-verbal cues.
  + Item41: The responses to customer requests are useful.

  => These items mention employees, elements of the store environment, therefore the name of this component is employees factor.

*Component 2- includes 5 items:
  + Item4: The store promotes a warm and cosy ambience.
  + Item7: The store is well-lit.
  + Item12: The light in the store is modern.
  + Item10: The lighting in the store makes me comfortable.
  + Item1: The store uses more natural light to save energy.
These items mention lighting elements of the store environment, therefore the name of this component is lighting factor.

*Component 3- includes 5 items:
  +Item2: The music is played at the right volume.
  +Item8: There are many types of songs played in the store.
  +Item14: The music tempo makes me joyful.
  +Item5: The store just plays the instrumental music.
  +Item13: The store has a soothing melody.
  => These items mention music elements of the store environment, therefore the name of this component is music factor.

*Component 4- includes 5 items:
  +Item26: The layout is appropriate with the merchandise.
  +Item30: The corridors are spacious enough.
  +Item21: The directional maps and guides are clear.
  +Item15: It is easy to move around in the store.
  +Item29: It is easy to locate products in the store.
  => These items mention layout elements of the store environment, therefore the name of this component is layout factor.

*Component 5- includes 6 items:
  +Item17: The colour is currently fashionable.
  +Item19: The store is clean.
  +Item24: The merchandise in the store is well-organised.
  +Item20: In-store displays (texture, pattern) are impressive.
  +Item28: The décor is suitable with the store image.
  +Item16: The design of floor, ceiling and wall are comfortable.
  => These items mention interior design elements of the store environment therefore, the name of this component is interior design factor.
*Component 6- includes 4 items:
  + Item23: It is easy to find out the products that are sought.
  + Item25: The height level of merchandise is reachable easily.
  + Item18: The store has different price ranges in different products.
  + Item27: The store has a wide variety of products.
  => These items mention assortment elements of the store environment, therefore the name of this component is assortment factor.

*Component 7- includes 3 items:
  + Item31: There are enough (not crowded) customers in the store.
  + Item34: The social relations among customers are cordial.
  + Item38: The other customers are kind.
  => These items mention other customer elements of the store environment, therefore the name of this component is the other customers factor.

As a result, there are 7 components chosen with names such as 1) employees, 2) lighting, 3) music, 4) layout, 5) assortment 6) interior design and 7) other customers.

4.3.1.2 Running factor analysis _ principle component analysis (PCA) for customer satisfaction (dependent variable)

<table>
<thead>
<tr>
<th>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</th>
<th>.708</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bartlett's Test of Sphericity</td>
<td></td>
</tr>
<tr>
<td>Approx. Chi-Square</td>
<td>378.935</td>
</tr>
<tr>
<td>Df</td>
<td>3</td>
</tr>
<tr>
<td>Sig.</td>
<td>.000</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO = 0.711) was greater than 0.6, and Bartlett's test of sphericity was significant, (p<0.05) as shown in Table 4.4, therefore it is suitable to use PCA to this data set (Manning & Munro 2007, p. 172).
Table 4.5 Total variance for customer satisfaction

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>Extraction Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>% of Variance</td>
</tr>
<tr>
<td>1</td>
<td>2.290</td>
<td>76.322</td>
</tr>
<tr>
<td>2</td>
<td>.437</td>
<td>14.573</td>
</tr>
<tr>
<td>3</td>
<td>.273</td>
<td>9.105</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.

Source: Data analysis developed for this research

Table 4.6 Rotated component matrix\(^a\) of store environment factors

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>ItemCS2</td>
<td>.905</td>
</tr>
<tr>
<td>ItemCS3</td>
<td>.874</td>
</tr>
<tr>
<td>ItemCS1</td>
<td>.841</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
\(a\). 1 components extracted.

Source: Data analysis developed for this research

Based on Table 4.5 and Table 4.6, there are only one component being found with an eigen value which is greater than 1. Thus all items measure a single concept (Manning & Munro 2007, p. 175).

+ItemCS1-You were satisfied with the store.
+ItemCS2-The store matched your expectations.
+ItemCS3-The store was close to your ideal store.

All items are accepted because the factor loading values are bigger than 0.5 (Hair et al. 1998) and these items mention other customers satisfaction. Therefore these items are suitable for measuring the customer satisfaction (dependent variable) in the survey.

There are 06 composite variables regarded as independent variables, consisting of 07 factors of store environment: 1) employees, 2) lighting, 3) interior design, 4) layout, 5) music, 6) assortment, 7) other customers and 01 composite variable considered as the dependent variable namely customer satisfaction. Each composite variable is measured
through a series of items. For instance, the composite variable, ‘music’, was created from the mean score through 5 individual items (items 2, 5, 8, 13 and 14). The validity, and reliability of 08 composite variables are tested and presented in the next section.

4.3.2 Validity and reliability of composite variables

In terms of store environment variables, after running factor analysis, the number of items decrease from 41 to 32, and these items are represented for 7 factors of store environment: music, lighting (belong to ambient factors), layout, assortment, interior design (design factors) and other customers, employees (social factors). While customer satisfaction variable still has 3 items. These factors - variables are assessed the validity and reliability in that order (from music, lighting, layout, interior, assortment, other customers and employees) in the following sections.

Assessing validity and reliability for music factor.

Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.836</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 4.7: Validity and reliability test of music

<table>
<thead>
<tr>
<th>Music</th>
<th>Inter-item correlations</th>
<th>Corrected Item-to-Total Correlations</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item2</td>
<td>From 0.475 to 0.533</td>
<td>0.670</td>
<td>0.793</td>
</tr>
<tr>
<td>Item8</td>
<td>From 0.479 to 0.554</td>
<td>0.679</td>
<td>0.790</td>
</tr>
<tr>
<td>Item14</td>
<td>From 0.461 to 0.549</td>
<td>0.652</td>
<td>0.798</td>
</tr>
<tr>
<td>Item5</td>
<td>From 0.384 to 0.554</td>
<td>0.612</td>
<td>0.810</td>
</tr>
<tr>
<td>Item13</td>
<td>From 0.384 to 0.512</td>
<td>0.576</td>
<td>0.820</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research
The overall coefficient (Cronbach’s) alpha for these five items of music item is 0.836 which is found to be good (above 0.80). Based on the result in Table 4.7, all 5 items (2, 8, 14, 5 and 13) has high Item-to-total correlations (above 0.50) and each of the Inter-item correlations is greater than 0.30 which reflects adequate homogeneity or internal consistency (Manning & Munro 2007, p. 30). Deletion of any item does not improve the overall reliability of this scale. As a result, the music factor is valid and represents ‘good reliability’.

Assessing validity and reliability for lighting factor

Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.866</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 4.8: Validity and reliability test of lighting

<table>
<thead>
<tr>
<th>Lighting</th>
<th>Inter-item correlations</th>
<th>Corrected Item-to-Total Correlations</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item4</td>
<td>From 0.566 to 0.596</td>
<td>0.715</td>
<td>0.831</td>
</tr>
<tr>
<td>Item7</td>
<td>From 0.544 to 0.596</td>
<td>0.706</td>
<td>0.833</td>
</tr>
<tr>
<td>Item12</td>
<td>From 0.559 to 0.595</td>
<td>0.709</td>
<td>0.832</td>
</tr>
<tr>
<td>Item10</td>
<td>From 0.482 to 0.579</td>
<td>0.666</td>
<td>0.843</td>
</tr>
<tr>
<td>Item1</td>
<td>From 0.482 to 0.576</td>
<td>0.647</td>
<td>0.849</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

The overall coefficient (Cronbach’s) alpha for these five items of lighting factor is 0.866 which is found to be good (above 0.80). Based on the result in Table 4.8, all 5 items (4, 7, 12, 10 and 1) has high Item-total correlations (above 0.5) and each of the Inter item correlations is greater than 0.30 which reflects adequate homogeneity or internal consistency (Manning & Munro 2007, p. 30). As already noted, deletion of any item does not improve the overall reliability of this scale. As a result, lighting factor is valid and represents ‘good reliability’.
After assessing validity and reliability, the ambient factors now contain music factor (with 5 items) and lighting factor (with 5 items). These factors are considered as independent variables in the next phase of the analysis.

**Assessing validity and reliability for layout factor**

**Reliability Statistics**

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.815</td>
<td>5</td>
</tr>
</tbody>
</table>

**Table 4.9: Validity and reliability test of layout**

<table>
<thead>
<tr>
<th>Layout</th>
<th>Inter-item correlations</th>
<th>Corrected Item-to-Total Correlations</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item26</td>
<td>From 0.481 to 0.529</td>
<td>0.650</td>
<td>0.763</td>
</tr>
<tr>
<td>Item30</td>
<td>From 0.405 to 0.585</td>
<td>0.623</td>
<td>0.773</td>
</tr>
<tr>
<td>Item21</td>
<td>From 0.402 to 0.529</td>
<td>0.594</td>
<td>0.782</td>
</tr>
<tr>
<td>Item15</td>
<td>From 0.354 to 0.529</td>
<td>0.562</td>
<td>0.790</td>
</tr>
<tr>
<td>Item29</td>
<td>From 0.354 to 0.585</td>
<td>0.583</td>
<td>0.785</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

The overall coefficient (Cronbach’s) alpha for these five items of layout factor is 0.815 which is found to be good (above 0.80). Based on the result in Table 4.9, all 5 items (26, 30, 21, 15 and 29) has high Item-to-total correlations (above 0.50) and each of the Inter-item correlations is greater than 0.30, which reflects adequate homogeneity or internal consistency (Manning & Munro 2007, p. 30). Deletion of any item does not improve the overall reliability of this scale. As a result, the layout factor is valid and represents ‘good reliability’.
Assessing validity and reliability for assortment factor

Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.785</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 4.10: Validity and reliability test of assortment

<table>
<thead>
<tr>
<th>Assortment</th>
<th>Inter-item correlations</th>
<th>Corrected Item-to-Total Correlations</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item23</td>
<td>From 0.477 to 0.565</td>
<td>0.643</td>
<td>0.705</td>
</tr>
<tr>
<td>Item25</td>
<td>From 0.436 to 0.565</td>
<td>0.619</td>
<td>0.718</td>
</tr>
<tr>
<td>Item18</td>
<td>From 0.411 to 0.491</td>
<td>0.543</td>
<td>0.756</td>
</tr>
<tr>
<td>Item27</td>
<td>From 0.411 to 0.485</td>
<td>0.561</td>
<td>0.747</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

The overall coefficient (Cronbach’s) alpha for these four items of assortment is 0.785 which is found to be acceptable (above 0.70). Based on the result in Table 4.10, all 4 items (23, 25, 18 and 27) has high Item-to-total correlations (above 0.50) and each of the Inter-item correlations is greater than 0.30, which reflects adequate homogeneity or internal consistency (Manning & Munro 2007, p. 30). Deletion of any item does not improve the overall reliability of this scale. As a result, the assortment factor is valid and represents ‘acceptable reliability’.

Assessing validity and reliability for interior design factor

Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>N of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.770</td>
<td>6</td>
</tr>
</tbody>
</table>
Table 4.11: Validity and reliability test of interior design

<table>
<thead>
<tr>
<th>Item Design</th>
<th>Inter-item correlations</th>
<th>Corrected Item-to-Total Correlations</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item17</td>
<td>From 0.319 to 0.443</td>
<td>0.575</td>
<td>0.719</td>
</tr>
<tr>
<td>Item19</td>
<td>From 0.340 to 0.496</td>
<td>0.533</td>
<td>0.733</td>
</tr>
<tr>
<td>Item24</td>
<td>From 0.374 to 0.443</td>
<td>0.535</td>
<td>0.731</td>
</tr>
<tr>
<td>Item20</td>
<td>From 0.317 to 0.438</td>
<td>0.522</td>
<td>0.734</td>
</tr>
<tr>
<td>Item28</td>
<td>From 0.301 to 0.413</td>
<td>0.501</td>
<td>0.740</td>
</tr>
<tr>
<td>Item16</td>
<td>From 0.301 to 0.340</td>
<td>0.424</td>
<td>0.759</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

The overall coefficient (Cronbach’s) alpha for these five items of interior design factor is 0.770 which is found to be acceptable (above 0.70). Moreover, 5 items (17, 19, 24, 20 and 28), reported in Table 4.11 above, have high Item-to-total correlations (above 0.50 except or Item 16; however 0.424 is not very far from 0.5 and the deletion of this item does not improve the overall reliability, on the other hand this leads to decrease of reliability from 0.770 to 0.759 therefore this item should be retained, (Manning & Munro 2007). Each of the Inter-item correlations is greater than 0.30, which reflects adequate homogeneity or internal consistency. As a result, the interior design factor is valid and represents ‘acceptable reliability’.

After assessing validity and reliability, items measuring design factors in the survey are met fully with the requirements of the reliability and validity test. Hence, the design factors now contain: layout factor (with 5 items), assortment factor (with 4 items) and, interior design factor (with 6 items) which are suitable for subsequence analyses. These factors are considered as independent variables in the next phase of analysis.
Assessing validity and reliability for other customers factor

Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.615</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 4.12: Validity and reliability test of other customers

<table>
<thead>
<tr>
<th>Other customers</th>
<th>Inter-item correlations</th>
<th>Corrected Item-to-Total Correlations</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item31</td>
<td>From 0.357 to 0.333</td>
<td>0.419</td>
<td>0.524</td>
</tr>
<tr>
<td>Item34</td>
<td>From 0.357 to 0.358</td>
<td>0.438</td>
<td>0.499</td>
</tr>
<tr>
<td>Item38</td>
<td>From 0.33 to 0.358</td>
<td>0.420</td>
<td>0.522</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

The overall coefficient (Cronbach’s) alpha for these three items of other customers is 0.615 which is found to be unacceptable (below 0.70). Based on the result in Table 4.12, 4 items (23, 25, 18 and 27) has the Inter-item correlations is greater than 0.30 however all these items has high Item-to-total correlations (below 0.50) which does not reflect adequate homogeneity or internal consistency (Manning & Munro 2007, p. 30). As a result, the factor of other customers is not valid and represents an ‘unacceptable reliability’, therefore, this factor is removed.

Assessing validity and reliability for employees factor

Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>N of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.844</td>
<td>7</td>
</tr>
</tbody>
</table>
Table 4.13: Validity and reliability test of employees

<table>
<thead>
<tr>
<th>Employees</th>
<th>Inter-item correlations</th>
<th>Corrected Item-to-Total Correlations</th>
<th>Cronbach’s Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item33</td>
<td>From 0.430 to 0.568</td>
<td>0.675</td>
<td>0.813</td>
</tr>
<tr>
<td>Item39</td>
<td>From 0.396 to 0.556</td>
<td>0.654</td>
<td>0.824</td>
</tr>
<tr>
<td>Item35</td>
<td>From 0.340 to 0.568</td>
<td>0.647</td>
<td>0.815</td>
</tr>
<tr>
<td>Item37</td>
<td>From 0.402 to 0.529</td>
<td>0.615</td>
<td>0.820</td>
</tr>
<tr>
<td>Item36</td>
<td>From 0.320 to 0.446</td>
<td>0.543</td>
<td>0.831</td>
</tr>
<tr>
<td>Item32</td>
<td>From 0.320 to 0.543</td>
<td>0.552</td>
<td>0.831</td>
</tr>
<tr>
<td>Item41</td>
<td>From 0.330 to 0.430</td>
<td>0.526</td>
<td>0.833</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

The overall coefficient (Cronbach’s) alpha for these seven items of the employees factor is 0.844 which is found to be very good (above 0.80). Based on the result in Table 4.13, all 7 items (33, 39, 35, 37, 36, 32 and 41) has high Item-to-total correlations (above 0.50) and each of the Inter-item correlations is greater than 0.30, which reflects adequate homogeneity or internal consistency (Manning & Munro 2007, p. 30). Besides, deletion of any item does not improve the overall reliability of this scale. As a result, the factor of employees is valid and represents ‘good reliability’.

After assessing validity and reliability, the social factor now contain employees factor (with 7 items), other customers factor is removed because of violating the conditions of validity and reliability. This factor is considered as an independent variable in the next phase of analysis.

Assessing validity and reliability for customer satisfaction variable

Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>N of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.842</td>
<td>3</td>
</tr>
</tbody>
</table>
### Table 4.14: Validity and reliability test of customer satisfaction

<table>
<thead>
<tr>
<th>Customer satisfaction</th>
<th>Inter-item correlations</th>
<th>Corrected Item-to-Total Correlations</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>ItemCS2</td>
<td>From 0.572 to 0.714</td>
<td>0.714</td>
<td>0.781</td>
</tr>
<tr>
<td>ItemCS3</td>
<td>From 0.646 to 0.714</td>
<td>0.770</td>
<td>0.718</td>
</tr>
<tr>
<td>ItemCS1</td>
<td>From 0.572 to 0.646</td>
<td>0.656</td>
<td>0.832</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

The overall coefficient (Cronbach’s) alpha for these three items is 0.842, which is very good (above 0.80). Based on the result in Table 4.14, all 3 items (CS2, CS3 and CS1) have high Item-to-total correlations (above 0.50) and each of the Inter-item correlations is greater than 0.30, which reflects adequate homogeneity or internal consistency (Manning & Munro 2007, p. 30). Besides, deletion of any item does not improve the overall reliability of this scale. As a result, customer satisfaction variable is valid and represents ‘very good reliability’. This variable is regarded as a dependent variable.

### Table 4.15: A Summary of reliability and validity of composite variable

<table>
<thead>
<tr>
<th>Composite variable</th>
<th>Reliability - Cronbach alpha</th>
<th>Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Item-to-total</td>
<td>Inter-Item</td>
</tr>
<tr>
<td>Music</td>
<td>0.836</td>
<td>&gt;0.5</td>
</tr>
<tr>
<td>Lighting</td>
<td>0.866</td>
<td>&gt;0.5</td>
</tr>
<tr>
<td>Layout</td>
<td>0.815</td>
<td>&gt;0.5</td>
</tr>
<tr>
<td>interior design</td>
<td>0.770</td>
<td>&gt;0.5</td>
</tr>
<tr>
<td>Assortment</td>
<td>0.785</td>
<td>&gt;0.5</td>
</tr>
<tr>
<td>Other customers</td>
<td>0.615 &lt;0.7</td>
<td>&lt;0.5</td>
</tr>
<tr>
<td>Employees</td>
<td>0.844</td>
<td>&gt;0.5</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>0.842</td>
<td>&gt;0.5</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research
A summary of the reliability and validity for composite variables is shown in Table 4.1. There were 7 composite variables (except for the other customers variable), which had good or acceptable reliability with coefficient alpha values of above 0.7. Moreover, all factors – variables reported (except for other customers factor) had high item-total correlations (above 0.50) and each of the inter item correlations was greater than 0.30, which reflects adequate homogeneity or internal consistency (Manning & Munro 2007, p. 30).

As a result, 7 composite variables (music, lighting, layout, assortment, interior, employees and customer satisfaction) were considered reliable and valid for entering the next phase of analysis.

4.4 Descriptive statistics composite variables

4.4.1 Composite variables

After running factor analysis and testing validity and reliability, some items and factors (such as scent and other customers) were removed. The remaining composite variables are presented in Table 4.1.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Items</th>
<th>Order of importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music</td>
<td>Items 2: The music is played at the right volume.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Items 5: The store just plays the instrumental music.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Items 8: There are many types of songs played in the store</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Items 13: The store has a soothing melody.</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Items 14: The music tempo makes me joyful.</td>
<td>3</td>
</tr>
<tr>
<td>Lighting</td>
<td>Items 1: The store uses more natural light to save energy.</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Items 4: The store promotes a warm and cosy ambience.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Items 7: The store is well-lit.</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Items 10: The lighting in the store makes me comfortable.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Items 12: The light in the store is modern.</td>
<td>3</td>
</tr>
<tr>
<td>Layout</td>
<td>Items 15: It is easy to move around in the store.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Items 21: The directional maps and guides are clear.</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Items 26: The layout is appropriate with the merchandise.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Items 29: It is easy to locate products in the store.</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Items 30: The corridors are spacious enough.</td>
<td>2</td>
</tr>
<tr>
<td>Assortment</td>
<td>Items 18: The store has different price ranges in different products.</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Items 23: It is easy to find out the product that are sought.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Items 25: The height level of merchandise is reachable easily.</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Items 27: The store has a wide variety of products.</td>
<td>4</td>
</tr>
<tr>
<td>Interior design</td>
<td>Items 16: The design of floor, ceiling and wall are comfortable.</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Items 17: The colour is currently fashionable.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Items 19: The store is clean.</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Items 20: In-store displays (texture, pattern) are impressive</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Items 24: The merchandise in the store is well-organised.</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Items 28: The décor is suitable with the store image.</td>
<td>5</td>
</tr>
<tr>
<td>Employees</td>
<td>Items 32: The store employees make good non-verbal cues.</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Items 33: The store has helpful employees.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Items 35: The store has knowledgeable employees.</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Items 36: The store has friendly employees.</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Items 37: The store has well-dressed employees.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Items 39: There are enough employees to serve customers.</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Items 41: The responses to customer requests are useful.</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

### Table 4.17: Composite – dependent variable

| Satisfaction     | Item_CS1: You were satisfied with the store. | 6     |
|                 | Item_CS2: The store matched your expectations. | 1     |
|                 | Item_CS3: The store was close to your ideal store. | 3     |

Source: Data analysis developed for this research
4.4.2 Univariate and multivariate outliers

After checking the validity and reliability of composite variables, the next step was to examine univariate and multivariate outliers of data. ‘Outliers’ are individuals who have extreme scores on an individual variable, or present an unusual pattern across a set of variables (Manning & Munro 2007, p. 49). It is necessary to detect outliers because they may distort the overall results. Outliers can be can be identified by univariate and multivariate techniques.

Univariate outliers are outliers with an extreme score on a single variable. According to Hair et al. (1998), univariate detection is to investigate the distribution of observations of each variable individually, and select values that fall at the outer ranges of the distribution. There are two methods used to detect univariate outliers: using the graphics (histogram or boxplot), and calculating standard scores (z-score). In this study, composite variables were converted to a standard z-score to compare across variables. Cases with standardised scores with an absolute value in excess of 3.29 were identified as potential outliers (p< 0.001, Zikmund et al. 2010). After running the SPSS program to calculate the z-score of all composite variables (music, lighting, layout, assortment, interior design, employees and customer satisfaction), there were two cases of interior design and two cases of employees having absolute value of z-score > 3.29 as shown in Table 4.18. Therefore these case (respondents’ numbers 80, 102, 132 and 149) were removed.

Table 4.18 Univariate and multivariate outliers

<table>
<thead>
<tr>
<th>Respondents’ number</th>
<th>Z-Interior design (-3.29 &lt; Z &lt; +3.29)</th>
<th>Z-Employees (-3.29 &lt; Z &lt; +3.29)</th>
<th>Mahalanobis distance score (&lt; 24.332)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.80</td>
<td>-3.4</td>
<td>1.41</td>
<td>16.175</td>
</tr>
<tr>
<td>No.102</td>
<td>-0.50</td>
<td>-3.37</td>
<td>16.732</td>
</tr>
<tr>
<td>No.132</td>
<td>1.79</td>
<td>-3.79</td>
<td>21.082</td>
</tr>
<tr>
<td>No.149</td>
<td>-4.4</td>
<td>-0.80</td>
<td>28.644</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research
Multivariate outliers are outliers with an unusual pattern of responses across a range of different variables (Manning & Munro 2007, p. 49). To identify multivariate outliers, the Mahalanobis distance was calculated for each case. A case was regarded as a potential outlier if the value of its Mahalanobis distance was bigger than a critical value. The critical value used was $\chi^2$ (chi-square) with degrees of freedom equal to the number of composite variables and a probability estimate of $p < 0.001$ (Tabachnick & Fidell 2012). In this research, $\chi^2$ with degrees of freedom equal to 7, the critical value to test for multivariate outliers was 24.322 (Manning & Munro 2007, p. 58), using the SPSS program to calculate the Mahalanobis distance for each case. There was only one case of the respondent being considered as a multivariate outlier because its Mahalanobis score is greater than critical value $\chi^2$ (24.332). Thus, this case (respondent’ number 149 with Mahalanobis distance score of 28.644) is removed.

In sum, 03 cases of respondents (numbers: 80, 102 and 132) that needed to be eliminated because of violating the condition of univariate outlier (absolute value of z-score >3.29) and 01 case of respondent (number 149) was removed since it is considered as a univariate outlier as well as a multivariate outlier. Therefore, a total of 4 outliers were removed, leaving 302 cases for investigation of the research hypotheses.

### 4.4.3 Normality of variable distributions

Before testing hypotheses, distribution of variables needed to be checked. According to Malhotra (2010) and Manning and Munro (2007), almost all statistical tests depend on the assumption that the data follows a normal distribution, and so it is necessary to test the normality of the data distribution. The results of this test are shown in tables below.

#### Test for normality of independent variable - music

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Std. Error</td>
</tr>
<tr>
<td>Music</td>
<td>302</td>
<td>4.7331</td>
<td>.75181</td>
<td>-.349</td>
<td>.140</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>302</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Z-score of skewness = statistic skewness/ std. Error = -0.349/0.140 = -2.49
According to Tabachnick and Fidell (1996), because an absolute of z-score of skewness does not exceed 3.29 (for samples greater than 300), the skew is not significant => distribution of music variable is ‘normal’.

**Test for normality of independent variable - lighting**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
</tr>
<tr>
<td>Lighting</td>
<td>302</td>
<td>4.4927</td>
<td>.87361</td>
<td>-.200</td>
<td>.140</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>302</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Z-score of skewness = statistic skewness/ std. Error = -0.200/0.140 = -1.43

According to Tabachnick and Fidell (1996), because an absolute of z-score of skewness does not exceed 3.29 (for samples greater than 300), the skew is not significant => distribution of lighting variable is ‘normal’.

**Test for normality of independent variable – layout**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
</tr>
<tr>
<td>Assortment</td>
<td>302</td>
<td>4.5338</td>
<td>.79491</td>
<td>-.299</td>
<td>.140</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>302</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Z-score of skewness = statistic skewness/ std. Error = -0.299/0.140 = -2.14

According to Tabachnick and Fidell (1996), because an absolute of z-score of skewness does not exceed 3.29 (for samples greater than 300), the skew is not significant => distribution of layout variable is ‘normal’.

**Test for normality of independent variable – assortment**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
</tr>
<tr>
<td>Assortment</td>
<td>302</td>
<td>4.7583</td>
<td>.80973</td>
<td>-.438</td>
<td>.140</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>302</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Z-score of skewness = statistic skewness/ std. Error = -0.438/0.140 = -3.14
According to Tabachnick and Fidell (1996), because an absolute of z-score of skewness does not exceed the critical value of 3.29 (for samples greater than 300) - Manning and Munro (2007, p. 61), the skew is not significant => distribution of assortment variable is ‘normal’.

**Test for normality of independent variable – interior design**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior Design</td>
<td>302</td>
<td>4.5855</td>
<td>.75870</td>
<td>-.258</td>
<td>.140</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>302</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Z-score of skewness = statistic skewness/ std. Error = -0.258/0.140 = -1.84

According to Tabachnick and Fidell (1996), because an absolute of z-score of skewness does not exceed the critical value of 3.29 (for samples greater than 300) - Manning and Munro (2007, p. 61), the skew is not significant => distribution of interior design variable is ‘normal’.

**Test for normality of independent variable – employees**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees</td>
<td>302</td>
<td>5.2171</td>
<td>.71078</td>
<td>-.441</td>
<td>.140</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>302</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Z-score of skewness = statistic skewness/ std. Error = -0.441/0.140 = -3.15

According to Tabachnick and Fidell (1996), because an absolute of z-score does not exceed the critical value of 3.29 for samples more than 300 - Manning and Munro (2007, p. 61), the skew is not significant => distribution of employees variable is ‘normal’.

The next section, test for normality of dependent variable – customer satisfaction
Test for normality of dependent variable – customer satisfaction

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistic</td>
<td>302</td>
<td>5.1556</td>
<td>.88237</td>
<td>-.266</td>
<td>.140</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>302</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Z-score of skewness = statistic skewness/ std. Error = -0.266/0.140 = - 1.90

According to Tabachnick and Fidell (1996), because an absolute of z-score does not exceed 2.58 (for samples less than 300), the skew is not significant => distribution of customer satisfaction variable is ‘normal’.

In general, the distribution of 6 independent variables and 1 dependent variable is normal therefore these variables can use Pearson’s r, t-test, ANOVA and multiple linear regression Manning and Munro (2007, p. 87). All hypotheses are tested in following sections.

4.5 Hypothesis testing

4.5.1 Relationship between store environment factors and satisfaction - Testing hypotheses 1, 2 and 3

H1: There is a positive relationship between perception of ambient factors and customer satisfaction.

- Based on the result of examining variables in Section 4.3, ambient factors comprise music and lighting (scent factor was removed in the factor analysis step, while temperature was eliminated in the literature review and the pilot stage of the research).

+ Running Pearson r to test the correlation between music and customer satisfaction (Table 4.19):
Table 4.19 Correlation test between music and customer satisfaction

<table>
<thead>
<tr>
<th></th>
<th>Music</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>302</td>
<td>302</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>Pearson Correlation</td>
<td>.272**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>302</td>
<td>302</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Data analysis developed for this research

+Running Pearson r to test the correlation between lighting and customer satisfaction:

Table 4.20 Correlation test between lighting and customer satisfaction

<table>
<thead>
<tr>
<th></th>
<th>Lighting</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>302</td>
<td>302</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>Pearson Correlation</td>
<td>.340**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>302</td>
<td>302</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Data analysis developed for this research

Based on the results from Table 4.19 and Table 4.20:

-A significant positive correlation was found between music factor and customer satisfaction, $r = 0.268, p < 0.05 \Rightarrow$ Hypothesis H1a is supported.

-A significant positive correlation was found between lighting factor and customer satisfaction, $r = 0.326, p < 0.05 \Rightarrow$ Hypothesis H1b is supported

As a result, Hypothesis 1 is partly supported (scent factor was not found the correlation).

H2: There is a positive relationship between perception of design factors and customer satisfaction.

- The outcome of examining variables in Section 4.3 showed that, design factors comprise layout, interior design and assortment.
+Running Pearson r to test the correlation between layout and customer satisfaction:

Table 4.21 Correlation test between layout and customer satisfaction

<table>
<thead>
<tr>
<th></th>
<th>Layout</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Layout Pearson Correlation</td>
<td>1</td>
<td>.043</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.452</td>
<td>.452</td>
</tr>
<tr>
<td>N</td>
<td>302</td>
<td>302</td>
</tr>
<tr>
<td>Satisfaction Pearson Correlation</td>
<td>.043</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.452</td>
<td>.452</td>
</tr>
<tr>
<td>N</td>
<td>302</td>
<td>302</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

+Running Pearson r to test the correlation between assortment and satisfaction:

Table 4.22 Correlation test between assortment and customer satisfaction

<table>
<thead>
<tr>
<th></th>
<th>Assortment</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assortment Pearson Correlation</td>
<td>1</td>
<td>.160**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.002</td>
<td>.002</td>
</tr>
<tr>
<td>N</td>
<td>302</td>
<td>302</td>
</tr>
<tr>
<td>Satisfaction Pearson Correlation</td>
<td>.160**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.002</td>
<td>.002</td>
</tr>
<tr>
<td>N</td>
<td>302</td>
<td>302</td>
</tr>
</tbody>
</table>

*. Correlation is significant at the 0.01 level (2-tailed).

Source: Data analysis developed for this research

+Running Pearson r to test correlation between interior design and customer satisfaction:

Table 4.23 Correlation test between interior design and customer satisfaction

<table>
<thead>
<tr>
<th></th>
<th>Interior Design</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior Design Pearson Correlation</td>
<td>1</td>
<td>.067</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.246</td>
<td>.246</td>
</tr>
<tr>
<td>N</td>
<td>302</td>
<td>302</td>
</tr>
<tr>
<td>Satisfaction Pearson Correlation</td>
<td>.067</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.246</td>
<td>.246</td>
</tr>
<tr>
<td>N</td>
<td>302</td>
<td>302</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research
Based on the results from Table 4.21, Table 4.22 and Table 4.23:

- A significant positive correlation was not found between layout factor and customer satisfaction, $r = 0.078, p > 0.05 \Rightarrow$ Hypothesis H2a is rejected.

- A significant positive correlation was found between assortment factor and customer satisfaction, $r = 0.124, p < 0.05 \Rightarrow$ Hypothesis H2b is supported.

- A significant positive correlation was not found between interior design factor and customer satisfaction, $r = 0.044, p > 0.05 \Rightarrow$ Hypothesis H2c is rejected.

As a result, Hypothesis 2 is partly supported.

**H3: There is a positive relationship between perception of social factors and customer satisfaction.**

- Arising from examining variables in Section 4.3, social factor comprises employees factor only (other customers factor was removed in the factor analysis stage).

+ Running Pearson $r$ to test the correlation between layout and customer satisfaction:

**Table 4.24 Correlation test between employees and customer satisfaction**

<table>
<thead>
<tr>
<th>Employees</th>
<th>Pearson Correlation</th>
<th>Employees</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>1</td>
<td>.208**</td>
</tr>
<tr>
<td>N</td>
<td>302</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>Pearson Correlation</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.208**</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>302</td>
<td>302</td>
<td>302</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).**

Source: Data analysis developed for this research

Based on the results from Table 4.24:

- A significant positive correlation was found between employees factor and customer satisfaction, $r = 0.114, p < 0.05 \Rightarrow$ Hypothesis H3b is supported.
As a result, Hypothesis 3 is partly supported because another factor of social cues - other customers factor was not proven to be significantly correlated with customer satisfaction.

To sum up, a significant positive correlation was found between four factors namely: music, lighting, assortment, employees and customer satisfaction. Meanwhile layout, interior design have not correlation with customer satisfaction (scent and other customers cannot be tested). In other words, Hypotheses 1, 2 and 3 are partly supported.

In the next steps, the researcher employed independent sample t-test and one way ANOVA to test Hypotheses 4, 5, 6, 7 and 8.

4.5.2 Relationship between demographic variables and satisfaction - Testing hypotheses 4, 5, 6, 7 and 8

H4: There is a significant difference of levels of customer satisfaction between males and females.

Using t-test to examine the relationship between Gender – independent variable and customer satisfaction – dependent variable:

Table 4.25 T-test for gender variable

<table>
<thead>
<tr>
<th></th>
<th>Levene’s Test</th>
<th>t-test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
<td>t</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>1.320</td>
<td>.252</td>
<td>-.393</td>
</tr>
</tbody>
</table>
|                   | -.385         | 221.8 | .700 | 221.8 | .4128         | .10509          | -.25234    | .16977 

Source: Data analysis developed for this research

As shown in Table 4.25, Levene’s test for homogeneity of variance is not significant (F=1.320, p= 0. 252, p> 0.05), therefore the researcher can continue to use the t-test with confidence (Manning & Munro 2007, p.123). Based on the result of the t-test, there
is not a significant difference between the means of customer satisfaction of males and females (p= 0.695 & p= 0.700, p> 0.05) or gender showed as a non-significant determinant of customer satisfaction. In other words, males and females did not differ in their satisfaction levels therefore gender will no longer be considered in further analyses.

Therefore, Hypothesis 4 is rejected.

H5: There is a significant difference of levels of customer satisfaction among customer age groups.

Using ANOVA to examine the relationship between age - independent variable and customer satisfaction – dependent variable:

Table 4.26 ANOVA test for age variable

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.640</td>
<td>3</td>
<td>298</td>
<td>.50</td>
</tr>
</tbody>
</table>

Satisfaction - Age

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>19.937</td>
<td>3</td>
<td>6.646</td>
<td>9.236</td>
</tr>
<tr>
<td>Within Groups</td>
<td>214.415</td>
<td>298</td>
<td>.729</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>234.352</td>
<td>301</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

A one-way ANOVA was conducted, Levene’ test was not significant (p=0.50, p>0.05) therefore the assumption of homogeneity of variances was judged to have not been violated (Manning & Munro 2007, p.119). As shown in Table 4.26, a significant difference was found for age groups F (9.236, p=000), p<0.05. Therefore, there is a significant difference of levels of customer satisfaction among customer age groups. In other words, Hypothesis 5 is supported.

H6: There is a significant difference of levels of customer satisfaction among customer family size groups.

As shown in Table 4.27, ANOVA was used to examine the relationship between family size – independent variable and customer satisfaction – dependent variable:
Table 4.27 ANOVA test for family size variable

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.086</td>
<td>2</td>
<td>299</td>
</tr>
</tbody>
</table>

Satisfaction - family size ANOVA

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>5.596</td>
<td>2</td>
<td>2.798</td>
<td>3.657</td>
</tr>
<tr>
<td>Within Groups</td>
<td>228.756</td>
<td>299</td>
<td>.765</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>234.352</td>
<td>301</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

A one-way ANOVA was conducted, Levene’ test was not significant (p=0.126, p>0.05) therefore the assumption of homogeneity of variances was judged to have not been violated (Manning & Munro 2007, p.119). As shown in Table 4.27, a significant difference was found for family sizes groups F (3.657, p=0.027), p<0.05 therefore there is a significant difference of levels of customer satisfaction among customer family size groups. In other words, Hypothesis 6 is supported.

**H7: There is a significant difference of levels of customer satisfaction among customer income groups.**

As shown in Table 4.28, ANOVA was used to examine the relationship between income – independent variable and customer satisfaction – dependent variable:

Table 4.28 ANOVA test for income variable

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.416</td>
<td>3</td>
<td>298</td>
</tr>
</tbody>
</table>

Satisfaction - income ANOVA

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>9.358</td>
<td>3</td>
<td>3. 119</td>
<td>4.131</td>
</tr>
<tr>
<td>Within Groups</td>
<td>224.995</td>
<td>298</td>
<td>.755</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>234.352</td>
<td>301</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

A one-way ANOVA was conducted, Levene’ test was not significant (p=0.238>0.05) therefore the assumption of homogeneity of variances was judged to have not been violated (Manning & Munro 2007, p.119). As shown in Table 4.28, a significant difference
was found for income groups F (4.131, p=0.007), p<0.05 therefore there is a significant difference of levels of customer satisfaction among customer income groups. *In other words, Hypothesis 7 is supported.*

**H8:** There is a significant difference of levels of customer satisfaction among customer’s shopping frequency groups.

As shown in Table 4.29, ANOVA was used to examine the relationship between shopping frequency (independent variable) and customer satisfaction (dependent variable):

<table>
<thead>
<tr>
<th>Table 4.29 ANOVA test for shopping frequency variable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Levene Statistic</strong></td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>.438</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Satisfaction - frequency</th>
<th>ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sum of Squares</strong></td>
<td><strong>Df</strong></td>
</tr>
<tr>
<td>Between Groups</td>
<td>25.319</td>
</tr>
<tr>
<td>Within Groups</td>
<td>209.033</td>
</tr>
<tr>
<td>Total</td>
<td>234.352</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

A one-way ANOVA was conducted, Levene’ test was not significant (p=0.646>0.05) therefore the assumption of homogeneity of variances was judged to have not been violated (Manning & Munro 2007, p.119). As shown in Table 4.29, a significant difference was found for shopping frequency groups F (19.220, p=0.000), p<0.05 therefore there is a significant difference of levels of customer satisfaction among customer’s shopping frequency groups. *In other words, Hypothesis 8 is supported.*

In conclusion, with regard to the influence of the demographic variables on customer satisfaction, the results revealed that gender showed as a non-significant determinant of customer satisfaction, therefore Hypothesis 4 is rejected. Meanwhile, there are significant differences between the age, family size, income, shopping frequency group variables and customer satisfaction. As a result, Hypotheses 5, 6, 7 and 8 are supported.
4.5.3 The relationship between store environment factors and customer satisfaction across customer demographic groups - Testing Hypotheses 9 and 10

4.5.3.1 Cluster analysis

Cluster analysis was employed to classify respondents’ demographic groups. Then groups were created according to respondents’ characteristics (age, family size, income and shopping frequency). One way ANOVA was used to compare means of customer satisfaction among them. The result of the agglomeration schedule from the SPSS hierarchical cluster analysis is presented in table 4.30:

Table 4.30 Cluster analysis for respondents’ demographic variables

<table>
<thead>
<tr>
<th>Cluster Combined</th>
<th>Stage Cluster First Appears</th>
</tr>
</thead>
<tbody>
<tr>
<td>297</td>
<td>390.316</td>
</tr>
<tr>
<td>298</td>
<td>448.202</td>
</tr>
<tr>
<td>299</td>
<td>507.311</td>
</tr>
<tr>
<td>300</td>
<td>638.446</td>
</tr>
<tr>
<td>301</td>
<td>870.685</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

According to Manning and Munro (2007, p.182), increasing the number of groups from one to two, results in a change of 232.239 (870.685 – 638.446 = 232.239, relatively large). Increasing from two to three, results in a change of 131.135 (=638.446 – 507.311, still large), However, increasing from four to five groups only results in a change of 59.109 (=507.311 – 448.202, quite small). Therefore, four clusters is probably the good solution.

In the next steps, the profile of each cluster or group across demographic variables (such as age, family size, income and shopping frequency) are created by using one-way ANOVA.
Table 4.31 Age groups of respondents

<table>
<thead>
<tr>
<th>Age Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>95% Confidence Interval for Mean</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>127</td>
<td>2.55</td>
<td>.686</td>
<td>2.50-2.78</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>61</td>
<td>1.05</td>
<td>.470</td>
<td>1.22-1.42</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>72</td>
<td>2.97</td>
<td>.503</td>
<td>3.22-3.45</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>42</td>
<td>2.48</td>
<td>.211</td>
<td>1.89-2.02</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>302</td>
<td>2.34</td>
<td>.939</td>
<td>2.23-2.44</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

Table 4.32 Family size groups of respondents

<table>
<thead>
<tr>
<th>Family size Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>95% Confidence Interval for Mean</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>127</td>
<td>2.14</td>
<td>.707</td>
<td>1.98-2.27</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>61</td>
<td>1.44</td>
<td>.563</td>
<td>1.31-1.55</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>72</td>
<td>1.56</td>
<td>.692</td>
<td>1.75-2.07</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>42</td>
<td>2.40</td>
<td>.518</td>
<td>2.16-2.48</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>302</td>
<td>1.90</td>
<td>.715</td>
<td>1.82-1.98</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

Table 4.33 Income groups of respondents

<table>
<thead>
<tr>
<th>Income Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>95% Confidence Interval for Mean</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>127</td>
<td>3.32</td>
<td>.500</td>
<td>3.34-3.55</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>61</td>
<td>1.49</td>
<td>.580</td>
<td>1.47-1.72</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>72</td>
<td>1.71</td>
<td>.578</td>
<td>1.73-1.99</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>42</td>
<td>1.93</td>
<td>.549</td>
<td>2.36-2.69</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>302</td>
<td>2.37</td>
<td>.952</td>
<td>2.27-2.48</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

Table 4.34 Shopping frequency groups of respondents

<table>
<thead>
<tr>
<th>Frequency Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>95% Confidence Interval for Mean</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>127</td>
<td>2.20</td>
<td>.676</td>
<td>1.94-2.21</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>61</td>
<td>1.82</td>
<td>.739</td>
<td>1.52-1.84</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>72</td>
<td>1.38</td>
<td>.681</td>
<td>1.51-1.82</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>42</td>
<td>2.48</td>
<td>.390</td>
<td>2.70-2.94</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>302</td>
<td>1.96</td>
<td>.770</td>
<td>1.88-2.05</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research
The results from cluster analysis were presented in Table 4.31 for age, Table 4.32 for family size, Table 4.33 for income and Table 4.34 for shopping frequency. Arising from these results, there were 4 groups as presented in Table 4.35.

**Table 4.35 Customer demographic groups**

<table>
<thead>
<tr>
<th>Group/Cluster</th>
<th>Mean</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age</td>
<td>Family Size</td>
<td>Income</td>
<td>Shopping frequency</td>
</tr>
<tr>
<td>1</td>
<td>2.55</td>
<td>2.14</td>
<td>3.32</td>
<td>2.20</td>
</tr>
<tr>
<td>2</td>
<td>1.05</td>
<td>1.44</td>
<td>1.49</td>
<td>1.82</td>
</tr>
<tr>
<td>3</td>
<td>2.97</td>
<td>1.56</td>
<td>1.71</td>
<td>1.38</td>
</tr>
<tr>
<td>4</td>
<td>2.48</td>
<td>2.40</td>
<td>1.93</td>
<td>2.48</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

**Name of the clusters:**

To name the group/clusters, the researcher identified typical characteristics of each group. As shown in Table 4.33, Group 1 consisted of highest income (3.32) and average-age customers (2.55) while, Group 2 contained the lowest age value (1.05) and lowest income as well (1.49). In terms of Group 3, customers in this group were the oldest (2.97) and had lowest shopping frequency (1.38). The story is quite different with Group 4, which included shoppers who go to stores most frequently (2.48) and they live in big families with an average of over two members (2.40). As a result, groups of customers were named as below:

- Group 1: The middle-aged with high income.
- Group 2: Young people and low income.
- Group 3: The elderly and occasional shopping.
- Group 4: Big family and regular shopping.

After creating 4 customer demographic groups, the researcher calculated the means of customer satisfaction for each group and compared them to test Hypothesis 9.

**H9:** There are differences in the levels of satisfaction among customer demographic groups
Running One-way ANOVA to compare levels of satisfaction among groups of customers:

Table 4.36 ANOVA test demographic group and customer satisfaction

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.578</td>
<td>3</td>
<td>298</td>
<td>.195</td>
</tr>
</tbody>
</table>

Satisfaction - demographic groups          ANOVA

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>17.145</td>
<td>3</td>
<td>5.715</td>
<td>7.841</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>217.207</td>
<td>298</td>
<td>.729</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>234.352</td>
<td>301</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

A one-way ANOVA was conducted, Levene’ test was not significant (p=0.195>0.05) and therefore the assumption of homogeneity of variances was judged to have not been violated (Manning & Munro 2007, p.119). As shown in Table 4.36, a significant difference was found for customer demographic groups F (7.841, p=0.000), p<0.05. Therefore there is a significant difference of levels of customer satisfaction across demographic groups as depicted below:

Table 4.37: Levels of customer satisfaction across demographic groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Customer satisfaction level</th>
<th>F value</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5.3</td>
<td>25.976</td>
<td>0.000</td>
</tr>
<tr>
<td>2</td>
<td>4.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>5.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>5.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

Based on the information in Table 4.37, the researcher found group 4 - Big family and regular shopping customers, to be the most satisfied (5.4), followed by group 1 - middle-aged with high income shoppers who had the levels of satisfaction of 5.3. The next was group 3 - the elderly and occasional shopping customers (with levels of customer = 5.0). Meanwhile, group 2 – young people and low income customers were least satisfied of
the 4 groups, with levels of customer satisfaction of 4.8. Therefore there are differences in the levels of satisfaction among customer demographic groups. In other words, Hypothesis 9 is supported.

4.5.3.2 Multiple linear regression

According to Manning and Munro (2007, p.103), if potential independent variables have correlations with each other that are very high (say above 0.9), this situation is regarded as one of ‘multicolinearity’. In such a situation, the highly correlated independent variables are basically measuring the same thing and so researchers would not enter both of them into the analysis.

Table 4.38: Checking multicolinearity of independent variables

<table>
<thead>
<tr>
<th></th>
<th>Satisfaction</th>
<th>Music</th>
<th>Lighting</th>
<th>Assortment</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.272**</td>
<td>.340**</td>
<td>.160**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.005</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>302</td>
<td>302</td>
<td>302</td>
<td>302</td>
</tr>
<tr>
<td>Music</td>
<td>Pearson Correlation</td>
<td>.272**</td>
<td>1</td>
<td>.196**</td>
<td>.065</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.001</td>
<td>.262</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>302</td>
<td>302</td>
<td>302</td>
<td>302</td>
</tr>
<tr>
<td>Lighting</td>
<td>Pearson Correlation</td>
<td>.340**</td>
<td>.196***</td>
<td>1</td>
<td>.099</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.001</td>
<td>.086</td>
<td>.012</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>302</td>
<td>302</td>
<td>302</td>
<td>302</td>
</tr>
<tr>
<td>Assortment</td>
<td>Pearson Correlation</td>
<td>.160**</td>
<td>.065</td>
<td>.099</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.005</td>
<td>.262</td>
<td>.086</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>302</td>
<td>302</td>
<td>302</td>
<td>302</td>
</tr>
<tr>
<td>Employees</td>
<td>Pearson Correlation</td>
<td>.208**</td>
<td>.215**</td>
<td>.144*</td>
<td>.058</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.012</td>
<td>.316</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>302</td>
<td>302</td>
<td>302</td>
<td>302</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

In Table 4.38, the researcher just focused on the value of Pearson correlation. Based on values of correlations above (no value of correlations is greater than 0.9), thus, there are no problems with multicolinearity. As a result, all these predictors (independent
variables) can be used to test their relationship with customer satisfaction. Then next stage was to run the multiple linear regression.

Table 4.39: Multiple linear regression model summary – for all customers

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.432</td>
<td>.187</td>
<td>.176</td>
<td>.80098</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>4</td>
<td>10.952</td>
<td>17.071</td>
<td>.000b</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>297</td>
<td>.642</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>234.352</td>
<td>301</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Satisfaction
b. Predictors: (Constant), Employees, Assortment, Lighting, Music

Source: Data analysis developed for this research

Table 4.40: Multiple linear regression – the value of the equation for all customers

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Std. coeff.</th>
<th>t</th>
<th>Sig.</th>
<th>Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Zero-order</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>1.504</td>
<td>.493</td>
<td>3.053</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>Music</td>
<td>.216</td>
<td>.064</td>
<td>.184</td>
<td>3.388</td>
</tr>
<tr>
<td></td>
<td>Lighting</td>
<td>.277</td>
<td>.054</td>
<td>.274</td>
<td>5.095</td>
</tr>
<tr>
<td></td>
<td>Assortment</td>
<td>.124</td>
<td>.057</td>
<td>.114</td>
<td>2.157</td>
</tr>
<tr>
<td></td>
<td>Employees</td>
<td>.152</td>
<td>.067</td>
<td>.122</td>
<td>2.272</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Satisfaction

Source: Data analysis developed for this research

Based on table 4.39 and Table 4.40 above, a standard multiple regression was performed between customer satisfaction as the dependent variable and music, lighting, assortment, employees as independent variables. The multiple correlation coefficient (R=0.432) was significantly different from zero, F (4; 297) = 17.071, with p = 0.000, p<0.05, and 17.6 percent of the variation in the dependent variable is explained by the set of independent variables (adjusted R²= 0.176) (Manning & Munro 2007, p. 106).
Music, lighting, assortment and employees were found to significantly and uniquely contribute to the prediction of customer satisfaction. The equation of prediction produced by this analysis describes the relationship between the variables to be:

\[
\text{Customer satisfaction} = 0.216 \times \text{music} + 0.277 \times \text{lighting} + 0.124 \times \text{assortment} + 0.152 \times \text{employees} + 1.504.
\]

In general, as for all customers, lighting was the most influential factor affecting customer satisfaction. Music and employees were the second and the third most important factors respectively. The least important factor was assortment.

Although lighting was the most significant factor affecting customer satisfaction, it is important to establish whether the same outcomes were applied for different customer demographic groups. Therefore, the result of cluster analysis in Section 4.5.3.1 was employed to combine with the multiple linear regression to assess the influence of store environment factors on customer satisfaction across demographic characteristics groups.

In the next step, the researcher creates the equation of prediction in relation to the influence of store environment factors on customer satisfaction for each group to test Hypothesis 10.

**H10: The effect of store environment factors on customer satisfaction varies among different customer demographic groups.**

Based on table 4.41 and Table 4.42 below, a standard multiple regression was performed between customer satisfaction as the dependent variable and music, lighting, assortment, employees as independent variables. The multiple correlation coefficient (R=0.581) was significant different from zero, F (4; 122) = 15.557, with p = 0.000, p<0.05, and 31.6 percent of the variation in the dependent variable as explained
by the set of independent variables (adjusted $R^2 = 0.316$) (Manning & Munro 2007, p. 106).

Table 4.41: Multiple linear regression model summary – for group 1

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>.581a</td>
</tr>
</tbody>
</table>

Sum of Squares | df | Mean Square | F | Sig. |
--- | --- | --- | --- | --- |
Regression | 28.594 | 4 | 7.148 | **15.557** | .000b |
Residual | 56.059 | 122 | .460 |
Total | 84.653 | 126 |

a. Dependent Variable: Satisfaction  
b. Predictors: (Constant), Employees, Assortment, Lighting, Music  
Source: Data analysis developed for this research

Table 4.42: Multiple linear regression – the value of the equation for group 1

<table>
<thead>
<tr>
<th>Coefficientsa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model- Group 1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>Music</td>
</tr>
<tr>
<td>Lighting</td>
</tr>
<tr>
<td>Assortment</td>
</tr>
<tr>
<td>Employees</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Satisfaction  
Source: Data analysis developed for this research

**With regard to group 1**, the equation of prediction produced by the analysis describes the relationship between the variables to be:

Customer satisfaction = 0.166 x music + 0.330 x lighting + 0.218 x assortment + 0.173 x employees + 1.087

**With regard to group 2**, the equation of prediction produced by the analysis describes the relationship between the variables to be:
Customer satisfaction = 0.154 x music + 0.277 x lighting - 0.003 x assortment + 0.317 x employees + 1.190

**With regard to group 3,** the equation of prediction produced by this analysis describes the relationship between the variables to be:

Customer satisfaction = 0.102 x music + 0.265 x lighting - 0.074 x assortment - 0.045 x employees + 3.268

**With regard to group 4,** the equation of prediction produced by this analysis describes the relationship between the variables to be:

Customer satisfaction = 0.153 x music + 0.253 x lighting - 0.080 x assortment + 0.012 x employees + 4.011

**Table 4.43: The result of specific equation of prediction for demographic groups**

<table>
<thead>
<tr>
<th>Group</th>
<th>The equation of prediction by the analysis describes the relationship between the variables to be:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Customer satisfaction = 0.166 x music + 0.330 x lighting + 0.218 x assortment + 0.173 x employees + 1.087</td>
</tr>
<tr>
<td>2</td>
<td>Customer satisfaction = 0.154 x music + 0.277 x lighting - 0.003 x assortment + 0.317 x employees + 1.190</td>
</tr>
<tr>
<td>3</td>
<td>Customer satisfaction = 0.102 x music + 0.265 x lighting - 0.074 x assortment - 0.045 x employees + 3.268</td>
</tr>
<tr>
<td>4</td>
<td>Customer satisfaction = 0.153 x music + 0.253 x lighting - 0.080 x assortment + 0.012 x employees + 4.011</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research
Based on outcomes for 4 groups above, the present researcher can conclude that the effect of store environment factors on customer satisfaction varies among different customer demographic groups. In other words, Hypothesis 10 is supported.

To sum up, cluster analysis and multiple linear regression was used to create the equation of prediction for each customer demographic group as table 4.43:

4.6 Conclusion

At the beginning, data from 315 respondents were collected, after that screening and scanning data were used to increase the accuracy of the data and find out values out-of-range values. The results showed that there were 306 completed questionnaires (nine out of 315 surveys had missing data). These completed questionnaires were run in SPSS programme.

With regard to examining variables, first, principal component analysis (PCA) – a technique of factor analysis with Varimax rotation – was undertaken to minimise the number of variables and extract variables containing high loadings on each factor. The outcome of this stage was that there were 7 factors of store environment namely: music, lighting, layout, assortment, interior design, other customers and employees. These independent variables were found to be reliable and valid, except for the other customers. Third, univariate and multivariate outliers were identified and removed. A total of 4 outliers were removed, leaving 302 cases for investigation of further analysis. Finally, tests for normality of distributions of variables were conducted, the results noted the skew values were not significant. Therefore all distributions of variables are ‘normal’.

As for testing hypotheses: Pearson r was used to test Hypotheses 1, 2 and 3, while t-test and ANOVA were employed to test Hypotheses 4, 5, 6 and 7 and 8 respectively. The result showed that a significant positive correlation was found between four factors: music, lighting, assortment, employees and customer satisfaction. In other words, Hypotheses 1, 2 and 3 are partly supported. Meanwhile, the story was quite different
for testing Hypotheses 4, 5, 6, 7 and 8. Hypothesis 4 was rejected because gender (males and females) did not differ in their satisfaction levels, and from this stage onwards, gender was not mentioned. However, there are significant differences between the age, family size, income, shopping frequency group variables and customer satisfaction. In other words, Hypotheses 5, 6, 7 and 8 were supported.

Factors of store environment which have significant correlations with customer satisfaction and 4 demographic variables were entered for further analysis. To test Hypotheses 9 and 10, cluster analysis, ANOVA and multiple linear regression were employed. First, cluster analysis was employed to classify respondents’ demographic groups. There were four groups established: middle-aged with high income shoppers; young people and low income customers; elderly and occasional shopping shoppers; big family and regular shopping customers. Second, ANOVA was used to test Hypothesis 9 and the result revealed that there was a significant difference of levels of customer satisfaction across demographic groups. This means that the hypothesis was supported. Hypothesis 10 was tested by using multiple linear regression for each demographic group. The findings proved that the influence of store environment factors (music, lighting, assortment and employees) on customer satisfaction varies across customer demographic groups. In other words, Hypothesis 10 was supported.
CHAPTER 5 CONCLUSION

5.1 Introduction

This chapter begins with a summary of the research problem, research questions and hypotheses developed from literature concerning store environment and customer satisfaction as related to demographic differences. It presents the findings from a survey of customers who had just finished their shopping in a supermarket or large store. The chapter then discusses the implications of the findings for academic theory and for practice. The limitations of the study are outlined and suggestions for future research are provided. The chapter is completed with the conclusion section. The structure of Chapter 5 is illustrated in Figure 5.1.

Figure 5.1 Structure of Chapter 5

Source: Developed for this research
5.2 Findings from the research

With regard to the influence of the store environment on customer satisfaction, significant positive correlations were found between four independent variables (music, lighting, assortment and employees) and customer satisfaction. The factors of scent and other customers did not show any significant correlation with customer satisfaction; the temperature was eliminated after the pilot study stage. Overall, hypotheses 1, 2 and 3 were partly accepted. After testing hypotheses 1, 2 and 3 only lighting, music, assortment and employees were chosen for further testing (scent, layout, interior and other customers were removed).

In terms of the influence of the demographic variables on customer satisfaction, the results revealed that gender was a non-significant determinant of customer satisfaction. Therefore, hypothesis 4 was rejected. In contrast, there was a significant difference of levels of customer satisfaction among customer age, family size, income and customer’s shopping frequency groups. Therefore, hypotheses 5, 6, 7 and 8 were accepted. By rejecting hypothesis 4, gender was subsequently removed when classifying customer demographic groups. The results from testing hypotheses 5, 6, 7 and 8 provided 4 other variables: age, family size, income and customers’ shopping frequency that were used for testing hypotheses 9 and 10.

Based on the cluster analysis in Section 4.5.3.1. There are four groups of respondents as shown in Table 5.1.

Table 5.1 Result of classifying demographic groups

<table>
<thead>
<tr>
<th>No</th>
<th>Group name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The middle-aged with high income - Group 1</td>
</tr>
<tr>
<td>2</td>
<td>Young people and low income - Group 2</td>
</tr>
<tr>
<td>3</td>
<td>The elderly and occasional shopping - Group 3</td>
</tr>
<tr>
<td>4</td>
<td>Big family and regular shopping - Group 4</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research
From the outcomes of four customer groups, the researcher calculated the satisfaction level to compare these four groups.

ANOVA was employed in this stage to test hypothesis 9 and the result revealed that there was a significant difference of levels of customer satisfaction across demographic groups.

Based on Table 5.2, the researcher found Group 4 - big family and regular shopping customers to be the most satisfied (5.4), followed by Group 1 - middle-aged with high income shoppers (5.3), Group 3 - elderly and occasional shopping customers (5.0) while Group 2 - young people and low income customers (4.8) are least satisfied in the 4 groups.

<table>
<thead>
<tr>
<th>Levels of customer satisfaction</th>
<th>Group name</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.4</td>
<td>Group 4 - Big family and regular shopping</td>
</tr>
<tr>
<td>5.3</td>
<td>Group 1 - The middle-aged with high income</td>
</tr>
<tr>
<td>5.0</td>
<td>Group 3 - The elderly and occasional shopping</td>
</tr>
<tr>
<td>4.8</td>
<td>Group 2 - Young people and low income</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

In terms of the relationship between store environment factors and customer satisfaction among customer demographic groups, the multiple linear regression was used with the result for two parts:

**First part, for all customers**

The equation of prediction produced by this analysis describes the relationship between the variables to be: Customer satisfaction = 0.216 x music + 0.277 x lighting + 0.124 x assortment + 0.152 x employees + 1.504
In general, lighting factor is the most influence on customer satisfaction, music and employees’ factors play the second and the third in that order. The fourth one is the assortment factor in influencing customer satisfaction.

**Second part, for each specific demographic group**

+Group 1: The equation of prediction:

Customer satisfaction = 0.166 x music + 0.330 x lighting + 0.218 x assortment + 0.173 x employees + 1.087

+Group 2: The equation of prediction:

Customer satisfaction = 0.154 x music + 0.277 x lighting - 0.003 x assortment + 0.317 x employees + 1.190

+Group 3: The equation of prediction:

Customer satisfaction = 0.102 x music + 0.265 x lighting - 0.074 x assortment - 0.045 x employees + 3.268

+Group 4: The equation of prediction:

Customer satisfaction = 0.153 x music + 0.253 x lighting - 0.080 x assortment + 0.012 x employees + 4.011

The next section, the results of testing hypotheses mentioned in Table 5.3
### Table 5.3 Summary of results of testing hypotheses

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: There is a positive relationship between perception of ambient factors and customer satisfaction. (Sub hypotheses: H1a, H1b are supported; H1c, H1d: are not supported).</td>
<td>Partly supported</td>
</tr>
<tr>
<td>H2: There is a positive relationship between perception of design factors and customer satisfaction. (Sub hypotheses: H2b are supported; H2a, H2c: are not supported).</td>
<td>Partly supported</td>
</tr>
<tr>
<td>H3: There is a positive relationship between perception of social factors and customer satisfaction. (Sub hypotheses: H3a is supported; H3b: is not supported).</td>
<td>Partly supported</td>
</tr>
<tr>
<td>H4: There is a significant difference of levels of customer satisfaction between males and females.</td>
<td>Rejected</td>
</tr>
<tr>
<td>H5: There is a significant difference of levels of customer satisfaction among customer age groups.</td>
<td>Supported</td>
</tr>
<tr>
<td>H6: There is a significant difference of levels of customer satisfaction among customer family size groups.</td>
<td>Supported</td>
</tr>
<tr>
<td>H7: There is a significant difference of levels of customer satisfaction among customer income groups.</td>
<td>Supported</td>
</tr>
<tr>
<td>H8: There is a significant difference of levels of customer satisfaction among customer’s shopping frequency groups.</td>
<td>Supported</td>
</tr>
<tr>
<td>H9: There are differences in the levels of satisfaction among customer demographic groups.</td>
<td>Supported</td>
</tr>
<tr>
<td>H10: The effect of store environment factors on customer satisfaction varies among different customer demographic groups.</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

-In the three main factors of store environment, ambience has two elements: music and lighting influencing on customer satisfaction, while design and social factors have only one each, namely assortment and employees respectively.
In terms of demographic variables, only gender did not differ in their satisfaction levels. However, there are significant differences between the age, family size, income, shopping frequency group variables and customer satisfaction.

=> The results show that the influence of store environment factors (music, lighting, assortment and employees) on customer satisfaction varies across customer demographic (age, family size, income and shopping frequency) groups.

Based on results above, each different demographic group has different relationships between store environment factors and customer satisfaction. In other words, the effect of store environment factors on customer satisfaction varies among different customer demographic groups (Hypothesis 10). As summary of the result of testing, all hypotheses are provided in Table 5.3. Therefore research questions and problems are clarified.

5.3 Implications of the research study

The implications for academic researchers arising from the findings of the research are discussed. This is followed by a discussion of practical implications for physical retailers and the broader community.

5.3.1 Implications for the academic field

First, this research gives rise to a range of questions related to store environment. Specifically, there were 41 items relevant to the influence of store environment on customer satisfaction. These items were developed from prior research and from the pilot study. This list of items is more comprehensive than those identified in the review of existing literature. In previous studies, store environment factors either focussed on the broad picture or paid attention to only one or two specific features whose items contain one or two factors like layout or design (Sweeney & Wyber 2002, Morales et al. 2005). The present study gathered and choose items in the context of store environment. Therefore, as for implications for academic field, the questionnaire used
in this study may be used to address similar topics related to the impact of store environment on customer satisfaction or other similar matters in the future.

Second, the outcomes of this research are important and valuable for the body of academic knowledge. The implications related to each research question in this study are as follows.

1. With regard to the first research question, ‘What are the retail store environment factors that have significant positive correlations with customer satisfaction?’, results indicated that all three major elements of store environment (ambience, design and social factors) have an influence on customer satisfaction, but with differences. For example, of the four factors of ambience (music, scent, lighting and temperature), only music and lighting were found to have a significant positive correlation with customer satisfaction. However, all of three factors of design (interior design, layout and assortment) were found to have a positive influence on customer satisfaction. The story was quite different for social factors, with only the employees’ factor impacting significantly on customer satisfaction.

2. For the second research question, ‘What customer demographic variables influence customer satisfaction in retail store environment?’, gender was found not to influence customer satisfaction. This result is similar to the study by Theodoridis and Chatzipanagiotou (2009), who also found that male and female customer in supermarkets do not differ in their satisfaction. Concerning age, income and frequency of shopping, the research showed that age, income and frequency of shopping had a significant influence on customer satisfaction. This concurs with the studies of Iqbal et al. (2013), Theodoridis and Chatzipanagiotou (2009) and Seiler et al. (2013). These studies examined the effects of customer characteristics on customer behaviours and customer satisfaction.

3. With regard to the third research question, ‘How different are levels of satisfaction in relation to customer demographic variables?’, there were four
groups of the customers, namely: Group 1 - middle-aged with high income shoppers; Group 2: young people and low income customers were least satisfied; Group 3: the elderly and occasional shopping customers; Group 4: Big family and regular shopping customers. The levels of satisfaction amongst them were found to be quite different (4.8 to 5.4 on the 7-point Likert scale). Thus, the findings of this study accord with those of the existing literature regarding demographic segmentation in retailing (see Section 2.4.4).

4. With regard to the fourth research question, ‘How does the influence of retail store environment factors impact on customer satisfaction vary across different customer demographic groups?’, the literature review identified store environment factors such as music, lighting, scent and temperature (ambient factors); layout, interior design and assortment (design factors) and other customer, employees (social factors) (Baker 1986; Kim & Kim 2012; Yoo et al. 1998) as being important to customer satisfaction. The findings of this research however, showed that there are only four factors (music, lighting, assortment and employees) that affect customer satisfaction. Moreover, the present research proved that these four factors produce different effects on customer satisfaction depending on the customer’s demographic characteristics.

The results showed that all store environment factors impact differently on customer satisfaction. The research did not only focus on individual factors of the ambient, design and social factors, or combining specific factors such as scent and signage like previous studies (Ang et al. 1997; Mattila & Wirtz 2001). The implications of the results of this research created a comprehensive framework in order to achieve a detailed understanding of in-store environmental influences.

-Previous Australian studies in supermarkets just paid attention to the relationship between demographic characteristics and customer satisfaction without investigating store environment factors (Beynon et al. 2010). But the result of this research set up successfully the equation prediction for these three disciplines (demographic, customer satisfaction and store environment). This highlights the theory implications of the
structural relationship among demographic characteristics, customer satisfaction and store environment for future studies carried out in Australia.

=> This study seems to be the first one to mention and create the equation of prediction for customer satisfaction from store environment factors for specific customer demographic groups.

-Most of the previous research studies set out to ascertain the link between demographics in specific store formats such as discount store or drugstore. Most of this research uses one or two variables of demographics such as age or gender (Mittal & Kamakura 2001; Taylor 2003; Walsh et al. 2008). To overcome these gaps, the author employed five common demographic variables (gender, age, family size and income) from respondents’ data to explore the influence of these demographics characteristics on customer satisfaction in relation to store environment. In terms of store environment factors, most previous researchers have paid attention to the individual factor of ambient or design factors such as scent, music or assortment (Reda 1998; Fiore et al. 2000). To fill the gap, this research set out to investigate the effect of all factors of retail store environment on customer satisfaction.

-The outcomes of this study are noteworthy as this study is likely to be the first one to mention and create an equation for the prediction of customer satisfaction from store environment factors for specific customer demographic groups. Therefore, this is a theoretical implication for future study related to investigating the structural relationship between store environment factors and customer satisfaction across different customer demographic groups.

To sum up, findings from this research contribute to academic theory by 1) creating a range of items to illustrate the store environment factors; 2) confirming the factors of demographic variables and store environment variables influencing customer satisfaction; 3) examining the correlation between levels of satisfaction and customer demographic groups; and 4) clarifying the relationship between store environment factors and customer satisfaction across different customer demographic groups.
Despite the considerable amount of attention in the literature given to store environment, customer satisfaction and segmentation, there is a lacuna of research into the relationship among them. Therefore the findings from this study contribute to these gaps. The outcomes of this research can apply into the practice as mentioned in the following sections.

5.3.2 Implications for practice

5.3.2.1 Implications for retailers: stores - supermarkets

Based on the findings of Chapter 4, customer satisfaction is affected by store environment factors and demographic variables. As a result, to satisfy customers better, retailers should focus on these matters:

With regard to store environment, the research revealed the function of relationship between store environment and customer satisfaction for all customers as below:

Customer satisfaction = $0.216 \times \text{music} + 0.277 \times \text{lighting} + 0.124 \times \text{assortment} + 0.152 \times \text{employees} + 1.504$

Arising from this function, lighting was the strongest factor influencing customer satisfaction, followed by assortment, music and employees, while interior design and layout play unimportant roles. Therefore, in general, managers of stores and supermarkets must devote their attention to lighting, music, assortment and employees in order to better satisfy customers. To be more specific, as calculated in the Rotated Component Matrix\(^9\) in Section 4.3.1.1, the importance levels among these items are different.

As for lighting, the order of importance of items was found to be as follows: item4 - the store promotes a warm and cosy ambience, item7 - the store is well-lit, item12 - the light in the store is modern, item10 - the lighting in the store makes me comfortable, item1 - the store uses more natural light to save energy. This means retailers should focus on how to use lighting to create warm and cosy ambience first; then set up well-lit and
modern light; after that pay attention to create pleasant light and use natural light. Similarly, with regard to music, retailers of supermarkets may apply suggestions from items of the questionnaire with high evaluations from respondents such as paying more attention to creating the right volume, playing many types of songs first and then using the instrumental music and choosing an appropriate tempo.

In terms of assortment, retailers need to arrange the products so that they are easy to find and can be easily reached. In addition, the store should have various price ranges for products as well as a wide variety of products.

With regard to employees, based on the result of factor analysis and the Rotated Component Matrix in Chapter 4, there are 7 items (in the order of importance): 1) the store has helpful employees; 2) there are enough employees to serve customers; 3) the store has knowledgeable employees; 4) the store has well-dressed employees; 5) the store has friendly employees; 6) the store employees make good non-verbal cues; 7) the responses to customer requests are useful. This means that helpfulness and knowledge are the most important characteristics of staff needing attention of retailers in order to satisfy customer requirements. In addition, the number of staff needs to be adequate and stores/supermarkets should have well-dressed employees. So, retail managers need to train staff to help them become friendlier with customers and address customer’s concerns quickly and efficiently.

The research not only demonstrates the effects of store environment factors on customer satisfaction, but also suggests how to improve customer satisfaction through changes to the store environment. Retailers may use suitable findings in this study to apply in their stores or supermarkets to satisfy customers better.

With regard to demographic characteristics, the outcomes of this study highlight the importance of segmenting customers into smaller groups depending on customer demographic variables. In a study on customer segmentation in retailing, Seiler et al.
(2013) concluded that an effective customer segmentation can help retailers create a customised service that brings suitable offers for the different customer profiles and enhance customer satisfaction as well as loyalty. Based on the results of this research, the levels of satisfaction amongst the four identified groups of customers were different. For example, Group 2 - the young people and low-income customers and Group 3 - elderly and occasional shopping customers are less satisfied than the other two groups (Group 1 and Group 4). Therefore, retailers may apply policies such as promotions or training employees to focus on these groups in order to improve consumer satisfaction.

By clarifying the relationships between store environment factors and demographic variables across customer groups, the study provides insights and valuable knowledge for retailers for understanding customers more clearly. Indeed, the results from this research could improve the competitiveness of stores and supermarkets by satisfying customers more successfully. These relationships for each demographic group were found to be as follows.

- **Group 1** - Customer satisfaction = 0.166 x music + **0.330 x lighting** + **0.218 x assortment** + 0.173 x employees + 1.087 (the bold words indicate the two strongest factors influencing on customer satisfaction for each customer group). Lighting and assortment are the most important factors of store environment for middle-aged with high income customers in terms of their satisfaction. Thus, for this kind of customer, retailers should pay more attention to lighting and assortment in that order to improve their level of satisfaction.

- **Group 2** - Customer satisfaction = 0.154 x music + **0.277 x lighting** - 0.003 x assortment + **0.317 x employees** + 1.190. Employees and lighting are the most important factors influencing customer satisfaction respectively. Therefore stores and supermarkets should focus on employees and lighting for young people and low-income shoppers to satisfy them better. Music is the third most important factor, followed by assortment (with value of 0.003).
As for group 3 - Customer satisfaction = 0.102 x music + 0.265 x lighting - 0.074 x assortment - 0.045 x employees + 3.268. Lighting and music are the most important factors of store environment respectively. (Meanwhile, assortment and employees seem not to impact customer satisfaction – with value of 0.074 and 0.045 in that order) for elderly and occasional shopping customers.

Similarly, lighting and music again are the two most important factors of store environment for group 4, big family and regular shopping customers, with regard to their satisfaction with the equation prediction: Customer satisfaction = 0.153 x music + 0.253 x lighting - 0.080 x assortment + 0.012 x employees + 4.011. Therefore, retailers should invest in lighting and music first to improve customer satisfaction or to attract this kind of customer.

The outcomes of this research showed that: lighting and music play the most important roles with respect to enhancing customer satisfaction (compared to other factors such as scent, layout). Therefore, store managers should pay much attention to music and lighting so as to attract and satisfy shoppers.

In terms of customer demographic groups, the results revealed that: levels of customer satisfaction among customer demographic groups are different. In these groups, young people with low income and occasional shopping are less satisfied. As a result, retailer managers should invest resources to increase the level of satisfaction from these kind of customers in order to attract more customers to stores.

Ways to apply the items of store environment in order to satisfy customers are discussed at the beginning of Section 5.3.2.1. Therefore, the study provides helpful and practical advice for retailers. In short, the outcomes of the research suggest directions for retailers in determining the relationships between customer demographic characteristics and particular factors of store environment, in order to satisfy customers better.
5.3.2.2 Implications for customers and community

The results of this study provide direction for retailers in determining which factors of store environment will enhance customer satisfaction. More importantly, stores and supermarkets may also make use of information about the level of importance of items within each factor. For example, concerning the assortment factor, customers pay attention to ‘finding out easily the products that are sought’ (survey item 23) more than whether the store has a wide variety of products (survey item 27). Therefore, customers and the community could benefit if retailers applied these findings.

One implication of the research for customers and the community is to increase the customer satisfaction index. In this study, the researcher employed the American Customer Satisfaction Index (ACSI) model to measure customer satisfaction with three question items: 1) an overall rating of satisfaction; 2) the degree to which performance falls short of or exceeds expectations; and 3) a rating of overall performance relative to the customer’s ideal good or service in the category (Fornell et al. 1996). In the research analysis, ACSI was calculated for each kind of customer segment. Based on these results, retailers will have at their disposal appropriate policies for increasing the customer satisfaction index in order to satisfy customers better. Therefore, both the community and retailers could benefit by the study.

In addition, the study has the potential to assist stores and supermarkets to better comprehend customers through analysing customer demographic characteristics. The research outcomes show significant differences between influences of store environment on customer satisfaction across demographic groups. Arising from these outcomes, the groups of customers in the community such as youth, the elderly or low income people could receive more appropriate customer services from stores and supermarkets. For example, focusing on the training of employees would better satisfy low income and young people, or investing in lighting would better satisfy the elderly and occasional shoppers in the community.
In brief, the outcomes of this study are noteworthy, as they could enhance retail management practices. Indeed, stores and supermarkets may apply the findings to gain customer satisfaction and create efficient policies of target segmentation in order to provide suitable offers for the different customer groups. Moreover, customers and the community would receive better services to satisfy their requirements.

5.4 Limitations of the research

The research just focuses on supermarkets, a single type of store-based retailer. Therefore, it does not provide a sufficiently broad picture that can be applied to all types of stores in the retailing industry. Because the researcher tried to explore all main elements of factors of store environment, small supermarkets or simple stores, which do not contain all elements of the store environment such as music, or scent, were not appropriate for conducting a survey.

With regard to the limitations of the survey methodology, the data collection took approximately 10 months, which may not have been sufficient for assessing the impact of some elements of store environment, especially ambient factors. Although most supermarkets are built in self-contained buildings, the weather also influences customers when they evaluate ambient factors such as temperature and scent. The products presented in stores and supermarkets are influenced by the seasons of the year, and thus some factors of store environment such as assortment and layout are significantly different from season to season. These changes may change the impact of store environment factors on customers, and hence their assessment of their levels of satisfaction, and, in turn, change the outcomes of the research.

Because of the limitation of resources in undertaking doctoral research such as in this study, the scope of the study could not include the customer segmentation of consumers under 18 years old. Besides, with regard to the target population and the distribution of customer surveys, the study attempted to have a range of typical characteristics of Australia from rural to large urban environments, from local people to
tourists, and immigrants. However, the research was conducted in 6 different areas of two states (New South Wales and Queensland) and this is likely to be not enough to make generalisations for the whole Australia population. Therefore this is also a limitation of the research which could become the focus for further research.

Despite the limitations mentioned above, they do not detract from the valuable contributions of the research for both theory and practice. In fact, these limitations can serve as directions for research in the future, discussed in the next section.

5.5 Suggestions for further research

Based on the outcomes of this study and the limitations and delimitations discussed in the previous section, the following points can be suggested for further research:

First, the results of this study can be used as guidelines or references for further research related to factors of store environment, customer satisfaction and demographic segmentation. Possible directions for future research could involve focussing on one of these aspects of retailing, or researching them in combination, or combining them with other aspects. In other words, further studies may choose a narrow scope with one or two factors of store environment (only music or lighting, for example) or seek to build up a larger picture that includes, for example, customer loyalty or store image.

Second, the survey that formed the basis of this research was carried out in a limited region of Australia. Similar research may be carried out in other regions of Australia, or in other countries, because the results could be quite different. The differences of culture, demographics, economics and facilities may lead to different findings.

Third, without the limitation of resources such as finance, time, manpower, a larger study could be undertaken. For example, survey data could be collected over one year to generate more accurate outcomes and assessments. This would take into account
seasonal changes that may impact the influence of store environment factors such as design, assortment, temperature or music on customer satisfaction. Besides, future studies could include other variables of demographic segmentation that could influence customer behaviours in the retailing industry, such as education, race or nationality.

Finally, the study also answered some important questions arising from previous studies. For example: clarifying the relationship between satisfaction and demographics as suggestions from Ali and Dubey (2014) and solving the problems of ‘previous Australian studies examined important supermarket characteristics and influencers of satisfaction, yet failed to consider the effect of gender, income and age’, from Mortimer and Clarke (2011, p. 575). Nonetheless, this study also contains a major limitation – store formats – that needs to be examined in further research. For example, a question for future research could be, ‘What is the relationship among store formats, with respect to customer satisfaction and demographics segmentation?’ In addressing this issue, further study could give a comprehensive picture not only for supermarkets, but also for other kinds of stores in the retailing industry.

5.6 Conclusion
This chapter has completed and clarified the research problem and the four research questions, and tested ten research hypotheses related to the major question: ‘What is the relationship between store environment factors and customer satisfaction across different customer demographic groups?’ In the first sections of the chapter, the research and findings are summarised. The next section discussed implications of the study, including for both theory and practice with retailers and customers/community. Finally, the limitations and delimitations of the study are discussed, and the recommendations for further research are presented.

The result of the study revealed the following main points: 1) significant positive correlations were found between four store environment factors (music, lighting, assortment, employees) and customer satisfaction, while other factors (layout, interior
design, other customers, etc.) did not show the correlation with customer satisfaction; 2) gender showed as a non-significant determinant of customer satisfaction, but, there were differences between the age, family size, income, shopping frequency group variables and customer satisfaction; 3) the levels of satisfaction were different among customer demographic groups; and 4) the influence of store environment factors on customer satisfaction varied among different customer demographic groups. Each customer demographic groups had a different relationship between store environment factors and customer satisfaction.

The outcomes of this study suggest directions for retailers to determine which factors of store environment to pay attention to in order to better satisfy customers. More importantly, the study established successfully the relationship among store environment, customer satisfaction and customer demographics. Arising from this structure, there are differences of the influence of store environment factors on customer satisfaction across customer demographic groups. This brings useful contributions to academic field, especially for practice applications. Retailers should invest in selective factors in proportion to each demographic group of customers to improve the influence of these factors on customer satisfaction.

In conclusion, the study has value since it proposed and justified the research problem, research questions and theoretical framework to clarify the relationship among three important concepts: store environment, customer satisfaction and segmentation. The findings have potential benefits for retailers, consumers and the community.
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APPENDICES
Appendix 1A: Information sheet

INFORMATION SHEET

Name of the project: The influence of store environment on customer satisfaction across different customer demographic groups within Australian supermarkets.

The significance of the research:

The retailing industry has developed and played a vitally important role in meeting the needs of a modern society. Therefore researching it is useful especially in an intensively global competitive market. Today, many researchers pay much attention to e-tailing, non-store-based retailers as a recent trend. However, store-based or ‘bricks-and-mortar’ retailers still keep the vitally critical part in our lives. Especially, supermarket plays a salient role not only because of the huge number of retailers being supermarket but also since this kind of retailer effects broadly our society nowadays. Another matter is that the lacuna of research in Australian retailing and its relevance (Mortimer & Clarke 2011). Therefore the thesis pay attention to investigate the influence of store environment on customer satisfaction across different customer demographic groups within Australian supermarkets. One of main purposes of the study is to help supermarkets evaluate the use of store space to meet the customer expectations and make shopping more enjoyable.

The researcher: my name is Duong Quoc Buu, my Student ID: 21853450. I am conducting research as part of my Doctorate degree in Business Administration at Southern Cross University.

I would like to invite you to participate in a study being conducted to help me study and understand deeply aspects related to:
1. What are the retail store environment factors have significant positive correlations with customer satisfaction?
2. What are customer demographic variables influencing customer satisfaction in retail store environment?
3. How different are levels of satisfaction in relation to customer demographic variables?
4. How does the influence of retail store environment factors impact on customer satisfaction vary across different customer demographic groups?

**My responsibility to my participants**

Your participation will be purely voluntary and there is no financial remuneration. You are free to withdraw or discontinue the participation at any time.

The questionnaires will take approximately 5 minutes to complete. No personal information will be collected.

It is my responsibility to make sure that any information given by you is protected, kept confidential and no personal information collected, all questionnaires are anonymous.

**Inquiries:**

If you have any questions or information, please do not hesitate to contact us:

Name of researcher: Duong Quoc Buu  
Qualification: DBA candidate  
Phone No: 0425348911  
Email: q.duong.11@student.scu.edu.au

Name of principle supervisor: Don McMurray  
Qualification: PhD  
Phone No: 0409960319

Name of Co-supervisor: Craig Julian  
Qualification: PhD  
Phone No: 07 5589 3000
Feedback:
The ethical aspects of this research have been approved by the Southern Cross University Human Research Ethics Committee and the Approval number is ECN-15-079 on 21st Apr 2015.

If you have any question or complaints about any ethical aspect of your participation in this study, you may contact to the following:

The Ethics Complaints Officer
Southern Cross University
PO Box 157
Lismore NSW 2480
Email: ethics.lismore@scu.edu.au

Any question and information from you will be treated in confidence and investigated and you will be informed the outcome. The researcher will keep data safe and secure (using locked filling cabinet, password protected computer).
Letter of Invitation

My name is Duong Quoc Buu. I am conducting research as part of my Doctorate degree in Business Administration at Southern Cross University.

I would like to invite you to participate in the study with the topic: **The influence of store environment on customer satisfaction across different customer demographic groups within Australian supermarkets.**

The significance of the research: supermarkets play a vitally important role in the society and customer satisfaction is one of the most critical concepts of marketing therefore understanding and researching them to make our life better are necessary.

The objective of the research is to:
- Identify factors of retail store environment and customer demographic variables affecting customer satisfaction.
- Examine the relationship between levels of satisfaction and customer demographic groups.
- Investigate the structural relationship between store environment factors and customer satisfaction across different customer demographic groups.

The questionnaires will take approximately from 5 to 7 minutes to complete. No personal information will be collected and your participation is purely voluntary. You are free to withdraw or discontinue the participation at any time. It is my responsibility to make sure that any information given by you is protected and kept confidential.

Once the research is completed, participants have the right to be provided study results.
If there are any questions you wish to ask about the research, please do not hesitate to write or ring me through my email: q.duong.11@student.scu.edu.au; telephone: 0425348911.

Thank you for your assistance.
Yours sincerely,

Researcher - Duong Quoc Buu
Appendix 2: Using factor analysis for each main factors of store environment:

In section 4.3, Principle component analysis (PCA) was applied for the whole 41 items of store environment. In this appendix, PCA was used for each main factors such as ambient factors (14 items), design factors (16 items) and social factors (11 items). The outcomes of two approaches are similar.

1/. Running factor analysis with principle component analysis (PCA) for ambient factors

Factor analysis was applied to the 14 items of ambient factors developed from the literature review and the pilot study.

KMO and Bartlett’s Test for store environment factors

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | .831 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 1382.837 |
| | df | 91 |
| | Sig. | .000 |

Source: Data analysis developed for this research

Rotated component matrix\(^a\) of store environment factors

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
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</thead>
<tbody>
<tr>
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<td>Item11</td>
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<td>.570</td>
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Source: Data analysis developed for this research
As shown in the table above, The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO = 0.831) was greater than 0.6, and Bartlett's test of sphericity was significant, (p<0.05), therefore it is suitable to use PCA to this data (Manning & Munro 2007, p. 172).

Based on the PCA result, the rotated component matrix. There are 3 components:

*Component 1- includes 5 items:
  +Item12: The light in the store is modern.
  +Item4: The store promotes a warm and cosy ambience
  +Item7: The store is well-lit.
  +Item10: The lighting in the store makes me comfortable.
  +Item1: The store uses more natural light to save energy.
  => These items mention lighting elements of the store environment, therefore the name of this component is lighting factor.

*Component 2- includes 5 items:
  +Item2: The music is played at the right volume.
  +Item14: The music tempo makes me joyful
  +Item8: There are many types of songs played in the store.
  +Item5: The store just plays the instrumental music
  +Item13: The store has a soothing melody
  => These items mention music elements of the store environment, therefore the name of this component is music factor.

*Component 3- includes 4 items:
  +Item3: the store has distinct fragrance.
  +Item6: the store has a pleasant scent.
  +Item9: the store has appropriate smell in different areas.
  +Item11: the scent is suitable for the products in the store.
  => These items mention scent elements of the store environment, therefore the name of this component is scent factor.
2/. Similarly for design factors

<table>
<thead>
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<th>KMO and Bartlett’s Test</th>
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<td>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</td>
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<td>Bartlett's Test of Sphericity</td>
<td>Approx. Chi-Square</td>
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<td>df</td>
<td>120</td>
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<td>Sig.</td>
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**Rotated Component Matrix***

<table>
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<th>2</th>
<th>3</th>
</tr>
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Source: Data analysis developed for this research

As shown in the table above, The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO = 0.794) was greater than 0.6, and Bartlett’s test of sphericity was significant, (p<0.05), therefore it is suitable to use PCA to this data (Manning & Munro 2007, p. 172).

Based on the PCA result, the rotated component matrix. There are 3 components:

*Component 1- includes 6 items (items 22 were removed because of the loading value <0.5):

  + Item17: The colour is currently fashionable.
  + Item24: The merchandise in the store is well-organised.
  + Item19: The store is clean.
  + Item20: In-store displays (texture, pattern) are impressive.
  + Item28: The décor is suitable with the store image.
+Item16: The design of floor, ceiling and wall are comfortable.

=> These items mention interior design elements of the store environment, therefore the name of this component is interior design factor.

*Component 2- includes 5 items:

+Item26: The layout is appropriate with the merchandise.
+Item30: The corridors are spacious enough.
+Item21: The directional maps and guides are clear.
+Item29: It is easy to locate products in the store.
+Item15: It is easy to move around in the store.

=> These items mention layout elements of the store environment therefore, the name of this component is layout factor.

*Component 3- includes 4 items:

+Item23: It is easy to find out the products that are sought.
+Item25: The height level of merchandise is reachable easily.
+Item27: The store has a wide variety of products.
+Item18: The store has different price ranges in different products.

=> These items mention assortment elements of the store environment, therefore the name of this component is assortment factor.

3/. Similarly for Social factor:

Based on the PCA result, the rotated component matrix (for social factors). There are 3 components:

*Component 1- includes 7 items:

+Item33: The store has helpful employees.
+Item39: There are enough employees to serve customers.
+Item35: The store has knowledgeable employees.
+Item37: The store has well-dressed employees.
+Item32: The store employees make good non-verbal cues.
+Item36: The store has friendly employees
+Item41: The responses to customer requests are useful.
These items mention employees of the store environment, therefore the name of this component is employees’ factor.

* Component 2- includes 3 items:
  + Item34: The social relations among customers are cordial.
  + Item38: The other customers are kind.
  + Item31: There are enough (not crowded) customers in the store.
  + Item40: The store has good communicated customers.

These items mention other customers of the store environment, therefore the name of this component is the customers’ factor.

As a result, there are 8 components chosen with names such as 1) lighting, 2) music and 3) scent (ambient factors); 1) interior design, 2) layout and 3) assortment (design factors); 1) employees and 2) other customers (social factors).

* Assessing validity and reliability for music factor.

- Reliability Statistics

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<th>Cronbach’s Alpha</th>
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- Validity and reliability test of music

<table>
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<th>Corrected Item-to-Total Correlations</th>
<th>Cronbach’s Alpha if Item Deleted</th>
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<td>Item2</td>
<td>From 0.475 to 0.533</td>
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<td>0.793</td>
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<tr>
<td>Item8</td>
<td>From 0.479 to 0.554</td>
<td>0.652</td>
<td>0.798</td>
</tr>
<tr>
<td>Item14</td>
<td>From 0.461 to 0.549</td>
<td>0.679</td>
<td>0.790</td>
</tr>
<tr>
<td>Item5</td>
<td>From 0.384 to 0.554</td>
<td>0.612</td>
<td>0.810</td>
</tr>
<tr>
<td>Item13</td>
<td>From 0.384 to 0.512</td>
<td>0.576</td>
<td>0.820</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research
*Similarly calculating the reliability and validity for all other factors, the result showed in the table below

A Summary of reliability and validity of composite variable

<table>
<thead>
<tr>
<th>Composite variable</th>
<th>Reliability Cronbach alpha</th>
<th>Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Item-to-total</td>
</tr>
<tr>
<td>Music</td>
<td>0.836</td>
<td>&gt;0.5</td>
</tr>
<tr>
<td>Lighting</td>
<td>0.866</td>
<td>&gt;0.5</td>
</tr>
<tr>
<td>Scent</td>
<td>0.552&lt;0.7</td>
<td>&lt;0.5</td>
</tr>
<tr>
<td>Layout</td>
<td>0.815</td>
<td>&gt;0.5</td>
</tr>
<tr>
<td>interior design</td>
<td>0.770</td>
<td>&gt;0.5</td>
</tr>
<tr>
<td>Assortment</td>
<td>0.785</td>
<td>&gt;0.5</td>
</tr>
<tr>
<td><strong>Other customers</strong></td>
<td><strong>0.625 &lt;0.7</strong></td>
<td>&lt; 0.5</td>
</tr>
<tr>
<td>Employees</td>
<td>0.844</td>
<td>&gt;0.5</td>
</tr>
</tbody>
</table>

Source: Data analysis developed for this research

Based on the outcomes in the table above, scent and other employees were removed because they violated the conditions of reliability and validity.

As a result, 6 factors (music, lighting, layout, assortment, interior, employees) were considered reliable and valid for entering the next phase of analysis.

The conclusion, as for this study, although scent occurred in this method however, this factor was removed because of violating reliability and validity. Therefore, using factor analysis for 41 items or using factor analysis for each main factors such as ambient factors (14 items), design (16 items) and social (11 items) factors, the outcome create the same result in terms of the number and name of factors.
Appendix 3: Questionnaire

**QUESTIONNAIRE**

The attached questionnaire is part of the doctor of business administration thesis studying the influence of store environment on customer satisfaction across different customer demographic segmentations within Australian supermarkets. All information supplied will be treated as strictly confidential.

1. Please indicate the extent of your agreement with the following statements determining the importance of store environment factors to customer satisfaction. Please tick (x) or (✓) in only one appropriate box on the scale provided – 7 point Likert scale where 1 = strongly disagree and 7 = strongly disagree.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-The store uses more natural light to save energy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-The music is played at the right volume</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-The store has a distinct fragrance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-The store promotes a warm and cosy ambience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-The store just plays instrumental music</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-The store has a pleasant scent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-The store is well-lit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8-There are many types of songs played in the store</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9-The store has appropriate smell in different areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-The lighting in the store makes me comfortable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-The scent is suitable for the products in the store</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-The light in the store is modern</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13-The store has a soothing melody</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-The music tempo makes me joyful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. (Continue) Please indicate the extent of your agreement with the following statements determining the importance of store environment factors to customer satisfaction. Please tick (x) or ( ) in only one appropriate box on the scale provided – 7 point Likert scale where 1 = strongly disagree and 7 = strongly disagree.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-It is easy to move around in the store</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-The design of floor, ceiling and wall are comfortable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-The colour is currently fashionable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-The store has different price ranges in different products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-The store is clean</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-In-store displays (texture, pattern) are impressive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-The directional maps and guides are clear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22-The signage is logically located in the store</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23-It is easy to find out the products that are sought</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24-The merchandise in the store is well organised</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-The height level of merchandise is reachable easily</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26-The layout is appropriate with the merchandise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27-The store has a wide variety of products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28-The décor is suitable with the store image</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29-It is easy to locate products in the store</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-The corridors are spacious enough</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. (Continue) Please indicate the extent of your agreement with the following statements determining the importance of store environment factors to customer satisfaction. Please tick (x) or ( ) in only one appropriate box on the scale provided – 7 point Likert scale where 1 = strongly disagree and 7 = strongly disagree.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>31-There are enough (not crowded) customers in the store</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32-The store employees make good non-verbal cues</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33-The store has helpful employees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34-The social relations among customers are cordial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35-The store has knowledgeable employees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36-The store has friendly employees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37-The store has well-dressed employees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38-The other customers are kind</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39-There are enough employees to serve customers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-The store has good communicated customers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41-The responses to customer requests are useful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Please indicate whether you agree or disagree with the following statements related to your satisfaction in this store:

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-You were satisfied with the store</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-The store matched your expectations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-The store was close to your ideal store</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The attached questionnaire is part of the doctor of business administration thesis studying the influence of store environment on customer satisfaction across different customer demographic segmentations within Australian supermarkets. All information supplied will be treated as strictly confidential.

Please tick (x) or (✓) in the only one appropriate box □ below:

3. Your gender: □ Male □ Female

4. Your age (years): □ 18 - 25 □ 26 - 40 □ 41 - 65 □ over 65

5. Your family size (members):
   □ 1-2 □ 3-4 □ 5 or over

6. What is your annual income (AUD$ _ approximately)?
   □ Less than 30,000 □ 30,000 - 49,999 □ 50,000 - 74,999 □ More than 75,000

7. How often do you go to supermarkets in every fortnight (time _ approximately)?
   □ 1-2 □ 3-4 □ 5 or over

Thank you for your time to answer the questionnaire.