Title: An Exploratory investigation into senior customers' supermarket shopping experiences in China

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Corresponding Author: Dr. Yuanyuan Yin, Ph.D

Corresponding Author's Institution: University of Southampton

First Author: Yuanyuan Yin, Ph.D

Order of Authors: Yuanyuan Yin, Ph.D; Song Qiu; Ashok Ranchhod, PhD

Abstract: This paper presents an ethnographic investigation exploring and identifying the key problems senior shoppers grapple with when shopping in supermarkets in China. This study highlights 63 shopping challenges that Chinese elderly consumers face at supermarkets. This resulted from a two-month ethnographic user study with 12 customers. Key issues include problems with reading information from product packages, narrow passageways, item placement, trolley availability, unclear signage, and frequent changes of product placement within the shop. The paper proposes design-based recommendations for improving the supermarket service for older Chinese customers. These evidence-based recommendations have important implications for retailers, who, in the future will be dealing with an ever-growing grey market. The limitations of the research are also discussed.

Suggested Reviewers: Maria Evandrou
maria.evandrou@soton.ac.uk

Rob Angell
Angellrj@cardiff.ac.uk

Anna-Maija Kohijoki
anna-maija.kohijoki@utu.fi

Maktoba Omar
m.omar@napier.ac.uk

John Ensor
j.ensor@napier.ac.uk

Opposed Reviewers:
09 February 2016

Professor Steven Brown
University of Houston,
Houston,
Texas,
USA

Dear Professor Steven Brown,

Please find enclosed a manuscript entitled “An Exploratory investigation into senior customers’ supermarket shopping experiences in China” which we would like to submit to Journal of Retailing.

We hope that the manuscript is of interest to the journal. If you have any question, please feel free to contact us. Please also let us know if we can support the journal in any way, for example by acting as referees.

Look forward to hearing from you. Many thanks for your support.

Yours Sincerely,

Dr. Yuanyuan Yin

Lecturer in Design Management
Winchester School of Art
University of Southampton
Park Avenue
Winchester
SO23 8DL
E-mail: y.yin@soton.ac.uk
Tel: +44 (0) 23 8059 6900 ext 27008
An Exploratory investigation into senior customers’ supermarket shopping experiences in China

Yuanyuan Yin\textsuperscript{a*}, Song Qiu\textsuperscript{b}, Ashok Ranchhod\textsuperscript{a},
Winchester School of Art, University of Southampton, Park Avenue, Winchester SO23 8DL UK
Academy of Arts and Design, Tsinghua University, No.1 Qinghua Yuan, Haidian, Beijing, China

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* Corresponding author: Yuanyuan Yin, email address: y.yin@soton.ac.uk
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Abstract

This paper presents an ethnographic investigation exploring and identifying the key problems senior shoppers grapple with when shopping in supermarkets in China. This study highlights 63 shopping challenges that Chinese elderly consumers face at supermarkets. This resulted from a two-month ethnographic user study with 12 customers. Key issues include problems with reading information from product packages, narrow passageways, item placement, trolley availability, unclear signage, and frequent changes of product placement within the shop. The paper proposes design-based recommendations for improving the supermarket service for older Chinese customers. These evidence-based recommendations have important implications for retailers, who, in the future will be dealing with an ever-growing grey market. The limitations of the research are also discussed.

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Introduction

Supermarket retailing is an important part of daily life in almost every country in the world. As the biggest economy in the world, China in particular has experienced rapid economic growth over the last twenty years and has seen a huge growth in supermarkets in many regions of the country. From 2000 to 2010 the rate of supermarket growth stood at 22% per annum and from 2010 to 2015 it slowed to around 10% per annum (STATISTA, 2015). Large Chinese supermarkets serve around 4,770 customers on a daily basis. From 2006 to 2009 the top 100 Chinese supermarkets increased their retail portfolios by 49% from 16,025
stores to 23,814 stores (Song et al, 2012). At the same time during this explosive growth the number of people in China over the age of 65 has grown from around 7% of the population in 2000 to around 10% in 2013 and it has been predicted to increase to around 26% of the population in 2050 (BBC, 2012).

The population of the world is ageing. The number of people classified as old in the world could rise to over 2 billion by 2050 (ONS, 2013; World Population Ageing Report, 2009). Because of this substantial global demographic shift, numerous studies have been conducted to improve ageing people’s quality of life from multiple perspectives such as public service, transportation services, health and social care, product and service design, and the pension system (Stewart, et al, 2014; Iparraguirre, 2014; Li et al, 2012; Kim et al, 2011; Martin, 2010; Pattison & Stedmon, 2006). Among these studies, many researchers have highlighted the importance of shopping in older people’s day-to-day life and have discussed older customers’ shopping behaviour and retail needs (Yin et al, 2013; Thompson et al, 2011; Meneely et al, 2009a). Several researchers have identified characteristics of elderly consumers’ shopping habits that differentiate them from their younger counterparts, such as decreased price sensitivity, preferences for quality products, a tendency to make joint buying decisions and greater levels of store loyalty (Kohijoki, 2011; Wilson, et al, 2004; Whelan, et al, 2002). These factors play a significant role on their shopping experience and satisfaction. Thus a better understanding of consumer shopping habits and behaviour within and between age cohorts can be used to inform the best types of service provision for the ageing shopper (Angell et al, 2012). Meanwhile, some researchers have also proposed that as senior citizens become healthier and wealthier, they are more inclined to spend more and shop more (Hopkins, 2013; Myers and Lumbers, 2008), especially as they spend a higher proportion of their income on groceries than other shoppers (Sudbury and Simcock, 2009; Moschis et al,
Retailers now find this segment of the population an attractive customer base. (Omar et al, 2014).

Although the findings from previous research on older shoppers are notable, research gaps still remain. Existing studies have raised the profile of older shoppers’ needs, but previous work has mainly focused on America (Lu and Seock, 2008), Australia (Worsley et al., 2011), New Zealand (Goodwin and Mcelwee, 1999), UK (Omar et al, 2014; Yin et al, 2013) and other and European countries (Kohijoki, 2011), whilst research in developing countries, such as China, has been minimal (Liu, 2014). Within the globalized retail industry, China is regarded as the biggest and most profitable overseas market by major international retailers such as Tesco (UK), Wal-Mart (US), Carrefour (France) and Metor AG (Germany) due to the growing economic power and size of the market (Samiee, et al, 2004). Chinese older customers’ shopping habits and behaviours tend to be different compared to customers in the West owing to cultural differences (Thompson et al, 2011). For example, a large majority of Chinese elderly consumers reach their shopping destinations by taking public transport rather than driving. Many have a habit of taking morning exercise and then shopping on the way home after exercising (Maruyama & Wu, 2014). Meanwhile, as supermarkets in China have different store formats, use diverse retail technologies, retail and customer service policies compared with stores in western countries, studies in China are sparse and existing studies cannot fully represent the changing dynamics in China. The supermarket retail format is also relatively young in China (Wang et al, 2010). Thus, in order to serve this market effectively, retailers need to develop a good understanding of Chinese older customers’ shopping habits, unmet needs and requirements to supermarket service. These subtle but different behaviour patterns need to be understood in order to create a better supermarket environment and service design to satisfy and improve this segment of consumers’ shopping experience in China. This is clearly a research gap that needs to be explored and addressed.
This paper is structured as follows: literature review, research methodology, research findings and discussion, recommendations, research limitation and further research.

**Literature Review**

*Ageing in China*

In China, the challenge of population ageing is an emergent area of concern with significant implications as the country enters a period referred to by some as ‘super ageing’ (Liu, 2014; Joseph and Phillips, 1999). It has been forecast that China will see an increase of 22% in the proportion of people aged 60 years and over, from 13% (185 million) to 35% (487 million) of the total population between 2012 to 2053 and this increase will be the fastest in the world (World Population Ageing Report, 2013). If ranked as a separate country, the ageing population of China alone would make the seventh largest population in the world (Feng & Mason, 2007). This has raised several challenges for the Chinese government. For instance, the cost of home and social care for this demographic group and public services that support their living independence has increased dramatically in the past decade (Sun et al, 2014; Cheng et al, 2010).

Researchers have also noted that ageing encompasses social changes that lead the elderly to have different requirements and preferences to public services in their day-to-day life (Park and Farr, 2007; Wolfe, 2005; Wilson et al., 2004). For instance, older people need to be more independent and rely more on public services compared to previous generations due to changes in family structure and domestic migration in China. People used to have several children in their family until the One-Child Policy was launched in 1979 in order to control population (Zhang & Goza, 2006). The policy has changed the social family structure and it has also been identified as one of the major reasons contributing to population ageing (Hingley et al, 2009). The term ‘4:2:1’ represents the current structure of most families in China, with four grandparents, two adult children and one grandchild (Flaberty et al, 2007).
As a part of traditional culture in China, older people used to live with the oldest son who took the main responsibility of family care for the older parents. The other children also acted in a supportive role and contributed to the family care. However, due to the One-Child Policy, the current older parents can only rely on the one child. To this end, in a family, young couples (who were born after 1979) have the responsibility of taking care of four older parents (who were born around 1955 or later) and one child. Thus, although people’s economic situation has been improved dramatically in the last two decades in China, the older parents are not receiving as much care and support from their children as the previous old generations, especially from an emotional support aspect (Shen et al, 2013; Zhang & Goza, 2006). Meanwhile, China’s recent market reforms, decentralization and economic globalization have impacted different social groups, geographic regions and industries unevenly with the resultant domestic/rural-urban migration readily altering the demographic composition of different regions in China (Evandrou et al, 2014; Zhu, 2013). Thus, millions of migrant workers move from rural to urban or from small cities to bigger cities so as to have better opportunities for education, social care and career development, which may leave older people behind without the traditional network of children to look after them as they age (Flaberty et al, 2007; Biao, 2006). As a result, based on the 2010 Chinese Census, Liu et al (2015) have highlighted that the number of ‘left-behind’ elderly has been increasing; 31.8% of older people do not live in families and within that 15.4% live with a spouse and 16.4% live alone. Consequently, these older people cannot rely on traditional family care any more, having to take care of themselves and be more independent.

Much research has emphasised the importance of shopping in older people’s life (Omar et al, 2014; Angell et al, 2012). It not only contributes to health and wellbeing, but also determines older peoples’ sense of independence that has been considered to be mentally important to consumers as they become older (Brennan and Ritch, 2010; Leventhal, 1997). As most of the
existing literature on older shoppers is focused on Western countries, it is necessary to explore and understand Chinese older customers’ shopping experience and their unmet needs towards retail service. In this study, therefore, the older customers have been identified as Chinese customers who aged over 60 years old, based on the retirement age in China (Powell & Cook, 2006).

Retail environment in China

Retail formats in China can be categorized into two groups; traditional retail format and modern retail format. The former includes wet market, traditional grocery stores and specialty food stores (e.g. butchers, staple food stores and general stores), and the latter includes, convenience chains, small stores, supermarkets and hypermarkets (Maruyama & Wu; 2014). Some researchers have highlighted that although traditional markets such as wet markets are perceived as offering superior freshness, low price and the chance to barter and bargain, the traditional markets are usually untidy and less organized, with weak regulations and poor food safety which is often a major concern for consumers (Gorton et al., 2011). In contrast, modern format stores are often better managed and under government regulation so product safety is more likely to be guaranteed (Goldman et al., 1999). Thus, despite traditional markets/stores providing unique value to customers in China, more and more Chinese customers prefer to conduct their shopping in modern stores (Cui and Liu, 2000). Table 1 presents features of these modern retail types in Beijing and their total sales in 2008 based on the China Second National Economic Census (Li & Wang, 2006; Li, 2006; China Second National Economic Census, 2010). Among different types of modern stores, local-based small stores were favoured by older customers due to their convenient location for top-up shopping whereas larger supermarkets are preferred for household shopping. Although there are more convenience stores in Beijing, they more targeted on the younger generation who
have busy lifestyles, prefer store locations close to workplaces or travel points and do not care too much about price. Because most older people in China do not have access to a car, they cannot frequent hypermarkets or club-based wholesale stores who often offer more promotions and cheaper prices, as it is difficult for them to go to these types of stores without a car. Thus, local stores and supermarkets are the most popular modern retail formats for the older customers in China.

Table 1. Modern retail formats in Beijing in 2008

Comparing domestic and foreign supermarkets in China, many young Chinese customers enjoy shopping in foreign supermarkets because they assume they sell products of higher quality in a nicer shopping environment than domestic supermarket stores (Hingley et al, 2009). These image-conscious consumers will pay a premium for products if they can afford them (Siebers, 2012). Also, as domestic supermarkets build the social relationships over time with local communities, older shoppers are attracted and as a result, shoppers in the domestic stores tend to be older than those in the foreign-based retail stores (Hino, 2010; Anand, 2009). This attraction is consolidated by domestic supermarkets that maintain a closeness with traditional and conservative older customers who like to shop daily (Hingley et al, 2009). This is in-line with Smith and Sparks (2000) and Szmigin et al., (2003) who highlighted that socialisation is one of the key functions that shopping can bring to older shoppers in the west. Thus, the exploration of this particular segment’s behaviours, habits and shopping experiences is important in determining key factors that retailers need to work on in order to improve their service provision.

Another important reason to cater to this segment’s needs is the increasing life expectancy and purchasing power of older customers (Reisenwitz and Lyer, 2007; Van Auken et al., 2006). For instance, based on research findings from the International Forum of Chinese Ageing Related Industry 2005, it was confirmed that economic power of Chinese older
customers has reached 400 billion RMB, equivalent to 9.88% of the overall retails sales of consumer goods in China in 2000 (China Consumer Market Report, 2006; Li, 2005). It has been predicted that this number would increase to 5 trillion by 2050 (Qu, 2006). Such incredible increasing economic power makes the extra cost of supermarket service (compared with traditional retail format) more affordable for the older customer. It can be predicted that Chinese older customers are less likely to shop at discount retailers in the future, especially as they preferred a ‘pleasant shopping environment’ (Hare, 2003). It is often argued that retailers cannot possibly hope to fulfil older customer demands in the competitive area of grocery retailing if they do not understand the culture plus customer needs, wants and experiences (Omar et al, 2014; Reed et al., 2000). Due to the lack of research literature on Chinese older customers, it is essential to explore Chinese older customers’ shopping behaviour, experience and their unmet needs, which could support retailers in improving their services for this generation and gain more competitive advantage in the retail market in China.

Supermarket shopping related issues that older customers face

Much of the research into this area has taken place within the western context and investigation within China has been minimal (Liu, 2014). Based on current knowledge, older people’s shopping experience is directly influenced by supermarket design, for instance layout, lighting, product information, shopping facilities, accessibility, location, temperature, service, smell and ambience (Woodliffe, 2007; Hare, et al. 1999; Leighton and Seaman 1997). Despite recognizing the importance of this customer segment, previous research indicated that most retailers fail to provide them with a satisfying shopping experience (Brown et al., 2008; Myers and Lumbers, 2008). In the light of this shortfall, current research by Yin et al (2013) indicate that important shopping related factors can be classified within six categories: trolleys and baskets, store layout and aisles, shelves and freezer, product related issues, customer service and checkout (Table 1). For example, studies by Goodwin and McElwee
(1999) also revealed that short queues, access to discounts, good customer service and easy parking were important factors for them. Meneely et al. (2008) confirmed that access to products, price, and customer service were areas that were perceived to be important among senior shoppers. This project builds on this research and explores pertaining issues in China.

Table 2. Shopping issues from western context based research (updated from Yin et al, 2013)

Methodology
In order to investigate the shopping related difficulties and challenges that older consumers face in China, an ethnographic user study approach that includes video-based direct observation and in-depth interviews were employed. This methodology was chosen, as it would support the researchers in studying people’s behaviour within a natural setting over a relatively long period of time. It also represents a dynamic picture of the lifestyle of the targeted elderly consumer group (Burns, 2000). The key feature of an ethnographic study is its capacity to view a phenomenon through the eyes of the user so as to discover the user’s needs (Hughes et al, 2004). Thus, it is very useful in designing service to satisfy the end-user, the elderly consumer in this case. Furthermore based on its qualitative features, an ethnographic study aims to explore and produce a detailed and meaningful description of a particular social group operates so as to understand their social life, behaviour, experience and culture, rather than to be representative of the population (O’Reilly, 2012). The sample size for ethnographic study is normally smaller and can be varied based on research objectives and practical factors. Many researchers have suggested that often only a relatively small sample is needed for an ethnographic study. This can be between 5 to 30 participants (Bernard, 2002; Brown & McCormack; 2005). In this study although the sample size was small, extensive level research data was collected from each participant, such as video-based direct observations and in-depth interviews which were conducted twice with each of 12
participants within a two-month period. This helped to comprehensively and objectively explore Chinese elderly consumers’ natural shopping behaviour and experience.

1) A video-based direct observation method was chosen because it supports the researchers in discovering and discussing the real, indisputable actions of the elderly consumer’s shopping behaviour as they occur (Berg & Lune, 2012). It helps the researchers to capture and fix ‘reality’ contextually. In addition, video data allows researchers to have insights of consistency between self-assessment and observable behaviour and also helps to reduce bias by checking the validity of other data collection methods (Asan and Montague 2014; Denzin and Lincoln, 2011).

2) An in-depth interview approach was also chosen because it offers a great opportunity for the researcher to understand individuals more deeply and to open up new dimensions of the problem and secure vivid, rich information that is based on personal experiences (Easterby-Smith et al 2002; Herne 1995). It supported the researchers in understanding older customer’s emotional feeling, satisfaction and their thought processes during their shopping process. During the interview process, the shopping video was used as a supportive reminder for the participants in recalling their shopping experience when it was necessary. Combining direct observations and in-depth interviews allowed the researchers to not only capture older shoppers’ natural shopping behaviours but also understand the reasons behind their behaviour. In contrast, compared with other methods such as questionnaires or interviews that largely rely on a participant’s memory recall to describe their behaviour, this methodology captures the actual reality and essence of behaviour, without recourse to memory, which can lapse from time to time (Fournier 1998).

**Store sampling**
The ethnographic user studies were conducted in Beijing, China. Beijing was selected because it has a comparatively high proportion of people aged 60 and over in China (National Bureau of Statistics of China, 2011). As older Chinese customers used to do their shopping with domestic stores due to price advantages and better socialisation with their neighbours, exploration of older Chinese customers’ shopping experience with domestic stores helps to reveal their natural shopping behaviour and habits. Thus, research collaboration invitation letters were sent to ten major domestic supermarkets in Beijing such as Wumart, Merry Mart, Chaoshifa, Lotus Market, Beijing Hualian Hypermarket and Huarun. Finally, two supermarkets agreed to participate in this project and provided access for the researchers to conduct video-based observation at one of their stores. Supermarket A is a large supermarket located at the centre of a shopping zone in north Beijing. It has three floors of shopping space and variety of product ranges include grocery, electrical goods, health & beauty, home, clothing, beauty, child & toys and so on. Supermarket B is a local based store and located at a residential area in north Beijing. It is a medium sized store with limited product ranges including grocery, and with few products in beauty and home. Both supermarkets were easily accessible from main roads by public transport services. Supermarket A also provides a shuttle bus service for their local customers. Based on previous discussion in the ‘Retail Environment in China’ in the literature review session, these two sampling stores could representative of the two most popular supermarket formats that cater to the older customers in Beijing.

Participant Sampling

Based on the supermarket A and B locations, senior citizens above 60 years of age and able to undertake their own shopping at least once fortnightly were invited as participants from north Beijing, China. This ensured that they were mentally and physically capable of completing the experiment. Older customers were recruited via the two supermarket stores,
local community centres and ageing groups. Once the participants agreed to join the project, an information pack that contained an information sheet of the user study and consent form were sent to them before the observation. The researchers also made phone calls or visited participants to explain the user study process and answer their questions before the user study started. A total of 12 participants took part during the two-month period and their participation was voluntary. Although the researchers tried hard to have balanced gender subjects during participant recruitment, the 12 participants comprised 9 women and 3 men due to the fact that older women normally spend more time in social activities and men were less likely to be as socially engaged (Ejechi, 2015). More women are the primary grocery shoppers in their households and for making grocery lists, with men being relatively less interested in shopping related activities (Omar et al, 2014; Bassett et al, 2008). It was thus difficult for the researchers to get a good gender balance. Participant information has been attached as Appendix I.

During the two-month user study period the researchers visited the participants twice for shopping observations and in-depth interviews. The participants were asked to conduct their shopping normally at our selected stores and they were observed from a distance. A video recorder was used at both supermarkets for data collection. Immediately after shopping observations, the participants were interviewed, eliciting their feelings and satisfaction levels. The interviews were conducted at a quiet and safe space such as the participant’s house, store office or a quiet coffee area. The interview was based on the participant’s shopping journey and experiences within the supermarket, without any set sequence of discussion. All conversations were based on the participant’s shopping experience. The observations took between 30 minutes to 1.5 hours and the interviews were between 30 minutes to 1 hour. In some instances, a participant only visited one supermarket store once. Overall, the results
from the data collection were based on 20 store visits, 11 with Supermarket A and 9 with Supermarket B.

**Data analysis**

Content analysis was selected as an analytical method for this project because it emphasises natural and empirical content rather than interpretative arguments. It has been seen as one of the most objective methods for the study of consumer behaviour and culture (Seale, 2004). The principal strength of this approach lies in the clear and systematic study of qualitative content as a basis for analysis and interpretation. This methodology helps to bring out some of the more subtle nuances of the elderly consumers’ shopping behaviour that cannot be captured easily such as personal values and physical discomforts.

The process of data analysis has been illustrated in Figure 1. According to Blaxter et al. (2001), the process of analysing data involves reducing the size and scope of information, translating this into a more useful form for the study. This was achieved through coding where the data was simplified, standardised and reduced into groups. Selection was then used to identify significant clusters to illustrate key points emerging from the research (Miles and Huberman, 1994).

**Figure 1. Data analysis framework**

This data analysis was conducted manually due to the relatively small sample size. Based on information that was collected from each of the participants, key descriptions from the content analysis were compiled into a persona matrix based on six categories (Table 2). And then, key patterns from the analysis were grouped into a table in order to identify common themes. It involved clarifying the findings with the participants; bringing words with the same meaning together; merging broader terms into identical concepts; and putting topics that are frequently mentioned into clusters (Spencer, 2010). The process was repeated for all the participants until no new themes could be identified (Mason, 1996; Dey, 1993).
• As the first step of data analysis process, each participant’s research raw data was collected together and moved into one folder entitled with the participant’s unique project ID number in the researcher’s computer.

• Secondly, for the observation video data, during the researchers’ review process, screenshot images from the videos that reflected difficulties that older people face during the shopping trip were taken and saved with a brief description in a word document in Chinese for clustering. The clustering process included combining and linking similar issue patterns together, group patterns based on their nature and given new names to clusters. After that, the explored clusters and patterns were moved into the personal matrix table for analysis.

• Thirdly, after the participant’s audio data from the in-depth interviews was transcribed into text-based data in Chinese, the compiling, coding and clustering process is similar as the video data. It was 1) the transcribed conversations were reviewed by the researcher to explore meaningful patterns, 2) identified patterns were moved into a word document for clustering, 3) patterns clustering and 4) results were moved into the personal matrix table.

• Fourthly, filed notes of observation and interview for each participant were reviewed as the last step of participant based analysis and contributed to the personal matrix table.

• Fifthly, information from all participants’ personal matrix table was moved into an excel sheet for cross-participant analysis in order to review all identified shopping issues together, combining similar issues/patterns/clusters and to examine frequency of the issues that had been reported from the participants. This process of tabulation quantifies the findings so that patterns can be identified (Silverman, 2006). Based on the data analysis, several new themes have been explored such as issues of in store
air-circulation, safety issue due to the fact that the baskets were located too close to the end of the escalator step off points and there were problems with storage lockers. The most signification findings are discussed in the next section.

- Finally, results from the data analysis were summarised and then translated from Chinese to English.

As all the raw data was collected in Chinese language that is the researchers mother language, the raw data compiling, coding, clustering and results were carried out in Chinese due to the limited project time and budget that did not allow the researchers to translate all Chinese based raw data into English. Only the results from the data analysis were translated into English at the end of the data analysis. In order to avoid inaccuracies in the translation process, three researchers who are good at Chinese and English translation reviewed the translated data analysis results together.

**Table 3. Ethnographic user study personal matrix**

**Key findings**

The key findings about shopping experiences are detailed below under different headings, with a better understanding of customer difficulties.

**Trolleys and baskets**

The utilisation of shopping trolleys and baskets is an important aspect of shopping as people lift them, push them, fill them and manoeuvre them when shopping. With this in mind, 15 shopping trolley and basket related issues have been explored (APPENDIX II). In the two sample stores, Supermarket A provides deep trolleys, wheelie trolleys and shopping baskets. Supermarket B only provides shopping baskets to customers due to space limitations. Several participants complained that stores should pay more attention to maintenance of trolleys and baskets. For instance, one participant explained that ‘trolleys and baskets look
not clean... I normally use my own basket for shopping...’; another one mentioned that ‘...I don’t know if shopping baskets have been disinfected regularly, as the basket looks dirty...’.

Some other participants have reported that deep trolleys and wheelie trolleys were difficult to control. One participants said ‘... It can go anywhere but just not straight forward, especially when the wheels were not aligning with each other. Supermarket do need to allocate staff to check if trolleys are in good working condition.’ Another one said ‘you would have a very bad day when you shopping with a wrong trolley. When I pushed the trolley around the store, one of the wheels was stuck for some reason, so I could not move the trolley by either push or pull it. I had to ask staff to help me with it finally. This was very irritating...’.

Other feedback from Chinese older customers focused on size of trolleys and baskets. ‘The deep trolley is too big for me and the basket is too small. There is no a right sized trolley or basket for my shopping. So, I have to take two wheelie trolleys with me and that obviously is also difficult for me to control them and shop around the store...’. Customers normally select a trolley or basket based on their shopping plan. For Chinese older customers, most prefer to use a wheelie trolley or small sized trolley if that is available.

Many participants also highlighted issues of availability of trolleys. One of the participants highlighted that ‘There were not enough trolleys. This was really difficult for us. My wife is 70 years old. She brought two packs of 10kg flour but there was no trolley available for her so she had to use a wheelie basket. However, you were not allowed to take the wheelie basket beyond the checkout point. You can do that with a trolley. You know there is a long walk between the checkout and the entrance. Thus, a supermarket without enough trolleys is really a problem for us.’ Entrance layout design for a large store in China is quite different from supermarkets in the UK. Most of the big supermarkets in China use the ground floor as a mixed shopping zone, which includes fashion, food or other goods. Customers need to pass this mixed shopping zone to get on an escalator towards the entrance of grocery shopping
area on the first floor. Thus, without a shopping trolley, it was quite difficult for customers to carry all shopping items from the checkout point to the entrance, especially for older customers, disabled customers and customers with children. As a result, this has limited the amount of items for customers to purchase in a single shopping trip. Other participants explained that ‘... I might give up my shopping plan if no trolley is available for me...’. One participant indicated a possible reason of this issue ‘I have reported the lack of trolley issue to the supermarket staff. They told me that it was because many trolleys have been used by staff for internal purposes such as for loading or temporary storage for products.’ It is interesting that the availability of trolleys affects the numbers that are available, but also the fact that staff use them to do their work.

Another key issue has been found in store A is that shopping baskets were located next to the escalator landing area. During rush hour, customers might queue to pick up a shopping basket leading to congestion in the escalator landing area, with potential for accidents. At Supermarket B, many participants highlighted that it was tiring to carry a shopping basket around the store during shopping. Almost all participants highlighted that they wish to have trolleys in Supermarket B. However, some participants were also concerned about the space limitation of supermarket B, preventing the use of trolleys. Thus, a smaller sized trolley would be a good choice for small stores and supermarkets do need to consider their store size when selecting or designing a new trolley. Participants also complain about baskets getting caught in the hooks, making it difficult to pick them up at the entrance.

Store layout and aisles

Regarding store layout and aisles issues, 14 issues have been explored (APPENDIX II). Participants emphasized that passageways are narrow, product packs on the floor obstructed the aisles and the product display positions keep changing, disorienting them.

For example, one respondent highlighted that “Some passageways are narrow in the Store A.
It was difficult for two customers with baskets to go through the passageway together.’ In the smaller store B, one participant comments that ‘the aisles are narrow. I have to turn myself sideways to get through the aisles when there is another customer in the same aisle. I think the store wants to display more product so they have to narrow the passageway.’

One participant highlighted that ‘...after staff have loaded items on shelves at the Store A, some big sized package boxes have been left on the passageway which stopped my access to the items that I wanted. It looks like the staff has forgot these boxed and started working on other tasks.’ For store B, due to the space issue, many big product boxes have been put on floor and next to the shelf or freezer. This is prepared for immediate loading when stock is low on shelves or freezers. However, these ‘well-prepared’ boxes cause several difficulties for customers’ access to products. For instance, one participant commented that ‘A big box of milk was located beside the freezer, so I could not get close enough to read price information and to get the products that I want to buy from the freezer.’

‘You can find this item at this shelf in this time, but it might be put on another shelf in another aisle when you come to the store tomorrow. The product merchandising and display is always different, especially in vegetable area...’ one participant mentioned after visiting Store A. Another participant said that ‘... it is very difficult to find items that I want as the products are always displayed in different places....’. Some customers believe that stores keep changing product displays in order to encourage customers to spend more time in the store and go through more passageways for more potential sales. From the observation, the researchers found that most of the participants would go to a particular shelf for an item based on their memory of item location from their previous shopping experience. When the participants could not find the item as it has been moved to another shelf, we can see participants’ facial expressions suggesting confusion (It should be here?), disappointment (I have to have another search for this item.) and unhappiness (why do they keep changing
this?). To have another go to find an item might not be an issue for younger customers, but older customers can get tired easily, may have poorer eyesight and may have reduced cognitive skills, making a difficult shopping situation even tougher. Participants were also unhappy with category definition and messy shelves.

Another participant commented that “the signs were not very clear and I must have missed (seeing) a lot of things”. Research results also show that signage problem is not only an issues for large stores but also for small sized supermarkets. Some of the issues have significant correlation with the size of stores. For example, comments of “Store is small” were all collected from Supermarket B, that is the smaller sized store in this study. And comments of “store is too big” and “passageway is too long” were all linked with the shopping experience in the relatively large Supermarket A.

**Shelves and freezers**

In terms of shopping issues with shelves and freezers, 12 issues have been explored (APPENDIX II). Many of the participants highlighted issues regarding accessibility to items on shelf and freezer. Feedback focuses on items placed too high, too low and too deep on the shelf and difficulties reaching items from the bottom of the freezer when stocks are low, as well as over-stocking making it hard to find or remove items from the shelf and bigger sized products getting stuck between shelves (Fig. 2&3). For example, one participant mentioned that ‘…if the item has been positioned on a lower level shelf, then I will have an issue because I have a bit of a knee problem when I bend. Another participant highlighted that ‘...the higher shelf is too high and the lower shelf is too low for older customers...’’. This result is in line with previous research about the poor access to products.

![Figure 2. High shelf](image)

![Figure 3. Low shelf](image)

Although customers complain that it is difficult for them to pick up items from the back of the shelves when stocks are low, some of them also indicated that they prefer to pick up an
item that is located relatively closer to the back of the shelf as they believe items on the back normally last longer then those have been put near the edge. ‘... I think supermarket always put items that closer to the ‘Best before date’ in the easy reaching zone and items that last longer are always on the back of the shelf. For big families, is should be ok for them as they can consume it before the expiry date. But, I live with my husband, so I need to find the one from the back that lasts longer...’ . This reflects the fact that the package size is important to the older customer as he/she tends to consume less and probably does not have a family to look after. There are also complaints about mixed foodstuffs in the freezer or on shelves, making it difficult to find particular items. For instance, one participant explained that ‘...sausage products are always mixed together and it takes time to find the one I want ...’ (Fig. 4). Figure 4. Mess product display in freezer

Some other participants commented on the consistency of price labelling. At store B, frozen products’ prices were list on a piece of paper on a wall near the freezer (Fig. 5). Prices were hand written and it was difficult to read due to font size and the layout of the prices. Some participants highlighted ‘... it is impossible for me to read the price list and find the correct price for the product that I want buy...’

Figure 5. Price labels for frozen foods

Store A has a different format for frozen product price labelling. The price labels are printed and located on the far edge of the chest freezer. This design may work with younger customers but for older ones with failing eyesight it creates difficulties. One participant said ‘...price labels for the frozen products were displayed on the far edge of the freezer. It is difficult for me to read even with my reading glasses. I have to bend down and position myself to get as closer to the freezer edge as I can for price information...’ (Fig. 6). Participants also mentioned that a price label placed on the lower shelf is difficult to read as it faces towards the floor.
Figure 6. It was difficult for participant to read information of frozen food

When products are positioned on the higher shelf, it is difficult for customers to read information on product packaging by standing in front of the shelf. Based on the observations, we have seen that one participant has to picked an item from the high shelf first, then hold it with one hand (as the other hand was used to hold the wheelie basket) to get close enough to read the product information. This could be dangerous in case the trolley moved and they fell. Price labels and products often do not correspond with locations being variable. This can create confusion. For instance one customer pointed out, ‘...I selected the best value product based on price labels below it which shows 3yuan, but they charged me 5yuan at the checkout. The staff explained to me that I referred to a wrong price label. This is very irritating...’

Other shelf and freezer related challenges have been summarised in table 5. These reflect usability issues of store facilities, the design and maintenance of price labelling systems.

**Product and promotion related**

From a product and promotion related shopping issue perspective, 10 issues have been explored (APPENDIX II). These issues focus on product packaging design and promotion information display. For instance, many participants felt that it was difficult to read product information on packaging because the size of the font was too small. It was found that the ‘best before date’ information is considered to be important by most of the older customers and the information of ingredients was very important to those with a special diet. “I look at the ingredients – what goes inside. I have to look out for wheat as I can only take gluten-free food... and the expiry dates are sometimes too small”. Another participant indicated that ‘...it is difficult to find the ‘best before date’ from product packaging. Some of them are printed on the bottom, some on the top and even some of them are printed as the same colour as the
package background colour that made it very difficult to read. The font size of this is also very small...

It has been observed that some packaging design for products in the same range looked very similar on shelves and it was difficult for the participants to find the particular item that they wanted, especially for herbs, spicy sauce and soya sauce. One participant emphasised that “...spicy sauce products from different brands have similar packages. When my wife asked me to buy a specific spicy sauce, it takes me a long time for me find it...”. This could be improved by a better merchandise design or non-identical packaging design. In the Chinese market, food suppliers often copy the packaging, colour and writing style of the main successful brand within a particular category (Fig. 2). This can confuse customers who can end up purchasing the wrong brand. The customers also complain that some of the packaging is not designed for convenience. For example, a dozen eggs have to be held carefully with support as the packaging is not strong enough to carry around. There is a big difference between transporting items such as eggs in bulk and then expecting the same packaging to meet customer needs. Thus, food packaging design should not only consider how the item can be transferred to the store but also if it is good enough for customers to take it home from the store.

Other product related issues:

- No labeling- some products do not have price labels necessitating a trip to the checkout point or customer service desk for price information;
- Product range -some participants felt that the store does not offer an adequate product range for customers;
- Stocks management- some people suggested that the store should let customers know which product is out of stock either near the entrance or near the product zone, so
customers would not waste their time to find it around the store. This is especially for
the store that keeps changing its product display;

- Poor quality vegetables—customers mentioned that some vegetables are not in good
  enough condition to sell. For example, some courgettes have turned bad but they still
  had been put together with other good courgettes. The staff should check the quality
  of vegetables at regular intervals, removing ones that have gone bad.

Regarding product promotion, several participants have indicated that it is very difficult to
work out what is the best value when items are on promotion. People also mentioned that the
store is very crowded during promotion events. ‘... It is very crowded during the promotion
period, especially when the store just opens...’.

**Customer service**

With regards to customer service problems, 11 issues have been explored (APPENDIX II).
Some customers think staff are friendly and better then before, but some others think that the
staff are indifferent. For example, one participant mentioned that ‘...she was nice and tried
to help me, however, after 10 minutes of searching she still could not find the light bulb that I
wanted. So, she gave up and asked me to find another supermarket employee for help...’.
But another one indicated ‘... I normally do not ask help from store staff as I could not find them
when I need help...I tried once, I asked a staff for the location of some sauce. But, he told me
he did not know about it and his working time had finished. The underlining message of his
response to me was that he had finished his time shift and I should not ask him for help...’.
Customers mentioned that some staff do not fully understand the store layout and where
products have been allocated, so they are not knowledgeable enough to support customers
effectively. ‘... I wanted to buy some crisps today. It is on the sales poster with price of 4.9
yuan. As I could not find any, I asked one of the staff about the location of the crisps and
whether they had been sold out. The staff member told me that he did not know where the
product was and ask me to find it by following the promotion poster. I explained that I had already done this and was unable to find the product. He then replied that it was not the store’s business to support me and he could not help. That staff member was hopeless ... I came here today mainly for the crisps highlighted on the supermarket promotion poster, but...I think this is one way of cheating... ’ the participant was very upset, not only because the staff member could not provide the information he needed, but also because he was rude.

Escalators are another area of concern for several reasons:

- The wheelie basket is not steady on the escalator,
- The escalator landing area should provide a handrail,
- The escalator does not have voice prompt when nearing the landing area,
- It is difficult to use escalator for customers with children,
- There should be a staff member to pull the trolley at the escalator landing area. For example, one participant highlighted that ‘...the wheelie basket’s wheels cannot be locked on the escalator as like the trolley, it is still movable on the escalator. So I have to hold the handle very tight so it will not slide downwards...’ (Fig. 7). Even with the shopping trolley, the researcher observed that one participant used one hand to hold the trolley and the other hand to hold the handle of the escalator. It might be because of the speed of the escalator was quick so she had to control her balance by holding the escalator handle. Other participants also expressed that they preferred to hold the escalator handle as they felt that the escalator was not running very smoothly and steadily (Fig. 8).

Figure 7. Wheelie basket on escalator
Figure 8. Shopping trolley on escalator

Regarding other services, the participants commented on the shuttle bus service and food processing service. For instance, one participant indicated that ‘... in order to pick up more customers, the shuttle bus service may take 40 minutes from my home area to the store. It
would be better if the store can open two or three shuttle lines to reduce the overall time on the bus. This would shorten my shopping journey time dramatically...’. Other customer mentioned that ‘...I want to make dumplings for dinner so I need some pork mince. I bought one slide of pork and asked the staff to process it into mince. Normally, when you ask the staff they will do it for you. May be the pork was on sale that day, so the staff refused my request. Finally, I have to chop it by myself when I arrived home...’. Some other participants also felt that more types of service should be provided such as a child centre or crèche service.

Checkout

In terms of checkout, 8 issues have been explored (APPENDIX II). Almost all the participants complained about long queues at the checkout point. One participant indicated that ‘...sometimes the queue is very long. The store opens a few checkout counters. I am not sure if they are short of staff. They should balance the number of checkout staff during rush hours such as evening and weekends...’.

Some other participants said that it was difficult to unload shopping items from the basket or trolley onto the checkout belt and they preferred checkout staff to help with packing. One highlighted ‘... at checkout, it is a big task for me to take every item from my basket and put them on the checkout belt...the basket with shopping items is too heavy for me to lift it up from floor level to the checkout belt, so I have to bend down and take the items one by one...’.

Other participants said that ‘... checkout staff scanned products very quickly, but, you know, as an older person, it take times for me to put items into my bag. It would be great if the staff can help me for packing so I would not feel nervous and pressured that I am too slow in packing...’.

Some respondents indicated that they preferred offers of free plastic bags at the store. Another respondent highlighted an issue with the payment machine. He said “the payment
machine was broken so I had to move from one checkout account to another. Also the buttons on payment machine are too stiff and small, and I sometimes enter the pin number wrongly”.

Additional feedback

When asked for additional feedback, 9 issues have been explored (APPENDIX II). Many participants highlighted the need to have more seats for older people after the checkout point. ‘...after shopping, I need to find a place to have a rest before I can move to home. I also want to check my receipt to see if I have been over-charged. But, the store does not provide a seating area for older customers...’ one participant mentioned.

One participant commented that the store should provide a disabled toilet and baby changing room. She said ‘...sometimes older customers might use wheelchair for shopping, but no disabled toilet is available at this store, the same issue exists for changing babies. Occasionally, I have to take my grandchildren with me for shopping as no other adult is free to look after them. In that case, the baby changing room is an essential factor and helps me to decide which store I can go to...’.

Discussions

Trolley and baskets

Older customers’ shopping experience with supermarket trolleys and baskets has been discussed extensively within the western context. For instance, trolleys can be difficult to use (Angell et al, 2012; Mason and Bearden, 1979) but carrying baskets has been found to cause most difficulty when shopping (Leighton and Seaman. 1997). Older customers therefore prefer smaller baskets and trolleys (Hare et al, 1999) and experience difficulty in manoeuvring trolleys (Freidrich, 2001). The availability and operability issues of baskets and trolleys were also reported. For example, Pettigrew et al (2005) have suggested that supermarkets should prioritise the maintenance of equipment provided for the shopping task such as trolleys and baskets. However many of these points have not been reported in more
recent studies. The assumption is that these concerns have now been fixed (Yin et al, 2013, Meneely et al 2009a).

The newly identified trolley points relating to trolley proximity to escalators and the lack of disinfection of baskets reflects the weakness of facilities management in domestic supermarkets in China. Yu and Chen (2005) highlighted that due to the competitive retail market in China, domestic retailers were more focused on a low price strategy and less on improvement of the quality of store management and customer service. Compared to international retailers, the domestic supermarkets group is still young and under a development stage (Song et al, 2012). Too much emphasis on the low price strategy rather than service quality would damage the retail brand value from a long-term perspective. Yu and Chen (2005) further suggested that domestic retailers should improve their awareness of the importance of store management and customer service, and provide more staff training, customer feedback and complaints channels to improve service quality.

*Store layout and aisles*

Many researchers have highlighted the importance of store layout design to older customers’ shopping experience such as Angell et al, (2012); Kohijoki, (2011); Pettigrew et al, (2005). For example, Hare et al (1999) recommended store layout design has great impact on customers’ behaviour. This was confirmed with a more recent study from Angell et al (2012) that pointed out that the logic of the layout and the ease of movement should be considered when designing or redesigning a store environment. Issues such as aisle width, poor signage, unclear labels, changing product display and poor lighting have been discussed before. For instance, Hare et al (1999) indicated that wider aisles are important to older customers. Older customer often require appropriate lighting, especially those with eyesight concerns (Angell et al 2012; Mason and Bearden, 1979; Wallis, 1994). Petermans and Van Cleempoel (2009)
highlighted that problems of finding items in store is an issue for older customers due to changing product displays and poor signage.

Compared to previous research other new issues have been observed in this study. As domestic supermarkets in China have varied layout designs as a result of lax regulations, some stores separate fresh food and non-perishable food by using different floors. Thus, Chinese older customers indicated that it would be better if all food related products could be allocated together on the ground floor so they did not need to go the first floor. Participants also complained about unclear product category notations that created a problem in locating the items they needed. Participants also pointed out messy displays, especially for smaller sized stores that were normally short of staff. Slippery floors in the vegetable area were also a problem. Chinese older customers’ diet habits lead them to buy more vegetables compared to meat or fish. They normally purchase vegetables on a daily basis to have them as fresh as possible. Messy displays of vegetables open or without plastic bags, washed and ready to eat but with wet floors, all contribute to a poor consumer experience and points to a lack of policy on display standards, hygiene and packaging in China.

*Shelf and freezer*

For example, older shoppers who are unable to reach for products considered high shelves as their main barrier towards a good shopping experience (Underhill, 2000; Hare et al, 1999). Pettigrew et al. (2005) also found that reaching for products from higher shelves or deep freezers was more difficult for older female customers as they tend to be shorter than younger adults and people sometimes lose their height as they age. Reading information from labels has been highlighted as a key problem with older customers due to small font sizes (Omar et al, 2014; Lumbers & Raats, 2006). Not all older customers are confident enough to ask for help from other customers or staff, especially for those with medical conditions (Welsh Consumer Council, 2006).
These issues reflect Chinese older customers’ declining body flexibility and eyesight. The current older generation in China experiences relatively poor health than older people in developed countries because they have experienced extraordinary levels of under-nutrition on a broad scale due to natural disasters and devastating wars in the 20th Century (Zeng, Gu, & Land, 2007). Researchers have commented that early-life conditions and the prevalence of hunger and stunting has clear negative consequences for people’s health in later life (Zhang et al, 2010). In addition, caring for older people has been traditionally viewed as a family’s responsibility in China so government funded public care services for older people are underdeveloped, such as nursing homes (Wu et al., 2009; Wan et al., 2008). As we discussed in the literature review, due to the changes in family structure and domestic immigration, more and more older people live alone or with a spouse and without family support nearby. The lack of public care services might also be a reason for the Chinese older people’s poor health. People’s health condition has great impact on their behaviour and daily activities. Thus, older Chinese customers’ health condition and its impact on people’s behaviours need to be considered by retailers and designers when designing or improving the current supermarket environment and service. It is proposed that the access to products could be enhanced if existing shelves are redesigned to accommodate the anthropometric limits of some senior shoppers, as well as determining the positioning of certain products. For example, identical products could be displayed in a vertical arrangement, rather than occupying the entire shelf. Font size should be increased on labels and product packages so it is easy to read by older people. Meanwhile, magnify glasses could be provided by the store to improve this issue.

Unique issues from the Chinese market include: 1) big product sizes are easily stuck between shelves due to overloading; 2) labels and items do not correspond on the shelf; 3) price labels for frozen products have been displayed on the far end edge of freezers. It was difficult for
older customers to read due to the distance and size of the labels. These issues require the store to improve retail management and service.

*Product and promotion*

From a product and promotion perspective, Chinese older customers complain about product range, product packaging and promotion information. Issues such as poor product range, poor quality of promotional packing and unclear promotional information have been discussed in previous literature. For example, Angell et al (2012) mentioned availability of various types of promotions as a key factor that influences older customers shopping behaviour. They may give up purchase of their preferred item when there was not a good deal for them. Meneely et al (2009) highlighted that older customers felt disadvantaged with multi-purchase promotions, as most older customers were either single or couples. For many, in China, it was very difficult to read promotional information on the lower shelves with the store very crowded during the promotion period, especially in the morning. Chinese older customers prefer to go to the supermarket in the early morning for fresh vegetables, meat, eggs and availability of promoted products. Customers received sales information through different channels such as sales leaflets/newsletters, sales posters in store and sales information was also available with local age groups. As availability of the promoted items normally could not satisfy all customer demands, they were normally sold on a first come-first served basis. This created queues and crowding.

Most of the participants highlighted difficulties in reading information on packages owing to font size and use of the same print colour as background colour. Problems with product information have been noted in previous research where elderly customers with visual impairments had issues reading labels, highlighting the need for larger text with contrasting colours as discussed in the literature review (Kohijoki, 2011). It would be sensible if all products could follow a standard format to position key information on product packages.
The use of similar colour text and background is a new concern as is the similarity of package design with different copycat brands. In addition, many researcher have highlighted that portion size and quantities offered by food retailers are often considered unsuitable for older consumers who live on their own. (Welsh Consumer Council, 2006; Lumbers and Raats, 2006). As there are more and more single or just old couple households in China due to family structure change and social changes, retailers in China need to take older consumers’ needs into consideration when they design portion size issues for their products, especially for fresh foods.

Customer service

Issues related to customer service focused on poor customer service, issues with the escalator and other service that should be provided. Some Chinese customers were not satisfied with the quality of service and availability of staff as well as with their indifference and lack of knowledge. However, some other participants did express that staff were friendly and helpful. This reflects the inconsistency of customer service in the domestic supermarket in China. This also shows the need for trained staff that can guide customers. This result is in the same vein as Petermans and Van Cleempoel, (2009); Mitchell and Harris, (2005); Pettigrew et al, (2005); Moschis et al, (2004) that indicated the controversial feedback on the quality of customer service in western supermarkets. Meneely et al. (2008) indicated that supermarkets neither train their staff to support older shoppers nor provide services that will meet ageing customers' requirements. However, Carrigan et al (2004) highlighted that older consumers “adopt new ideas, concepts and products” (Carrigan et al., 2004, p. 403).

The usage of escalators is a new concern for elderly shoppers, especially when they shop with children. They suggested that the escalator should have a voice prompt near the landing area,
handrails on landing and a staff member to pull the trolley at the landing area. Thus, supermarkets need to consider older people’s needs when they design escalators. Other services that are required by older customers include food processing, disabled toilets and baby changing rooms. These service are often used in the western retail market, so they have not been discussed before. Domestic retailers in China need to encompass international level services in the stores. There was also a need to provide better shuttle services.

Checkout

In term of checkout, feedback from participants focuses on long queues, need for a packing service, narrow checkout space and payment means. For instance, Goodwin and McElwee (1999) found that the waiting times at checkouts were linked to the level of satisfaction among customers and long queues contributed towards their dissatisfaction. Hare et al (1999) indicated older customers’ needing help at checkouts. Yin et al (2013) commented on difficulties in using card payment machines owing to the small sized keyboard for the pin number. However, in China, people complained that some stores only accept cash and one type of shopping card for payment and not bank or credit cards. The payment machines also needed better maintenance. For the checkout area, people suggested that it would be better to have a bigger space for packing and have staff to help with packing.

Recommendations

Based on the research findings, recommendations have been developed for supermarket service design to improve the elderly consumers’ shopping experience. Some of the recommendations focus on design perspectives such as trolley design, which should consider elderly consumers’ physical abilities and limitations; the rest of recommendations focus on the supermarket management aspect, for instance, trolleys and baskets need better maintenance. Retail management could follow these recommendations to improve their service for elderly consumers in the China market.
Recommendations from a supermarket design perspective:

- Elderly consumers’ physical abilities and limitations must be considered when designing trolleys and baskets.
- Store features should be considered when designing trolleys and baskets, such as size, location and parking space.
- Passageways should be wider.
- The signage needs to be improved.
- Larger gaps need to be provided in the middle of long passageways.
- The self-service locker system need better design.
- Escalator design needs improvement such as adding voice prompt when near landing area, adding handrail in landing area and also updating the design as to allow elderly consumer to pull or push trolley towards landing area without extra support.
- Shelves and freezer design should take elderly consumers’ human factor features into consideration.
- Labels on shelves should always correspond with the product display.
- Labels on shelves and freezers should be easy to read.
- Information on product packaging should be easy to read by elderly consumers.
- The checkout area may provide rest area for older people who are queuing.
- The checkout counter should provide enough space for packing.

Recommendations from a supermarket management perspective:

- Maintenance regulation of trolleys and baskets is important.
- The store floor should be kept clear to prevent tripping accidents and obstruction.
- Product display should follow certain rules consistently.
- The floor should be well maintained.
• Products should not be overloaded on shelves, especially big sized items
• Crates should not be overhanging
• Access to product on shelves or freezers should not be blocked
• Product should be positioned in an appropriate place based on its features and requirement of storage
• Sufficient number of customer service assistants should be around to serve customers
• Customer service staff should be well trained with good knowledge of store layout
• Customer service staff should be aware of special requirements from the elderly consumers
• The shuttle service timing should consider elderly consumers’ needs
• The checkout system should be more efficient to avoid long queues
• Checkout staff should help elderly consumers in packing
• Payment machines need better maintenance
• Stores should provide more seats for elderly consumers
• The in-store air circulation system needs to be better and well controlled
• Facilities such as children’s playgrounds, toilets, disabled toilets together with baby changing rooms need to be provided
• The lighting systems need to be better with brighter clear lights
• On food counters, such as meat and fish counters, more service staff are needed to process requests

According to the research findings and recommendations, potential solutions for improving elderly consumers’ shopping experience are proposed. For example, in order to improve the usability of trolleys, the size and height of trolley could be designed as an adjustable feature, a basket could be designed as an extra module on the trolley frame and the barcode scanner
would be added on the trolley to support express checkout. For improving legibility issues with shelves and the freezer, a magnifying glass could be designed as a part of the shelf to support reading labels and product packages. In addition, colour coding, voice support and adjustable shelf design would help to improve interactions between elderly consumers, items and shelves. In terms of store layout and aisles design, this could be improved by adding a seating area in the store, placing elderly consumer preferred products within easy reach on shelves and offering disabled toilet and baby changing rooms within the store layout. For improving the checkout experience, seats need to be provided at the checkout. With a seating area available, elderly customer would be able to have a rest and also use the queuing time for socialisation. Findings from this study can also help policy makers in China to have a better understanding of older people’s lifestyle and their needs. This will help to support the government in developing strategies to create better policies for improving the older people’s quality of life in China.

Research Limitations

The findings of this research should be considered in the light of its limitations. This preliminary study comprised a small sample of 12 participants with every effort made to obtain an equal number of elderly males and females, however, female participants still outnumbered males. It is important that a larger and gender balanced sample is considered, as there are likely to be differences between different socio-economic groups in the same age band. Also, this study was limited to 2 supermarkets in Beijing, China. Despite several attempts to invite other retailers to participate, they declined to take part. In addition, interpreting what was recorded during the observations is vital, as verbal interaction may not contain all interactions because some people tend to suffer memory lapses (Holt, 1998). Rauterberg (2010) highlighted that because written or verbal records of the experiences could be subjective, there is a possibility for the researchers to miss out important events that
occurred during the study. This can be resolved by undertaking a long-term study with a large sample size. In line with Moisander and Valtonen (2006), the reliability of the observations was achieved by describing the activities as accurately as possible and preventing the researchers’ personal perspectives from influencing the reports. To improve the reliability of the observations, face-to-face semi-structured interviews were employed to confirm the results and to elicit additional information. The combined use of both methods provided a more comprehensive and objective representation of the study that has greater rigour and richness (Denzin and Lincoln, 2000). Leading questions for the interviews were avoided. In addition, every effort was made to ensure that the data collection was consistent throughout the survey by using the same documents and procedures. Lastly, to reduce influencing the participants who may perform differently when they are observed, the researchers followed them from a distance.

**Conclusions**

The world is ageing. Demographic factors have been regarded as key elements that determine people’s shopping behaviour (Shepherd, 1999). Ageing can influence consumer needs and abilities. At the same time many older shoppers are likely to be ‘empty nesters’, lowering their consumption needs. Although, some of the changes are beyond the control of the individual, they will impact on consumer behaviour in purchasing, preparation and consumption of foods (Meneely et al., 2009; Thompson et al., 2011). There has been limited research into older customers’ shopping experience in China, indicating the need for further research (Brennan & Ritch, 2010; Welsh Consumer Council, 2006).

The results from this study have several significant implications. As the first ethnographic investigation that has explored the key difficulties that senior shoppers face based in China market, it has identified retail problems that could have a significant impact on the elderly shoppers consumer behaviour. The recommendations, provided based on research evidence
will allow retailers to cater towards a more customer-centred retail experience. The research also opens the door for further investigation into packaging design, access, trolley and basket design and signage. It also points towards facilities management and store design, which both have implications for supermarket management. The use of ethnographic methodology has provided a more accurate, comprehensive and objective study of elderly shoppers in China, significantly raising awareness of this much neglected segment of society.

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References


Rauterberg, M. (2010). Direct observation. www.idemployee.id.tue.nl/g.w.m.rauterberg/lecturenotes/UFTdirectobservation.pdf [Accessed in May 2015]


**APPENDIX I: Participant information and shopping details**

<table>
<thead>
<tr>
<th>No.</th>
<th>Gender</th>
<th>Age Group</th>
<th>Martial Status</th>
<th>Usual Shopping Times</th>
<th>Shops</th>
<th>Frequency of Shopping</th>
<th>Mode of Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Female</td>
<td>60-69</td>
<td>Married</td>
<td>PM</td>
<td>With family</td>
<td>2-6/week</td>
<td>Walk</td>
</tr>
<tr>
<td>2</td>
<td>Female</td>
<td>60-69</td>
<td>Married</td>
<td>Variable</td>
<td>Alone</td>
<td>Weekly</td>
<td>Walk</td>
</tr>
<tr>
<td>3</td>
<td>Male</td>
<td>70-79</td>
<td>Married</td>
<td>PM</td>
<td>With family</td>
<td>2-6/week</td>
<td>Bicycle</td>
</tr>
<tr>
<td>4</td>
<td>Male</td>
<td>60-69</td>
<td>Married</td>
<td>AM</td>
<td>Alone</td>
<td>2-6/week</td>
<td>Bicycle</td>
</tr>
<tr>
<td>5</td>
<td>Female</td>
<td>60-69</td>
<td>Married</td>
<td>AM</td>
<td>With family</td>
<td>Weekly</td>
<td>Walk</td>
</tr>
<tr>
<td>6</td>
<td>Female</td>
<td>70-79</td>
<td>Married</td>
<td>AM</td>
<td>With family</td>
<td>2-6/week</td>
<td>Walk</td>
</tr>
<tr>
<td>7</td>
<td>Male</td>
<td>60-69</td>
<td>Married</td>
<td>Variable</td>
<td>With family</td>
<td>Weekly</td>
<td>Bicycle</td>
</tr>
<tr>
<td>8</td>
<td>Female</td>
<td>60-69</td>
<td>Married</td>
<td>AM</td>
<td>With family</td>
<td>2-6/week</td>
<td>Drive</td>
</tr>
<tr>
<td>9</td>
<td>Female</td>
<td>70-79</td>
<td>Married</td>
<td>Variable</td>
<td>Alone</td>
<td>2-6/week</td>
<td>Walk</td>
</tr>
<tr>
<td>10</td>
<td>Female</td>
<td>70-79</td>
<td>Widowed</td>
<td>AM</td>
<td>Alone</td>
<td>2-6/week</td>
<td>Electric Bicycle</td>
</tr>
<tr>
<td>11</td>
<td>Female</td>
<td>70-79</td>
<td>Married</td>
<td>AM</td>
<td>With family</td>
<td>2-6/week</td>
<td>Walk</td>
</tr>
<tr>
<td>12</td>
<td>Female</td>
<td>70-79</td>
<td>Widowed</td>
<td>AM</td>
<td>Alone</td>
<td>Daily</td>
<td>Walk</td>
</tr>
</tbody>
</table>

**APPENDIX II: Identified shopping issues with direct quotations**

<table>
<thead>
<tr>
<th>Trolleys and Baskets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basket caught on retailer’s basket hook</td>
</tr>
<tr>
<td><em>It was difficult for me to pull out a shopping basket from the basket station as it got stuck on the hook in the retailer’s basket holder</em></td>
</tr>
<tr>
<td>Basket does not accommodate the trolley well</td>
</tr>
<tr>
<td><em>As wheelie basket cannot be used after the checkout point, I have to move all items from the wheelie basket to a trolley. But, as the wheelie basket and trolley were not designed to accommodate each other, it was very hard for me to move things from the wheelie basket to the trolley</em></td>
</tr>
<tr>
<td>Basket is too heavy to carry during shopping</td>
</tr>
<tr>
<td><em>I may not use a shopping basket if I only need to buy few items. It is too heavy to carry the basket around the store...</em></td>
</tr>
<tr>
<td>Baskets were located too close to escalator landing area</td>
</tr>
<tr>
<td><em>Baskets were located too close to the escalator landing area and that is quite dangerous.</em></td>
</tr>
<tr>
<td>Deep trolleys make it hard to reach for items at checkout</td>
</tr>
<tr>
<td><em>The trolley is too deep. It is difficult for me to pick up things from the bottom of the trolley at checkout</em></td>
</tr>
<tr>
<td>Not sure if baskets are regularly disinfected</td>
</tr>
<tr>
<td><em>Trolleys and baskets do not look clean... I normally use my own basket for shopping... ; another one mentioned that ‘...I don’t know if the shopping baskets have been disinfected regularly, as the basket looks dirty...</em></td>
</tr>
<tr>
<td>Number of trolleys was not sufficient for customers</td>
</tr>
<tr>
<td>Size of trolley was too big to manage</td>
</tr>
<tr>
<td>Trolley and trolley baskets need better maintenance (broken or dirty)</td>
</tr>
<tr>
<td>Trolley or wheelie basket is needed even for small sized supermarket</td>
</tr>
<tr>
<td>Trolley was hard to control</td>
</tr>
<tr>
<td>Wheelie basket handle was too low to reach</td>
</tr>
<tr>
<td>Wheelie basket only can be used in-store, no access to car park</td>
</tr>
<tr>
<td>Wheelie basket was too low to pick up product from it or drop down product into it</td>
</tr>
<tr>
<td>Wheelie Basket was too small</td>
</tr>
</tbody>
</table>

**Layout and Aisles**

| It is better to have all grocery items on the ground floor so older customers do not need to go to the first floor. | For older customers, it would be very convenient if all grocery items were on the ground floor. As most of us would shop mainly with grocery goods... I don’t like to move around the ground floor and first floor for shopping... |
| It was difficult to find items as the store is big and/or the layout was not clear | The store layout is not clear. It is difficult for me to find products I need if that was not something I normally buy... |
| Narrow passageways | Some passageways are narrow in the Store A. It was difficult for two customers with baskets to go through the passageway together.’ |
| Passageway too long | ‘...the passageway is too long, they used have several gaps between shelves but it was changed to a long shelf...' |
| Product display category is not clear | ... how the store categorized products is confusing, it does not make sense...’ |
| Product display keep changing | ‘... they always change the way items have been displayed, it was very difficult for me to find things I need...’ |
| Product display on the sale shelf is a mess | ‘... on the sale shelf, items have been mixed together, especially for vegetables...’ |
| Product packaging on floor obstructed passageway | ...many empty boxes used by loading by staff were left in the passageway and made the passageway very narrow for customers, the staff should tidy up the passageway immediately after the loading work... |
| Signage is not clear | Signage at the store was not helpful for finding items, especially when I went to a new store or to try to find something I don't buy very often... |
| Slippery floor in fresh vegetable zone | The floor was wet in the vegetable zone as sometimes staff may wash vegetables in the shopping area and make them more desirable for customers... |
| Store is too small | I think this store is small and old, so quality of the layout design is limited... |
| The store is dark and lighting system needs improvement | The store is quite dark, it did not use the natural light wisely... |
| Working staff block passageway | ... when staff worked on loading items to shelf, the ladder occupied more than half of the aisle... I have to find another way to pass that aisle... |

**Shelves and Freezers**

<p>| Bigger sized products are stuck between shelves | ...it was difficult to put large sized items back to the shelf, and they might be stuck between shelves. |
| Customers prefer to pick items from the back of shelves rather than the edge | Supermarkets always put the freshest item towards the back of the shelf. I do need to find one that lasts longer as we only have two people in my household so I like to get an item from the back of shelf... it is difficult, but it is worth doing it to save money... |
| Disordered product display, products mixed together | Items have not been allocated or stored appropriately, for example, dairy products were not in the refrigerator... some items have been mixed on the shelf... |
| It is difficult to find wanted item due to similar product packaging design | Some products have very similar packaging design such as spicy sauce. It was not easy to find the one I wanted. The suppliers seem to have similar packaging design with the most popular product in the category... |
| It is difficult to reach items from the bottom of the freezer when stocks are low | ... the freezer is too deep, it was difficult for me to read and pick up items from the bottom... |
| It is difficult to read information of items on high shelf | ... I cannot read information on products on the high shelf. I have to move it down to the eye level shelf first and then find out more about the item... |
| Items placed too deep on shelves | ... I cannot reach items that are close to the back of the shelf when stock was low... staff should replenish the shelves on time and make sure customers have good access to products... |
| Items placed too high on shelves | the high shelf is too high for older customers... I am not tall enough to pick up items from the high shelf... |
| Items placed too low on shelves | ... I have back pain, it was difficult for me to bend down for an item on the bottom shelf. |
| Labels and items do not correspond | price labels did not match the closet item on the shelf. I have to double check the item name and price to make sure they correspond. |
| Over stacking made it hard to find or remove items | Space between shelves was very small due to over stacking issues... |
| Price label on lower shelf is difficult to ready as it faces towards floor | Price labels on the bottom shelf faced to the floor and this made the label very different to read. I can understand that the angle of the label is useful for higher shelves. But, not for the bottom shelf... |
| Price labels on freezers were a | Price labels for frozen products were displayed on the far edge of the... |</p>
<table>
<thead>
<tr>
<th>Product and promotion</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance away to read freezer: I have to bend my back and bring myself as close as I can to read the price label …</td>
<td></td>
</tr>
<tr>
<td>The font size used for packaging is too small (e.g. for instructions or ingredients)</td>
<td>Product information on the packaging is too small to read such as best before date and ingredients, even with my reading glasses…</td>
</tr>
<tr>
<td>Difficult to read product promotion information on low shelf</td>
<td>Sometimes the promotion products have been put on the bottom of the shelf. It was quite difficult for me to read details of the promotion….</td>
</tr>
<tr>
<td>It is difficult to work out what is the best value when items are on promotion when comparing with non-promise products.</td>
<td>I am keen to buy the best value products for grocery shopping. But, it was difficult for me to figure out the best value between items under promotion and similar items that are not under promotion….</td>
</tr>
<tr>
<td>Items’ actual price is different as the price shown on the shelf</td>
<td>There were many mistakes on price labels. Last week, when I was checking my shopping receipt, I found out one item had been charged more than what was shown on the price label. I asked the staff, and they told me there was a mistake. They did not update the price label on time… it is bad…</td>
</tr>
<tr>
<td>Key information of product was printed in the same colour as the package background colour, such as the best before date</td>
<td>…I always check the best before date before I purchase anything. However, sometimes, the best before date was printed in white ink and the packaging background colour was also white. So, I was extremely difficult for me to read the information…</td>
</tr>
<tr>
<td>Out of stock message is needed</td>
<td>It would be useful if the store can provide information on products that are out of stock so I would not spend my time trying to find it…</td>
</tr>
<tr>
<td>Package does not fully protect product</td>
<td>Product packaging does not protect the item. For example, I bought a dozen of eggs, but the packaging was very soft so I had to hold it carefully in my hand on my way home…</td>
</tr>
<tr>
<td>Some items do not have Price label</td>
<td>There was a delay at the checkout because one of my shopping items did not have a price label on it, so the cashier has to ask another staff to check it ….</td>
</tr>
<tr>
<td>Store did not have adequate range of products</td>
<td>I cannot get all the items I need from this store and it does not provide full range of products. It may be because the size of this store is small….</td>
</tr>
<tr>
<td>Vegetable items in display are not in good condition</td>
<td>If you are not careful, you might pick up a damaged or broken vegetable. They should have staff to remove those vegetables that are not in good condition for sale …</td>
</tr>
<tr>
<td>The store is crowded during promotion periods</td>
<td>There are always too many customers during product promotion periods … as older customers we do have time to queue for good value items… but the store was very crowded…</td>
</tr>
<tr>
<td>Customer service</td>
<td></td>
</tr>
<tr>
<td>Customer service assistants unavailable nearby</td>
<td>Sometimes, it was difficult for me to find staff when I need help from them…</td>
</tr>
<tr>
<td>Difficult to use escalator for customers with children</td>
<td>I think the escalator would be difficult for customers with children as it was not very stable …</td>
</tr>
<tr>
<td>Escalator does not have voice prompt when near landing area;</td>
<td>It would be good if the escalator could have a voice prompt for when I near the landing area as sometimes when I am thinking about something, I forget to check the distance towards the landing point on the escalator…</td>
</tr>
<tr>
<td>Escalator landing area should provide handrail</td>
<td>It might be good to have a handrail at the escalator landing area for older customers who need this type of support…</td>
</tr>
<tr>
<td>Issue</td>
<td>Feedback</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>It would be good if there were other services such as cutting meat into small pieces.</td>
<td>I would like the supermarket to provide a meat preparation service....</td>
</tr>
<tr>
<td>More services should be provided such as kids centre and food processing service</td>
<td>It would be good to have a playground area for children so parents can leave their children there and do their shopping...</td>
</tr>
<tr>
<td>Need a staff member to pull trolley at the escalator landing area</td>
<td>For older customers who have a trolley on the escalator, it is difficult to push the trolley down from the escalator to the landing area. It would be helpful to have a staff member in the landing area and help them to pull the trolley off the escalator...</td>
</tr>
<tr>
<td>Quality of free shuttle service should be improved</td>
<td>Driver of the shuttle bus is not very friendly...</td>
</tr>
<tr>
<td>Staff are friendly and helpful</td>
<td>I think the staff here are always friendly and helpful...</td>
</tr>
<tr>
<td>Store staff are not knowledgeable about the product they sell</td>
<td>Sometimes the staff are not very helpful as they do not know the items they sell very well and could not find what I need at the store...</td>
</tr>
<tr>
<td>Store staff was indifferent to customers</td>
<td>Some staff were indifferent and ignored people who needed help. For example, I was moving items from a trolley to a wheelie basket and I was very tired. There was a staff member just next to me, but she did not help..</td>
</tr>
<tr>
<td><strong>Checkout</strong></td>
<td></td>
</tr>
<tr>
<td>Free plastic shopping bag are not provided</td>
<td>We have to pay for plastic shopping bags. It would be good if they were free of charge.</td>
</tr>
<tr>
<td>It is difficult to unload my shopping from the trolley onto the checkout belt</td>
<td>Loading items from my trolley to checkout account is difficult for me due to my back pain.</td>
</tr>
<tr>
<td>Long queues</td>
<td>The queue is too long, as they don't have enough staff for checkout.</td>
</tr>
<tr>
<td>Only accept cash and one type of shopping card, bank card can not be used</td>
<td>This store sometimes only accepts cash and some shopping vouches, but I can not use my bank card.</td>
</tr>
<tr>
<td>Payment machine need better maintenance</td>
<td>The card payment machine always out of use. They need better maintenance.</td>
</tr>
<tr>
<td><strong>Additional Feedback</strong></td>
<td></td>
</tr>
<tr>
<td>Baby changing room should be provided</td>
<td>The store should provide baby changing room ...</td>
</tr>
<tr>
<td>Disable toilet should be provided; ... and disable toilet need to be considered in the store design...</td>
<td>We have to pay for plastic shopping bags. It would be good if they were free of charge.</td>
</tr>
<tr>
<td>In-store air circulation should be improved</td>
<td>Seafood zone is very smelly. We need fresh air...</td>
</tr>
<tr>
<td>Number of self-service lockers is not enough</td>
<td>Sometimes, I could not find a space in the self-service lockers as many of them were broken.</td>
</tr>
<tr>
<td>Supermarket’s storage locker needs better maintained</td>
<td>... the store need to look after their facilities, such as the self-service lockers...</td>
</tr>
<tr>
<td>The store should pay more attention on fire precaution</td>
<td>The store is a place that has higher risk of fire, so they should be aware of this and pay attention to avoid fire....</td>
</tr>
<tr>
<td>Toilet should be provided and well maintained;</td>
<td>The toilets need better maintenance. It was not clean sometimes...</td>
</tr>
<tr>
<td>Would like to have more seats available</td>
<td>It would be very helpful to have more seating space for older customers...</td>
</tr>
</tbody>
</table>
APPENDIX III: Figures

Figure 1. Data analysis framework

Figure 2. High shelf

Figure 3. Low shelf

Figure 4. Mess product display in freezer

Figure 5. Price labels for frozen foods
Figure 6: It was difficult for participant to read information of frozen food

Figure 7. Wheelie basket on escalator

Figure 8. Shopping trolley on escalator

APPENDIX III: Tables

Table 1. Modern retail formats in Beijing in 2008

<table>
<thead>
<tr>
<th>Store type</th>
<th>Size</th>
<th>Target customers</th>
<th>Location</th>
<th>No. of stores</th>
<th>Total sales (Billions)</th>
<th>Opening hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenience chains</td>
<td>Small (100-400 square meter)</td>
<td>People with busy lifestyle, more for younger generation</td>
<td>Near resident area, tube station, high-street and business center</td>
<td>1938</td>
<td>49.5%</td>
<td>7.6%</td>
</tr>
<tr>
<td>Local stores</td>
<td>Small (100-400 square meter)</td>
<td>Families in resident area</td>
<td>In resident area</td>
<td>1234</td>
<td>31.5%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Supermarkets</td>
<td>Medium (400-2,500 square meter)</td>
<td>Families</td>
<td>Close to Resident area, business center</td>
<td>615</td>
<td>15.7%</td>
<td>36.9%</td>
</tr>
<tr>
<td>Hypermarkets</td>
<td>Large (6,000+ square meter)</td>
<td>Families with car</td>
<td>Outside of resident area</td>
<td>86</td>
<td>2.2%</td>
<td>49.0%</td>
</tr>
<tr>
<td>Club-based wholesale store</td>
<td>Huge (10,000+ square meter)</td>
<td>Small business, family with car</td>
<td>Outside of resident area</td>
<td>43</td>
<td>1.1%</td>
<td>5.8%</td>
</tr>
</tbody>
</table>

(Adapted from Li & Wang, 2006; Li, 2006; China Second National Economic Census, 2010)

Table 2. Shopping issues from western context based research (updated from Yin et al, 2013)

<table>
<thead>
<tr>
<th>Issues</th>
<th>Recourse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trolley difficulties of using trolleys</td>
<td>Angell et al, 2012; Kohijoki, 2011; Petermans &amp; Van Cleempoel, 2009; Pettigrew et al, 2005; Leighton &amp; Seaman, 1997; Mason &amp; Bearden, 1979</td>
</tr>
<tr>
<td>Category</td>
<td>Issue</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Issue of loading and unloading trolleys</strong></td>
<td>Leighton &amp; Seaman, 1997</td>
</tr>
<tr>
<td><strong>Difficulties of carrying baskets</strong></td>
<td>Leighton &amp; Seaman, 1997</td>
</tr>
<tr>
<td><strong>Badly-designed trolleys and baskets</strong></td>
<td>Meneely et al, 2009a; Wallis, 1994; Hare et al, 1999; Pettigrew et al, 2005</td>
</tr>
<tr>
<td><strong>Trolleys and baskets are not well-maintained</strong></td>
<td>Pettigrew et al, 2005</td>
</tr>
<tr>
<td><strong>Poor availability of trolleys and baskets</strong></td>
<td>Pettigrew et al, 2005</td>
</tr>
<tr>
<td><strong>Badly-designed store environment</strong></td>
<td>Leighton &amp; Seaman, 1997</td>
</tr>
<tr>
<td><strong>Poor user friendliness of store layout</strong></td>
<td>Angell et al, 2012; Kohijoki, 2011; Pettigrew et al, 2005; Tongren, 1998</td>
</tr>
<tr>
<td><strong>Inconsistently aisle signs</strong></td>
<td>Tongren, 1998</td>
</tr>
<tr>
<td><strong>Aisles are not wide enough</strong></td>
<td>Angell et al, 2012; Tongren, 1998</td>
</tr>
<tr>
<td><strong>Unclear signage and labels</strong></td>
<td>Wallis, 1994; Hare et al, 1999; Tongren, 1998</td>
</tr>
<tr>
<td><strong>Poor access due to aisles</strong></td>
<td>Tongren, 1998</td>
</tr>
<tr>
<td><strong>Poor availability of seating</strong></td>
<td>Petermans &amp; Van Cleempoel, 2009; Wallis, 1994; Hare et al, 1999; Tongren, 1998</td>
</tr>
<tr>
<td><strong>Stores being too cold</strong></td>
<td>Mason &amp; Bearden, 1979</td>
</tr>
<tr>
<td><strong>Poor lighting system</strong></td>
<td>Angell et al, 2012; Wallis, 1994; Hare et al, 1999; Tongren, 1998</td>
</tr>
<tr>
<td><strong>Store size either too big or small</strong></td>
<td>Meneely et al, 2009a</td>
</tr>
<tr>
<td><strong>Changing layout</strong></td>
<td>Meneely et al, 2009a</td>
</tr>
<tr>
<td><strong>Unclear product location</strong></td>
<td>Petermans &amp; Van Cleempoel, 2009</td>
</tr>
<tr>
<td><strong>Difficult to manoeuvre between the aisles</strong></td>
<td>Petermans &amp; Van Cleempoel, 2009</td>
</tr>
<tr>
<td><strong>Shelves and freezers</strong></td>
<td>Kohijoki, 2011; Meneely et al, 2009a; Underhill, 2000; Leighton &amp; Seaman, 1997</td>
</tr>
<tr>
<td><strong>Unclear price display on shelf</strong></td>
<td>Kohijoki, 2011; Leighton &amp; Seaman, 1997; Mason &amp; Bearden, 1979</td>
</tr>
<tr>
<td><strong>Difficult to use deep freezers</strong></td>
<td>Leighton &amp; Seaman, 1997</td>
</tr>
<tr>
<td><strong>Poor accessibility to products on shelf</strong></td>
<td>Angell et al, 2012; Pettigrew et al, 2005; Moschis et al, 2004; Hare, 2003; Hare et al, 1999; Wallis, 1994;</td>
</tr>
<tr>
<td><strong>Need larger print on product labels</strong></td>
<td>Meneely et al, 2009a</td>
</tr>
<tr>
<td><strong>Product</strong></td>
<td><strong>Unhelpful multi-purchase promotion</strong></td>
</tr>
<tr>
<td><strong>Poor quality of product packing</strong></td>
<td>Meneely et al, 2009a; Hare et al, 1999; Leighton &amp; Seaman, 1997; Wallis, 1994</td>
</tr>
<tr>
<td><strong>Poor product range</strong></td>
<td>Angell et al, 2012; Petermans &amp; Van Cleempoel, 2009; Leighton &amp; Seaman, 1997; Wallis, 1994;</td>
</tr>
<tr>
<td><strong>Product price too high</strong></td>
<td>Meneely et al, 2009a; Leighton &amp; Seaman, 1997</td>
</tr>
<tr>
<td><strong>Unclear product informational labelling</strong></td>
<td>Omar et al, 2014; Petermans &amp; Van Cleempoel, 2009; Leighton &amp; Seaman, 1997;</td>
</tr>
<tr>
<td><strong>Unclear product promotion information</strong></td>
<td>Omar et al, 2014; Leighton &amp; Seaman, 1997</td>
</tr>
<tr>
<td><strong>Package size too large</strong></td>
<td>Omar et al, 2014; Angell et al, 2012; Kohijoki, 2011; Petermans &amp; Van Cleempoel, 2009; Meneely et al, 2009a; Pettigrew et al, 2005; Moschis et al, 2004; Hare, 2003; Mason &amp; Bearden, 1979</td>
</tr>
<tr>
<td><strong>Poor customer service</strong></td>
<td>Kohijoki, 2011; Meneely et al, 2009a; Meneely et al, 2008; Pettigrew et al, 2005; Moschis et al, 2004; Hare, 2003; Goodwin &amp; McElwee, 1999; Hare et al, 1999</td>
</tr>
<tr>
<td><strong>Personal in-store service</strong></td>
<td>Petermans &amp; Van Cleempoel, 2009; Patterson, 2007; Cox et al, 2005</td>
</tr>
<tr>
<td><strong>In-store assistance</strong></td>
<td>Angell et al, 2012; Meneely et al, 2009a; Solomon, 2004; Hare et al, 1999; Wallis, 1994</td>
</tr>
<tr>
<td><strong>Friendly service</strong></td>
<td>Meneely et al, 2009a; Mitchell and Harris, 2005; Semeijn et al., 2004</td>
</tr>
<tr>
<td>Category</td>
<td>Observation Findings</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Trolleys and Baskets</td>
<td>She had to bend down when put a glass bottle or a box of egg to the shopping basket; the basket was not very steady on escalator, it moved from her back to front; sometimes she pulled the basket and sometimes pushed the basket.</td>
</tr>
<tr>
<td>Store Layout and Aisles</td>
<td>Blocked passageway.</td>
</tr>
<tr>
<td>Shelves and Freezers</td>
<td>She picked up a product from an upper shelf and put it on a lower shelf so as to read the product information.</td>
</tr>
<tr>
<td>Products</td>
<td>Price label was located on the back of a pack of eggs; thus, she had to lift the pack up to find the price. The big pack of eggs was difficult to put into her shopping bag. So she had to hold it on the way home.</td>
</tr>
<tr>
<td>Customer Services</td>
<td></td>
</tr>
<tr>
<td>Checkout</td>
<td>She removed her stuff from her shopping bag first, and then put purchased products into her bag.</td>
</tr>
</tbody>
</table>

Table 3. Ethnographic user study personal matrix

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