

How Retail Store Accommodations for the Visually Impaired Affects the Shopping Experience of the Non-Visually Impaired

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Abstract

Visual impairment is a rising concern, and there is a stronger push towards a more inclusive retail experience. However, these accommodations are often conceived as an altruistic movement to help the visually impaired, at the expense of the retail experience of non-visually impaired customers. This paper is an attempt to rethink inclusive design. Can accommodating visually impaired customers also improve the retail experience of the non-visually impaired? This study attempts to bridge the current scholarly literature on the two groups to examine how helping the former can also enhance the shopping experience of the latter. The central argument of this study is that there are needs of the visually impaired that, when addressed, would also enhance the shopping experience of the non-visually impaired. It is not possible nor effective to think of the two in isolation; in the real world, there is a single store frequented by all. Through a survey of 80 non-visually impaired respondents, the study has found that the non-visually impaired would also benefit from modifications in-store layout, price tag, product signage, and aisle signage designed to help the visually impaired. Thinking about the two groups together is a critical first step in creating a truly universal retail experience.

Keywords

Visual Impairment, Retail Design, Consumer Experience, Inclusive Design, Universal Design

1. Introduction

Visual impairment is a rising social concern. Around 285 million individuals across the world live with visual impairment (WHO, 2012). Of this number, 39 million individuals are blind and 246 million individuals have low vision. As the

numbers above indicate, being visually impaired does not mean being 100% blind. Many individuals with visual disabilities have an illness called low vision, a condition of uncorrectable vision loss that interferes with daily activities. Low vision affects all aspects of life—including the retail experience. Common challenges include navigation of the store, identifying specific products on the shelf, and checking price tags to determine whether the product is affordable. There are also barriers after the purchase, such as returning purchased goods or reviewing the receipt. These are just a few challenges that affect the shopping experience of the visually impaired.

There has been increasing awareness of these challenges, and we are witnessing a stronger push towards a more inclusive retail experience. Indeed, new mobile-based IoT tools are being introduced to support the disabled in product identification and store navigation (Abdel-Jaber et al., 2021; Hung et al., 2019; López-de-Ipiña et al., 2011). Store owners are also making adjustments in store layout, color, and design to help the visually impaired (Stevens, 2003; Mashiata et al., 2022). However, these accommodations are often initiated as an altruistic movement of goodwill to “help” the disabled, rather than a universal design that can truly support the needs of a wide range of customers. As a result of this limited understanding, inclusive design has “not yet been widely applied in an industrial context” (Zitkus et al., 2013). That is, because the accommodations are thought to be designed for a minority of individuals and therefore irrelevant for the vast majority of their customer base who are non-visually impaired, shop owners often lack the incentive to implement the accommodations in their stores.

This paper is an attempt to rethink inclusive design. Can accommodating visually impaired customers through retail design also improve the experience of non-visually impaired customers? This study attempts to bridge the literature on the two groups to examine how helping the former can also enhance the shopping experience of the latter. The remaining paper is structured as follows: the first section examines the current literature on the retail experience of the visually impaired and the non-visually impaired, respectively. This examination paves the way to a discussion of a clear gap in the field, namely, the lack of research bridging the two consumer groups. The paper then discusses the three methods of the research: 1) preliminary study to understand the broad spectrum of challenges, 2) a semi-structured interview of the visually impaired to identify five common challenges, and 3) a survey of non-visually impaired individuals. Finally, the paper ends on a discussion of the findings, limitations, and implications of the research.

2. Literature Review

2.1. Retail Experience of the Visually Impaired

Individuals with visual impairment had not been widely studied as a consumer group until the late 1990s. The first was from a 1999 study by Stephan J Gould,

which argued that visual impairment is a key “determinant of consumption” (Gould, 1999). This foundational paper—which raised the question of equity in consumption for the first time—paved a new path for research on the retail experience of the visually impaired. The emergent research of the past two decades can be classified into the following three groups.

The first group accounts for the concrete challenges that low-vision individuals face in the store. Sandra Tullio-Pow in “Do You See What I See” offers in-depth insights into the navigational experience of the visually impaired through numerous vivid personal accounts. The encompassing scope of Tullio-Pow’s methodology helps the reader understand the challenges that emerge from the very moment the visually impaired leave home to the moment they return (Tullio-Pow et al., 2012). It classifies the shopping experience into seven sequential “taskscape”—pre-shopping, traveling to the mall, mall navigation, in-store navigation, merchandise evaluation, checkout, and post-shopping—and discusses the challenges underlying each step. Tullio-Pow offers the most comprehensive scope of challenges, but other studies have demonstrated insight into the more specific challenges within the store (Kaufman-Scarborough, 2001; Khattab et al., 2015).

Many studies have extended the discussion to examine the solutions for alleviating these challenges. These structural modifications have employed strong contrasts in colors, lighting, flooring (Yu et al., 2015; Baker et al., 2002; Dias de Faria et al., 2012; Kulyukin & Kutiyawala, 2010). Others have looked beyond the specific in-store design changes to examine external resources like time and the availability of professional help or the quality as opposed to the quantity of support (Balabanis et al., 2012).

A more recent group of studies have moved beyond the challenges to explore the symbolic significance and the experiential value of the retail experience for the visually impaired. Shopping is an important experience that constitutes the identity and emotions of the visually impaired. One study has examined the consciousness of body image for the visually impaired (Kaplan-Myrth, 2000). Others have studied how the emotions associated with body image translate into “shopping and consumption behaviors” (Bradley et al., 2000; Kaufman-Scarborough, 2001). What these studies stress is that shopping is a key “driving factor in modern life” for the visually impaired (Miller et al., 1988). Shopping provides an opportunity to “self-construct” (Baker, Holland, & Kaufman-Scarborough, 2007).

2.2. Retail Experience of the Non-Visually Impaired

There is also a rich body of literature on the retail experience for ordinary, non-visually impaired customers. Early studies in this field have examined the utilitarian functions of shopping, and primarily conceived of shopping as the tradeoff between quality and price (Babin et al., 1994; Bettman, 1979; Dodds, Monroe, & Grewal, 1991).

More recently, research in this field has expanded to encompass the symbolic

value of consumption. Recognizing that the nature of consumption is not just utilitarian, Holbrook and Hirschman also examine consumption through a secondary hedonistic lens. The hedonic lens focuses on “multisensory” or “emotive” aspects of the shopping experience. Holbrook and Hirschman’s work was foundational in pointing out that consumption was not just an objective task of acquiring utility, but also fundamentally a “subjective state of consciousness” (Holbrook & Hirschman, 1982; Jones et al., 2006).

More recently, scholars have picked up on this suggestion to further examine how shopping is constitutive of identity and social relationships. Piacentini and Mailer have introduced the term “symbolic consumption” to designate the process whereby consumers give and receive signals associated with certain social groups. We can now no longer ignore these relational and emotional aspects of shopping. Indeed, experience design is a key part of retail design, as we are seeing the rise of the experience economy. Experiential marketing is all about giving customers a memorable event.

2.3. Bridging the Gap

While there is abundant literature on the two subfields discussed above—the retail experience of the visually impaired and that of the non-visually impaired—they rarely spell out or extend the implications of the study towards the other group. In other words, lessons from one have not been applied to the other. Most critically, none of these studies spell out the implications of findings for visually impaired people on the retail experience of the non-visually impaired. That is, if a store decides to adopt large fonts in price tags or changes in store design to accommodate the visually impaired customers, how would those changes affect the non-visually impaired customers who comprise the vast majority of visitors to the store? There is a lack of research connecting the experience of the visually impaired consumer to the ‘ordinary’ consumer.

This represents a significant gap in the literature and should be addressed, as it will set a guide for a way to impact both groups of customers. The simple logic behind this project is that it is not possible or effective to think of the two groups in isolation. In the real world, there is a single store that is frequented by both groups. Ideally, a store owner would want to devise a single strategy that helps both groups. By addressing this gap, stores may be able to make modifications in stores that would enhance the experience of both the visually impaired and non-visually impaired customer groups.

To truly create a retail design that caters to both consumer groups, we must strive for what Molly Follette Story calls universal design. While in colloquial usage we often use the two interchangeably, there is a clear distinction between “inclusive design” and “universal design” (Story, 1998). Inclusive design aims to maximize accessibility for a specific subset of customers, and universal design focuses on creating one design to create a unified experience for as many people as possible. Story argues that we must stop trying to accommodate certain

groups, and rather create a single universal store that can “fully integrate” all needs (Ibid.). This is indeed the theoretical premise of this paper, but we must evaluate whether such a universal design is realistically possible in practice—hence the research question, “Can accommodating visually impaired customers in retail design improve the shopping experience of non-visually impaired customers?”

The central hypothesis of this paper is that there are needs of the visually impaired that, when addressed, would also enhance the shopping experience of the non-visually impaired. More specifically, the paper hypothesizes that the accommodations that increase the signage font size or color contrast would also enhance the shopping experience of non-visually impaired customers. The reason proposed is that retail space design has recently tilted towards aesthetics rather than practicality, to the detriment of the shopping experience of both visually impaired and non-visually impaired alike.

3. Methodology

3.1. Overview

The study is composed of three steps. STEP 1 conducted a broad review of case studies in the literature to understand the broad spectrum of challenges faced by the visually impaired. STEP 2 consisted of a semi-structured interview to identify five areas of difficulty commonly experienced. These shared challenges would then be isolated for use in the quantitative survey section of the research (STEP 3).

3.2. Step 1: Preliminary Study to Understand the Broad Spectrum of Challenges

The review of case studies in the literature on the shopping experience of the visually impaired was critical for gaining insights across the many factors that enhance or hinder the shopping experiences of the visually impaired. It was not realistically possible to conduct an interview with 100 or 200 different visually impaired individuals in a span of months to merely gain a foundational understanding—hence the decision to make use of the current literature in the field to understand the many challenges that the visually impaired undergo when shopping. Three keywords—“visually impaired,” “retail,” and “challenges”—were entered into Jstor, Science Direct, Google Scholar databases for the years 2000-2024. This search produced twenty relevant articles, which were carefully studied for content. Three papers have been extremely illuminating in offering insight into concrete challenges (Yu et al., 2015, Khattab et al., 2015; Tullio-Pow et al., 2012).

3.3. Step 2: Semi-Structured Interview to Identify Common, Shared Challenges

After surveying the literature to understand the broad spectrum of challenges (STEP 1), this study sought to identify five common challenges encountered by

the visually impaired.

For STEP 2, this study conducted a semi-structured interview, which combines structured questions with unstructured ones (Wilson, 2014). The semi-structured interview format effectively derives qualitative data since the interviewer can lead participants by asking specific questions while leaving room to go deeper in areas that were not anticipated (Tenny et al., 2022). Perhaps more importantly, semi-structured interviews allow room for intervention, which creates flexibility throughout the interview (DeJonckheere & Vaughn, 2019). These interventions are crucial in an interview that involves the visually impaired as research subjects, as talking about challenging situations could potentially trigger traumatic memories. In such unanticipated situations, flexible intervention is essential to avoid or mitigate any potential sources of re-traumatization.

For the interview, an exploratory questionnaire was drafted. The questionnaire drew upon Crawford's nine-step method and adhered to the following key principles of question design: opening questions, question flow, and question variety (Crawford, 1990). Opening questions were intentionally designed to ease the conversation of what may be a painful topic; question flow was considered to ensure that the questions build up from the previous answer, rather than jump from one topic to the next; question variety ensured that the responses covered not just one or two challenges experienced, but rather the overall shopping experience and possible remedies.

The interview questionnaire (Figure 1) was designed with these principles in mind. All questions were open-ended and general. The questions were designed to be dependent on the participants' answers. For instance, for the "Low Vision" Category, Q1 builds onto Q2, which asks "If yes, please describe your condition above." Likewise, for the "Obstacles in More Detail" category, the questions were intentionally left open-ended at the beginning. In other words, after first inviting the interviewee to reflect on some obstacles faced in the store (Q1), a series of follow-up questions asks the interviewee to identify a few more (Q2 and Q3). And in case the interviewee has a hard time recalling more challenges, some commonly identified challenges were pointed out to help the interviewee recall the other parts of the experience.

3.4. Step 3: Quantifying Data through Survey

The third stage of the research process employed a method of pattern recognition to identify five specific factors that the participants in the semi-structured interview and the case studies in the literature equally pinpointed to a major hindrance to the shopping experience, and their corollary methods for improvement: 1) the challenge of navigating stores with continuous changes in layout, 2) the small size and lack of color-contrast in price tags, 3) the homogeneity of flooring texture and color, 4) small signage for products, 5) small signage for aisles.

<p>Basic Information</p> <ol style="list-style-type: none"> 1. Name: 2. Gender: 3. Age: <p>Low-Vision</p> <ol style="list-style-type: none"> 1. Do you have low vision? 2. If yes, please describe your condition. 3. What specific things do you have a hard time seeing (ex: dark colors, small sized-font) 4. What would you say is your biggest challenge in carrying out daily life? <p>Retail Experience Basics</p> <ol style="list-style-type: none"> 1. Do you go shopping for clothing or food? 2. If so, how often do you go per month/year and with whom? <p>Obstacles in More Detail</p> <ol style="list-style-type: none"> 1. When you enter the store, what obstacles do you face? 2. What about some others? (e.g. layout, directional cues, lighting, labels/tags, tripping) 3. It seems that most of the challenges you mentioned fall into [Category A]. I created a chart for today's meeting, and I was able to find other areas—like [Categories B, C, D]. Did you have any other major challenges in these other areas as well? Please tell me more. <p>Potential Remedies</p> <ol style="list-style-type: none"> 1. What is one thing you wished you could change about these stores? 2. How do you think this remedy would help?

Figure 1. Interview questionnaire.

After identifying the top five hindrances, a survey was distributed to the non-visually impaired individuals. The goal was to configure a general sense of how the non-visually impaired conceive of the proposed solutions for the visually impaired so as to find a universal store design that can enhance the shopping experience of both groups.

The main rationale behind the survey's focus on the non-visually impaired stems from the research question of this study, namely, how the accommodations to help the visually impaired affects shopping experience of the non-visually impaired. There is a growing body of literature shedding light on the struggles and the respective accommodations for the visually impaired; these challenges had been confirmed through STEP 2 interviews. The primary aim of this study was, therefore, to better understand the perspectives of the non-visually impaired to these possible modifications. None of the academic literature currently has conducted this extended study. This is a clear gap in the literature, and a survey was carefully designed to understand this perspective of the non-visually impaired.

Each question in the survey was composed of the following steps.

1) Scenario (Problem and Solution): The problem statement lists a short description of one of the five challenges listed above. The solution statement introduces a remedy for these challenges. (These solutions were all unequivocally pointed out in the literature and by the interview participants as modifications that could help mitigate the challenges of navigating a store).

2) Choice: After the problem-solution discussion, each question asked how

these changes would affect the non-visually impaired individual and his or her own retail store experience. The non-visually impaired were asked to choose one of three answer choices: changes ENHANCE, changes DO NOT AFFECT, or changes HINDER my shopping experience. Rather than asking open-ended short answer questions, the survey intentionally gave three specific answer choices for efficient identification of patterns.

3) Rationale: Then, the participants were asked to justify their choices. The respondents had the option to choose one of three justifications offered or write a free response.

This survey was distributed to the 450 members of students, faculty, and staff of Korea International School's high school division. An international school is one of few places in South Korea composed of a diverse group of individuals with a variety of socioeconomic and ethnic backgrounds. Diversity was highly considered when selecting the participant pool.

The survey was also explicitly designed to address concerns around sampling and desirability bias. To reduce sampling bias, survey participants were recruited through random sampling, thereby ensuring equal odds for every member of the population to be chosen for the study (Martino et al., 2019). The survey was distributed via email to the entire student body, faculty, and staff. This meant that participants of all age groups (teenagers to those aged sixty and above), participants of all socioeconomic backgrounds (lower income students and staff to higher income students and faculty), and cultures (Korean and non-Korean) would participate. To address concerns around social desirability bias, the survey was fully anonymous and conducted digitally rather than in person. Untruthful answers stemming from fear of judgment were most likely mitigated (Larson, 2019).

Finally, to preserve the most accurate and reliable data without overlap, the survey sent out a random code to each participant alongside the survey form. Any instance of the same code appearing multiple times in the survey would mean that a single individual was answering the survey more than once, and it would be possible to track the code and delete the response. In the data review process, there were no instances of a code appearing more than once.

4. Findings & Discussion

The survey of 80 non-visually impaired respondents, as shown in **Table 1**, found

Table 1. Survey participants overview.

AGE	10 s - 60 s
GENDER	Male, Female, Other
NATIONALITY	Korean, Non-Korean
OCCUPATION	Student, Faculty, Staff
INCOME	24,808,800 KRW - 1,000,000,000+ KRW

that, with the exception of Q3 on the question of flooring, accommodations made for the visually impaired would also enhance the shopping experiences of a vast majority of non-visually impaired customers.

4.1. Discussion of Quantitative Findings

For Q2, Q4, and Q5, as shown in **Figure 2**, more than 80% of the non-visually impaired respondents indicated that the accommodations for the visually impaired would ENHANCE their own shopping experience. We must note that the respondents who chose NOT AFFECT should also be considered in a favorable

Q1) Store Layout

Many visually impaired individuals state that they face great challenges in navigating a store when they visit it for the first time. However, once they get used to a store, the environment becomes less challenging to navigate. In other words, it is helpful to keep the store layout consistent.

To help the visually impaired, a store decided to always maintain the same layout. In other words, no pop-up stands in random locations of a store during special occasions like Christmas and Thanksgiving.

How would this **consistency** in the store layout affect you?

- (1) It would also enhance my shopping experience
- (2) It would not affect my shopping experience
- (3) It would hinder my shopping experience

What is your reason for selecting the answer above?

- (1) I like consistency. I, too, get confused when stores make too many changes to the layout.
- (2) I prefer change. I have a better experience when there are changes to stimulate my interest.
- (3) The layout of a store does not affect my shopping experience
- (4) Other: _____.

Q2) Price Tag (Size of font and color contrast)

Checking the price labels and size before purchase is essential, but the visually impaired often find that the font size on tags is too small.

The way to help is by increasing the font size, giving a clear contrast, and cleaning up the extent of information on the tags (see image below).

How would this **enhancement of price tag** affect you?

- (1) It would also enhance my shopping experience
- (2) It would not affect my shopping experience
- (3) It would hinder my shopping experience

What is your reason for selecting the answer above?

- (1) Larger font and high contrast is easier to see
- (2) Larger font and high contrast would kill the aesthetic of the product
- (3) Price tag design would not affect my shopping experience
- (4) Other: _____

Q3) Flooring Texture and Color

Many visually impaired individuals have pointed out that using different flooring colors and materials might help them identify what section they are in a large store.

In response, a new store owner decides to implement this suggestion (e.g light gray epoxy for vegetable aisle, dark green tile for produce aisle, carpeting for condiments aisle)

How would this **variety of floor color texture** in the store affect you?

- (1) It would also enhance my shopping experience
- (2) It would not affect my shopping experience
- (3) It would hinder my shopping experience

What is your reason for selecting the answer above?

- (1) Variety in flooring would also help with my navigation
- (2) Variety in flooring would kill the aesthetic of a store
- (3) Flooring will not affect my shopping experience whatsoever.
- (4) Others:

Q4) Signage for Products (Size of font)

The visually impaired rely heavily on font size to clearly read signs.

To help combat this problem, we can implement a bigger font size. By increasing the number of letters, there will not be one visually impaired customer leaving the store in disappointment.

How would this increase in the size of the font in the store layout affect you?

- (1) It would also enhance my shopping experience
- (2) It would not affect my shopping experience
- (3) It would hinder my shopping experience

What is your reason for selecting the answer above?

- (1) Larger font is easier to see
- (2) Larger font would kill the aesthetic of a store
- (3) Signage font size would not affect my shopping experience
- (4) Other: _____

The image on the left shows a small product label.

Q5) Signage for Aisle

The visually impaired rely heavily on aisle signage to properly locate themselves in a supermarket.

To help implement this problem, we can make Aisle Signage that hangs from the ceiling with an enormous font and bright, contrasting colors.

How would this increase in the size of the font affect you?

- (1) It would also enhance my shopping experience
- (2) It would not affect my shopping experience
- (3) It would hinder my shopping experience

What is your reason for selecting the answer above?

- (1) Larger signage is easier to see
- (2) Larger signage would kill the aesthetic of a store
- (3) Signage font size would not affect my shopping experience
- (4) Other: _____

Figure 2. Survey questionnaire.

Table 2. Quantitative findings.

	Questions				
	Q1 Store Layout	Q2 Price Tag	Q3 Aisle Flooring	Q4 Product Signage	Q5 Aisle Signage
ENHANCE	52.5%	81.3%	36.3%	81.3%	87.5%
NOT AFFECT	35%	15%	62.5%	15%	11.3%
HINDER	12.5%	3.7%	1.2%	3.7%	1.2%

light, as it indicates that the respondents are not opposed to the proposed accommodations for the visually impaired. Almost all of the participants with the exception of two respondents (Q2 and Q4) and one respondent (Q5) were either in favor of or indifferent to the changes proposed. The commonality between the three accommodations was the size and color contrast of print letters on price tags (Q2), product signage (Q4), and aisle signage (Q5). We can conclude that clarity of product information and location is valued by all customers, regardless of visual impairment.

For Q1 (consistency in-store layout), only 52.2% indicated that the accommodations would ENHANCE. However, if we include the 35% who chose NOT AFFECT, more than 80% of the individuals would be completely in support of or indifferent to the proposed accommodation. Surprisingly, Q1 had the most HINDER votes, reaching 12.5%. In other words, as shown in **Table 2**, compared to signage, store layout had a greater number of non-visually impaired individuals who indicated that the specific modification would HINDER their shopping experience.

For Q3 (flooring layout), ENHANCE received only 36.3%. This is the only accommodation whereby the ENHANCE option received less than the majority support. However, interestingly, 62.5% of the respondents chose NOT AFFECT, making it the accommodation with the highest percentage of participants indicating that they were neutral to the change. As shown in **Table 2**, personal preferences for efficiency in-store navigation or preferences for new experiences most likely affected the divergent responses.

4.2. Discussion of Qualitative Findings

The survey included not just quantitative data, but also qualitative data collected through the free responses, as shown in **Table 3**. These free-response answers derived significant responses and are analyzed in detail below.

A first set of free-response rationales suggests that non-visually impaired customers also seek accommodations for practical reasons. That is, while there is a greater emphasis on store aesthetics in contemporary stores, the non-visually impaired also value efficiency and practicality over aesthetic store experience. Common rationales for valuing consistency in store layout were “minimizing”

Table 3. Free responses.

Q1	ENHANCE	<i>"I prefer to minimize the amount of time I spend shopping, and therefore appreciate knowing that the locations of items I might purchase regularly remain in the same place."</i>
		<i>"It would simplify my shopping experience and minimize shopping for unnecessary items on the spur of the moment."</i>
		<i>"My wife is visually impaired so I understand this problem"</i>
NOT AFFECT		<i>"I don't care much."</i>
		<i>"If only a few sections change, it wouldn't affect my experience"</i>
		<i>"The layout doesn't affect me personally but, if it helps those who are visually impaired, then it's something all stores should adopt as policy."</i>
HINDER		<i>"Special occasions should have special displays"</i>
		<i>"Moving things around into new eyesight lines means I might see something I did not know I was looking for"</i>
		<i>"I like when certain events or sales are brought to the front so I can quickly see what stock they have and get in and get out."</i>
Q2	ENHANCE	<i>"It is annoying to search through clothing to find the right size and, when labels are small, it is even more annoying."</i>
		<i>"Would make essential information (size/price) easier/quicker to access for everyone."</i>
		<i>"Like many people over 60, my eyes aren't what they used to be"</i>
NOT AFFECT		<i>"The manufacturers purposely and thoughtfully place the price in an inconspicuous place"</i>
HINDER		<i>"I often find some of the information written on the price tag useful, especially for clothing I purchase. I like to see what kinds of materials were used and determine if the pricing is reasonable. "</i>
Q3	ENHANCE	<i>(No Free Responses)</i>
	NOT AFFECT	<i>"It wouldn't affect my experience except if all stores in the same country had the same color-coding, in which case it might enhance my experience very slightly."</i>
		<i>"As long as the flooring choice is done with practicality, for the visually impaired, and aesthetic, for the sighted, I see no reason why it can't be good for everyone."</i>
HINDER		<i>"Carpeting is an inappropriate flooring choice for a retail space--especially a condiment aisle."</i>
Q4	ENHANCE	<i>(No Free Responses)</i>
	NOT AFFECT	<i>"These signs are typically big and visible already."</i>
	HINDER	<i>(No Free Responses)</i>
Q5	ENHANCE	<i>(No Free Responses)</i>
	NOT AFFECT	<i>"I don't use signs much in stores"</i>
		<i>"I have great vision and can see the small signs, so it would not matter to me if the font was changed, but I am supportive of any changes that would help others, especially if it does not matter to me."</i>
HINDER		<i>(No Free Responses)</i>

shopping time or "simplifying" the shopping experience, and hinted at the utilitarian values of shopping previously mentioned in the literature review. A con-

clusion can be drawn that practicality and efficiency is a value shared by a majority of the shoppers, both visually impaired and non-visually impaired alike.

A second set of free-response rationales suggests that non-visually impaired individuals also face similar difficulties in the retail space, despite the lack of visual impairment. For example, one rationale for the second response claimed that “like many people who are over 60, my eyes aren’t what they used to be.” This response clearly shows that the respondent also has a difficult time reading price tags and descriptions even though she is not classified as visually impaired. Another response points to how “annoying” the process of squinting and “searching through” the price tag with small writing is. These responses suggest that while the severity of visual impairment and its impact on the shopping experience may drastically differ, there is a shared struggle between the visually impaired and non-visually impaired. Hence, both groups would benefit from the accommodation presented in Q2, lending support to the hypothesis that the accommodation thought to solely enhance the visually impaired can also enhance the experience of the non-visually impaired.

5. Limitations

This study has a few limitations, and future studies can accommodate these limits to derive more accurate research. The first limitation is the sample size. While eighty respondents in an international high school research setting is not negligible, the survey could have benefitted from a wider sample size. The sample size of 80 participants is not negligible and meets the 10% margin of error for the population of 450 according to the Cochran’s sample size formula (Conroy, 2018). Indeed, the survey could have indeed benefitted from a larger sample size to meet a higher confidence level. However, the study should be considered as a preliminary study, and one of the first of its kind that seeks to address a key gap in the literature. This study should be a pointer helping us understand that the accommodations to help the visually impaired do not necessarily hinder the experience of the non-visually impaired. Ensuing studies could conduct studies of larger scale to confirm this finding with greater accuracy. The larger sampling size would bring immense value in the field of business, as it would give store owners more confidence in adopting accommodations for the visually impaired.

Another limitation would be the lack of diversity in the socio-economic backgrounds of the respondents. Shopping is the act of expending money, and it is evident that shopping preferences and needs can look drastically different based on socioeconomic factors. The research did not take into consideration the diverse backgrounds of the survey respondents, but future studies with larger sample sizes could group the samples into respective socio-economic groups, and compare the percentage of people who select ENHANCE, NOT AFFECT, or HINDER based on this critical variable. The information derived from this future survey could add tremendous depth to the research.

The last limitation was the inability to translate the proposed scenario in the

survey into a real-life setting. Practically, it was impossible to create realistic-sized signs to put into a retail store and make the respondents truly experience what it is like with the accommodation in place. With more time and more funds, future studies can implement the specific accommodations in a retail store. We can make the non-visually impaired to go into the store before the modification and after the modification to truly determine how the accommodations affect the shopping experience. The current survey designed does include images to help the participants to imagine themselves in a store setting, but a real-life experience would enable the participants to respond to the survey with greater accuracy.

6. Conclusion

The study sought to address the gap in the literature by connecting findings from one group and extending it to the other—and in doing so, questions the premise that the non-visually impaired have needs that are fundamentally different from that of the visually impaired. This finding is significant because until recently, profit-driven store owners were reluctant to adopt store design changes to accommodate the visually impaired, as they constitute a small percentage of customers that frequent the store (Story, 1998). For profit-driven store owners, making store modifications for a small minority is not always the most financially savvy course of action. This conclusion was based on the premise that the visually impaired are a small minority with unique medical conditions and that these individuals have unique needs that are not relevant for the rest of the customers.

However, the study questions this very premise. It suggests that proposed store adjustments to help the visually impaired may also enhance the shopping experience of the non-visually impaired. It is important to note that the respondents of the survey were approving of changes for themselves, not due to some benevolent desire to help those in need. This is a significant finding that points to the possibility of a true universal design that meets the needs of all customers. The findings give shop owners more confidence to introduce universal design principles that could accommodate both the visually and non-visually impaired. This is especially the case for modifications related to signage. That being said, further research must be done to fully validate the shared needs surrounding consistency in store layout and diversity in flooring materials.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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