

## A STUDY OF PRODUCT ANTICIPANT IMAGES OF THE ELDERLY

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### ABSTRACT

Aging population is a challenge faced by most countries in the world. The aged population happen to be in the prime of their life. Although advanced in age but are still wealthy, they will become a major consumer group ready to treat themselves well and try out new things.

Although seniors are emerging as a great business opportunity, exploration of their psychological demands for the related commodities is limited. In order to avoid the mistake caused by designers in designing based on their own perceptions, the products intended for seniors, we will start a research from the perspective of Kansei Engineering. Through questionnaires, the research is intended to reveal the expectation images of seniors about their frequently used glasses and blood pressure meters through their choices of the descriptive adjectives about their preferred products and also to identify the difference in perception of quality consumer products between seniors and non-seniors.

The research shows that: 1) Seniors focus on the overall user experience about consumer products rather than their individual features. 2) Seniors pay less attention to the appearance of the products with a preference for graceful physical forms. 3) Gender does not play a big role in their choices of consumer products. 4) Female seniors pay more attention to their personal images when it comes to the choice of the consumer products involving personal appearances while their male counterparts do not pay much attention to this aspect. 5) The preference is basically consistent between seniors and non-seniors.

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## 1. RESEARCH BACKGROUND AND LITERATURE REVIEW

### 1.1. Research background

According to the World Health Organization (WHO), an aging society is defined as one in which the number of senior citizens aged over 65 accounts for over 7% of the country's total population; an aged society has more than 14% of its population over 65, and a hyper-aged society is one with over 20%. Taiwan (ROC) became an aging society in 1993. Taiwan is projected to become an aged society in the year 2018, and a hyper-aged society in 2025.

In Taiwan, the population of older adults (over the age of 50) and senior citizens (over 65) will exceed 9.12 million by 2020, representing 40% of the total population. People in this group are just only reaching the peak of their lives. Although they are becoming aged, their lives are like brilliant maple leaves in autumn, rich and dazzling. People in this group are wealthy, exhibit a desire to consume, dare to try out new things, and treat themselves well. Hence, they will become the next mainstream of consumers.

The silver-haired population offers much business opportunities. But most enterprises do not have sufficient information about the consumption preferences of the aged population. They cannot afford to avoid the challenge of seizing the market of the silver-haired population as an aged society is taking shape. The stereotyped image that the general public has about the consumer products intended for seniors is usually associated with such descriptions as dark-coloured, function-oriented, easy in operation, and simple in appearance. (figure 1.) But do senior consumers really like these kinds of products?



Figure 1: Photos of consumer products used by seniors are searched through Google search engine.

A review of the research literature on seniors published in recent years shows that most of them focus on discussion of the effects of their declining physiological functions, such as the Exploration of Cell Phone Operation Interface for Seniors (Yu Jing, Ji Ting, and Xu Jianbo, 2016); General Design Principles Attempting to Draw Conclusions on Seniors' Visual Demands for Their Products (Jeff, Johnson. & Kate, Finn., 2016); and the Effect of Overall Environment and Social Effects on the Seniors (Tad Hirsch, Jodi Forlizzi, Elaine Hyder, Jennifer Goetz, Jacey Stroback, Chris Kurtz, 2000); Exploration of Seniors' Demands for Product Designs Sponsored by

Enterprises (Matsushita Electric Works, Ltd., 2005). The exploration of the psychological expectation image of seniors is quite limited.

This research attempts to proceed from the association between expectation image and design approaches. It first studies the preference of seniors for consumer products with examples of their frequently used products and the preference of non-seniors as well as the obvious difference between seniors and non-seniors, so as to offer a general conclusion for reference.

If we could have some understanding of the basic cognition of the design definition between designers and senior consumers, we will be able to help bridge their gap in cognition. If we could extract the design elements and methods, about which both designers and senior consumers have consistent cognition, to come up with a table of design suggestions, they could act as references for practical designing.

Through questionnaires and interviews, this research intends to identify the shared perceptions amongst seniors about consumer products. Its findings are expected to provide suggestions in the product design process and also helps to understand the demands of seniors for consumer products.

## **1.2. Research topics**

This research initially explores the following topics:

1. Expectations of seniors about consumer products.
2. Comparison of the expectations between male and female seniors to identify whether gender will cause major differences.
3. Will the expectations of seniors vary significantly with consumer products of different nature?
4. Compare the expectations of seniors and non-seniors to find out whether non-seniors do know what seniors want.

## **2. RESEARCH METHOD AND PROCEDURES**

The above-mentioned topics are explored through a questionnaire about choice of adjectives for expectation description supplemented by an interview on the spot.

### **2.1. Subjects**

Subjects are divided into a senior group and a non-senior group.

#### **2.1.1. Seniors**

According to the Golden Age Theory by Lin in 1995, there are three categories of seniors (Golden Age I - III) in accordance with the five comprehensive health indexes including physical health, mental health, social health, economic health and ADL.

Golden Age I: (healthy & active, 70~80%)

Golden Age II: (moderately morbid or infirm, less active, partially dependent, 2~7%)

Golden Age III: (seriously ill or disable, totally dependent, 2~7%)

This research intends to study the senior population in Gold Age I which refers to the healthy and physically active seniors with the abilities of independent living. This group accounts for 70% of the overall senior population. In the age group of 65-74, they have just joined the senior population. Since they could express their own preferences with their abilities of independent living and choice of consumer products, they became the focus of this research which studied a total of 50 subjects in the group including 25 male seniors and 25 female seniors.

#### **2.1.2. Non-seniors**

A total of 50 subjects aged under 65 were chosen, including 10 in each of the five age groups with an interval of 10 years, namely 64-55, 54-45, 44-35, 34-25 and <25.

#### **2.2. Consumer products studied**

In choosing the consumer products for the study, we focused on the ones which seniors find familiar. Through an interview of 5 seniors, we managed to find out their most-frequently used products. They were asked for the reason for their choices. This information could be used as reference for the follow-up screening and evaluation.

Finally, blood pressure meter and glasses were chosen as the study samples. Both of the products are used by seniors on a daily basis. They are also of different nature since glasses involves personal appearance. A study based on these two products is also expected to show the preferences of seniors for the products of different nature.

#### **2.3. Adjectives available**

An interview with five product designers with more than 3 years of designing experience reveals their intended image perceptions in designing products for seniors. We also collected image words frequently used in the related literature and came up with 52 adjectives available for choices in our questionnaire.

## 2.4. Experiment Procedures

Among the 52 adjectives, subjects were asked to make a choice to describe their expectations about blood pressure meter and glasses respectively. In the due process, they were asked for the reason of their choices which were recorded. Finally, we counted the times each adjective had been chosen, showing their popularity.

## 3. EXPERIMENT RESULTS SHOW

### 3.1. Results of the study on the participating seniors

#### 3.1.1. Overall expectation image of the participating seniors

The participating seniors made a choice among the 52 adjectives to describe their expectations for the two products. Table 1. shows the top 10 adjectives.

Table 1: Results of the choices by the participating seniors. (overall)

Rank	Adjectives (anticipant image)	Frequency
1	Practical	65
2	Safe	58
3	Light	51
4.5.6	Comfortable, durable, effective	49
7	Convenient	42
8	Efficient	39
9	Solid	37
10	Graceful	27

1. The participating seniors focused on the practical aspect of the products, followed by their "safety", "lightness", "comfort", "durability", "effectiveness", "convenience", "efficiency", "Solidarity" and "gracefulness". Among them, lightness refers to the product's actual size as well as its physical form. The three adjective words "comfort", "durability" and "effectiveness" were chosen for the same number of times.
2. An analysis of these words shows that most of them are related to the overall perception after the use of the products. For example, the adjectives like "practical", "comfortable", "durable", "effective", "convenient", "efficient" and "solid" are used to describe the overall experience rather than a single feature of the products. Such experience would be possible only after usage over a period of time. Thus, seniors care more about the overall user experience of the products rather than their individual features.

3. From the perspective of the seniors, products need be comfortable, convenient and safe in their operation. They also need to be durable and solid allowing for a long-term use.
4. The experiment results show that seniors pay less attention to the physical form of the products. Although the word “light” ranks the 3<sup>rd</sup> in the top 10 most frequently used words, we learned through interviews that it was chosen to mean demands in usage, operation and even for the purpose of collection rather than because of the physical form. “Graceful” is the most frequently chosen adjective that is purely related to the physical form.◦
5. In choosing daily consumer products, most of seniors would consider the overall user experience, followed by their operation and then their physical form.

### 3.1.2. The effects of the gender factor

Table 2 shows the effects of the gender factor.

Table 2: Results of the choices by the participating seniors. (Differences caused by the gender factor)

Female seniors		Male seniors	
Rank	Adjectives (Frequency )	Rank	Adjectives (Frequency)
1.2	Safe, practical (30)	1	practical (35)
3	Comfortable (26)	2	Effective (29)
4.5	Light, durable (24)	3.4	Safe, convenient (28)
6	Effective (20)	5	Light (27)
7.8	Graceful, efficient (19)	6	Durable (25)
9	Professional (16)	7	Comfortable (23)
10	Solid (15)	8	Solid (22)
		9	Efficient (20)
		10	Concise (15)

1. The results of the study on both genders show that male seniors care more about the practicality of the products while their female counterparts pay equal attention to the practicality and safety. The former pay more attention to effectiveness while the latter focus more on comfort.
2. In terms of physical form, female seniors prefer graceful designs while their male counterparts prefer concise designs.
3. Generally speaking, the choices of the adjectives are basically consistent between female and male seniors in terms of individual choices and identical in the overall choices.

### 3.1.3. Effects of product categories

Table 3 shows effects of different product categories on the choices of senior about their expectation image.

Table 3: Results of the choices by the participating seniors. (Differences caused by the product category)

Blood pressure meter		Glasses	
Rank	Adjectives (Frequency)	Rank	Adjectives (Frequency)
1	Practical (36)	1	Durable (30)
2.3	Safe, effective (31)	2.3	Convenient , practical (29)
4	Light (28)	4	Safe (27)
5	Convenient (22)	5	Light (23)
6	Efficient (21)	6	Graceful (21)
7	Comfortable (20)	7	Convenient (20)
8	Durable (19)	8	Durable (19)
9	Solid (18)	9.10	Efficient , effective (18)
10	Simple (14)		

As the overall results demonstrate, seniors emphasize their demands for functionality in choosing blood pressure products while they pay more attention to the comfort and gracefulness of the glasses as evidenced by the frequency of their choices of the adjectives.

The effects of both product categories and gender factors are shown in table 4 and 5.

Table 4: The gender factor vs the product category. (Blood pressure meter)

Blood pressure meter			
Female seniors		Male seniors	
Rank	Adjectives (Frequency)	Rank	Adjectives (Frequency)
1.2	Practical, safe (16)	1	Practical (20)
3	Effective (13)	2	Effective (18)
4	Light (12)	3	Light (16)
5	Efficient (11)	4	Safe (15)
6.7	Comfortable, durable (10)	5	Convenient (13)
8.9	Professional, convenient (9)	6	Solid (12)
10	Simple, clean (7)	7.8	Comfortable, efficient (10)
		9	Durable (9)
		10	Concise (8)

Regarding the blood pressure meter, there is not much difference in the choices between male and female seniors. The results are the same with the effects of gender factor. Male seniors focus on the functionality of products while their female counterpart pay equal attention to safety in addition to the functionality.

Table 5: The gender factor vs the product category. (Glasses)

Glasses			
Female seniors		Male seniors	
Rank	Adjectives (Frequency )	Rank	Adjectives(Frequency)
1	Comfortable (16)	1	Durable (16)
2	Graceful (15)	2.3	Practical, convenient (15)
3.4.5	Safe, practical, durable (14)	4.5.	Safe, comfortable (13)
6	Light (12)	6.7.	Effective, light (11)
7	Solid (9)	8.9	Efficient, solid (10)
8	Efficient (8)	10	Simple, concise (7)
9.10	Effective, professional, modern (7)		



1. Regarding the glasses, female seniors care about their comfort most while male seniors focus on their durability. In terms of their physical forms, female seniors prefer graceful designs while male seniors tend to like simpler designs.
2. Both male and female seniors pay the most attention to the practicality in choosing different products, without much difference in their choices between them. However, female seniors pay equal attention to the safety apart from the practicality. Female seniors care about their appearance while their male counterparts do not care that much on it. The former like graceful designs while the latter prefer simple designs.

### 3.2. Seniors vs non-seniors

#### 3.2.1. Comparison of overall results

The comparison of the choices between seniors and non-seniors is shown in Table 6.

Table 6: Choices of seniors and non-seniors. ( overall )

Seniors		Non-seniors	
Rank	Adjectives (Frequency)	Rank	Adjectives(Frequency)
1	Practical (65)	1	Light (65)
2	Safe (58)	2	Durable (64)
3	Light (51)	3	Practical (63)
4.5.6	Comfortable, durable, effective (49)	4	Comfortable (51)
7	Convenient (42)	5	Professional (49)
8	Efficient (39)	6	Safe (46)
9	Solid (37)	7	Convenient (39)
10	Graceful (27)	8	Effective (33)
		9	Efficient (32)
		10	Concise, durable (30)

1. Generally speaking, the choices of non-seniors are basically similar to those of seniors.
2. In terms of the frequency of choices, non-seniors believe that “light”, “durable” and “practical” are the most important features about the products for seniors, each chosen by 60% of them. Nearly 50% of non-senior participants chose “comfortable” and “professional”. They believe that products intended for seniors need to be as light as possible. In light of the decline of physiological function of the seniors, their product design needs to address the difficulty caused by the decline to ensure their comfort. In addition, the word

“professional” were chosen to mean the functions of the products and also their physical forms. Non-seniors consider that the physical forms of the products for seniors need to be “professional” and “concise” while seniors themselves prefer graceful design.

### **3.3. Overall research results**

To sum up, the experiment results are as follows:

1. In choosing daily consumer products, seniors would consider the overall user experience first, followed by easiness of their operation and then their physical forms in which they prefer graceful designs.
2. In terms of choices, there are no obvious differences between male and female seniors. As indicated by the experiment results, male senior focus on the practicality of the products while their female counterparts also give equal attention to their safety. The former emphasizes the functional effectiveness of the products while the latter stress their comfort. Regarding the physical forms of the products, female seniors prefer graceful designs while their male counterparts like concise designs.
3. Regarding the products of different nature, there are not much differences among seniors in terms of their choices, although female seniors care about their appearance while their male counterparts do not care that much about their appearance.
4. The expectation images of the products for seniors are generally the same between seniors and non-seniors. The former are more concerned about the functions of the products while the latter believe that the physical forms of the products need to be “professional” and “concise”.

## **4. FOLLOW-UP RESEARCH AND SUGGESTIONS**

Early in the research, we attempted to identify the preferences of the participating seniors about the particular products. The comparison between seniors and non-seniors revealed that both groups had similar preferences. The seniors are concerned about the overall perception of the products first rather than their individual features, followed by the physical forms in which they prefer graceful designs.

We have learned from the results of the previous experiment that in designing products for seniors we need focus on the balanced performance of the products in all aspects rather than highlighting individual features. Based on the previous findings, this research will follow up by attempting to sum up designing elements and approaches corresponding to the preferred adjectives in hopes of contributing reference data to practical designs.

## 5. ACKNOWLEDGMENTS

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