# Older adults' attitudes towards and perceptions of product manual: a pilot study

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Abstract: The purpose of present study was to conduct a pilot study of older adults' usage of and attitudes toward product manuals. The goals were to better understand perspectives that may be generalized across different contexts, and diverse populations of older adults. Seventy older adults (N = 70) in Taiwan were interviewed to discuss their use of and attitudes about product manuals. The structure interviewed data provide a more in-depth view of the concerns of older adults. Older adults have certain needs on the product manual and present different attitudes from the manual usage experience. Negative attitudes (i.e., dislikes) outnumbered positive attitudes (i.e., likes) among a three product manual inventory. Our research elucidates the reasons behind older adults' attitudes, and provides insight into older adults' preference within product manuals. The design guidance and implication of the results are discussed.

***Key words: Product manual, older adults, attitudes, perceptions***

## 1. Introduction

Although older adults report a willingness to adopt technology products [1], most technology products have many functions and their operations are often complex. Technology products do not always seem to work properly, or they are so complicated they might seem beyond older adult's capabilities [2]. To compensate for older adults' inexperience with certain technologies, related research has reported that providing supporting information or extra training materials is an effective way to support and enhance older adults' interactions with technology [3, 4, 5]. Older adults would be more comfortable with and willing to adopt new technology products if they received useful type of supportive information or training materials [6, 7, 8].

Product manuals are one kind of supportive material for older adult users to become familiar with the product. Product manuals are often associated with the traditional paper-based, electronic, multimedia and interactive approach for different products. A manual is an interface between the user and the product, presenting diverse information and collection of ways to assist in answering users' questions. The goal of any manual is to deliver essential knowledge that is accurate, applicable, reliable and understandable to the users [7]. A good product manual is also an important factor in the success and satisfaction of products. Likewise, poor presentation of information in a product manual may result in loss of confidence and misuse in the product [9].

An optimal product manual would provide older adults with the supportive information they need at the right time and at the right quality level. Because of this, understanding and designing the product manual is as important as the design of the product itself. Previous research studies have addressed general issues related to

usage of product manuals with younger adult users; however, older adults might have different competencies, qualifications and experiences, perform different product functions, and have different information needs. Manual usage or the attitudes of older adults regarding manuals for a variety of product used in their daily life is unknown. It will be beneficial and critical to understand the older adults who are likely to use the instruction manual. Additionally, assuming that older adults do not have much experience with such unfamiliar technology products, it is conceivable that they might want to read the manual to obtain an understanding of the concept and functions of the product and to learn to use it [9]. Therefore, if we want to provide adequate product manuals to older adults, what are the aspects of product manual we need to consider? Due to the age-related changes in motor, perceptual and cognitive abilities, the manual requirements for older adults must be considered [10]. It is apparent that there are specific aspects that need to be clarified and considered when designing a product manual for older adults [11].

## 2. Methods

### 2.1 Participants

The research recruited participants randomized from the adult community college in different Taiwan Counties. Posters and leaflets were given to community groups and advertisements were placed in each local bulletin board. Participants were screened first for suitability through discussion either by telephone or in person. Suitable participants were then visited at their home for the purposes of orientating recruits to provide information about the study and for the collection of informed written consent.

Seventy community-dwelling older adults participated in this study (age range 65-75; M=70.21, SD=4.53). The participants had a varied educational background: 72% had a high school education or lower, 21% had completed college, and 7% had a master degree or higher. There were 58% females and 42% males. Most participants reported living with relatives (79%) or in independent senior housing (5%); the remaining 16% reported living in a house, apartment, or condominium, in public housing, or in assisted living. As expected for this age group, the majority of participants were retired (60%). The remaining participants reported occupational status as part-time (17%), full-time (3%), homemaker (9%), or volunteer (7%). Four percent of the participants did not specify their occupational status. Most participants (85%) rated their general health to be good or excellent (1 = poor and 5 = excellent, M = 3.17, SD = .83)

### 2.2 Materials

Participants were given a structured interview script and asked (1) “From your past experience, what is your purpose for reading the manual?” Finally, we asked (2) For those of you who have used [different kinds of product manual in their household], “what do you like and dislike about using the manual?” This question was designed to encourage participants to discuss their attitudes about manuals.

The structured interview questions were pilot tested with five older adults to ensure that the questions were clear and prompted discussion relevant to the issues of immediate interest. The materials are available from the first author.

### 2.3 Results

#### 2.3.1 Purpose for reading the manuals

Participants reported their opinions to the question, “From your past experience, what is your purpose to read the manual?” A total of 92 segments were coded as purposes/reasons. Significant differences among the frequencies ($x2=14.6$, $df=5$, $p<.05$) in six categories were identified. (see Table 1 for percentages and example quotes).

Older adults provided many reasons for using product manuals. Trying to gain a better understanding of the product and supporting forgotten information were the two most frequently mentioned reasons for using the manual. Older adults were also afraid of making mistakes or misusing the product, so they were depending on the manual in case of some unexpected situation. In particular, older adults reported having a manual so they would not have to bother their family members for assistance. Other ideas like exchanging opinions with peer learners, gaining self-confidence were also mentioned by older adults. These data provide insight into the diverse reasons for which older adults use product manuals.

**Table1 Numbers and percentage of segments on the purpose of using manual**

| Coding Scheme Categories | N | % | Example quotes |
|---|---|---|---|
| Better understanding with the products | 25 | 27.2 | The main purpose to read the manual is to catch correct product knowledge. When I use it correctly, the images are great! Read the manual to find out about all the settings.” |
| Recall forgotten functions or tasks | 21 | 22.8 | My purpose is to review the forgotten task, especially for the sequenced function. Immediate recall from the manual and quick answered my question. |
| Preventing making mistake | 16 | 17.4 | Better safe than sorry, I am afraid causing any mistake or problem result in big trouble. |
| Not to bother family members | 13 | 14.1 | I feel frustrated when my son teaches me impatiently. |
| To exchange opinions with peer learners or friends | 9 | 9.8 | I can share what I learned to my friends and teach them how to use the cell phone. |
| Strengthen confidences | 8 | 8.7 | I feel more confident following the manual instruction to use my products. |

### 2.3.2 Relative proportion of likes and dislikes for the manual

A primary goal of this portion of the interview was to gain a better understanding of older adults’ attitudes related to using product manuals. A total of 212 segments were coded as attitudes for manual usage from older adults’ past experience. The segments were coded separately for likes and dislikes.

The coding scheme was developed by reviewing a random sample of the transcripts from each domain and extracting specific themes, as well as incorporating the manual design checklist as fundamental characteristics. Three coders independently coded the selected transcripts, which was followed by a discussion of the discrepancies and revisions to the coding scheme. Every like and dislike segment was coded on each of three inventories: content, navigation and presentation. Segments were also coded on different element levels.

Overall, negative opinions (i.e., dislikes, N=174) outnumbered positive opinions (i.e., likes, N=38). Chi-squared tests revealed significant differences between the frequencies of inventory of attitudes discussed in the content ($x2=26.2$, $df=1$, $p<.001$), navigation ($x2=15.5$, $df=1$, $p<.001$) and presentation ($x2=48.3$, $df=1$, $p<.001$). Attitudes of content, navigation, and presentation inventory provided more specific underlying reasons for the overall positive and negative opinions.

**(1) Content inventory for manual:**

*Likes*. When discussing likes or dislikes about product manuals, participants talked about different experiences. In the content inventory (Table 2.), positive attitudes about the manual were mentioned. For example, older adults

were satisfied with the mobile phone smart card for the question and troubleshooting and the “On screen help guide” in the product itself. Older adults also spoke positively about the concept of placing the important information on the packaging; they can refer to the manual directly. These positive attitudes demonstrate that older adults do like some aspects of current product manual designs.

*Dislikes*. When the older adults had to read a manual to perform a specific task, the most dislike attitudes was about too much terminology or jargon used in the manual. Older adults experienced difficulty in understanding such abbreviations as ‘3G’ or ‘WAP’ that are used in many products.

Secondly, older adults reported that manuals did not provide an overview page to explain how to use the product in the beginning. The overview of a manual is important to help older adults conceptualize which aspects of the product they need to know.

In addition, older adults complained about that the examples shown in the manuals were unclear and did not correspond to the real life scenario. Older adults indicated that the manual examples would make more sense and be more meaningful by using familiar narrative events and facts.

The other attitudes on exploitation and task description reveals the manuals do not take into consideration how to guide older adults in exploring the basic and advanced features of the product, as well as provide the detailed explanation for each task that users can perform.

**(2) Navigation inventory for manual**:

*Likes*. In the navigation inventory (Table 3), the most frequently reported positive attitude toward product manuals was the “orientation” element. The data demonstrated that participants had preferences for the concept of manual orientation functions, which is helpful for the quick reference. This useful part of the manual is using a “quick start” concept. For older adults who might be confused interacting with a product, this quick start guide explains how to use the manual to setup a product with reading as few paragraphs. This allows older adults to understand the immediately important information for the specific requirements and setup of the product.

*Dislikes.* The elements of “finding the right information” and “structure” constituted the majority of the older adults’ dislikes. Older adults expressed the manual index is an essential factor to get the right or needed information. The reason older adults were annoyed was due to uncertainty about information and incomprehensive definition on the index title and table of content in the manual. Moreover, more and more products contain different functions and settings under layers of menus. Too much overlap or irrelevant information increases older adults’ uncertainty. If older adults wanted to complete a task, they needed to turn the page several times and eventually failed because of the confusing manual structure. Older adults reflected the structure of the manual did not logically describe the task steps. It made them confused about the whole process.

For the rest of the attitudes about navigation of the manual, numbering and cross reference were described. Older adults indicated that they disliked manuals because it is easy to get lost due to vague numbering and cross-referencing. These difficulties make it harder for older adults to build a conceptual model about the product. For example, one manual instructed readers to follow the sequence: 1. Press central "Menu/OK" button. 2. Press LEFT arrow (the one with the flower/close-up icon). 3. Press DOWN arrow.... In this case, older adults found it difficult to divide their attention between various steps in the manual to find correct buttons on the product. When reading

the manual, older adults tended to forget which step in a sequence was already performed and which was the next to be performed. This was exacerbated for complex tasks.

**(3) Presentation inventory for manual:**

Likes. Older adults indicated a positive attitude toward the illustration element of the presentation inventory (Table 4). Older adults found product manuals interesting to look at and caught their attention for further reading. Attractive and funny pictures motivated them to be more willing to use the product and understand quickly.

Dislikes. Older adults expressed that manuals always have room for improvement on the page layouts and illustrations. Older adults showed most of the manuals were on a small page size. Older adults complained that some of the manual were too simple in a one or two column page; it seems the company crams as many words as possible on to a page to reduce printing costs.

Many product manuals often translated directly from the original language version; inappropriate writing style could result in confusing. Additionally, some sentences were passive voice rather than active voice to describe task steps. Older adults prefer more direct, vigorous, explicit, and concise writing style to guide the action. Furthermore, older adults reported their negative attitude toward color and typography issues based on the declined eyesight to emphasize its importance with the manual usage. Manuals printed in a small size makes font difficult to read for many users.

The other negative attitudes focused on the paper quality, binding and miscellaneous statements. Older adults reported their manuals are easy to damage since the paper quality is poor and binding was not secure or long-lasting. Older adults also reported disappointment with the glare of the paper; it strains their eyes and makes them fatigued.

The interview data described above demonstrate that older adults have needs and requirements for using product manuals. They hope the manuals can make the product easier to use, as well as make complicated tasks less effortful. However, there are many product manual content, navigation and presentation aspects that need to be redesigned and modified. Older adults need accurate, up-to-date content provided in a consistent and helpful way. Good presentation that complements the content and makes the manual more attractive and easier to use would benefit older adults. This broad picture of older adults' manual attitudes must consider for manual design and development.

## 4. Conclusions

Product manuals cover almost all materials that are aimed at end users and contain instructions on how to use the product. For older adults, a good product manual could help them get useful information and basic concepts about the product. Well-designed manuals can improve older adults' quality of life by facilitating more independence and confidence. Across a broad range of products in our research, it has been shown that older adults have certain needs on the product manual and present different attitudes from the manual usage experience. Current usage of and attitudes of product manual gleaned from older adults can provide insight guidance that could make manual more likely to be perceived thoroughly and therefore more likely to be adopted. Also, product manual developers can benefit from our findings by gaining a better understanding of older adults' needs and preferences to improve the quality of product manuals.

**Table 2. Content inventory related to like and dislike attitudes about manual usage**

| Domain | Element | N | % | Example quotes |
|---|---|---|---|---|
| Like | Questions and problems | 5 | 25 | The on-screen Help Guide is really helpful.<br>I like these help cards |
| | Task descriptions | 4 | 20 | Provide step-by-step instructions for completing these tasks. |
| | Overview | 4 | 20 | There is an overview page of the product, it is helpful. |
| | Examples | 3 | 15 | The examples provided are so interesting, appealing me to read. |
| | Exploitation | 2 | 10 | The manual split into two parts for the basic and advanced function page. |
| | Interface element | 2 | 10 | Each part of the product is well explained. |
| Subtotal | | 20 | 100 | |
| Dislike | Terminology | 14 | 20.6 | I feel frustrated by its obscure terminology description. |
| | Overview | 11 | 16.2 | The overview page is too rough; I can't get any basic information. |
| | Examples | 10 | 14.7 | I hope the manual could provide some practical example or scenario to better understand the real usage situation. |
| | Questions and problems | 9 | 13.2 | Insufficient troubleshooting advice in different situation. |
| | Task descriptions | 8 | 11.8 | It provides highly detailed information part of the task, but others didn't have the same level of detail. |
| | Exploitation | 7 | 10.3 | Multifunction explanations are mixed together. Very hard to figure it out.<br>I don't know how to distinguishing between "important" and "less important" information |
| | Interface elements | 7 | 10.3 | It is too simple to introduce all its detailed parts and elements |
| | User-supplied content | 2 | 2.9 | I hope I can keep what I want and throw away the useless page. I can tailor my own manual. |
| Subtotal | | 68 | 100 | |

**Table 3. Navigation inventory related to like and dislike attitudes about manual usage**

| Domain | Element | N | % | Example quotes |
|---|---|---|---|---|
| Like | Orientation | 5 | 50 | The quick tip of the manual could guide me to find the starting point for my needs.<br>It is easy to set up with the two-sided quick start guide. |
| | Finding the right information | 3 | 30 | Easy to clarify the content by index referring. |
| | Structured | 2 | 20 | Very informative and logical for the content arrangement. |
| Subtotal | | 10 | 100 | |
| Dislike | Finding the right information | 17 | 45.9 | The information that I really needs is too hard to find.<br>The index is not comprehensive, accurate and well-edited. |
| | Structured | 8 | 21.6 | There is no logic and no concession given for the fact that people expect certain standards (like the hierarchy menu).<br>The structure of the flow looks sloppy. |
| | Orientation | 5 | 13.5 | Insufficient orientation to my perspective for operating the product.<br>The heading is so confused, not easy to figure it out. |
| | Numbering | 4 | 10.8 | I got confused the page numbers in each volume or each part make it chaos to which volume or part they belong. |
| | Cross-references | 3 | 8.1 | It is hard to flip back and forward to check different pages and content. |
| Subtotal | | 37 | 100 | |

**Table 4. Presentation inventory related to like and dislike attitudes about manual usage**

| Domain | Element | N | % | Example quotes |
|---|---|---|---|---|
| Like | Illustrations | 5 | 62.5 | I feel relaxed about these interesting drawings and graphics. |
| | Page layouts | 3 | 37.5 | Text and graphics on the page arranged clear and easy to follow. |
| Subtotal | | 8 | 100 | |
| Dislike | Page layouts | 18 | 26.1 | The manual that folds out into a single tablecloth-sized piece of paper printed in tiny text with narrow margins looks cluttered and is very hard to read!<br>The manual seems to have been assembled without order. |
| | Illustrations | 14 | 20.3 | I can't understand all the parts of the product from the exploded diagram showing.<br>Screenshots picture did not illustrating the default theme. |
| | Style | 8 | 11.6 | It was written in badly translated English.<br>Some words that looks Dumb! Too weak, awkward, and wordy. |
| | Color | 8 | 11.6 | The manuals only print black & white. Some important information can't use different color to point out. |
| | Typography | 6 | 8.7 | The font size is too small. |
| | Binding | 6 | 8.7 | Some parts that fall to pieces, I need to use the tape to fix. |
| | Miscellaneous | 5 | 7.2 | My manual is accompanying CD-Rom and downloadable software, but I didn't even own a computer! |
| | Paper | 4 | 5.8 | The paper is a little glaring. Make my eyes feel uncomfortable! |
| Subtotal | | 69 | 100 | |

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