Differences in Customers' Interactions with Expert/Novice Salesclerks in a Bespoke Tailoring Situation: A Case Study on the Utterances of Salesclerks

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Abstract. When we make decisions, we do not always decide by ourselves, but sometimes rely on recommendation systems. Previous recommendation systems focused on the accuracy of the recommendation. More recently, human-centered recommendation systems have garnered attention. The human-centered recommendation is especially important in a context wherein mass customization lets users personalize what they buy. However, how people tackle a vast amount of decision-making in the context of personalization has not yet been revealed. In this research, we focused on bespoke tailoring, which relies on salesclerks to help customers acquire what they want. We investigated the ways that customers interact with human recommenders (salesclerks). The results showed that expert salesclerks limited the number of options which customers have at a time, and that they reassured the customers about the suitability of their choices after they made their decisions. These results indicate that qualified recommenders in bespoke tailoring help customers by avoiding choice overload and evoking the customers' positive emotions. These findings are especially helpful for a recommendation system in a situation in which personalization can lead to the realization of customer needs and wants.

Keywords: Recommendation system · Feeling and image · Bespoke design

1 Introduction

Sometimes we make decisions by ourselves, and other times, we accept advice from others about what to do. Such advisors include both humans (professional salesclerks, experts in their fields, and friends) and nonhumans (recommender systems on the computer). With the help of these advisors, we can make better choices, even in a field, where lack sufficient knowledge or experience.

This kind of advice is becoming more and more important in the industry 4.0 society, where mass customization furnishes us with various choices. In such a society, we are exposed to a multitude of options and must repeatedly make decisions. Individuals in demanding decision-making situations can be supported by technical assistance [1], one feature of industry 4.0. This technical assistance is expected to

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facilitate decision-making and lead users to better outcomes, via the interaction between humans and computers.

In decision-making activities, such as shopping, people evaluate a given item, not only in terms of its functional properties, but based on the kind of feeling and image (*kansei* in Japanese) the item evokes it [2]. The importance of *kansei* factors is heightened in an industry 4.0 society, thanks to mass customization, which enables people to select what they want through multiple stages of decision making. Although *kansei* is an important factor in human decision making, no computer-based recommender systems that consider *kansei* factors have yet been implemented. To realize one's *kansei*, it is essential to consider various options and modes of personalization.

Therefore, this study focuses on actual recommendation scenes between humans and investigates their mode of realizing the products' personalization. In particular, we pay attention to the recommenders' respective levels of ability. The results of this study demonstrate the optimum method of generating a computer system that recommends choices, from a *kansei* viewpoint. To grasp the whole scene's characteristics, we used a case study approach.

2 Related Works

2.1 Recommender Systems

Recommender systems are an example of computerized decision-making support. Recommender systems are "software tools and techniques providing suggestions for items to be of use to a user" [3]. It selects an appropriate choice among various items and decreases the user's cost of choosing.

Many studies have focused on recommender systems. Although the best recommender systems naturally provide accurate recommendations, some studies have indicated that even an accurate recommendation is not sufficient [4]. Other studies indicate the importance of human factors in rendering the recommendation: one study attaches importance to user centric directions [5]; another values a deeper understanding of users' information-seeking tasks [6]; and still another emphasizes the importance of the coverage and serendipity of recommender system output [4]. They have emphasized factors related to the human factors, and this suggests the importance of considering recommender systems from the human perspective.

Recommendations are not always provided by computers. Recommendations from humans, such as salesclerks, experts in the field, or doctors are very typical. Human recommendations decrease decision maker's cost of choosing, in much the same way that recommendation systems do.

One area in which human recommendations function usefully is bespoke design, especially bespoke tailoring. In bespoke tailoring, unlike ready-to-wear, garments are designed through the interaction between the customers and salesclerks. Thanks to that, not only can customers acquire garments in their exact size, but their every preference can also be reflected in the garment. This feature of bespoke tailoring compels customers to make a lot of choices as they buy their garment. Considering this feature, bespoke

tailoring can be defined as a communication-based and decision-making process that operates as well as the computer-based recommendation systems described above.

2.2 Consumer Decision Making

Decision making is a psychological process of choosing one option from two or more alternatives. In most decision making, it is not possible to examine all possible alternatives (maximization) because cognitive resources are limited. Instead, most decision makers stop searching when they arrive at the choice that satisfies them (satisfaction) [7]. Another perspective divides the decision-making process into multiple stages (multistage decision strategy) [8]. In the multiple decision strategies, the first step involves reducing the number of the alternatives by a non-compensatory strategy, to minimize the cognitive cost. This allows for a more fine-grained analysis of the relevant information.

Psychology and economics research has investigated consumer decision making, from among the decision-making processes. Consumer decision making is affected by various factors, which include not only the function of the products, but also more affective factors, such as emotion [9] and brand similarity [10]. The effect of these affective factors was not investigated in the context of recommendation systems.

3 Customers' Interactions with Expert/Novice Salesclerks in a Bespoke Tailoring Situation

3.1 Method

Participants. Three male salesclerks and 4 male customers participated in the survey. They were recruited at a sales fair of a suit manufacture company. One salesclerk was an expert, with over 10 years of experience in bespoke tailoring. The other two were novices, who had been engaged in bespoke tailoring for fewer than five years.

Procedure. In the survey, a customer ordered a bespoke tailored suit while consulting with a salesclerk (Fig. 1). First, the customer selected the suit materials and then determined the design of the details of the suit (overall figure, number of front buttons, cloth backing, etc.) After that, the customers were measured by the salesclerk. The whole bespoke tailoring process took approximately 30 to 60 min. All aspects of customer-salesclerk interactions, including their utterances, were recorded.

3.2 Results

Object Phase of Analysis. As described in the procedure, bespoke tailoring can be divided into three phrases: suit material selection, detail design, and measurement. We focused on the suit material selection process, wherein customers face a vast number of choices.

Fig. 1. An example of actual bespoke tailoring. A salesclerk and a customer (or customers) design the suit through interaction.

Interactions with Expert Salesclerks

Case #1. (salesclerk A) The customer is a 34-year-old male.

At the beginning of the bespoke tailoring process, salesclerk A asked some questions to get a grasp of the customer's desires. He asked the customer very concrete questions, such as when he would be wearing the suit (at the office), and which color he preferred (gray, close to black). After that, salesclerk A selected some suit materials that met the customer's specifications. After the customer selected the suit material, salesclerk A provided verbal support for the decision ("I like it, I think this is good").

Case #2. (salesclerk A) The customer in is a 67-year-old male.

As in case #1, salesclerk A first determined the customer's desires through conversation. Before selecting a suit material, the customer explained his needs and wants (comfortable design, as he needed to wear a waist corset, a bright navy suit material that he had never had, and formal design) in response to the salesclerk's questions. After the customer selected the suit material, salesclerk A provided verbal support for the decision ("It's fine because the suit is double-breasted").

Interaction with Novice Salesclerks

Case #3. (salesclerk B) The customer in is a 48-year-old male.

As in the case of the expert salesclerk, salesclerk B grasped the customer's wants at the beginning of the bespoke tailoring interaction, but to a more limited extent (navy close to black). In the process of suit material selection, salesclerk B leaves all choice to the customer, failing to limit the number of alternatives. During suit material selection, the customer, and not salesclerk B, took the initiative in making the selection and salesclerk B responded to the customer's choice afterwards. Rather, salesclerk B encouraged the customer to keep comparing materials repeatedly. After the customer had made a decision regarding suit material, salesclerk C demonstrated no clear support for the selection, simply saying, "I see."

Case #4. (salesclerk C) The customer in is a 19-year-old male.

As in the other cases, salesclerk C inquired about the customer's wants (darker color and plaid), but in an abstract way ("What kind of suit materials do you like?"). During suit material selection, salesclerk C indulged in long (over 30 s) periods of silence 14 times, during which the customer continued searching for the right suit

material with his family members. Like salesclerk B, salesclerk C offered no clear support for customer's selected suit material, and just said, "You like this? O.K."

4 Conclusion

4.1 Summary of the Results

There were clear differences between the customer interactions with expert salesclerks and novice salesclerks. The expert salesclerk limited the number of the choices of suit materials faced by customers. In addition, he justified the customer's decision by voicing his approval of the customer's choice he made it. By contrast, the novice salesclerks let the customers confront a vast number of choices. They also failed to validate the customer's choice.

Limiting the number of choices is a good way of decreasing the choice overload. Previous research shows that too many options causes choice overload and decreases the selector's satisfaction with the option that he ultimately selects [11]. This overload has also been studied in the context of knowledge communication between experts and decision makers (information overload) [12]. At the sales fair, more than 100 suit materials were available in the suit material selection. In addition, customers must select the various components of the suit: the number of buttons; the color of the cloth backing; the shape of the lapel and the vent; and so forth. Although these various options represent a heavy cognitive cost to customers, the expert salesclerk managed weight of the load by presenting only some of the available options to the customer. This is exactly the process upon which multistage decision strategy [8] is premised. The salesclerk first helps the customers limit their number of options and then moves onto detailed processing.

It is possible for choice justification to yield a positive effect for customers. Buying behavior is not a task that can be calculated by an algorithm that guides customers to reach the "best" outcome, but by a heuristic, with which they can arrive at a "sufficiently good" outcome. These characteristics of buying behavior make it difficult for customers to reassure themselves of the viability of what they have bought. This difficulty is more pervasive in the current society, where customers are able to choose whichever options they desire, thereby satisfying their feelings and image of what they prefer [2]. Thanks to the reassurance provided by the expert, it was possible to evoke customers' positive emotions, which are known to facilitate a purchase [9].

The characteristics of the experienced salesclerk, relative to those of the novice salesclerks, are analogous to the human information processing in decision making (Fig. 1). This analogy is possible, rendering the recommendation of the expert salesclerk more useful, reliable, and agreeable, and perhaps the one element needed to make computer-based recommendation systems a success (Table 1).

Table 1. The characteristics of the human decision-making process and recommendation of expert/novice salesclerk

Types of processing or recommendation system	Initial decision-making	After decision-making
Human decision making in purchase	Reducing information-processing and making more fine-grained analysis [8]	Seek information supporting choices in the item they purchased [13]
Expert salesclerk	Limiting the number of choices that customers have at one time	Choice justification
Novice salesclerk	Exposing customers to vast information	No support

4.2 The Novelty of the Present Research

In the previous research on recommendation systems, the accuracy of the recommendation has been attracting attention. However, in industry 4.0 society, wherein customers can purchase commodities that have been tailored to their preferences, customers must make a lot of choices, even when they can rely on recommendation systems. In this research, we revealed how the expert salesclerk reduces the costumer's cognitive cost and avoids choice overload. This mode of interaction can be applied to the design of computer-based recommendation systems.

4.3 Future Directions

In future research, we must address two problems: quantitative analysis and the need for an investigation of factors related to the customers.

In quantitative research, factors such as the rate of purchase and levels of customers' satisfaction should be explored. Implementing these analyses will facilitate more detailed and objective discussions.

The present analysis focused solely on the recommenders' side and investigated the interaction in terms of the experience of purchasing from salesclerks. Previous research has indicated that, in addition to the quality of the products, the character of the customer affects customer decision making [14] and domain-specific emotion there [15]. Introducing factors related to the customers would allow for a more revealing account of the interactions between them and salesclerks.

Considering these factors will be a help to realize a better recommender system in industry 4.0.

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