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Customer cooperative capability, perceived value and customer loyalty: a perspective of smart retailing

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Short Research Paper

Customer cooperative capability, perceived value and customer loyalty: a perspective of smart retailing

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Abstract: Smart retailing has become an inevitable trend in the development of the retail industry, and how to enhance smart retail technology-related customer cooperative capability has become a top priority of traditional retailers who have migrated to smart retailing format. This study explores the mechanism of customer cooperative capability on customer loyalty in the context of smart retailing. Firstly, we construct a conceptual model in which customer cooperative capabilities affect perceived value and customer loyalty. Secondly, we adopt structural equation model method to verify the hypotheses. The study found that among the three dimensions of customer cooperative capability, search capability and participation capability positively affect customer loyalty through hedonic value and utility value; learning capability positively affects customer loyalty through hedonic value; the effect of hedonic value on customer loyalty is weaker than that of utilitarian value.

Key words: smart retailing, customer cooperative capability, perceived value, customer loyalty

1. INTRODUCTION

Smart retailing is "the smart use of smart retail technologies by enterprises and consumers to reshape and strengthen their role in the new service economy by improving the quality of shopping experience"[1].The key to the success of smart retailing lies in whether smart retail technology can enhance customer's shopping experience—perceived value. Perceived value is the overall evaluation made by customers on the utility of products or services based on the perception of what is received and given, and it has an important effect on customer satisfaction and customer loyalty [2]. In the smart retail environment, the use of smart retail technology is an important approach for firms and customers to create value together. This view has been recognized by firms and many scholars [3]. The service-dominant logic suggests that firms, customers and other stakeholders can co-create value in a specific experience context in an interactive way through joint investment of resources [4]. In a smart retail environment, customer cooperative capability, as a resource invested by customers in value co-creation, should be one of the important antecedents of customer perceived value, and the relationship between the two variables is necessary to be explored. However, so far, no research has explored the impact of customer cooperative capability on perceived value from the perspective of smart retailing. How does customer cooperative capability affect perceived value in a smart retail environment? What kind of changes will this influence bring on customer loyalty? There is no answer yet.

Xie et al. [5] suggested that customers have three cooperative capabilities related to big data technology: search capability, learning capability and participation capability. As the "intelligent" use of technology to collect real-time data (big data) of each consumer's behavior and preferences is an important feature of smart retailing [3], the dimension of customer cooperative capability related to big data can also be applied to smart retailing, albeit with certain variation. Therefore, we divide the customer cooperative capability based on smart retailing into three dimensions: (1) search capability, which refers to the ability of customers to search for

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effective information using various smart retail technologies; (2) learning capability, which refers to the ability of customers to quickly master the use of smart retail technologies; (3) participation capability, which refers to the ability of customers to develop products or services in cooperation with retailers using smart retail technologies.

2. THEORETICAL BACKGROUND AND HYPOTHESES

2.1 Effects of search capability on perceived value

Smart retail technology can provide customers with a wealth of information that is helpful for decision-making, For example, customer can receive comments from other customers on products through social media, or receive discount information from nearby stores through mobile apps, and know their total purchase expenditure through the budget monitoring function of the smart shopping cart when shopping. The stronger the search capability, the more effective information customers can obtain by using smart retail technology, making it easier to make better purchase decisions according to their own needs [6]. Further, the improvement of the quality of decision-making will enhance customers' perception of utility value [7]. Therefore, customers with strong search capabilities can perceive more utility value from retailers with "smart transformation". In addition, customers with strong search capability can use smart retail technology to access more new products or get more new experiences, which will make customers perceive more fun of exploration in shopping [8]. Therefore, search capabilities can enhance the hedonic value perceived by customers. Thus, we hypothesize that:

H1a: Customers' search capability based on smart retailing has a positive effect on perceived utility value

H1b: Customers' search capability based on smart retailing has a positive effect on perceived hedonic value

2.2 Effects of learning capability on perceived value

In the context of smart retailing, customers are exposed to many smart retail technologies that were unfamiliar in the past. The use of these technologies directly determines whether customers can obtain new experiences that are different from traditional retail scenarios. Through learning, customers can master the use of these smart retail technologies. The stronger the learning capability, the less time and effort customers need to invest in learning smart retail technology, correspondingly, the stronger their perception of the ease of use of smart retail technology [9]. Further, existing studies have shown that perceived ease of use of service technology has an important effect customer perceived value of service providers [7,10]. Therefore, customers with strong learning capability should perceive more customer value from retailers who migrate to smart retail format. Thus, we hypothesize that:

H2a: Customers' learning capability based on smart retailing has a positive effect on perceived utility value

H2b: Customers' learning capability based on smart retailing has a positive effect on perceived hedonic value

2.3 Effects of participation capability on perceived value

In a smart retail environment, smart retail technology provides customers and retailers with more opportunities to jointly improve products. For example, customers use mobile applications provided by retailers to feed back their opinions on new products, and use virtual reality technology to design customized products along with retailers. The stronger the customer's ability to participate in product development, the higher the degree that the final product provided by the retailer meets the customer's personalized needs [11], which means that customers can perceive higher utility value. In addition, customers with strong participation capability often have strong interests in participating in the process of product and service development [12], and therefore it is easier for them to experience the fun of designing products in this process, which means that customers can perceive more to hedonic value. Thus, we hypothesize that:

H3a: Customers' participation capability based on smart retailing has a positive effect on perceived utility value

H3b: Customers' participation capability based on smart retailing has a positive effect on perceived hedonic value

2.4 Effects of value perception on customer loyalty

The effect of customer perceived value on customer loyalty in a retail environment has been widely supported by theoretical and empirical studies. Research on online stores such as Chiu[13] has shown that utility value and hedonic value have positive effects on customer loyalty. Therefore, the utility value and hedonic value perceived by customers in a smart retail environment should positively affect customer loyalty. Thus, we hypothesize that:

H4a: The perceived utility value of customers based on smart retailing has a positive effect on customer loyalty

H4b: The perceived hedonic value of customers based on smart retailing has a positive effect on customer loyalty

Based on the above mentioned hypotheses, we construct the conceptual model shown in Figure 1:

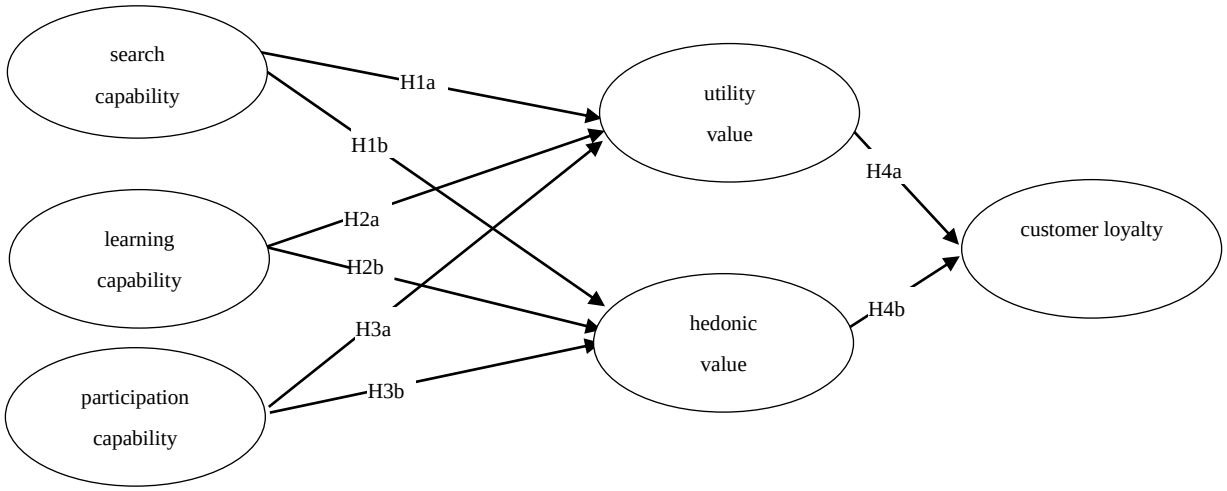

Figure 1. Conceptual model.

3. METHODOLOGY

3.1 Samples

This research conducts a formal questionnaire survey to actual retail shoppers who have used smart retail technology. Subjects from a comprehensive university who have used smart retail technology in shopping during the past 6 months were selected to participate in this study. Respondents were asked to fill in a questionnaire about their latest shopping experience in using smart retail technology. A total of 402 responses were obtained. Elimination of incomplete responses left 355 eligible responses for analysis. 41% of the respondents were men and 59% were women. 99% were between 18-25 years old. 43% of the respondents reported using smart retail technologies in more than 50% of their shopping in the last 6 months. The smart retail technologies reported by the respondents included face recognition technology, in-store interactive display screens, augmented reality, virtual reality, electronic tags, mobile APP, mobile self-checkout, and retailer's WeChat official account.

3.2 Questionnaire

Our measurement items come from two sources: scales verified by previous empirical studies and scales developed by ourselves. Before the formal survey, we conducted a pilot test with 150 college students who had prior experience with smart retail technologies to further refine the measurement items. All items were measured on 7-point Likert-type scales.

4. EMPIRICAL ANALYSIS AND RESUITS

4.1 Measurement model

Confirmatory factor analysis (CFA) enables the performance of tests regarding the convergent validity, discriminate validity, and reliability of the study constructs. The measures of overall fit mostly meet conventional standard, which suggests that our model fits the data well(CMIN=407.807, CMIN/DF=2.997, RMSEA=0.070, GFI=0.904, AGFI=0.867, NFI=0.944, CFI=0.962, IFI=0.962, RFI=0.930).

More specially, for all constructs, the composite reliability and coefficient alpha values exceed the threshold value of 0.6. Therefore, the scale for constructs appears to exhibit satisfactory internal consistency reliability. All the factor loading, which range 0.784 to 0.912, are significant($p<0.001$), indicating that convergent validity is achieved for all the study constructs.

The discriminate validity of construct measures was assessed on the basis of the Fornell and Larcker's criterion [14]. All the square root of average variance extracted (AVE) are greater than interconstruct correlations, indicating that discriminant validity is supported.

Table 1 . Discriminant validity test results.

Latent variable	1	2	3	4	5	6
search capability	**0.910**					
learning capability	0.578	**0.857**				
participation capability	0.780	0.609	**0.902**			
perceived utility value	0.672	0.516	0.688	**0.850**		
perceived hedonic value	0.661	0.591	0.616	0.774	**0.879**	
customer loyalty	0.690	0.646	0.620	0.761	0.810	**0.871**

4.2 Structural model

Structural Equation modeling (SEM) was used to estimate parameters of the structural model in Figure 1, and the completely standardized solutions computed by the AMOS22.0 are reported in Table I. Goodness-of-Fit statistics, indicating the overall acceptability of the structural model analyzed, were acceptable: RMSEA is 0.082, GFI is 0.882, AGFI is 0.840, NFI is 0.928, RFI is 0.913, TLI, CFI, and IFI are all higher than 0.9, and each fitting index reaches an acceptable level.

We found that customer perceived utility value was positively related to search capability and participation capability. The relationship of search capability to perceived utility value was the strongest (0.434 t value= 5.833), next was the relationship of participation capability to perceived utility value (0.124, t value= 2.332).

We found that customer perceived hedonic value was positively related to search capability, learning capability and participation capability. The relationship of participation capability to perceived hedonic value was the strongest (0.377, t value= 4.428), next was the relationship of search capability to perceived hedonic value (0.324, t value= 5.099). The relationship of search capability to perceived hedonic value was the weakest (0.301, t value= 5.557).

The customer loyalty was positively related to perceived utility value and perceived hedonic value. The relationship of perceived utility value to customer loyalty was the stronger (0.573, t value= 11.499), The relationship of perceived hedonic value to customer loyalty was the weaker (0.379, t value= 8.122).

Table 2. Structural model estimates.

Relationship	Standardized Parameter	T value	Conclusion
Relationship of dimensions of customer cooperative capability to perceived utility value			
H1a: search capability → utility value	0.434	5.833	Significant
H2a: learning capability → utility value	0.102	1.395	Insignificant
H3a: participation capability → utility value	0.124	2.332	Significant
Relationship of dimensions of customer cooperative capability to perceived hedonic value			
H1b: search capability → hedonic value	0.324	5.099	Significant
H2b: learning capability → hedonic value	0.301	5.557	Significant
H3b: participation capability → hedonic value	0.377	4.428	Significant
Relationship of dimensions of customer perceived value to perceived customer loyalty			
H4a: utility value → customer loyalty	0.573	11.499	Significant
H4b: hedonic value → customer loyalty	0.379	8.122	Significant

5. CONCLUSION

This study explores the relationship between three dimensions of customer cooperative capability and customer loyalty through the mediating role of perceived value in the context of smart retailing. The conclusions were follows: First, customer cooperative capability based on smart retailing can be divided into three dimensions, that is, search capability, learning capability and participation capability. Secondly, search capability and participation capability positively influence customer loyalty through hedonic value and utility value. Thirdly, learning capability positively affects customer loyalty only through hedonic value. Finally, the effect of hedonic value on customer loyalty is weaker than that of utility value. The results of this research show that traditional retailers who migrate to smart retailing format can enhance customer perceived value by strengthening customer cooperative capabilities, thereby achieving customer retention and customer growth.

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