

A Study on the Impact of Number Placement in Digital Systems on Consumer Perceived Value

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Abstract: In the context of the digital economy, businesses utilize digital systems to provide product information to consumers, who generate perceived value based on this information and make consumption decisions. This study employs an empirical research method to investigate the impact of number placement of product information in digital systems on consumer perceived value, with a focus on different levels of consumer involvement. The findings suggest that the number placement of product information has a significant impact on consumer perceived value for products with varying levels of consumer involvement. Therefore, it is crucial for businesses to provide product information in digital formats that align with consumer needs in order to enhance consumer perceived value and stimulate consumer-purchasing behavior.

Keywords: Number Placement; Consumer Perceived Value; Digital Systems; Consumer Involvement

1. Introduction

With the rapid development of the digital information era, the significance of the digital economy in economic growth is becoming increasingly prominent. In response to this trend, many businesses are embarking on digital transformation. The process of digital transformation enables enterprises to improve efficiency, reduce costs, and enhance competitiveness^[1]. In the digital environment, businesses have the opportunity to leverage digital technologies to provide superior products and services, thereby attracting a larger customer base and strengthening brand influence. In this process, digital systems serve as crucial carriers, tools, and supports. Compared to traditional business models,

many of the services offered by enterprises are now presented in digital formats, greatly enhancing the efficiency of interaction between enterprises and customers. Through digital platforms or systems provided by enterprises, customers can engage in business inquiries, place orders, track logistics, and communicate with customer service in a more streamlined manner. As the essential bridge facilitating interaction between enterprises and customers, the establishment of digital systems deserves significant research attention in order to facilitate the transformation of customer value.

The digital systems showcase the services and products of enterprises through various forms of data, allowing customers to gain insights into the offerings. Throughout the sales process, enterprises utilize digital systems to present essential product information, pricing, sales performance, and customer reviews. Customers then evaluate these details to make informed purchasing decisions. The digital display of products within the digital systems plays a crucial role in customers' perception. For instance, the placement and presentation format of product prices may vary across different enterprise digital systems, resulting in different perceptions among customers. A user-friendly number placement and clear presentation can provide customers with the most intuitive experience. Therefore, the construction of digital systems is a vital aspect, and attention to detail is essential for achieving better value conversion. Thus, this study focuses on the impact of number placement within digital systems on consumer perceived value, aiming to identify optimization methods for digital system construction.

2. Theoretical Studies

2.1 Digital System

In the current context of the digital economy, enterprise digital transformation has become a crucial trend. As enterprises undergo digital transformation, the demand for digital systems is increasing, and these systems play a pivotal role in driving high-quality development. For example, digital systems can reduce manual intervention in procurement processes, thereby improving work efficiency. They enable precise inventory tracking, allowing for effective inventory management. Moreover, digital systems facilitate timely resolution of order-related issues, leading to increased customer satisfaction. It can be said that digital systems provide new methods for interaction and communication between businesses and customers, ultimately impacting brand image and customer loyalty. To achieve management upgrading through the construction of digital systems, it is necessary to center the construction around the market, define the enterprise's digital objectives, and systematically analyze various factors^[2]. Hence, the efficiency of digital information presentation in digital systems deserves significant attention, and attention to digital details should be diligently studied. In the process of constructing digital systems, it is essential to grasp the enterprise's digital objectives and prioritize customer usage requirements. Efforts should be made to present customers with high-quality, smooth, and efficient system interfaces to maximize customer value conversion.

2.2 Number Placement

In the realm of digital systems, the information about products or services is presented using various numerical formats. Numbers themselves are symbols utilized to represent quantity and magnitude, devoid of inherent subjective emotions. However, in different contexts or applications, distinct types of numbers can evoke diverse perceptions in customers. The placement of numbers holds a significant position in the process of constructing digital systems. Scholar Wu Yinghao^[3] suggested that the presentation orientation of number placements may impact consumers' purchasing decision-making. Based on the individual's habitual practice of plotting an "X-axis", scholar Cai^[4] determined that as one progresses towards the right, the numbers tend to increase. Consequently,

disregarding the influence of price, consumers may perceive that products placed on the right side of a shelf are more expensive than those on the left. Within the digital economy landscape, enterprises employ digital systems to showcase product information to consumers. Factors such as pricing, specifications, features, and evaluations are presented to consumers through the digital system's interface. In the process of constructing a digital system, it is crucial to consider how to strategically position this information on the page to maximize its effectiveness. Therefore, this paper focuses specifically on the issue of number placement of product prices within digital systems. In this context, number placement refers to the way sellers display the information about product prices, such as common practices of placing price tags on the bottom right or top left of product pages. As positional descriptions are inherently relevant, this paper regards number placement as the presentation position for product price information. Within a fixed price framework, the placement options for price labels include the four positions: top left, bottom left, top right, and bottom right.

2.3 Number Placement and Consumer Perceived Value in Digital Systems

Within a digital system, number placement serves as a way to present the spatial orientation of product information. Regardless of the type of product or service, displaying information requires the use of a medium. Scholars suggest that individuals tend to perceive numbers on the right as greater than those on the left, based on their habitual understanding of plotting an "X-axis", where numbers increase as one moves towards the right. When unaffected by external factors, consumers make choices based on learned behavior when selecting products or services, and the form of number placement can influence their browsing habits. Consequently, scholar Chen^[5] pointed out that the directional display of number placement can impact the perceived value by consumers. From this, it can be inferred that within a digital system, number placement has the potential to influence consumer perceived value.

Good consumer-perceived value is a prerequisite for the emergence of consumer purchase behavior. Scholars Sweeney and

Soutar^[6] believed that consumer perceived value consists of four dimensions: emotional value, which refers to the utility that customers derive from the sensory and emotional state of product consumption; social value, which refers to the utility that a product brings to customers by improving their social self concept; quality value, which refers to the utility that customers derive from comparing the perceived quality of the product with the expected performance; and price value, which refers to the utility that customers derive from the reduction of their short- and long-term perceived costs. In the current digital landscape, businesses utilize digital systems to showcase various product or service information. Prior to making a purchase, consumers engage in information search regarding the products or services. According to scholar Zaichkowsky^[7], consumers invest different amounts of time, energy, and costs in information retrieval, depending on the nature of the product, indicating varying levels of consumer involvement. Influenced by the level of involvement, for commonly used goods, consumers may not extensively search for product information within the digital system.

Instead, they rely on consumption habits and brand trust to browse product information, resulting in relatively shorter stays on digital system pages. However, for less frequently purchased goods, consumers spend more time within the digital system, conducting detailed information searches, and carefully deliberating before making a purchase decision. At this point, the numerical presentation on product pages in the digital system becomes crucial, as consumers form their evaluations based on their perception of these displayed numbers. Therefore, considering the level of consumer involvement, it can be argued that number placement within a digital system can influence consumers' perceived value.

Therefore, this paper proposes the following hypotheses and develops a theoretical model as shown in Fig. 1.

H_1 : The number placement of low consumer involvement products in a digital system has an impact on consumer perceived value.

H_2 : The number placement of high consumer involvement products in a digital system has an impact on consumer perceived value.

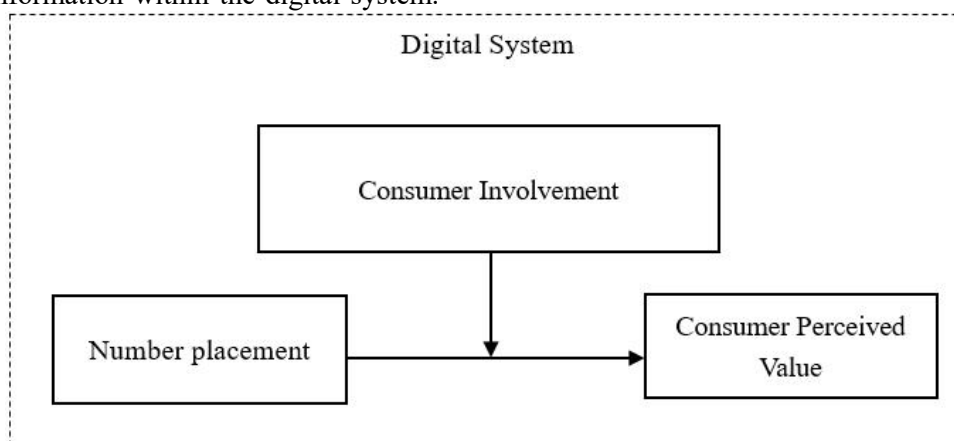


Figure 1. Model

3. Research Process

3.1 Research Methodology

In this study, both experimental and survey methods were employed to analyze the impact of number placement on consumer perceived value in the context of consumer involvement. Consumer involvement was divided into two dimensions: high and low, based on whether consumers engage in complex and lengthy product information search. Consumer

perceived value was examined from four dimensions: emotional value, social value, quality value, and price value. The study initially designed experiments using representative consumer goods in the same digital system, categorized as low involvement products and high involvement products. Four different digital display pages were created for each product, with the only difference being the placement of the price information. The price information can be positioned in the top

left, top right, bottom left, or bottom right corner of the page, while all other digital information remains identical. Four different number placement variations of product digital pages were presented to the participants in this study. A questionnaire survey approach was then utilized to gather responses from the participants regarding their level of agreement based on the questionnaire items. The questionnaire adopts a five-point Likert scale format. The response options range from “strongly disagree”, “disagree”, “neutral”, “agree”, to “strongly agree”, which were assigned scores of 1, 2, 3, 4, and 5, respectively. The questionnaire consists of two parts. The first part collects basic demographic information of the participants, including gender, grade, age, location, consumer spending level, online purchasing frequency, and other related details. The second part constitutes the core survey questions, focusing on the impact of number placement on consumer perceived value across the four dimensions.

3.2 Implementation Process

The experiment and questionnaire were carried out for people who have experience in using online digital systems. In order to ensure the quality of the experiment and questionnaire, the experiment is divided into preparatory experiment and formal experiment. In the preparatory experiment stage, individual research participants are selected to carry out the experiment, and then fill out the questionnaire. A wide range of formal experiments are then carried out after ensuring that the preparatory experiment is free of errors, and the reliability and validity of the questionnaire are qualified. The implementation time lasts for one month.

A total of 468 participants were selected for this experiment, 468 questionnaires were sent out and 432 valid questionnaires were recovered, with a validity rate of 92.3%. In the sample, the number of men accounted for 44.2% of the total number of samples, and women accounted for 55.8% of the total number of samples. The age group of 18-40 years old dominated the sample with 82%. On average, more than 90% of the sample accessed the digital system every day for product browsing or purchasing. In the questionnaire items, 91.7% of the participants

agreed that the number placement affects the perceived value of consumers. The overall distribution of the sample is basically in line with the characteristics of the digital system user group, and the results of the study have general application reference value.

3.3 Data Statistical Analysis

This study first conducted a reliability test on the questionnaire data collected in the experiment, and its Cronbach Alpha coefficients exceeded 0.8. It indicates that the collected data has good reliability and can be used for subsequent research.

Then, this paper adopts the statistical method of single-sample t-test to statistically analyze the questionnaire data, and determines the impact of number placement in digital systems on consumer perceived value. This paper compares the statistical mean of the impact of number placement with different levels of involvement in digital systems on four dimensions of consumer perceived value with 3 (which is believed to be consistent with the overall mean critical point). If the probability sig value of the test is greater than the significance level of 0.05, it indicates that there is no significant difference between the statistical mean of this impact and 3. Conversely, if the probability sig value is less than the significance level of 0.05, it indicates a significant difference. The statistical results are shown in Table 1.

(1) As can be seen from Table 1, the detection value sig of the impact of number placement in the digital system on all dimensions of consumer perceived value is less than 0.05, indicating that the statistical mean of the impact is significantly different from 3. No matter the product with high or low involvement degree, the statistical mean value of the impact of number placement in the digital system on the four dimensions of consumer perceived value are greater than 3, indicating that in case of different consumer involvement, the number placement in digital system has an impact on consumer perceived value.

(2) Regardless of whether it is a low involvement product or a high involvement product, the impact of number placement on consumer perceived value is most prominent in the price value dimension, with mean scores of 3.2604 and 3.2354, respectively. This suggests that in the digital system, the impact

of number placement on consumer perception of price value is relatively minor, as consumers are more inclined to pay attention to the actual price rather than its specific placement. Notably, the impact of number placement on the price value dimension is more pronounced for low involvement products, indicating that consumers exhibit a higher sensitivity to price for such products in the digital system. Furthermore, both low

involvement and high involvement products show the least impact of number placement on the emotional value dimension. This implies that the number placement in the digital system easily influences consumers' emotional perception of the product, and displays that cater to consumers' browsing habits with a friendly and clear number placement are more likely to garner positive consumer sentiments.

Table 1. Statistical Results

Content	Sig Value	Mean	Median	Standard deviation
The impact of the number placement of low involvement products in digital system on consumers' perception of price value.	0.00	3.2604	3	1.18132
The impact of the number placement of low involvement products in digital systems on consumers' perception of quality value.	0.00	3.2479	3	1.17160
The impact of the number placement of low involvement products in digital system on consumers' perception of social value.	0.00	3.2250	3	1.24100
The impact of the number placement of low involvement products in digital system on consumers' perception of emotional value.	0.00	3.2104	3	1.20173
The impact of the number placement of high involvement products in digital system on consumers' perception of price value.	0.00	3.2354	3	1.22466
The impact of the number placement of high involvement products in digital system on consumers' perception of quality value.	0.00	3.2063	3	1.22481
The impact of the number placement of high involvement products in digital system on consumers' perception of social value.	0.00	3.1997	3	1.25430
The impact of the number placement of high involvement products in digital system on consumers' perception of emotional value.	0.00	3.1958	3	0.889942

(3) Through in-depth analysis of the survey data, it is evident that consumers in the digital system tend to prefer the lower position rather than the higher position for the presentation of price digits. Similarly, in the horizontal dimension, consumers are more inclined towards the left position rather than the right position. This indicates that displaying the price digits in the lower-left position in the digital system is more likely to capture consumers' attention.

Drawing from the aforementioned analysis, it can be concluded that within the realm of digital systems, consumer perceived value of both low-involvement and high-involvement products are subject to the influence of the placement of numerical information, thus

affirming the validity of H_1 and H_2 and confirming the model's reliability. When embarking upon the construction of a digital system, the placement of numerical information should not be arbitrary; instead, it should be approached from the consumer's perspective.

4. Research Conclusion

In the digital landscape, businesses utilize digital systems to facilitate communication and interaction with customers, offering them services and products while prompting their purchasing behavior. Within a digital system, the display of numerical information relating to products plays a crucial role as it directly influences customers' perceived value, thereby

impacting their ultimate buying behavior. Through research, it has been established that the number placement of product within a digital system has an impact on customers' perception of value for both low-involvement and high-involvement products. The placement of product price digits on a digital system's page can create varying perceptions of value for consumers. Placing the price below tends to be more enticing to consumers compared to placing it above. Similarly, placement the price on the left side of the page tends to grab consumers' attention more effectively than placing it on the right side. Therefore, when constructing a digital system, careful attention should be given to the presentation of numerical information on the page. The placement of product prices should take into account consumers' browsing habits, as suitable and favorable placement is more effective in capturing their attention. The placement of numerical information within a digital system influences consumers' perceptions, which, in turn, affects their purchasing behavior. During the process of digital system development, the placement of numerical information should not be treated casually; instead, it should be meticulously considered from a consumer-centric perspective. Rationalizing the spatial arrangement of numerical information contributes to enhancing consumers' affinity and, consequently, stimulating their consumption. In the digital era, the construction of digital systems is an inevitable trend. Therefore, the efficiency of presenting numerical information within these systems deserves significant attention. It is through attentive focus on the details that better value conversion can be achieved.

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