

Factors Affecting Customer Stickiness and Interface Design of Online Bookstores

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ABSTRACT

Online shopping platforms with high commodity homogeneity, such as online bookstores, rely on the assistance of user interface designs to differentiate themselves from other merchants. By comparing the user interface designs of different online bookstores, this study concluded that the operational process and interface design elements are required for a good shopping experience from the perspective of consumers. The research studied the similarities and differences of the user interfaces of the top five online bookstores in the Taiwan market through content analysis and investigated factors of user interface that influence customer stickiness and satisfaction from the consumers' perspective through a questionnaire survey. The research results found that the design of the field and navigation bar in the interface design was the main factor affecting customer stickiness and satisfaction with the website. It is expected that the proposed specific user interface design suggestions can assist stores or platforms with high commodity homogeneity, such as online bookstores, to create successful market segmentation and improve customer stickiness to their platform.

Keywords: Interface design, Stickiness, Online bookstores

INTRODUCTION

Online bookstores are widely embraced by readers for their reduced personnel costs and quick search capability. Taiwan has also seen its online bookstores flourishing and prospering with this wave of globalization. In particular, books.com.tw, an online bookstore (<http://www.books.com.tw>) operating as a pure e-commerce business, became the largest sales channel in Taiwan's book market in 2009. Its sales volume has officially exceeded that of physical stores. The biggest feature that sets online bookstores apart from shopping platforms for other types of commodities is the high homogeneity of the former's commodities. In the commercial market, where the commodity itself is mature, it is more difficult to widen the gap with the competitor, as the nature and performance of the commodity are mostly the same (Ohta, 2016). At present, the importance of "emotional value", through which a commodity can improve the psychological satisfaction of consumers, has increased

significantly. The Market Intelligence & Consulting Institute (MIC) found that, with changes in lifestyle, the general public's emotional requirements for technology have changed from simple "convenience and efficiency" to "harmonious and sustainable" and "safe and comfortable" aspects. Hence, the user interface is naturally regarded as the main channel for communication between users and intelligent products. Thus, service experience must ensure products' emotional value, such as user interface design. Furthermore, online shopping platforms may need to rely on user interface design to effectively achieve brand market segmentation under the premise of high commodity homogeneity and effectively improve consumer stickiness and satisfaction. Therefore, this study explored how online bookstores in Taiwan can improve their consumer stickiness and satisfaction through user interface design under the condition of high commodity homogeneity.

USER INTERFACE DESIGN

The goal of user interface design (UI) is to achieve the interaction between the user and the object and ensure the simplicity and efficiency of the process (Wikipedia, 2021). The book "50 Keys to Successful UI/UX" mentions that user interface is most common in webpage designs, such as the overall webpage layout and the design of website menus. Generally speaking, it is related to design, interface, aesthetics, and interaction. Unlike user experience design, user interface design aims to enhance the presentation of a product's appearance more directly (Peng, 2016).

A good user interface experience depends on the mutual relationship and balance of visual components. The following five variables of visual composition items can be considered the visual components of user interface proposed by Li, Chang, & Lin, (2011), Peng (2016), Harada (2014), and Lee (2014).

- (1) **Color-Matching:** The visual composition of color can reflect a brand's connotation, effectively enhance aesthetics, and achieve a better user experience.
- (2) **Icon Design:** Many common icons have fixed shapes. If the fixed shapes are not used as icons, users may find it difficult to understand the icons' meaning.
- (3) **Button Design:** Button design focuses on its own tasks and functions. Highlighting the brand's style in button design while ensuring practicality is one of the most important links in the visual composition of interface design.
- (4) **Grid Layout:** Grid can help designers confirm interface design specifications, maintain a neat and uniform layout, and avoid cluttered layouts. A good layout helps users understand a website's content and read easily, optimizing the overall user experience.
- (5) **Navigation Design:** The number and level of navigation must be determined before the navigation design. One must determine and classify weight distinctions to avoid excessive information resulting in user cognitive overload.

RESEARCH METHOD

This study involved (1) conducting a semi-open questionnaire survey to understand users' cognitive attitudes towards interface design and (2) collecting interface samples of online bookstores and analyzing the design conditions of their interface design.

(1) Questionnaire Survey Method

The respondents were young men and women aged 21 to 40 years old with tertiary education or above and who had the habit of online shopping. There were 40 respondents in total. The questionnaire was conducted as a semi-open online questionnaire. Its content includes the respondents' main purchase platforms for online bookstore shopping, their browsed or used online bookstores, and the most frequently used in return visits. Finally, the respondents were asked to check the advantages of the interface design of their most frequently visited online bookstores.

(2) Content Analysis

The ultimate task of online bookstores is to attract customers to order books on the platform. Thus, the experience with the shopping process page is significant. According to a survey conducted by the Communication Survey Database of the Ministry of Science and Technology in 2019, 88.2% of Taiwanese people used mobile phones, most of which were smartphones (E-Newsletters of Taiwan Communications Society, 2019). Therefore, this study selected the mobile versions of online shopping process interfaces for sample collection and analysis. First, 5 mobile pages of Taiwan online bookstores were collected (books.com.tw, Kingstone Bookstore, Eslite Bookstore, TAAZE, and Readmoo). Then, the pages were divided into (1) Home page, (2) Chinese book search page, (3) Book introduction page, (4) Shopping page, and (5) Checkout page. The content analysis was performed according to color-matching, icon design, button design, grid layout, and navigation design.

QUESTIONNAIRE SURVEY RESULTS

A total of 66 questionnaires were collected, including 62 valid questionnaires and 4 invalid questionnaires (from respondents who never used any online bookstore platforms). The rate of the valid questionnaires was 93.9%.

The survey results showed that the website's desktop version was the main platform used by the respondents (30 respondents accounting for 48.3%) for online book shopping, followed by site pages on mobile devices, such as smartphones (27 respondents), and online bookstore applications (5 respondents accounting for 8%).

In terms of the advantages of interface design components, "button design is easy to use" (50%) and "navigation design is clearly classified" (50%) accounted for the highest proportion, with 31 respondents choosing either item. Then, these items are followed by "graphic design is clear and consistent" (27 respondents, accounting for 43.5%), "grid arrangement is neat and uniform" (26 respondents, accounting for 41.9%), "color-matching

Table 1. The analysis of the online bookstores' interface designs.

Bookstores	books.com.tw	Kingstone Bookstore	Eslite Bookstore	TAAZE	Readmoo
Color matching	The brand's main color is turquoise. The color is used for most icons and categories, accounting for about 30% or more. On the other hand, black is used for most texts, accounting for 30% or more. Meanwhile, the color gray accounts for about 20% or more.	The brand's main color is golden yellow, accounting for 30% or more. On the other hand, brown is used for some subtitles, accounting for 20% or more. Meanwhile, the color black is used for product names and texts, accounting for 30% or more.	The brand's main color is dark red, accounting for 40% or more. On the other hand, black is used in some subtitles and texts, accounting for 40% or more.	The brand's main color is peach, accounting for 20% or more. On the other hand, black is used for texts, accounting for 40% or more. Meanwhile, gray is used for buttons, accounting for 10% or more.	The overall tone is mainly gray and black, accounting for 60% or more. This is followed by pink used as a key mark, accounting for 30% or more.
Icon design	They are all white block-shaped icons with distinctive features and more details.	It is the composite multi-color icon design that combines lines and surfaces. There is also pure linear or pure block-shaped single-color icon design.	It is mainly designed with block-shaped monochrome icons. The corners of the icons are decorated with small rounded corners, and the overall shape is square.	It is mainly based on linear monochrome icons. Only the leaderboard uses a two-color block surface icon.	The block-shaped, realistic illustration style icons change with the use situation. The icons that normally appear, such as "Search", "Reminder", and "Shopping Cart", are linear.
Button design	Book classification buttons are displayed in plain black texts, with left and right borders between the options. The color of the text changes to turquoise after clicking.	A completely flat style and a real shadow design with a natural transition are used based on button function differences. The lower border of the quasi-materialized style button is given depth to function as a shadow.	They are mainly flat-style buttons.	They are mainly buttons with rounded corners, and most of them have gray text with a gray frame on a white background. There are also square buttons with black text on a gray background. The text turns pink after clicking.	All are flat-style buttons. Buttons (e.g., "Favorite", "Preview", and "Add to Cart") have light gray and light pink backgrounds. The background color darkens after clicking.

(Continued)

Table 1. Continued.

Bookstores	books.com.tw	Kingstone Bookstore	Eslite Bookstore	TAAZE	Readmoo
Grid layout	Featured products or discount recommendations are presented in double columns.	The product information is mainly displayed in double columns, and the rest are adjusted according to the content.	It is adjusted according to the content of the page information.	The masthead is a single-column right-swipe carousel advertisement; the featured books are displayed in a single column with the picture on top of the text; the remaining books are arranged in a right-swipe double-column.	The categories of books are arranged in three columns, the recommended books are arranged in two columns, and the picture is placed above the text. Individual books are displayed in a single column. Its pictures are placed on the left and the texts on the right.
Navigation design	Single-column collapsible menu. Some menus have expandable sub-menus.	Single-column collapsible menu. After expanding the sub-menu, sub-categories can be further expanded.	Double-column design. The left column is a slide-down menu for the major categories of the theme library, and the right column follows the options in the left column, showing a sub-category slide-down menu.	Single-column collapsible design. Users must click the button to expand the sub-categories. There is no frame separation between the categories.	Single-column design. Users must click the buttons to enter the leaderboard directly. For other categories, users must click the buttons to expand the sub-menu. If the return button in the sub-menu is clicked, the screen will return to the main menu on the right.

is good”, (16 respondents, accounting for 25.8%). Noteworthy, “button design is easy to use” (50%) and “navigation design is clearly classified” (50%) accounted for the highest proportion among the advantages of the interface design components of the most frequently used online bookstores. The content analysis is as Table 1.

CONTENT ANALYSIS RESULTS

This study aimed to provide specific suggestions for e-commerce platform design to enhance consumer stickiness and satisfaction through user interface design and achieve market segmentation from consumers' perspectives under a high homogeneity of commodities. The analysis of the online bookstores' interface designs found that navigation design and button design were the most influential interface design components for user stickiness and satisfaction.

In this stage, the mobile phone site pages of five online bookstores (i.e., books.com.tw, Kingstone Bookstore, Eslite Bookstore, TAAZE, and Readmoo) were collected. Then, the content analysis was conducted for their color matching, icon design, button design, grid layout, and navigation design. The content is as follows.

CONCLUSION

The interface design features of the mobile version of the top five online bookstores in Taiwan are summarized as follows. (1) Color-matching: The brand's main color accounted for about 40%, followed by the text (about 30%) and the key marking color (about 30%). The colors used for key markings were mostly those with a sharp contrast to the brand's main color. (2) Graphic design: Block-shaped icons had the highest proportion. Icons with button effects represented the current operation status in the form of lines and blocks. (3) Button design: Flat-style icons for the design were mostly adopted, or excessive natural shadows were made below. Framed buttons were mostly square with rounded corners. (4) Grid layout: mastheads were mostly fixed in a single column with right-swipe advertisements; the recommendation column was mainly two to three columns, and all were right-sliding. The new products and main titles were mostly single-columns. (5) Navigation design: All were collapsible menus. The sub-category was placed on the same page for single-column navigation, and the sub-menu was categorized according to bibliographic subjects.

This study, which mainly analyzed and compared different types of interface design components, suggests that subsequent scholars study the impact of detailed items (e.g., color presentation, arrangement of moving lines, and shape design) on users of the same type of components.

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