

AN EMPIRICAL STUDY ON CONSUMER PREFERENCES FOR ONLINE CUSTOMISED CLOTHING PLATFORM

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ABSTRACT

The landscape of fashion online shopping has undergone rapid transformation since the pandemic. Unlike traditional offline shopping experiences, customers engaging in online shopping are unable to physically interact with the products they intend to purchase. As a result, the display of comprehensive and accurate product information plays a primary role in facilitating fashion online shopping experience. This paper aims to gain insights from consumer perspective to investigate their preferences for online fashion platforms and individualized fashion by conducting online questionnaire survey. The survey involved 162 respondents who were asked to rate opinion questions using a seven-point Likert scale. The results highlighted the importance of displaying products from different angles, providing close-up details with zoom-in functions, and presenting clothing on human models along with size information, such as size charts and size recommendation tools. Credibility cues, including product reviews and comments, seller reputation and ratings, and consumer-submitted photos, were also valued by consumers. The study also revealed a high expectation on the mobile body measuring technology. This paper provided valuable insights for prioritizing product information and features in the design of an online custom clothing marketplace platform. Additionally, it offered valuable customer insights for fashion brands and tech companies assisting with e-shop launches.

KEYWORDS

Product Information, Online Marketplace, Product Page, Customer Perceptions, Credibility Cues, Online Shopping

1. INTRODUCTION

Generation Z (Gen Z), a new wave of individuals born between 1995 and 2012, has entered the workforce with considerable purchasing power, surpassing that of previous generations (Amed et al., 2019, Francis and Hoefel, 2018). This generational shift has led to a transformation in the consumer landscape, driving fashion brands to devise novel strategies to appeal to Gen Z

consumers, who exhibit digital proficiency, prioritize sustainability and seek highly personalised products (Francis and Hoefel, 2018).

In response to these evolving consumer preferences, several fashion brands and start-up have embraced digital customisation approaches, enabling consumers to acquire highly personalized fashion items and participate in the online clothing customisation process. The concept of digital customisation has been observed across various garment categories. Anomalie, a bridal gown start-up established in 2016, introduced a collaborative dress sketch visualizer that enables customers and designers to co-create their own wedding gowns (Anomalie, 2020). Similarly, Unspun, a custom denim brand, employs 360-degree mobile scanning technology to craft tailor-made jeans, allowing customers to choose denim fabric, thread color, style, and preview the finished 3D product online (Unspun, 2020). These start-up brands have secured significant seed funding resources from investors to undergo advanced digital transformation.

However, a majority of fashion businesses, including independent designers and tailors, operate on a micro-scale as sole proprietors (Gorgels et al., 2022, Hollihan, 2021). While some of these businesses may express interest in digital customisation, their primary focus remains on daily operations to generate turnover. They often lack the necessary time, manpower, financial resources, and technical knowledge required to establish and operate their own digital customisation systems (Canhoto et al., 2021, Klein and Todesco, 2021).

To address their pinpoints, we will design and develop an online customised clothing marketplace for small fashion businesses and consumers to conduct digital customisation and online transactions. This paper aims to investigate consumer preferences regarding the presentation of product information and features. This includes aspects such as product detail images, product display formats, size information, credibility cues, and technologies related to clothing customisation. We collected survey responses from 162 participants, primarily from Hong Kong, to gain insights. The findings of this study will serve as a reference for prioritizing important product information and functionalities during the design and development of the online custom clothing marketplace platform. Additionally, it will provide valuable customer insights for fashion brands and technology companies assisting brands in designing their online presence.

2. LITERATURE REVIEW

Online fashion marketplace is a fashion e-commerce which is normally owned and operated by a third-party service provider. The marketplace gathers a network of sellers and buyers to sell and purchase products or services from each other. For each successful transaction, the third-party platform will charge seller commission fee (Yenipazarli, 2021). Renowned fashion online marketplace platforms from luxury to mass market segments, such as Farfetch, ASOS and Zalora which charges commission with charge from 10% to 30% per sale from brands (ASOS, 2023, Kansara, 2015, Tan, 2020). Oklander and Kudina (2021) highlighted various advantages of marketplace model from seller perspective, including a higher cost-effectiveness to establish online store, higher accessibility to target customers and wider market. From buyer perspective, marketplace could offer a wide selection of products, efficient information screening, product search and comparison.

In contrast to shopping in physical stores, online consumers do not have the opportunity to physically touch or feel the actual products. As a result, the role of product information becomes crucial in conveying the look and feel of the product in reality, especially for new items that consumers may be less familiar with. Previous research has established that product information significantly influences consumer trust, purchase confidence, website traffic, conversions, and sales (Davis, 1989, Hong et al., 2016). The fundamental components of fashion product information, which encompass product description, detailed photography, display formats, size information, statistics, ratings, and customer feedback, while this paper will focus on consumer preferences regarding the functionalities and features associated with product details, display formats, size information, credibility cues, and clothing customisation.

2.1 Product Details

In fashion marketplaces, product details are typically presented through visual imagery, allowing consumers to assess the intricate features of the product. These visual representations include various perspectives such as front, back, and side views, as well as close-ups and enlargements, accompanied by styling elements like colour and fabric swatches (Hong et al., 2016, Naegelien et al., 2019, Kim et al., 2007). Furthermore, fashion items are often showcased on models of different sizes to emphasize inclusivity and cater to a diverse consumer base (Rhee and Lee, 2021).

2.2 Product Display Format

Regarding the display format, fashion products are commonly presented in two approaches: showcasing the product itself or displaying it on models. The products can be presented in a flat laid format or portrayed through static images featuring mannequins, human models (styled or unstyled), virtual model, or short catwalk videos where models strike poses and make quick turns within 20 seconds (Rhee and Lee, 2021, Kim et al., 2007, Naegelien et al., 2019, Bug and Helwig, 2020).

2.3 Size Information

Size information holds significant importance in the context of fashion e-commerce, as highlighted by a survey conducted by McKinsey in 2019, which revealed a 25% return rate attributable to poor fitting or style issues (Ader et al., 2021). Therefore, size information is crucial for fashion ecommerce. To address this, fashion platforms typically provide a size chart with detailed measurements for different product sizes (e.g., US2, 4, 6, 8), accompanied by supplementary information such as try-ons on models of different weights and heights, size comparisons across different brands, and tools like size calculators or mobile body measuring technologies. These additional resources aim to aid consumers in selecting the appropriate size and increase their confidence in making accurate purchasing decisions.

2.4 Credibility Cues

In addition to product details, consumers also rely on credibility cues when making purchase decisions. These elements provide valuable insights and reassurance regarding the quality, reliability, and satisfaction levels associated with a product. Statistics such as sales figures or popularity indicators can indicate the level of demand and popularity of a product. Ratings and reviews from other customers, often referred to as e-word of mouth (eWOM), provide valuable firsthand experiences, opinions, and even photos of the products received. These reviews allow potential buyers to assess the overall satisfaction and reliability of the product based on the feedback and experiences shared by other customers. By considering these credibility cues, consumers could make more informed decisions and have greater confidence in their purchases (Malak et al., 2021, Sulthana and Vasantha, 2019, Cheong et al., 2020, Sa'ait et al., 2016, Kim and Choi, 2012). The common statistic includes product transaction volume, repeat customers of product, seller experience, number of subscribers, number of people who add the item to wish list and number of view history of products.

2.5 Features to Enhance Clothing Customisation

Due to the limited information available regarding existing marketplaces for customised fashion, an investigation was conducted focusing on independent fashion brands and start-ups that specialize in customisation, made-to-measure, and bespoke services. The findings revealed that these entities have incorporated a range of features and technologies to streamline the traditional fashion customisation process. These include the integration of mobile scanning technology, the provision of customised product previews, and the implementation of virtual fitting capabilities (Pei, 2022). One of the renowned industrial example, Unspun, a custom denim brand, which leveraged 360-degree mobile scanning technology to craft a tailor made jeans (Pei, 2022). The user interface of Unspun page which allows customers to preview the customised product, including the fabric, thread color and style.

3. METHODS

3.1 Survey Design

The Qualtrics online survey platform system was utilized to distribute questionnaires and collect data, enabling the inclusion of a larger sample of participants and gathering valuable insights. The survey was shared through various channels, including social media platforms, communication tools, and Mechanical Turk. It encompassed six sections, covering topics such as online fashion shopping habits, product detail images, display formats, size information, credibility cues, and demographic details. Demographic information and details about participants' online fashion shopping habits were collected through multiple-choice questions. Meanwhile, participants were asked to express their opinions and judgments on statements using a 7-point Likert scale, ranging from "strongly disagree" to "strongly agree." This approach aimed to understand the specific product information that consumers consider when shopping online in the fashion marketplace.

3.2 Respondent Characteristics

Prior to recruiting participants for the survey, the initial stage involved determining the appropriate sample size. The sample size formula is used to calculate the sample size for an infinite population, as outlined below.

$$n = \frac{Z^2 P(1-P)}{d^2}$$

In determining the sample size, the formula takes into account various factors. These include the number of participants (n), the Z score (1.96 at a 95% confidence level), the percentage of the population (P, assumed as 50% or 0.5), and the margin of error (d). In online survey research, a margin of error less than 8% is typically considered acceptable at a 95% confidence level. Applying this formula, it can be determined that a minimum of 151 respondents should be recruited for the survey.

$$150.06 = \frac{1.96^2 \times 0.5(1 - 0.5)}{0.1^2}$$

For this research, a total of 162 respondents who had prior experience with online fashion shopping participated in the survey through convenience sampling. Convenience sampling is a cost-effective approach that allows for quickly gathering preliminary data from a larger group of respondents for platform design purposes (Pierce et al., 2020).

The majority of respondents were based in Hong Kong, with only a small number from mainland and overseas countries. Table 1 provides an overview of the profile, characteristics, and shopping habits of the survey respondents. The results show that a significant portion of the respondents belonged to the 18-25 and 26-35 age groups, representing Generation Z and millennials. Most of them were employed, and over 80% of the respondents held at least an undergraduate degree. More than 70% of the participants reported purchasing clothing online at least once every three months. Furthermore, the majority of respondents spent less than HKD 500 on clothing per month.

Table 1. The demographic information of respondents

Item	Type	Count	%
Gender	Male	63	39%
	Female	99	61%
Age	Under 18	1	1%
	18-25	73	45%
	26-35	63	39%
	36-45	13	8%
	46-55	8	5%
	Above 56	4	2%
Position	Student	57	35%
	Employee	105	65%

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Education level	Secondary School	10	6%
	Diploma/ Higher Diploma	19	12%
	Undergraduate	93	57%
	Postgraduate	40	25%
Monthly income	HKD 0-15,000	63	39%
	HKD 15,000-29,999	57	35%
	HKD 30,000-59,999	34	21%
	>HKD 59,999	8	5%
Frequency of purchasing	Twice per month or above	26	16%
	Once every 1-2 months	65	40%
	Once every 3 months	33	20%
	Once every 6 months	24	15%
	Once per year or less	14	9%
Average monthly online	<HKD 500	96	59%
	HKD 500-999	38	23%
	HKD 1,000-1,999	17	10%
	> HKD 2,000	11	7%
Cities / Countries	Hong Kong	138	85%
	Mainland China	3	2%
	Oversea	21	13%

Figures 4-9 shows the mostly used online fashion shopping marketplace. Taobao was the most popular fashion shopping platform, while Amazon, Zalora, ASOS and Shein were the second, third, fourth and fifth popular fashion shopping platforms respectively.

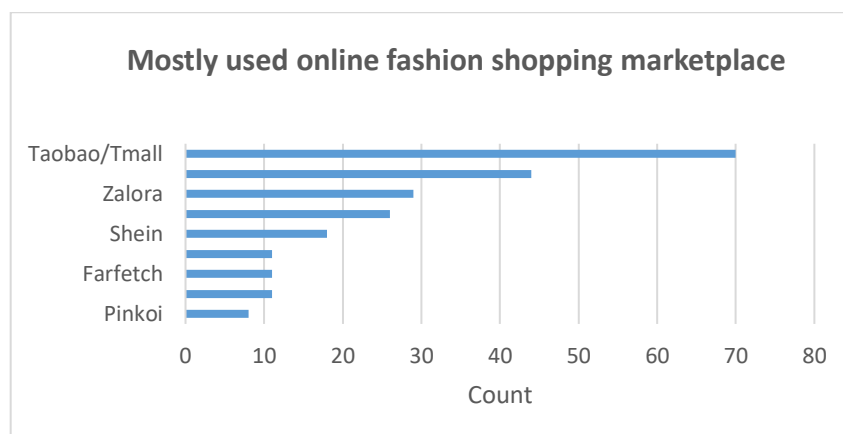


Figure 1. Mostly used online fashion shopping marketplace from respondents

3.3 Data Processing and Analysis

The collected information from the questionnaire was analyzed in Microsoft excel and visualized various types of charts. The Likert rating scale was plotted in a diverging stacked bar (bi-directional bar chart) because this sort of bar style was highly recommended by researchers to graphically display data of each rated scales (Robbins and Heiberger, 2011, Howorko et al., 2018, Heiberger and Robbins, 2014).

4. RESULTS AND DISCUSSION

4.1 Product Details

It was found that nearly a half of respondents believe displaying product in different angles is extremely important, followed by displaying close-up product details with zoom-in functions (41%). Previous literatures indicated that the close-up product details, zoom-in functions and displaying in various angles can provide local information-based cues of product quality (e.g. craftsmanship) and materials (e.g. fabrics) (Hong et al., 2016, Naegelien et al., 2019). This information is particularly helpful for respondents to make purchase decision for online shopping.

Respondents believed that colour and fabric swatches are less important product information. Our explanation for this finding is that the close-up details and zoom-in functions already deliver a rich information of product detail, such as the colour and fabric. Therefore, the images of colour and fabric swatches might not be necessary. Figure 2 shows the preferences of product detail images from respondents.

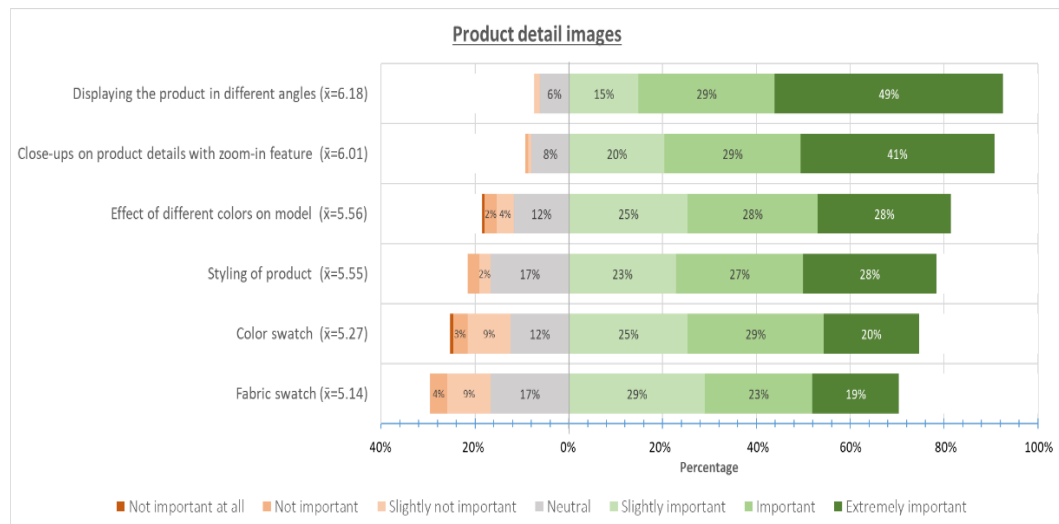


Figure 2. The preferences of product detail image types from respondents

4.2 Product Display Formats

Respondents indicated that the most important product display format, with a mean rating of 5.86 out of 7, is the display of fashion models without specific styling. This format is considered fundamental and necessary as it showcases how the fashion product appears when worn by a human body, such as draping. Figure 3 shows the preferences of product display formats from respondents.

However, it is surprising to note that respondents regarded virtual model and model catwalk videos as the least important format, with an average rating of 4.82 and 4.88 out of 7, respectively. In our study, the consumer respondents did not express significant enthusiasm for this feature. This divergence in perception may stem from current technological limitations, such as the lack of accuracy and unrealistic representation of body and facial features during virtual fitting (Lee and Xu, 2020).

Previous literature has emphasized the advantages of videos, particularly catwalk videos, in demonstrating how fashion products look when worn by models in motion. Such videos are believed to enhance the online shopping experience and the purchase intention of shoppers (Bug and Helwig, 2020, Kim et al., 2007). The finding suggests that while videos may be an attractive feature from the consumers' perspective, they may not be deemed essential compared to other product display formats, such as models and mannequins. Furthermore, catwalk videos can be fast-paced and hectic, potentially hindering the clear visibility of product details. Additionally, it is worth noting that video production is relatively more costly and time-consuming compared to other presentation formats like flat-lay and mannequin displays (Lee and Park, 2014, Bug and Helwig, 2020).

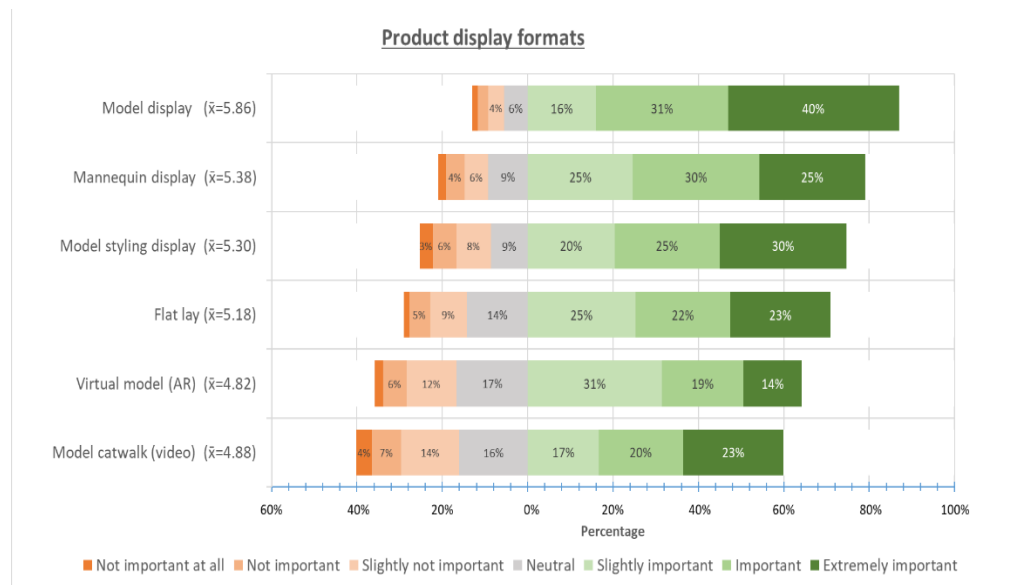


Figure 3. The preferences of product display formats from respondents

4.3 Size Information

Our findings indicate that among all the size information cues, more than half of the respondents (57%) considered the size chart to be extremely important. Following closely behind, over 40% of respondents agree that both trying on the product on models of different weights and receiving size recommendations are extremely important size information cues. It is not surprising that respondents perceived the size chart as the most crucial size information for fashion products since it provides numeric data to assist consumers in selecting the right size that fits their body. Several studies have emphasized that the absence of a size chart could lead to perceived product risk and uncertainty regarding sizing, which may result in purchase hesitation (Masoud, 2013, Kim et al., 2006, Ariffin et al., 2018). Therefore, size chart is an essential product size information for online fashion shopping.

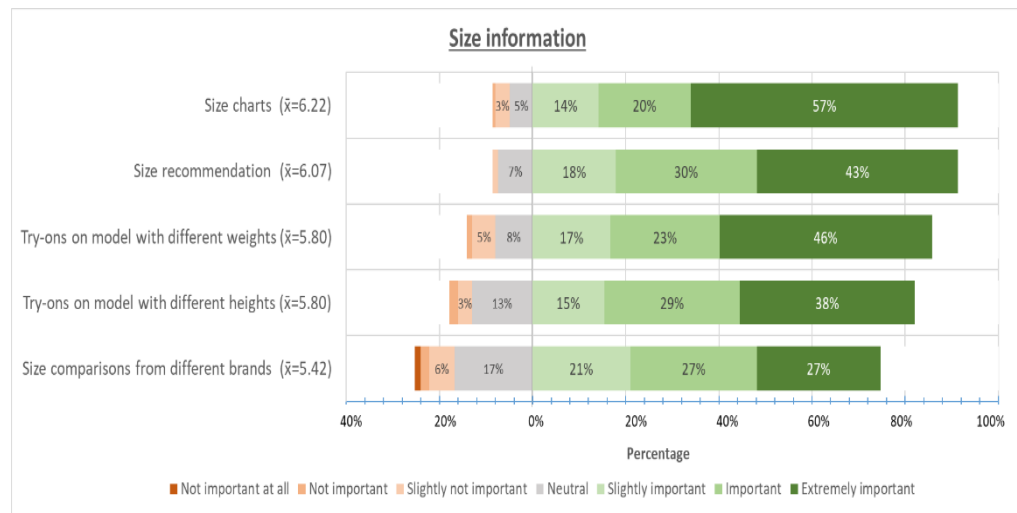


Figure 4. The preferences of size information from respondents

According to the respondents, size recommendation is the second-most important feature of size information, with an average score of 6.07, aligning with our expectations. This finding is consistent with previous research that has highlighted consumers' ongoing difficulties in determining the correct size when making online fashion purchases, despite the presence of size charts on most platforms. The lack of standardized size charts and variations across brands and countries contribute to consumer uncertainty and hesitation when selecting the right size. As a result, size recommendations are necessary to provide personalized size guidance to individual consumers based on their inputted body measurements (Lasserre et al., 2020, Guigourès et al., 2018). By offering personalized size guidance tailored to individual consumers based on their inputted body measurements, fashion platforms can bridge the gap between these measurements and the available size options, thereby enhancing the accuracy and precision of size selection. Through such personalized size recommendations, online shoppers can make more informed decisions and experience with their purchases.

Additionally, displaying products on models of different sizes and shapes is also perceived as important feature which enables shoppers to visualize how the items would look on their own bodies by referencing the photos of models who share similar body characteristics (Rhee and Lee, 2021). Figure 4 showcases the preferences of respondents regarding size information cues.

4.4 Credibility Cues

In addition to the intrinsic cues of a product, such as its color, design, and materials, credibility cues play a significant role in providing insights into the product's quality during the pre-purchase stage. Our research reveals that among the information-based cues, customer reviews and comments, seller reputation and ratings, and photos of the product received by real customers were considered the top three important credibility cues according to the respondents. This finding aligns with previous literature that emphasizes the impact of electronic word-of-mouth (eWOM), which includes seller reputation, ratings, and customer feedback, in influencing purchase intention and reducing perceived risks associated with the product. (Kim and Choi, 2012, Malak et al., 2021, Sulthana and Vasantha, 2019). Figure 5 shows the preferences of credibility cues from respondents.

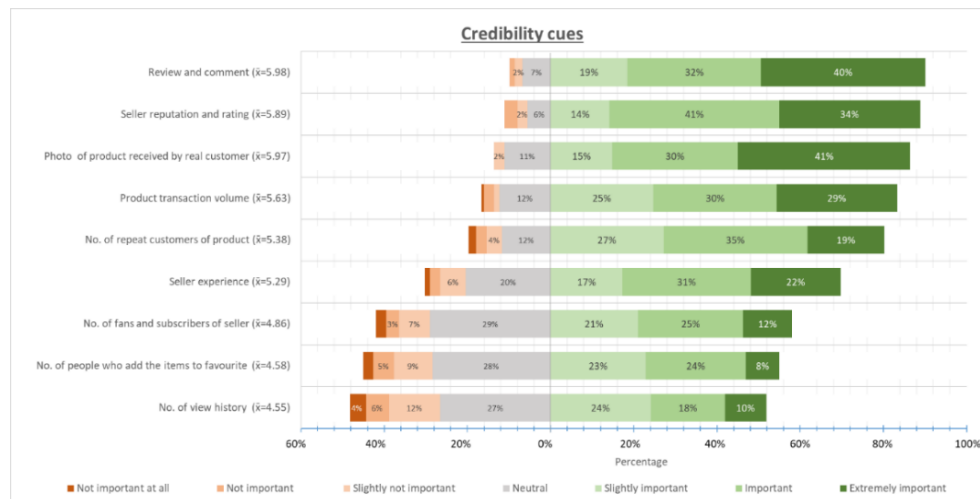


Figure 5. The preferences of credibility cues from respondents

The findings reveal that among all the product information and cues, the number of view history, the number of people who add items to their favorites, and the number of fans and subscribers of the seller are considered the least important, with average scores under 5 point. This finding could be attributed to the fact that these cues are more closely associated with "popularity" rather than "credibility." The number of view history, for instance, might be influenced by a product's high-ranking in search engine results, indicating better search engine optimisation (Lewandowski, 2013). On the other hand, the number of people who add items to their favorites and the number of fans and subscribers of the seller may not always serve as reliable indicators of product quality (Dias et al., 2021). These cues might only reflect the popularity or trendiness of a product or seller, but they may not necessarily provide concrete information about the product's credibility or overall quality.

4.5 Features to Enhance Clothing Customisation

The findings indicate that mobile body measuring technology is considered the most important feature for enhancing and streamlining the process of individualized fashion. 75% of the respondents rated it as slightly important to very important. Only 9% of the respondents held a negative perception of this technology in the context of individualized fashion. This aligns with the findings of previous studies, where customers expressed agreement that digital fitting technology is convenient and instills confidence in the online shopping experience by ensuring better fitting clothes (Hwangbo et al., 2020). The positive perception of mobile body measuring technology suggests that respondents recognize its potential to provide personalized measurements. Surprisingly, the respondents found virtual try-on to be the least important feature in enhancing the process of individualized fashion. This is unexpected as considering the widely recognized benefits of virtual fitting technology, such as its engaging and interactive consumer experience, as well as its functionality in visualizing garment appearance, drape, and fitting on a virtual model (Blázquez, 2014, Lee and Xu, 2020). The respondents' perception of virtual try-on as the least important feature may be attributed to the technical limitations associated with this technology. Concerns regarding the accuracy of the simulation and the poor representation of body and facial features in virtual fitting systems could have influenced the respondents' views (Lee and Xu, 2020). These limitations might lead to unrealistic perceptions and undermine the confidence of consumers in the virtual try-on experience. Figure 6 highlights the perceptions of respondents for the features to enhance clothing customisation.

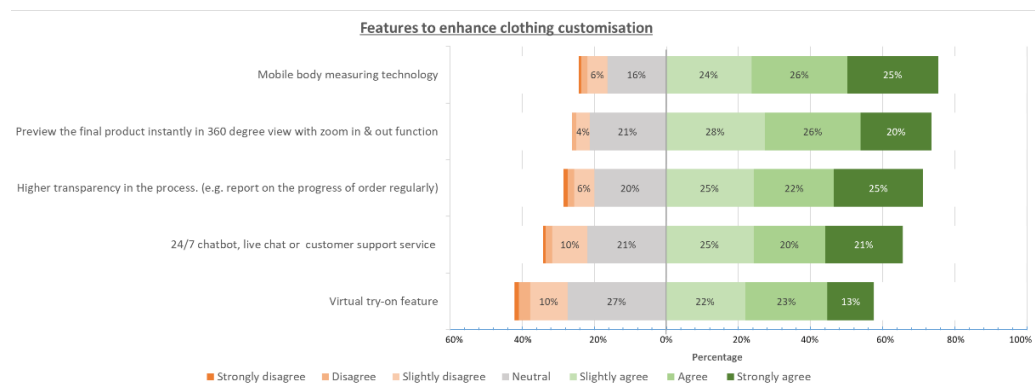


Figure 6. Features to enhance clothing customisation

4.6 Online Customised Clothing Marketplace

By taking reference from the survey results, it could be summarized that preferences of designed the our online customised clothing marketplace platform featuring essential product features, including the images of human models in different size and body shapes who wear the fashion products in multi-angles of view, close-up detail with zoom-in feature of products, size chart, size recommendation with mobile body measuring technology, product review and comment, seller rating and photo of products received by customers. The measurement data input and clothing customisation functions will be included in the nearly future. Figure 7 shows how the overview of product page of our online customised clothing marketplace platform design.

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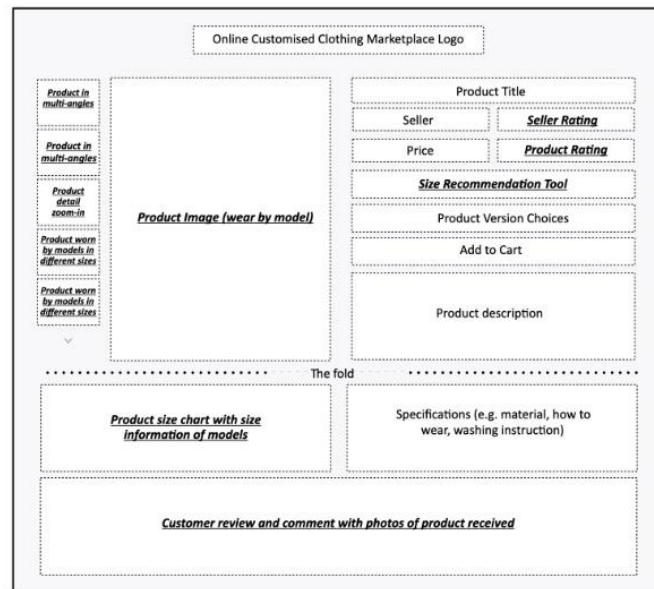


Figure 7. Key features and wireframe of our online customised clothing platform design

5. CONCLUSION

This paper aimed to investigate the product information, cues and features that consumer respondents consider important when shopping for clothing online. The findings highlight several key factors that influence consumers' online fashion shopping experience. Firstly, displaying products in different angles and providing close-up details with zoom-in functions emerged as crucial product information for online fashion shopping. Additionally, presenting clothing on human models, accompanied by size information such as size charts, try-on demonstrations on models of different sizes and body shapes, and size recommendation tools, were essential. Respondents also placed value on credibility cues, including product reviews and comments, seller reputation and ratings, and customer-generated photos of received products. These cues contribute to building trust and confidence in the online shopping experience. Furthermore, the positive perception of mobile body measuring technology indicates that consumers recognize its potential in providing personalized measurements and improving the accuracy of clothing fit. Implementing this technology can offer consumers a more customised and tailored shopping experience, leading to higher satisfaction and reduced returns or exchanges.

The investigated results will be used as reference to determine the prioritisation of key product information and functions during the design and development phase of an online customized clothing marketplace platform. The result also provides valuable insight for tech companies who are developing or running marketplace for online fashion shopping to enhance their platforms and meet the evolving needs of consumers. In addition, some individual fashion brands that operate their own fashion e-commerce businesses can benefit from these findings

because the brand owners might need to decide what kind of product information should provide to consumers. The information should be able to meet the need of customers without being overloaded or necessitating significant investments of time and resources.

By incorporating the relevant product information identified through this study, it will be more cost-effective for fashion brands to optimise their online shopping experience, improve customer satisfaction, and drive sales eventually. This not only benefits the brands themselves but also contributes to the overall growth and success of the online fashion business. This study is a preliminary study with relatively small sample size — only 162 respondents were involved. In the future, we will expand our sample size and cover samples from various countries and cities out of Hong Kong.

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