

Original Article

# Determining the Moderating Effect of Psychosocial Benefits Between Functional Benefits and Consumer Value in Electronic Commerce Websites

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**Abstract** - This research study delves into the complex interplay of factors influencing consumer perceptions and value in the context of online apparel shopping. Through a comprehensive analysis involving constructs such as Website Aesthetics (WAFEW), Personalization (WPFWE), Price Offers (POFEW), Functional Benefits (FBFEW), Psychosocial Benefits (PSYFEW), and overall Consumer Value (CVIV-EW), the study aims to unravel the dynamics that underpin instrumental values such as honesty, and helpfulness in the digital marketplace. By employing a robust methodological framework, the research analyzes data from consumers of e-commerce apparel websites, using statistical techniques to examine the relationships between the identified constructs. The collection of data subsequently accompanied the framework for evaluating the consumer value via a structured questionnaire. The questionnaire had a total of 350 consumers of e-commerce apparel websites. The study utilized Smart-PLS version 4 to explore the research's theoretical framework. The findings emphasize the important role of psychosocial benefits in influencing consumer value, highlighting the importance of emotional and social connections between consumers. Additionally, the study reveals the critical impact of aesthetics, personalization, and price offers in enhancing perceptions of functional benefits. Moreover, the research identifies a moderating effect among the functional and psychosocial benefits, suggesting that a holistic approach to integrating these aspects can amplify consumer value. This study's results provide valuable insights for electronic commerce businesses looking to enhance technological frameworks such as website architecture, user interface designs, or data analytics. The study contributes to the literature on e-commerce and consumer behavior by providing empirical evidence on the multifaceted determinants of consumer value in the online apparel shopping context.

**Keywords** - Apparel, Consumer value, Electronic commerce websites, Functional benefits, Smart-PLS.

## 1. Introduction

In the early 21st century, e-commerce experienced substantial growth, with apparel websites emerging as a prominent sector in the online retail business. The global e-commerce apparel market has been gradually rising and is projected to continue expanding steadily. Statista projected that the worldwide e-commerce fashion industry's sales will increase from \$531 billion in 2019 to more than \$672 billion by 2023, indicating considerable growth prospects [1]. Developed markets like the United States and Europe are typically the leading players in e-commerce apparel. However, emerging markets in Asia-Pacific, particularly China and India, are experiencing significant growth due to higher internet usage, increasing middle-class incomes, and a growing interest in apparel among consumers. Apparel websites in the dynamic e-commerce industry play a crucial

role by enabling the buying of apparel products and accessories while having a substantial impact on consumer value in behavior and decision-making [2]. The transition from conventional physical storefronts to online purchasing has changed how customers engage with apparel firms and how they view and benefit from these engagements. It is crucial to examine how psychosocial benefits, functional benefits, and consumer value interact in the realm of buying apparel products on e-commerce websites. Studying the significance of psychosocial benefits, functional benefits, and consumer value is crucial. Examining the psychosocial benefits, such as emotional satisfaction and social status, and functional benefits, such as product quality and website usability, offers a comprehensive understanding of consumer decision-making. Understanding these influential aspects is essential for forecasting consumer behavior, allowing e-



commerce platforms to customize their products and marketing approaches to meet and surpass consumer expectations. E-commerce companies can improve the customer experience by examining how psychosocial and functional benefits impact consumer value [3]. These functional benefits include enhancing the website's functional elements, such as usability and customer service, as well as utilizing the emotional and social components of purchasing apparel products. Adapting experiences to elicit positive psychological responses can increase satisfaction and happiness. These improve customer experience. Understanding how psychosocial benefits influence consumer value, in addition to functional benefits, can give a significant competitive edge in the fiercely competitive online apparel sector. Brands that successfully convey and fulfil these aspects are likelier to distinguish themselves in a competitive market. Thus, this helps to understand the competitive advantage.

In the very competitive e-commerce industry, especially in the apparel sector, the significance of website design, personalized service, and competitive price is essential. These components are crucial for attracting and maintaining customers, improving user experience, and increasing sales. Implementing these functionalities presents unique challenges. Also, to quantify psychosocial benefits, more empirical study is required to measure the influence of psychosocial benefits on consumer purchase intentions, satisfaction, and loyalty in the online apparel industry. Creating uniform criteria to quantify such benefits helps comprehend their significance and impact.

The influence of psychosocial benefits in e-commerce, namely in the apparel business, is a promising research area that provides various opportunities to study their effects on consumer behavior, happiness, and loyalty. Although there is an increasing amount of literature on online buying, there still needs to be research gaps in comprehending the complete influence of psychosocial benefits in terms of moderation effects with respect to consumer value in this research framework [4]. By addressing these gaps, valuable insights can be gained by both academics and practitioners, leading to the creation of more engaging, fulfilling, and effective online shopping experiences. Thus, the present study incorporates aesthetics, personalization, and price offer dimensions that impact functional benefits and moderate variable psychosocial benefits, which enhance consumer value.

**1.1. Objective**

- Examine how aesthetics, personalization, and price offer functional benefits and result in consumer value in the e-commerce apparel industry.
- To examine the psychosocial benefit's role as a moderator in the relationship among functional benefits as well as consumer value in e-commerce websites, aiming to understand the potential for psychosocial benefits to enhance apparel purchasing decisions.

**1.1.1. Research Gap**

- The present study proposed a research framework where the study found a theoretical gap for the evaluation of Means end-chain towards consumer value (especially in terms of instrumental and terminal value) [5]. This is considered as the novelty of the study.
- Thus, consumer value using a means-end chain developed. Also, there is a challenge to study moderation effects that impact consumer value. Thus, the research explores the moderation effects of functional benefits on consumer value in the e-commerce apparel shopping context.

**1.2. Conceptual Framework**

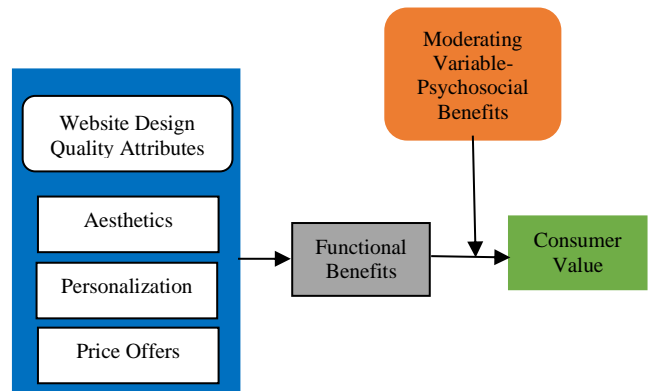


Fig. 1 Conceptual diagram

**2. Literature Review**

**2.1. Background of the Research**

The integrative technique seeks to uncover innovative theoretical frameworks and viewpoints by analysing, criticizing, and synthesizing previous research on a certain subject. The goal of this kind of study is to mix several viewpoints. As a result, each study variable is thoroughly summarized in this session, together with critical review elements.

**2.2. Website Design Attributes**

**2.2.1. Aesthetics and Functional Benefits**

"Aesthetics" in the context of apparel websites pertains to the general visual and sensory characteristics that create the site's feel, look, and identity. This comprises several components, such as the layout, color schemes, fonts, product presentation, website design, and User Interface, or UI. In the context of apparel websites, functional benefits are the useful features or advantages that a website provides to its consumers, improving their shopping experience and possibly influencing their decisions to buy. These benefits center on how the website facilitates the capacity for consumers to locate, assess, and buy things with more ease and efficiency. In e-commerce, especially in the apparel industry, combining aesthetics and functionality in website design is crucial for attracting consumers, enhancing the shopping experience, and increasing sales. An effectively developed e-commerce

platform can greatly influence consumer behavior, affecting aspects such as brand image and buying choices. An efficient website design improves the purchasing experience by facilitating searching for products for consumers. [6] state in "Prioritizing Web Usability" that straightforward and easy-to-understand navigation greatly enhances a website's usability, potentially resulting in higher sales and consumer value in terms of loyalty in the apparel e-commerce industry. Utilizing high-quality photos and videos is essential for apparel websites [7]. Informative and high-quality (functional benefits) visual representations can decrease perceived risk and enhance mood, therefore promoting purchases. Acceptance or rejection of apparel products mainly plays a role in product aesthetics, which impacts functional benefits [8, 9]. However, few studies address the link between aesthetics and functional benefits in e-commerce apparel websites. This research measures aesthetic characteristics in relation to functional benefits in the apparel website context. Hence, the research proposes Hypothesis 1. There is a significant relationship between aesthetics and functional benefits.

### **2.3. Personalization and Functional Benefits**

Personalization on apparel websites involves tailoring the purchasing experience to align with the unique preferences, behaviors, and requirements of each user. This method utilizes data analytics, user history, and artificial intelligence to provide personalized recommendations, information, and interactions that align with the consumer's interests and needs. The objective of personalization is to enhance the purchasing experience by making it more timely, appealing, and effective. Personalization in e-commerce apparel websites provides several functional benefits, such as improving user experience and enhancing convenience, efficiency, and user interface. Apparel businesses can enhance the buying experience by using consumer data to offer personalized recommendations, content, and promotions according to each consumer's preference. Personalized size and style preferences can be saved by consumers to enhance their purchasing experience, facilitating the discovery of products that meet their specific requirements.

So, [10] says another valuable avenue for further research would be to explore the impact of personalization in different contexts. [11] investigated how functional perspectives resulting from personalized products impact perceived quality, considering the increasing significance of personalization in marketing and commerce. E-shops provide mass personalization programs. Consumers often select an apparel item based on its functional benefits. As per the study, there are some empirical limitations with respect to personalization and functional benefits. Thus, the present research quantifies the association between personalization and functional benefits. Hence, the research came up with Hypothesis 2. There is a significant relationship between personalization and functional benefits.

### **2.4. Price Offers and Functional Benefits**

"Price offers" on apparel websites are pricing schemes and promotions aimed at attracting consumers, encouraging purchases, and improving the value of purchasing products from the web page. Retailers utilize these offers strategically to influence customers' decision-making processes and achieve various goals, such as boosting sales, reducing inventory, or attracting new visitors to the website. [12] price reflects physical features that are relatively simple to define and put into action. The two terms—quality and service—were more intangible. Price means value for money, offers, and product promotion, which influence durability, which is considered a functional benefit. Thus, this study discusses price-related offers that strongly impact the functional benefits. [13] explains that price influences functional perspectives. Also, the Clothing's functional benefits include elements like usability, performance, and ease of care. [14] Competitive prices substantially impact functional consequences in e-commerce and cross-border environments, which correlate to cost savings, efficiency, and exact shipment.

The authors in [15] investigate purchasing benefits with an opportunity to provide the most significant positive impact on a website's product offers. More investigation would enhance comprehension of the connections between various product categories. Thus, the present research focuses on specific product categories, "apparel". Hence, the study proposes Hypothesis 3. There is a significant relationship between price offers and functional benefits.

### **2.5. Moderating Variable -Psychosocial Benefits**

Volkan Polat (2022) [3] aims to investigate the impact of psychosocial benefits from streaming videos on consumer value (instrumental and terminal value). Researchers utilize empirical methodologies to analyze the theoretical structure. The data was gathered by a convenience sampling method involving 363 paid members in Turkey to several streaming sites on the global web.

Various elements, including psychosocial benefits and consumer values, can alter the interaction in research that examines moderating effects. By assessing the research framework in relation to several categorical factors, new insights are anticipated to surface. Researchers highlight a challenge in the study of moderation outcomes. Academic investigators and industry experts concentrate on the research issues facing upcoming studies. Therefore, the current research focuses on psychosocial benefits, which act as a moderator in different contextual environments. Chen et al. (2017) [4] Digital apparel firms with well-thought-out designs provide consumers with greater ease and convenience compared to traditional offline companies. Zappos, a virtual clothing company, outperformed conventional apparel stores by providing psychosocial benefits. The psychological benefit affects both the instrumental and terminal values. Netflix

surpassed traditional TV providers by providing expanded options, improved well-being, and cherished experiences. The authors identified a lack of understanding in recent studies about how different types of consumers moderate the relationship between psychosocial and consumer values. Hence, the present research seeks to clarify the psychosocial benefits and analyze how consumer values moderate in various environments. Thus, the research hypothesis defined Hypothesis 4: Psychosocial Benefit moderates the relationship between functional benefits and consumer value. Hypothesis 5: There is a significant relationship between Psychosocial benefits and consumer value.

### 2.6. Functional Benefits and Consumer Value

The researchers in [16] say instrumental and terminal values are considered consumer values. Also, a product's usefulness, efficiency, or effectiveness are all examples of its instrumental value. For this reason, the practical benefits of a product are more critical to an instrumental-value customer than its hedonic aspects. Consumers with strong beliefs are typically self-reliant, goal-oriented, honest, and responsible people, driven to improve their quality of life. Terminal values drive consumers to prioritize components with expressive aspects over practical or utilitarian aspects. Thus, this research explores functional aspects that impact consumer values. Similarly, [3] investigates in the video streaming services context, functional benefit impact with instrumental and terminal value (consumer value).

They conclude that functional benefit is associated with instrumental value, which is  $p < 0.1$ , whereas functional benefit is associated with terminal value, which is  $p < 0.05$ . This shows there is a strong association between these linkages. Further, the article concludes that functional benefit is strongly associated the consumer value. [17] tries to uncover the underlying values that drive fitness apparel, keeping in mind that consumers seek products or services that satisfy not only their physical demands but also their functional needs in addition to their physical elements. According to this research findings, the most significant human values are, in order of significance, security, independence, accomplishment, and physical well-being. All these values are considered as Rokeach values (human values) in this research. In the present study, human values are considered as consumer values.

Therefore, the research shows that functional needs influence human values. By this, the author strongly assumes that functional perspectives impact consumer values. Consumer values are those that have to be most important in life. Many researches focused on instrumental and terminal value but the present research focuses on the combination of these two values as consumer values. Also, the study investigates functional benefits that impact consumer value. Hence, the hypothesis developed Hypothesis 6: There is a significant relationship between functional benefits and consumer value.

## 3. Methodology

In the present study, bibliometric analysis was employed to narrow down the conceptual framework (means end chain and consumer value) by using keyword co-occurrence analysis using 597 Scopus documents using Vos-viewer software. The current study is descriptive, focusing on questionnaire-based approaches to gain a deeper knowledge of the desired audience's perspectives and behaviors. Descriptive research encompasses a variety of inquiries that seek to offer audiences a comprehensive understanding of the phenomenon being studied. The mentioned phenomena refer to research on several aspects of website design attributes, functional benefits, along consumer values among apparel prospective consumers. The current investigation incorporates an essential data-gathering tool known as a questionnaire. A well-planned questionnaire was created to gather data to maintain the integrity of the research concept. The questionnaire's components directly prompted participants to be open. The survey for the research was developed with a 5-point Likert scale commonly used in various investigations. The survey's scale layout has been adapted to suit the specific research context, utilizing variables sourced from the most recent literature, such as aesthetics, personalization [18], price offers [19], functional benefits [4] and consumer value [20].

The author in [21] suggests using a sample size that is at least four to five times bigger than the number of statements used to assess the constructs. In the opinion of [22], it is recommended that each variable should have a minimum of five observations (a ratio of 5:1) and a sample size of 10 observations per variable is considered appropriate (a ratio of 10:1). Applying the rule of thumb, the projected sample size was calculated to be 370 respondents, derived from multiplying 37 by 10. After removing the incomplete questionnaire, it resulted in 350 samples. Because the SMART-PLS software was employed to determine the website design quality aspects toward consumer value, the current research is quantitative. The SMART-PLS software proves psychosocial benefits as a moderator in this e-commerce website shopping context. SMART-PLS, a quantitative tool, is employed mainly in subject areas such as business, management and engineering. Shopping via the internet in India is now in its developmental stages. Consumers in this place should be more cautious about internet shops and recognize the benefits of e-commerce purchasing. The research will target Indians, particularly those living in Karnataka, who also have made purchases via the internet or regularly used e-commerce websites. The study highlighted the significance of sample size. This research selects Smart-PLS for analysis to achieve the research objectives. The Smart-PLS assessment suggests a sample size that varies from 150 - 400 sample numbers. Thus, the present research focused on a sample size of 350 apparel consumers. 350 complete responses were collected from e-subscribers who purchase apparel products in the top five e-commerce websites. The investigation analyzed survey methods of

collecting data through questionnaire responses from August 2022 to August 2023. The survey structure was designed based on a Likert scale with 5 points ranging from 1 (strongly disagree) to 5 (strongly agree). The investigation adopted the SmartPLS 4 evaluation technique, typically used in management academics. The quality of the measuring model in the present investigation was assessed by examining particularly reliability of the factor items along with internal consistency. Then, validity was confirmed by implementing convergent and discriminant validity tests, after which a structural framework was developed to analyse the association among both endogenous and exogenous factors [23, 24].

**3.1. Analysis and Findings**

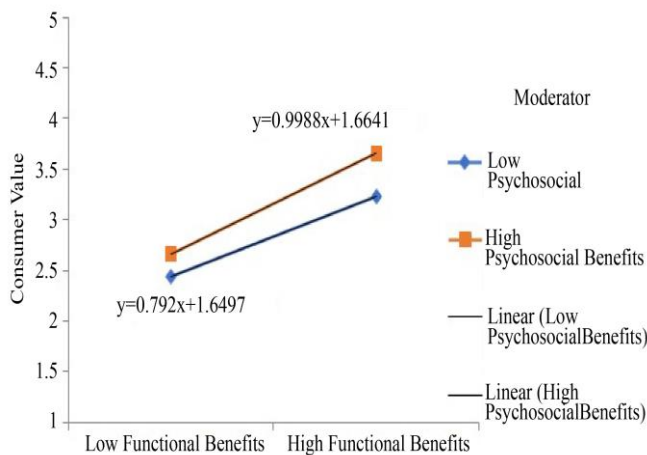
The study uses a pilot study of 120 samples (reliability value - 0.750) by using IBM SPSS Software to determine the reliability test for the variables. Also, this reliability test is confirmed using Cronbach Alpha values. The final sample set of 350 respondents gives a reliability of 0.963 (Table 1). With this for moderation analysis by Table 2, Andrew Hayes's process also confirmed the moderation effect seen in between functional benefits with respect to consumer value when psychosocial benefits are included in the e-commerce shopping context.

**Table 1. Reliability test**

Constructs	Cronbach Alpha Value
Website aesthetics	0.839
Website Personalization	0.806
Price Offerings	0.797
Functional Benefits	0.826
Psychosocial Benefits	0.906
Consumer value	0.879
<b>Overall Reliability statistics</b>	<b>0.963</b>

**Table 2. Andrew Hayess Process (Moderation effect)**

R	R-Square	MSE	F	Df1	Df2	P
0.6418	0.4119	0.2637	164.85	3.000	706.000	0.000



**Fig. 2 Graphical representation of functional benefits on consumer value**

**Table 3. Convergent validity**

Constructs	Cronbach's Alpha	Composite Reliability	Composite Reliability (rho_c)	Average Variance Extracted
WAFEW	0.959	0.962	0.965	0.777
WPFEW	0.953	0.959	0.962	0.785
POFEW	0.963	0.967	0.971	0.847
FBFEW	0.989	0.99	0.991	0.948
PSYFEW	0.885	0.901	0.917	0.689
CVIV-EW	0.964	0.966	0.971	0.825

Figure 2 and Table 2 explain that the psychosocial benefits strengthen the positive relationship between functional benefits and consumer value. Partial Least Squares (PLS) path modelling, sometimes referred to as factor-based structural equation modelling, can be used to achieve greater theoretical clarity. The present research will apply PLS path modelling with a path weighted strategy for the inside estimation to overcome the constraints of covariance-based SEM. The non-parametric bootstrap technique was applied in the present research to analyse the standard errors of the estimations. The current research used discriminant validity and convergent reliability based on the recommendations of [23]. Additionally, to ascertain the validity of each factor, researchers confirmed that all the outer loadings exceed the minimum value of 0.70 [25].

The present research presents a robust examination of various constructs associated with consumer perceptions and values in e-commerce environments, focusing on aesthetics (WAFEW), personalization (WPFEW), price offers (POFEW), functional benefits (FBFEW), psychosocial benefits (PSYFEW), and consumer value (CVIV-EW). Each construct was meticulously analyzed through reliability and validity measures, specifically Cronbach's alpha, composite reliability, composite reliability (rho\_c), and Average Variance Extracted (AVE). The reliability scores across all constructs indicate exceptionally high internal consistency. Cronbach's alpha values range from 0.885 (PSYFEW) to 0.989 (FBFEW), suggesting that the items within each construct reliably measure the same underlying concept. Similarly, the composite reliability and rho\_c values are above the recommended threshold of 0.7, further substantiating the internal consistency of the constructs. For instance, FBFEW exhibits the highest composite reliability (0.99) and rho\_c (0.991), emphasizing the robustness of functional benefits as a construct in the study. The Average Variance Extracted (AVE) evaluates the extent to which a construct accounts for the variance in its indicators compared to measurement error, demonstrating robust construct validity. The AVE values vary between 0.689 (PSYFEW) and 0.948 (FBFEW), with all constructs above the widely accepted criterion of 0.5. This shows a substantial amount of variance explained by the constructs through their corresponding indicators, which strengthens the validity of the measurement model.

**Table 4. Discriminant validity – Fornell and Larcker criteria**

Constructs	CVIV-EW	FBFEW	POFEW	PSYFEW	WAFEW	WPFEW
CVIV-EW	0.909					
FBFEW	0.345	0.974				
POFEW	0.331	0.352	0.92			
PSYFEW	0.445	0.534	0.451	0.83		
WAFEW	0.217	0.257	0.306	0.363	0.881	
WPFEW	0.148	0.28	0.221	0.177	0.174	0.886

**Table 5. HTMT table**

Construct	CVIV-EW	FBFEW	POFEW	PSYFEW	WAFEW	WPFEW
CVIV-EW	0.352					
FBFEW	0.337	0.358				
POFEW	0.471	0.566	0.48			
PSYFEW	0.22	0.26	0.314	0.387		
WAFEW	0.149	0.286	0.227	0.191	0.178	
WPFEW	0.02	0.01	0.118	0.262	0.018	0.245

The functional benefits (FBFEW) exhibit the highest levels of reliability and validity in this research setting, indicating a well-defined and regularly measured construct. Psychosocial benefits (PSYFEW) have the lowest ratings in both reliability and AVE, but they still satisfy acceptable norms, indicating a slightly lower but still sufficient level of internal consistency and explained variation. The analysis confirms that the concepts of aesthetics, personalisation, price offers, functional benefits, psychosocial benefits, and consumer value are valid and trustworthy in the research's framework.

The thorough evaluation of reliability and validity highlights the methodological strength of the research. It confirms the strength of its findings on consumer perceptions and values in e-commerce website environments. The Discriminant Validity Table 4, following the Fornell and Larcker criteria, provides insightful distinctions among the constructs of Consumer Value (CVIV-EW), Functional Benefits (FBFEW), Price Offers (POFEW), Psychosocial Benefits (PSYFEW), Aesthetics (WAFEW), and Personalization (WPFEW) in the context of an e-commerce apparel website. Discriminant validity assesses the extent to which a construct is truly distinct from other constructs within the model, which is crucial for ensuring that measurements are not merely reflecting the same underlying phenomenon.

In this analysis, the diagonal elements represent the square root of the Average Variance Extracted (AVE) for each construct, which should be greater than the off-diagonal elements in its row and column to satisfy the Fornell and Larcker criterion. This criterion is met in this table, indicating good discriminant validity among the constructs. For example, CVIV-EW's square root of AVE is 0.909, which is higher than its correlations with other constructs (ranging from 0.148 to 0.445), signifying that consumer value is distinctly captured and not significantly overlapped with the other constructs. The

relatively lower correlations between constructs such as CVIV-EW and WPFEW (0.148) or CVIV-EW and WAFEW (0.217) illustrate that while these constructs are related within the context of an e-commerce apparel website, they represent different facets of the consumer's experience and perceptions. For instance, how consumers perceive the value (CVIV-EW) in their transactions on such websites is distinct from how they view the site's Personalization Efforts (WPFEW) or its aesthetic appeal (WAFEW).

Conversely, higher correlations, such as between PSYFEW and FBFEW (0.534), suggest that while these constructs are distinct (since the criterion for discriminant validity is still met), they are more closely related. This could imply that in the context of e-commerce apparel websites, the psychosocial benefits (like keeping up with trends or recommending apparel products to social circles derived from purchases) are somewhat aligned with the functional benefits (such as easy to use website interface or wide varieties of apparel products), suggesting that improvements in functional aspects could also enhance psychosocial perceptions.

Overall, the discriminant validity analysis supports the conceptual separation among the constructs of consumer value, functional benefits, price offers, psychosocial benefits, aesthetics, and personalization in an e-commerce apparel setting. This distinction is critical for developing targeted strategies that can separately address each of these areas to improve consumer logical ability, honesty and convenience on apparel websites. The HTMT (Heterotrait-Monotrait ratio) Table 5 offers a nuanced approach for assessing discriminant validity in the constructs of Consumer Value (CVIV-EW), Functional Benefits (FBFEW), Price Offers (POFEW), Psychosocial Benefits (PSYFEW), Aesthetics (WAFEW), personalization (WPFEW), and an interaction term (PSYFEW x FBFEW) in the context of an e-commerce apparel website.

**Table 6. The structural model and moderation model effects**

Hypothesis Development	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
WAFEW -> FBFEW (H1)	0.141	0.144	0.054	2.627	0.004
WPFEW -> FBFEW (H2)	0.197	0.200	0.058	3.370	0.000
POFEW -> FBFEW (H3)	0.266	0.269	0.061	4.348	0.000
PSYFEW x FBFEW -> CVIV-EW (H4)	0.084	0.086	0.044	1.925	0.027
PSYFEW -> CVIV-EW (H5)	0.399	0.405	0.073	5.497	0.000
FBFEW -> CVIV-EW (H6)	0.132	0.130	0.072	1.849	0.032

The HTMT ratio is a relatively recent criterion for evaluating discriminant validity, comparing the average of the heterotrait-hetero method correlations to the average of the monotrait-hetero method correlations. A threshold of 0.85 or lower is generally accepted as evidence of adequate discriminant validity, suggesting that constructs are distinct from one another. In this analysis, the HTMT values between different constructs range from 0.01 to 0.566, all well below the 0.85 threshold, which strongly indicates good discriminant validity among the constructs.

This means that each construct represents a distinct aspect of consumer perception and interaction with e-commerce apparel websites without significant overlap that could confound their interpretation. For instance, the HTMT ratio between PSYFEW and FBFEW is 0.566, the highest in the table, suggesting a relatively strong relationship between psychosocial and functional benefits, yet still distinct enough to be considered separate constructs. This could reflect a nuanced dynamic in e-commerce settings where the psychological satisfaction derived from a purchase (like updated with the latest trends or socially validated) is somewhat dependent on the functional aspects of the product (like a wide variety of product categories or easy to use website interface), but they are not the same thing. The interaction term PSYFEW x FBFEW shows very low HTMT values when compared with other constructs (e.g., 0.01 with FBFEW and 0.262 with PSYFEW), indicating that this interaction is distinctly different from either of the individual constructs.

This suggests that the combined effect of psychosocial and functional benefits on consumer value is unique and does not merely reflect the sum of its parts. Low HTMT values, such as 0.149 between CVIV-EW and WPFEW and 0.22 between CVIV-EW and WAFEW, further confirm that consumers distinctly perceive constructs like consumer value, personalization, and aesthetics. They indicate that strategies to enhance consumer value should be multidimensional, addressing not only functional aspects but also how personalized and aesthetically pleasing the consumer finds the e-commerce platform. Overall, the HTMT analysis supports the discriminant validity of the constructs involved in the study, reinforcing the conceptual clarity and measurement accuracy of the research model. This clarity is crucial for

developing targeted interventions or improvements on e-commerce apparel websites, as it ensures that efforts to enhance one aspect of the consumer experience are unlikely to be confounded with others.

The structural model and moderation model effects Table 6 presents the findings from a study examining the influence of various factors on Functional Benefits (FBFEW) and Consumer Value (CVIV-EW) within an e-commerce apparel website context. The hypotheses tested include the direct effects of Aesthetics (WAFEW), Personalization (WPFEW), and Price Offers (POFEW) on Functional Benefits (FBFEW), as well as both the direct effects of Psychosocial Benefits (PSYFEW) and Functional Benefits (FBFEW) on Consumer Value (CVIV-EW) and a moderation effect (PSYFEW x FBFEW -> CVIV-EW).

The results are reported with the original sample (O), sample mean (M), Standard Deviation (STDEV), T statistics (|O/STDEV|), and P values, providing a comprehensive view of the data analysis outcomes. Hypotheses 1 through 3 (H1, H2, H3) address the direct relationships between aesthetics, personalization, and price offers with functional benefits. All three hypotheses are supported, with price offers (H3) having the strongest effect ( $\beta = 0.266$ ,  $p < 0.001$ ) on functional benefits, indicating that consumers perceive greater functional benefits when they find the price offers appealing. Personalization (H2) also shows a significant positive effect ( $\beta = 0.197$ ,  $p < 0.001$ ), followed by aesthetics (H1) with a smaller yet significant impact ( $\beta = 0.141$ ,  $p < 0.01$ ). Hypothesis 4 (H4) tests the moderation effect of the interaction between psychosocial benefits and functional benefits on consumer value, which is supported ( $\beta = 0.084$ ,  $p < 0.05$ ), albeit with a smaller effect size. This suggests that the combination of psychosocial and functional benefits enhances consumer value but perhaps not as strongly as direct effects. The direct influences of psychosocial benefits (H5) and functional benefits (H6) on consumer value are both supported, with psychosocial benefits showing a notably strong effect ( $\beta = 0.399$ ,  $p < 0.001$ ). This indicates that the emotional and social aspects associated with the apparel significantly impact perceived consumer value. Functional benefits also contribute to consumer value ( $\beta = 0.132$ ,  $p < 0.05$ ), but their impact is less pronounced compared to psychosocial benefits.

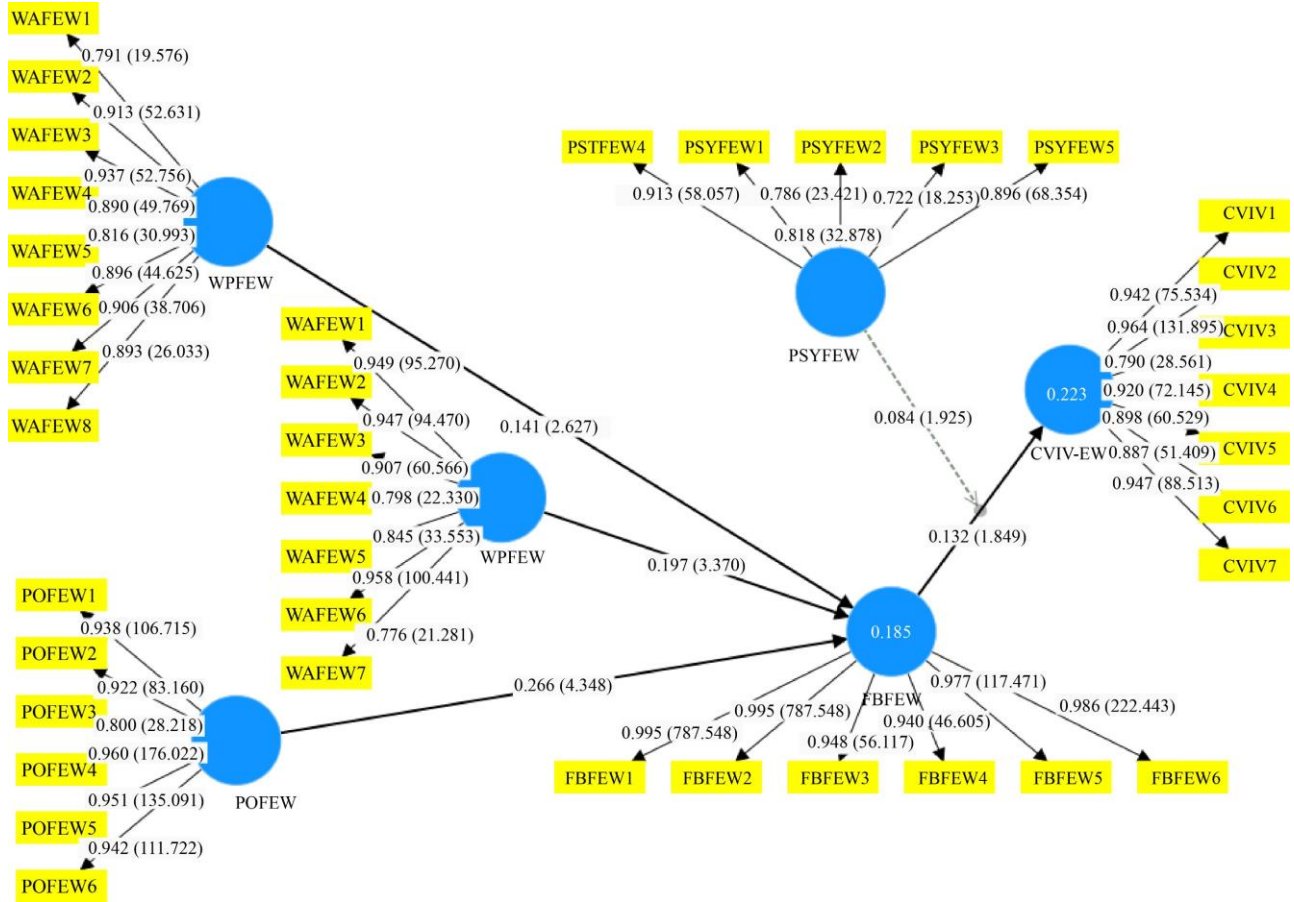


Fig. 3 Structural model with T values

In summary, the analysis reveals that while all examined factors positively affect functional benefits and consumer value, psychosocial benefits stand out as a particularly influential driver of consumer value in the e-commerce apparel context. Additionally, the moderation effect, while significant, suggests that the synergy between psychosocial and functional benefits plays a more modest role in enhancing consumer value compared to their direct effects.

#### 4. Discussion

The study explores various dimensions influencing consumer perceptions and values in the context of e-commerce apparel websites, integrating aspects such as Aesthetics (WAFEW), Personalization (WPFEW), Price Offers (POFEW), Functional Benefits (FBFEW), Psychosocial Benefits (PSYFEW), and Consumer Value (CVIV-EW). The investigation utilizes a structured approach to understand how these dimensions interplay to affect consumer decisions and perceptions of value, leveraging statistical analyses to validate hypotheses related to these constructs. The findings underscore the significant role of psychosocial benefits in shaping consumer value, suggesting that the emotional and social rewards consumers associate with their purchases are pivotal. This highlights the importance for e-commerce apparel websites to not only focus

on the functional aspects of their products but also to create and communicate the psychosocial aspects that can be derived from their website design offerings. E-commerce websites that successfully engender a sense of trendy products, social circle, or independence through their websites can thereby enhance perceived consumer value. The study also demonstrates the effectiveness of personalization and price offers in influencing functional benefits, pointing to the necessity for tailored experiences and competitive pricing strategies. Personalization — tailoring the shopping experience to individual preferences and behaviors — emerges as a critical strategy for e-commerce platforms aiming to increase perceived functional benefits and, by extension, consumer value. Similarly, attractive price offers directly impact perceptions of functional benefits, emphasizing the need for pricing strategies that resonate with target consumer segments. Moreover, the interaction between psychosocial and functional benefits in contributing to consumer value is modest. It suggests a synergistic effect where the combination of these benefits can further enhance how consumers perceive the value of their purchases. This implies that while direct impacts of functional and psychosocial benefits are paramount, there is also value in strategies that integrate these aspects to compound consumer perceptions of value.



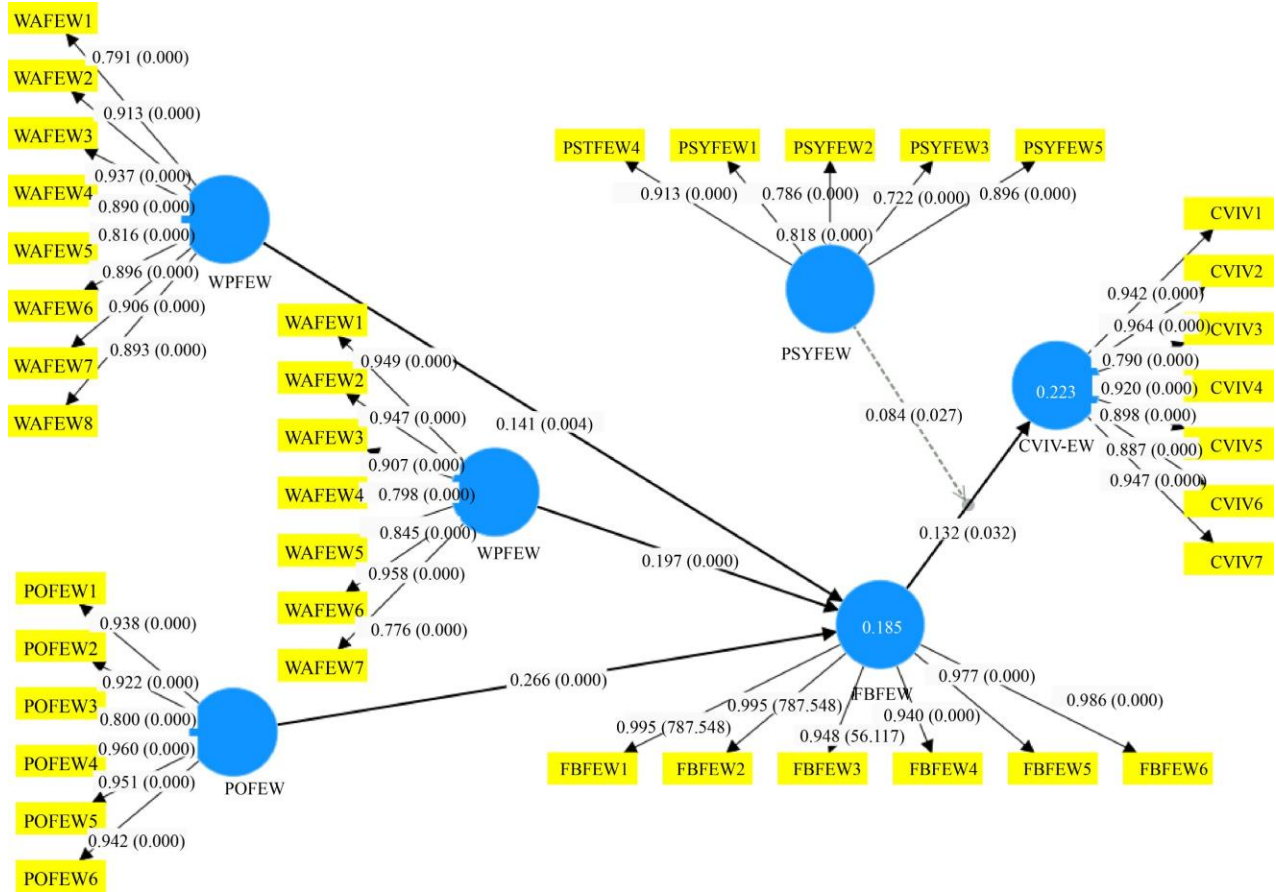


Fig. 4 Structural model with P values

Aesthetics, while having a less pronounced impact compared to other factors, still significantly affect functional benefits, indicating that the visual appeal of the website and its products plays an essential role in the overall consumer experience. This aspect should not be overlooked, as it contributes to the initial engagement and satisfaction with the e-commerce apparel website platform. This study uses the SMART-PLS software tool because reflective measurement models (such as consumer value) can be explained easily. The study also investigates moderation effects. A graphical user interface makes it easy to understand the relationship of the variables. Though the research data is a non-normal distribution, this software helps to enhance the proposed model in a better way.

The software handles a better casual predictive approach, and the current study mainly shows a greater predictive approach especially for Q square values. The model predictive shows more than 0.200 which is higher predictive relevance. Thus, the discussion of the study emphasizes a multi-faceted approach to enhancing consumer value in e-commerce settings, particularly for apparel. It underscores the necessity for e-commerce websites to develop comprehensive strategies that not only address the functional and economic aspects of their offerings but also deeply resonate on an emotional and

social level with their consumers. The author in [8] says future research should emphasize quantitative analysis for attributes and benefits. Thus, this study explains the attributes (website aesthetics, personalization, price offerings) that have a relationship with the benefits of structural modelling. By focusing on a consumer experience that encompasses aesthetics, personalization, competitive pricing, and the delivery of both functional and psychosocial benefits, e-commerce platforms can significantly improve consumer value, thereby fostering loyalty and encouraging repeat business.

### 5. Conclusion

The research study on consumer value in the e-commerce apparel context offers critical insights into the multifaceted factors that drive honesty, logical thinking and helpfulness. By examining constructs such as aesthetics, personalization, price offers, functional benefits, psychosocial benefits, and their impact on consumer value, the study provides a comprehensive framework for understanding consumer behavior in the digital marketplace. The findings highlight the paramount importance of psychosocial benefits in influencing consumer value, suggesting that the emotional and social connections consumers forge with a website can significantly enhance their perception of value. This underscores the

necessity for e-commerce apparel websites to not only focus on the tangible aspects of their products but also to invest in building strong, emotionally resonant website narratives that can foster a deeper connection with their audience. Personalization and price offers are identified as key drivers of functional benefits, indicating that tailored shopping experiences and competitive pricing strategies are essential for meeting consumer expectations and enhancing their perception of functional value. These elements, combined with a strategic emphasis on the aesthetic appeal of the website and products, create a holistic experience that can significantly impact consumer decisions and loyalty. The study also sheds light on the synergistic effect of combining functional and psychosocial benefits, suggesting that while each has a direct impact on consumer value, their interaction can further amplify this effect. This finding points to the potential for e-commerce websites to differentiate themselves in a crowded marketplace by integrating these benefits into a cohesive value proposition that speaks to both the practical and emotional needs of their consumers.

In conclusion, the research offers valuable insights for e-commerce apparel websites looking to optimize their online platforms and marketing strategies to enhance imagination power, honesty, logical thinking and convenience. By adopting a multi-dimensional approach that addresses the various factors identified in the study, e-commerce websites can better engage with their consumers, foster loyalty, and drive long-term success in the competitive digital retail landscape.

The study not only contributes to the existing body of knowledge on consumer behavior in e-commerce but also provides practical implications for marketers aiming to enhance consumer engagement and value perception in the apparel industry.

## 6. Implications

- **Engineering Concepts:** Website design based on engineering concepts, specifically for individualized user experience. Additionally, if personalization data is known, these data websites' can be designed for target marketing campaigns. By knowing the product listing management, the user interface technical persons can reduce product overselling and streamline business operations. Research data are always used for website designers, interface technical persons, data analysts etc.
- **Enhanced Personalization Techniques:** With personalization emerging as a significant driver of functional benefits, e-commerce platforms should invest in advanced data analytics and AI technologies to better understand consumer preferences and behaviors. Personalized product recommendations, customized marketing messages, and tailored shopping experiences can significantly enhance consumer satisfaction and perceived value.

- **Psychosocial Value Creation:** The strong impact of psychosocial benefits on consumer value underscores the importance of creating a brand identity and narrative that consumers can connect with on an emotional level. Strategies such as community building, engaging storytelling, and social media interaction can help brands foster a sense of belonging and identity among their consumers, enhancing the overall perceived value of their offerings.
- **Pricing and Value Perception:** The study's findings on the influence of price offers on functional benefits and, indirectly, on consumer value highlight the importance of strategic pricing. Brands need to carefully balance between offering competitive pricing and maintaining a perception of quality and exclusivity. Implementing dynamic pricing strategies, offering limited-time promotions, and emphasizing the value proposition of products can help in optimizing this balance.
- **The Role of Aesthetics:** Although aesthetics had a relatively smaller impact, the importance of website and product design cannot be underestimated. A visually appealing, easy-to-navigate website can significantly enhance the user experience, making it a critical element in attracting and retaining consumers. High-quality product imagery, consistent branding, and a cohesive visual theme across the platform can further reinforce the perceived value of the products.

## 7. Future Directions

Future research could explore how cultural differences affect the perceived importance of these constructs. Consumer values and the impact of psychosocial benefits, in particular, might vary significantly across different cultural contexts. Secondly, investigating how consumer perceptions change over time with repeated interactions with a brand could provide deeper insights into the development of loyalty and the long-term impact of psychosocial benefits. Lastly, as the retail landscape becomes increasingly omnichannel, understanding how online and offline experiences complement each other and contribute to overall consumer value could offer additional strategic insights for brands. Therefore, the detailed analysis of consumer perceptions and value in the e-commerce apparel sector reveals a complex interplay of factors that influence consumer decisions. E-commerce websites that effectively navigate these dynamics, focusing on a multi-dimensional approach to consumer engagement, are better positioned to achieve competitive advantage and sustain long-term growth in the digital retail ecosystem.

Future researchers can plan for different perspectives, such as

1. **Data analytics and Consumer Behaviour:** ETL (Extract, Transform, and Load) techniques are used to construct effective data pathways that guarantee data integration and cleaning from a variety of sources for analysis. This helps to

understand consumer behaviour efficiently such as by their transactional data, digital footprints, and also by survey and feedback mechanisms. Future researchers can take these data.

2. Technological Innovations: Big data analytics, machine learning, artificial intelligence, real-time analytics, and IoT (Internet of Things) can be included by future researchers to create more personalized consumer experiences.

3. Case studies: To determine whether the research data's suggestions, UI alterations, and marketing tactics are effective; for example, Netflix runs a lot of A/B testing. They

are able to optimize customer engagement owing to their data-driven strategy efficiently. Future research can plan on these types of case studies.

4. Future Trends: Ongoing technology developments and changing customer expectations will shape the future of e-commerce. Through the utilization of engineering solutions, companies can effectively manage the forthcoming issues in addition to navigating these new trends. In the ever-changing world of e-commerce, being ahead of the curve in implementing cutting-edge technologies will be essential to your competitiveness.

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