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Impacts of Website Design Attributes and Functional Benefits on Consumer-Instrumental Value in Electronic Commerce Apparel Websites

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Abstract With the rapid progress of technology, E-commerce apparel websites have become a predominant shopping trend. Although e-commerce websites provide more benefits than brick-and-mortar purchasing, looking deeper into consumer-instrumental values in an e-commerce website environment is essential. This research aims to develop a consumer-instrumental model that elucidates consumers' cognitive and affective processes while engaging with e-commerce websites. The paper presents and evaluates a conceptual model of the links between the constructs of consumer-instrumental values, functional benefits, and e-commerce website design attributes, with the means-end chain concept serving as the conceptual foundation. The methodology used in the study is descriptive research design with purposive sampling methods. Structural equation modeling is used to evaluate our hypotheses on data from 570 professional online consumers with immense knowledge in the e-commerce industry. The analysis evaluates website design attributes significant impacts functional benefits. Additionally, the impact of functional benefit leads the consumer-instrumental value. The results of this study hold significant management implications for e-commerce businesses, clothing sellers, and website design developers. This study offers a novel approach to assessing consumer value by employing means-end chain theory as a theoretical framework. The research contributes to the existing body of knowledge on consumer-instrumental value by explaining a unique form of consumer value. Furthermore, it is crucial for retailers to implement efficient tactics in order to guide consumers toward the most appropriate website for their purchasing requirements within the realm of electronic commerce. The research implications for e-commerce retailers and explains potential avenues for future research.

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1 Introduction

Humanity's development and usage of apparel developed the modern apparel business, which has been around for over 100,000 years [1]. Since the sector has grown and changed in tandem with society, it has become an increasingly popular research topic, especially in today's technologically advanced society [1–4]. The worldwide contribution of the apparel sector to the world's gross domestic product is roughly $3000 billion [1]. India's apparel businesses are the most numerous in the world. With a CAGR of 13% from 2017 to 2020, the size of the Indian retail business projects to increase from $672 billion [5]. India will have a young generation by 2020, and this demographic shift will prompt businesses to experiment with new approaches to consumer value, product creation, service provision, and distribution [6]. Consumer value has evolved into a vital part of most marketing strategy models in purchase and retention.

The "means-end" theory, popular in consumer behavior, seeks to clarify how a person's final decision on a product or service influences their likelihood of achieving their goals. It emphasizes the importance of the relationship between product attributes, consumption effects, and instrumental (consumer values) in guiding their purchasing decisions. Means-end chain theory deals with attributes, benefits, and values. Consumers learn to seek specific outcomes or benefits based on the attributes offered to them independently from the business view. Moreover, the means that attributes and the results or benefits they provide are the sources of the value that consumers seek. In this regard, consumers evaluate the unique features of an apparel website's design and the benefits that can derive from these features in order to achieve what they want [7, 8]. There is a theoretical gap in means-end chain and value system (Rokeach Value Survey). This study focuses the theoretical gap especially the combination of means-end chain with consumer-instrumental value [9]. Few research has been conducted to understand the precise feature of apparel purchasing businesses taking into account consumer desires and parameters that consumers value most [10]. Additionally, this study incorporates an e-commerce website context, which needs improvement. Thus, this research provides that consumers' goals for e-commerce apparel website design experiences should examine, providing more specific reasons or purposes for purchasing the apparel products. The provided information would also prove beneficial for technologists involved in the development of e-commerce websites, particularly in the context of formulating efficient marketing tactics.

1.1 Objectives

- To analyze the relationship between the usage of website design attributes, the consumption of functional benefits, and desired goal of consumer-instrumental value in the electronic commerce apparel websites.
- To estimate a structural model of causal relationships among website design attributes, benefits (i.e., functional), and consumer value (i.e., instrumental value) on electronic commerce apparel websites.
- To evaluate whether the conceptual model fits all the measures of the recommended value, indicating a good fit of the structural model.

2 Literature Review

2.1 Theoretical Background Hypothesis Developed

This article connects the electronic commerce website attributes, functional benefits, and consumer values specially focused on instrumental values—means-end chain concept. Product/service features are composed of attribute levels [11, 12]. Lin [13] consumers view products/services as a collection of attributes. Although this approach can characterize a service successfully, the concept of 'attributes' needs to be clarified. This study emphasizes on the website design attributes [14] that are the only service features on electronic commerce apparel websites. A cognitive paradigm known as the means-end chain (MEC) concept connects consumers' understanding of website design attributes to end-desirable notions. The creation of consumer insight into their interaction with shopping platforms could be clarified most effectively by the MEC theory [15].

Many articles focus on attributes [14, 16] or personal values [17–20], but not many suggest the variables that affect the consequences. Investigators have replaced 'consequences' with 'benefits' because benefits see upon consumption [21]. So, this research provides consumption of functional benefits. The high or low benefits that arise from using a product or service are known as outcomes. Consumer-centric research suggests that consumption models improve by paying closer attention to how consumer use a product or service. Marketers can design vital website attribute concepts by using these models. Developing consumer cognitive representations is directly proportional to having an understanding of consumer perceptions of value. Consumers' values divide into a few distinct categories, such as the list of values and the Rokeach value. This research makes use of [17] concept of human (consumer) values, which define as our enduring views concerning patterns of behavior (instrumental value) and end states of being (terminal value). The Rokeach value system divides into instrumental value and terminal value. This research has a primary emphasis on consumer-instrumental value. The instrumental value refers to behaviors that refer to the individuals and are about the person's competency [22].

2.2 Website Design Attributes and Functional Benefits

Meppurath and Varghese [23] Youngsters are drawn to virtual retailing platforms because they are convenient, tend to save time and energy, have a large audience, and have a wide selection of goods at competitive costs. The competitive price or price offerings are the aspects of website design attributes that influence the functional perspectives, such as shopping convenience while purchasing products. Thus, the author concludes competitive prices affect the functional views aspect of consumers. The limitation of the study is that the digital revolution might alter the results. Thus, there is a need for the study price offerings, which is whether website design attributes associate convenient (functional perspectives) based consumers.

Foroudi et al. [24] explains the conceptual underpinnings and background factors of corporate website design attributes oversight. Marketing experts categorize the website's attributes into two broad categories. One group focuses on hedonic benefits, while the other emphasizes functional benefits. Consumer intent to get functional benefits related to ease of use (utilitarian perspectives) is another field of research on website attributes. Website design in marketing studies is a helpful factor for achieving hedonic or functional benefits.

In this article, "website design attributes," refer as "attributes of website such as website aesthetics, website personalization, price offerings also the attributes that links the website design elements." Consumers will understand and value the benefits of website design attributes through functional benefits to gain consumer value. Consumer appreciation of a product's functional advantages may vary, depending on factors including website aesthetics or price offerings. This highlights the need for greater focus on the difficulty of identifying the variables that influence consumers' perceptions of functional benefits.

H1—Website design attributes associate with functional benefits on e-commerce apparel websites.

2.3 Functional Benefits and Consumer-Instrumental Value

Product usage benefits classify as "functional" consequences [25]. The functional effects of product use include reduced physical work, saved time and money, and so on. High-quality fashion vintages have "functional" benefits for the consumer's day-to-day life. Such benefits would be the potential for less waste, cheaper luxury goods, and a longer-lasting effect. Consumers choose exceptional antique items due to their high quality, according to functional drivers. Purchases of high-end fashion vintage items might be motivated by either "instrumental" aims or ideals. Consumers' actions direct the instrumental values to pursue precise, time-bound goals [26]. Thus, the functional benefit of "affordable luxury" trumps the instrumental value of "impressing others."

Xu et al. [27] the functional benefits of a product/service are the practical advantages and performance outputs that effectively benefit the users (e.g., save money). Instrumental values are preferred behavior or ways of conducting oneself such as loyal [28]. Functional benefits result from a service's ability to fulfill its utilitarian functions [29]. These depict functional benefits as those which pertain to the essential product/service, which includes the difficulties of providing a solution to a problem consumers have and performing tasks the consumers might not be capable of performing without the assistance of the service [30].

Thus, the present research focuses on "functional benefits," which describe the benefits acquired directly from perceived e-commerce apparel websites. The instrumental value determines the product's functional utility or capacity to fulfill utilitarian or physical such as ease to use, convenience, service, and saving time. It demonstrates a utilitarian purpose while using a service or product in most cases. Thus, the beneficial and performance outcomes occur during product/service usage. After using a product or service, an individual's instrumental values are helpfulness, equality, good for life, satisfaction, comfort, and accomplishment. These are the instrumental values used in this research and, additionally, considered as the mental representations of "ideal forms of conduct or behavior," The term "preferred patterns of conduct" or "means of behaving" is used to define what is known as "instrumental values." Instrumental value considers consumer value (Rokeach value survey). Thus, the present research denotes instrumental value as "consumer-instrumental value." Additionally, it affects the individual's personality traits, representing the many forms of preferential behavior. To analyze the variations between functional benefits and the instrumental value indicates,

H2—Functional benefits associate with consumer-instrumental value on e-commerce apparel websites.

3 Methodology

The present study employs a descriptive research design most suitable for an objective, quantifiable research technique. The novelty of descriptive research usually assists researchers in evaluating hypotheses and obtaining definitive conclusions on the testing of hypotheses [31].

The data collection method used in the study is primary data collection methods. The respondents are selected who are well knowledge in e-commerce platforms also who use and buy apparels from e-commerce apparel websites ask to fill out a survey questionnaire with Likert 5-point scale instrument. The contact information of consumers who consume apparel products from Flipkart, Myntra, and Amazon. Consumers were contacted via traditional paper and pencil method, google forms, and email and requested to participate in the survey. The consumers from Karnataka's major cities, like Bangalore, consider for the research since as per google trends 2022 the e-commerce shopping keyword is highly used by Bangalore people. E-commerce consumers of 3 different e-commerce companies include in the survey.

The questionnaire represented the key variables by electronic commerce website design attributes, functional benefits, and instrumental value. Six hundred and fifty participants chose at random from the sampling frame. They were given a Google form with a version of the questionnaire and an explanation of the study's goals, a promise of privacy, and anonymity. Researchers received 505 questionnaires, each of which was filled out. When follow-up emails come a few weeks after the initial survey slot, 65 more responses are created. Only 65 submitted answers by hand, while the other 505 came from Google forms.

However, this research uses various statistical tests using AMOS software, IBM SPSS software applications including validity and reliability checks, to examine the set of hypotheses. Though AMOS software applications have certain challenges encountered when acquiring proficiency in using of the technique of comprehending meaning involves the analysis and interpretation of language, as well as the recognition and comprehension of the various complex terminology that are employed.

4 Data Analysis

4.1 EFA—Exploratory Factor Analysis

The results indicating that the Kaiser–Meyer–Olkin (K-MO) measure for the sample exceeded the threshold of 0.6, indicating a satisfactory degree of sampling adequacy. Additionally, Bartlett's sphericity test yielded a highly significant result with a p-value of less than 0.001, suggesting that the correlation matrix is significantly different from an identity matrix [32, 33]. These values empower us to continue ahead with the EFA. In this research, the adopted items of the scale were improved by employing the correct item-to-total correlation (CTC).

As a result, all of the dataset's items' parameters were at the desired value of 0.40, as presented in Table 1. Moreover, reliability test was employed with a criterion of 0.70 to confirm our explored variables' reliability and validity [34]. Furthermore, the all the research variables exceed the given limit, and the analysis are shown in Table 1. Moreover, it is worth noting that all the chosen items were subjected to normalization, as indicated in Table 1. This process involved assessing the Skewness and Kurtosis data for each item, ensuring that the values fell within the range of $+2$ to -2 [35]. In addition, C. Alpha (C stands Cronbach's), the K-MO test of good reliability and Bartlett's sphericity is used to test the research study. Also, the value of reliability measures 0.906. Further, the principal component evaluation outcomes with Varimax show that the factor loading of the observed variables on their corresponding factors was more significant than 0.40 [36–38].

Table 1 EFA factor loadings

Variables	Sub items	Mean	Std. Dev	CTC	Skewness	Kurtosis	C. alpha	EFA loading
Website design attributes (WDA)	WDA 1	4.421	0.814	0.743	− 1.528	2.327	0.936	0.805
	WDA 2			0.813				0.858
	WDA 3			0.830				0.875
	WDA 4			0.838				0.889
	WDA 5			0.798				0.856
	WDA 6			0.802				0.862
	WDA 7			0.766				0.831
Functional benefits (FB)	FB1	4.832	0.433	0.724	− 3.217	11.867	0.903	0.804
	FB2			0.825				0.883
	FB3			0.715				0.802
	FB4			0.691				0.789
	FB5			0.848				0.898
Consumer-instrumental value (CV)	CV1	4.270	0.789	0.748	− 1.049	0.975	0.909	0.811
	CV2			0.756				0.822
	CV3			0.730				0.796
	CV4			0.713				0.788
	CV5			0.713				0.779
	CV6			0.718				0.783
	CV7			0.711				0.779

4.2 CFA—Confirmatory Factor Analysis

Each variable set was subjected to a CFA to confirm the measure model's reliability and validity. As a result, the CFA and SEM fit are all above the criterion for statistical significance. All standardized loadings were higher than 0.5. Verify reliability estimations using composite reliability, which showed all factors had ranges greater than 0.70. It is clear from these findings that convergent validity can be proven. The confirmation of convergent validity was strengthened through the computation of the average variance explained, which revealed that all outcomes above a threshold of 0.50.

Table 2 SEM evaluations

Hypothesis development	Path evaluations	T-value and ($p < 0.01$)	SEM evaluations
H1	WDA → FB	2.60 ($p = 0.00$)	Accepted
H2	FB → CV	8.52 ($p = 0.00$)	Accepted

4.3 SEM

Once the concepts' reliability and validity got established, a mono analysis was carried out, with the measurement and structural models being estimated simultaneously. The SEM includes e-commerce website design attributes (WDA), functional benefits (FB), and consumer-instrumental value (CV) as the three observed variables, and three unobserved variables ($e1$, $e2$, and $e3$). The hypothesized model analyzes via structural equation modeling (SEM). The fit indices are satisfactory to the extent that they fit indices fall within the acceptable range. However, the p-value, together with std regression weights, and the path evaluations, required to be computed to evaluate the test's hypotheses. The results showed a significant relationship between website design attributes and functional benefits, as well as between functional benefits and (consumer) instrumental value, with T-value of 2.60 ($p = 0.00$) and 8.52 ($p = 0.00$), respectively. SEM evaluations of the hypothesis test in Table 2, which includes the hypotheses, path evaluations, their corresponding t-values and p-values.

5 Conclusion and Future Research

In a changing e-commerce environment, website attributes are regarded as an integral component of the purchase decision. Understanding the ultimate objective of consumers in connection with the consumption of functional benefits offers insight for e-marketers in building business strategies. First, this research achieves its research objective of analyzing the website design attributes, functional benefits, and consumer-instrumental value from the standpoint of e-commerce consumers. The results of this research offer e-commerce marketers easy yet particular and significant insights on which attributes to prioritize and how to manifest consumer goals. This finding also reinforces a broader understanding of the apparel website attribute retailing [9] and the most valued human (consumer value) criteria. Thus, the present research has some limitations which should be focused by future researchers. The limitation of the SEM application is predictive relevance (Q square) is not explained in detail as like SMART-PLS software application. Future research can plan for SMART-PLS software's applications and other software's such as Python, Nvivo, R programs, and Machine learning applications.

In contrast, product position approaches, visual mapping, attitudinal modeling, and advertising research frequently necessitate functional benefits. These perspectives can be studied by future academicians. Thus, the future research can focus on

these strategies. In addition, sampling frame limits the study. Future research can plan for different geographical locations to enhance the generalizability.

6 Managerial and Theoretical Contributions

The outcomes of this research have various critical managerial contributions for e-commerce retailers, apparel retailers, and website developers. Firstly, it is imperative for retailers to get a comprehensive understanding of the many functionalities offered by e-commerce apparel businesses. In order to help retailers, create successful e-commerce strategies, this research extracts website design attributes that reflect the characteristics of functional benefits shown to consumers. Therefore, based on the findings of the study, it is recommended that businesses maintain a wide range of product attributes in order to stimulate consumers' interest in exploring e-commerce platforms. Additionally, retailers should employ effective strategies to direct consumers toward the most suitable websites for their buying needs. As theoretical contributions, the means-end theory is an excellent guide for businesses seeking to promote e-commerce apparel purchases to consumers. The research contributes to advertising and communication strategists at apparel firms interested in drawing consumers' attention to universally important instrumental-consumer values. The research implications help e-businesses refine their product and website layouts by focusing on the most important factors. Understanding the conceptual framework might help businesses emphasize consumer values when launching new products/ services.

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