

The different impact of utilitarian and hedonic attributes on web-based retail shopping behaviour

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Abstract

Purpose – Acknowledging previous scholarly focus on functional attributes in understanding technology acceptance behaviour, the current study offers a novel perspective by integrating eight different dimensions of utilitarian and hedonic attributes to examine their influence in delivering a holistic web-based retail shopping experience.

Design/methodology/approach – The research model was tested and validated through data collected from 370 online shoppers across both hedonic and utilitarian product ranges. Hypotheses were tested using covariance-based structural equation modelling with multi-group analysis to examine the moderation effect.

Findings – The findings strongly support the model confirming eight new utilitarian and hedonic dimensions that influence web-based retail shopping behaviour. The findings also confirm that hedonic attributes remain important even for utilitarian product purchasing.

Originality – This study integrates multiple dimensions of utilitarian and hedonic attributes into a single model and highlights the interplay of these attributes, thus extending the Technology Acceptance Model. This paper also advances scholarship through its identification of attribute impact across different product categories.

Practical implications – The key managerial implication is the demonstrated need to balance utilitarian and hedonic attributes in web-based retail platforms, where previously, there has been an overemphasis on functional features. Web-based retailers should consider the optimal blend of utilitarian (e.g. information quality) and hedonic (e.g. aesthetic) attributes in the design of a retail shopping site, irrespective of the product category.

Keywords: customer behaviour, e-retail management, hedonic attribute, perceived enjoyment, technology acceptance, web-based retailing

Introduction

With the growth of many first-time online shoppers in emerging markets, electronic retailing is projected to reach one-third of global retail sales by 2024 (Research and Markets, 2020). In response to this growth, web-based retailers in emerging markets are striving to better understand their target market in order to enhance their online business. To respond appropriately to this type of retail sales, both academics and web-based retailers (hereafter called “e-retailers”) need to have a clear understanding of the impact of different website attributes on customers’ web-based retail shopping experience. While this is well documented in the e-retailing behaviour literature generally (e.g., Driediger and Bhatiasevi, 2019; Liu *et al.*, 2020; Maduku and Thusi, 2023), decoupling different attributes of websites and their differential impacts on web-based retail shopping experience is required, as customers’ utilitarian and hedonic expectations may vary in online shopping context (Liu *et al.* 2020). Indeed, the distinction between utilitarian and hedonic benefits, along with their impact on consumers’ decision processes in the interactive e-environment, is considered to be one of the major factors explaining differences in consumer behaviour (Khare and Sarkar, 2020).

Consumers’ need for different utilitarian and hedonic attributes may also vary across product categories both in very traditional shopping environments and contemporary e-retailing environments (Jain and Kanungo, 2013). Essentially, the importance of utilitarian and hedonic attributes for purchasing different product categories, such as games, clothing, or groceries, is not likely to be equal. However, extant research (e.g., Driediger and Bhatiasevi, 2019; Liu *et al.*, 2020; Maduku and Thusi, 2023) on e-retailing has overlooked the differentiating effect of different dimensions of utilitarian and hedonic attributes on web-based retail shopping behaviour across product categories.

Previously, the Technology Acceptance Model (TAM) (Davis, 1989) was used as an established model to predict and explain consumers’ use of online channels for shopping (Singh and Basu, 2023) and payments (Bailey *et al.*, 2020). The current study, whilst using TAM as a base, extends the context of application to web-based retailing in an emerging market context. Accordingly, this study responds to the recent call (Singh and Basu, 2023) for further studies in

emerging nations (e.g., China, India, Bangladesh). Furthermore, acknowledging the predominant focus on functional attributes in TAM, the current research aims to address this gap by examining the interplay of eight different utilitarian and hedonic attributes influencing perceived usefulness (PU), perceived ease-of-use (PEU), and perceived enjoyment (PE) in adopting web-based shopping across product categories in an emerging market.

This study therefore offers a timely response to the recent research calls (Basu *et al.*, 2022; Laroche *et al.*, 2022; Singh and Basu, 2023) for exploring the ‘what’ and ‘how’ elements of website attributes (e.g. aesthetic, social presence) and their impact in triggering hedonic and/or utilitarian purchase decisions. Similarly, scholars (Srivastava and Thaichon, 2023; Zerbini *et al.*, 2022) argued that critical aspects of utilitarian (e.g., financial transaction, privacy concern) and hedonic (e.g., aesthetic, novelty) attributes require additional research attention as these are highly influential ‘crowd pullers’ in web-based retail settings. Responding to these current research calls in addressing the research gap identified above, the current study advances two central research questions:

RQ1: What are the different attributes constituting utilitarian and hedonic qualities in web-based retail shopping?

RQ2: How do utilitarian and hedonic qualities interplay in influencing web-based retail shopping behaviour across product categories?

Understanding the attributes is an antecedent to designing and delivering a pleasurable and positive web-based shopping experience. Thus, this study aims to identify, integrate, and explain utilitarian and hedonic attributes and their relative influence on shopping behaviour across product categories to both extend scholarship within the TAM realm and provide useful insight for web-based retailers. The development of the hypotheses now follows, preceded by the method employed and the results. A discussion leading to the contribution and avenues for future research is then provided.

Literature and hypotheses

This study refers to “web-based retail shopping” as the act of purchasing goods or services from retailers over the internet through websites or online platforms. It involves browsing of products, selection, and payment, all conducted through a web interface without the need for physical presence in a brick-and-mortar store. Research attention on understanding web-based retail

shopping is critical for advancing e-retail shopping behaviour literature as well as for retailers to appropriately target, attract, and retain consumers (Zerbini *et al.* 2022). Yet, many researchers noted a lack of in-depth research on consumer motivation amongst other aspects of online shopping behaviour (Liu *et al.*, 2020; Sramova and Pavelka, 2019), including the critical aspects of utilitarian (e.g., financial transactions interface, privacy concern) and hedonic (e.g., aesthetic, novelty) attributes that require additional research attention (Srivastava and Thaichon, 2023; Zerbini *et al.*, 2022).

From a customer value perspective, utilitarian qualities provide self-fulfilling value, and hedonic qualities provide instrumental value (Heijden, 2004). The classification of the quality dimensions in a web-based retail context also depends on their role in performing the shopping task: utilitarian qualities focus on attributes that facilitate completing the shopping task (e.g. navigation, payment), while hedonic qualities focus on attributes that trigger emotional states (e.g. color, aesthetics of the website) (Bauer *et al.*, 2005). Further rationale for classifying these attributes as utilitarian and hedonic quality dimensions is discussed in the following section.

Utilitarian quality (UQ)

UQ deals with an individual's perception of the utility and functionality of an object (Batra and Ahtola, 1991), offering utilitarian benefits, including functional, instrumental, and practical benefits of consumption offerings (Maduku and Thusi, 2023). Former prominent studies (e.g. Liu *et al.*, 2020; Maduku and Thusi, 2023) have conceptualised UQ as a multi-dimensional construct, with aspects like convenience and compatibility as sub-dimensions. Indeed, conceptualising UQ as a multi-dimensional construct provides a more comprehensive grasp of its nature. Within the context of a web-based retail platform, utilitarian attributes include both core functional features (e.g., information quality and navigability) and other interface features (e.g., financial transaction interface and customer reviews) that influence shopping behaviour (Srivastava and Thaichon, 2023; Zerbini *et al.*, 2022). Hence, this study uses four task-related attributes as sub-dimensions of utilitarian quality of web-based retailing: information quality, website navigability, financial transaction interface, and customer reviews.

Information quality

Online retail shopping may be perceived as risky by shoppers, especially in an emerging market context (Malaquias and Hwang, 2016), owing to the inexperience of online shoppers and their dependency on product information provided on websites. Mitigating this risk requires e-retailers to provide accurate and timely information to shoppers (Kim and Park, 2013), as information is considered a utilitarian attribute that plays a significant role in facilitating customers' online shopping decisions (Maduku and Thusi, 2023). Simultaneously, information theory suggests that information overload makes shoppers spend more time and effort, reversing any likely purchasing decision (Lv and Liu, 2022). Clearly, information on web-based retailing sites is a crucial utilitarian attribute that may facilitate as well as negate web retail purchasing.

Navigability

In the context of web-based retailing, navigability refers to the degree to which the interface attributes of the shopping site are well organized with all relevant tools necessary for the shoppers to use the site conveniently. Navigation tools, including directions, menus, buttons, frames, site maps, subject trees, image maps, and colours help shoppers move through the site (Cao *et al.*, 2005). Past studies have identified navigability as an important factor influencing the functionality and usability of a website (Shukla *et al.*, 2022). Hence, shopping site navigability is considered a key utilitarian attribute of web-based e-retailing.

Payment interface

Payment or financial transactions are among the most critical concerns for web-based retail shoppers and e-retailers. The established payment modes for web-based retailing include credit and debit cards, third-party payment gateway, and cash-on-delivery (COD). The variety of payment modes offers different utilitarian benefits to the customers and contributes to their concerns. Many customers face high levels of uncertainty in sharing card information online and do not trust web-based platforms to share their financial details (Thakur and Srivastava, 2015). Third-party payment gateways (e.g., PayPal, WeChat) may facilitate the financial transaction between buyer and seller, but this results in a loss of control for the retailer. Another popular payment mode, especially in emerging markets, is cash-on-delivery (COD), where customers make the payment in cash once the product is delivered. Studies suggest that COD helps mitigate the perceived risk of online financial transactions, making many shoppers in developing markets

trust the e-retailers (Xu *et al.*, 2017). Hence, the payment interface is highlighted as an essential utilitarian attribute of web-based retailing.

Customer reviews

Customer reviews on web-based retail platforms can be considered a utilitarian attribute facilitating customers' online purchasing decisions (Singh and Basu, 2023). Most e-retailers offer customers the opportunity to provide voluntary feedback in numerical star ratings as well as subjective comments about the product and/or shopping experience. The effectiveness and usefulness of customer reviews in better understanding online shopping behaviour have been emphasized by multiple scholars, including Atulkar and Singh (2021), Cocco and De-Juan-Vigaray (2022), and Marder *et al.* (2023). Thus, customer reviews provided on web-based retail platforms can be considered an important utilitarian attribute facilitating web-based retail shopping decisions.

The above discussions have led us to conceptualize utilitarian quality as a higher, second-order construct, with information quality, navigability, financial transactions interface, and customer reviews as its four constituent dimensions.

Hedonic quality (HQ)

HQ refers to the attributes involving the experiences of sensory appeals, which comprise emotion and gratification (Batra and Ahtola, 1991) and may include non-instrumental dimensions like aesthetics, innovativeness, or novelty. Studies on the hedonic qualities of web-based retailing platforms are still scarce (Liu *et al.*, 2020). Past studies highlighted different hedonic motives in shopping contexts, such as enjoyment (Heijden, 2004), adventure, self-gratification, and idea shopping (Maduku and Thusi, 2023). However, only a handful of studies (e.g. Liu *et al.*, 2020; Maduku and Thusi, 2023) have integrated different attributes of HQ in the e-retailing environment that may add to hedonic experiences. Such studies, performed in slightly different contexts (e.g. mobile shopping), have conceptualised HQ as a multi-dimensional construct, presenting an inclusive understanding of its nature. Accordingly, this study includes those dimensions that are referred to as hedonic attributes of an e-retail environment in the existing literature discussed below.

Aesthetics

Broadly, aesthetics refers to the extent to which the technology is visually appealing (Liao *et al.*, 2011). In previous studies, aesthetics were used synonymously with attractiveness (Hartmann *et al.*, 2007) and visually appealing design (Liao *et al.*, 2011). In the e-retailing context, aesthetics refers to the degree to which the site has a visually appealing interface, such as pleasant colours and clear design. Aesthetics has an influence on PU, PEU, and creating pleasurable experiences in user interaction with technology (Castillo and Bigne, 2021). Hence, aesthetics is assumed to be an indispensable hedonic attribute in web-based retail.

Interactivity

Interactivity is defined as “the availability and effectiveness of customer support tools on a website, and the degree to which two-way communication with customers is facilitated” (Srinivasan *et al.*, 2002, p. 42). Researchers argued that as a hedonic attribute, the online interactive environment might provide consumers with more enjoyment than in the physical environment (Mäenpää *et al.*, 2006), where such interactions are facilitated by incorporating spatial, music, and lighting effects in order to enhance shoppers’ hedonic experience (Lau and Lee, 2019). Accordingly, interactivity is identified as a salient hedonic attribute for e-retailing.

Novelty

Novelty refers to those features of website characteristics that users find new, surprising, unexpected, and unfamiliar (Huang, 2003). Web-based retail platforms frequently integrate different features that are perceived by the users as novel, such as multimedia modalities, augmented reality, and the simulation of human-like characters or chatbots. Novelty can be considered a hedonic attribute because it generates sensory curiosity among the users by arousing imagination and capturing users’ interest in a site (Huang, 2003). From a hedonic perspective, users get excitement and pleasure from searching for new things. Hence, integrating novel attributes into a shopping site can attract curious shoppers and provide them with an enjoyable (hedonic) experience (Huang, 2003).

Social presence elements

Social presence refers to the degree to which a medium provides users with the experience of others being psychologically present (Fulk *et al.*, 1987). A key difference between web-based and offline shopping platforms is that the latter provides physical stimuli for social interactions with humans. Web-based retailers use different features and cues to provide customers with a certain degree of enjoyment of social presence without an ‘actual’ social presence. Such features and cues may include socially rich picture content (Gefen and Straub, 2003), personalized greetings (Gefen and Straub, 2003), human voice audio, human video, talking-face displays, live-streaming commerce (Chong *et al.*, 2023). Therefore, social presence elements are underlined as vital hedonic attributes in web-based retail platforms.

Thus, hedonic quality is considered a higher, second-order factor with aesthetics, interactivity, novelty, and social presence as its four constituent dimensions.

PU, PEU, PE and web-based retail shopping behaviour

As e-retail shopping (e.g. browsing, purchasing, paying) requires the use of a new technology, especially still new in many developing country contexts, TAM offers a suitable theoretical lens to understand consumer acceptance of e-retail shopping (Castillo and Bigne, 2021; Tong, 2010). TAM also appears to be the most appropriate theoretical foundation for understanding web-based retailing behaviour, which is a voluntary adoption of a computer-based system for shopping (Çelik, 2011; O’cass and Fenech, 2003).

The practical applicability of the TAM depends on the retail website’s different attributes that lead to the PU and PEU of the users (Taylor and Todd, 1995). Besides, Holbrook and Hirschman (1982) argued that understanding multi-dimensional user experience should integrate both utilitarian and hedonic aspects, which are also found dominant in predicting PU, PEU, and PE of users (Castillo and Bigne, 2021; Maduku and Thusi, 2023). In line with this, we argue that the initial building blocks for delivering PU, PEU, and PE to web shoppers are the attributes of the web retail platform, including utilitarian and hedonic qualities. Hence, integrating UQ and HQ within the TAM framework will enhance the model’s predictive ability in understanding web-based retail shopping behaviour (WRSB). These arguments led us to formulate the following hypotheses (H1-H5) within the TAM framework:

H1. Utilitarian quality enhances the perceived usefulness of WRSB.

H2. Hedonic quality enhances the perceived usefulness of WRSB.

H3. Utilitarian quality enhances the perceived ease-of-use of WRSB.

H4. Hedonic quality enhances the perceived ease-of-use of WRSB.

H5. Hedonic quality enhances the perceived enjoyment of WRSB.

Customers' purchase intentions do not often predict their future purchase behaviour (Chandon *et al.*, 2005). Online shopping behaviour studies also reported that attitudes and/or intentions may not always translate into behaviour (e.g. Wiedmann *et al.*, 2015). Given this background, while the positive influence of PU, PEU, and PE on attitudes toward technology adoption and/or intention to adopt online shopping is well documented (e.g. Bhatt, 2022; Burgess *et al.*, 2023; Driediger and Bhatiasevi, 2019; Nguyen *et al.*, 2023; Thomas-Francois and Somogyi, 2022), the direct influence of these three antecedents (PEU, PU, and PE) of TAM on actual adoption of web-based retail shopping is little known. To address this gap, the following hypotheses are formulated:

H6. Enhanced perceived usefulness of web-based retail platforms positively influences WRSB.

H7. Enhanced perceived ease-of-use of web-based retail platforms positively influences WRSB.

H8. Enhanced perceived enjoyment of web-based retail platforms positively influences WRSB.

Moderating effect: Product category

Although the consumption of many goods involves different degrees of both dimensions, some products are characterized as primarily utilitarian and others as primarily hedonic (Batra and Ahtola, 1990). The classification is mainly based on consumption motives where the consumption of utilitarian goods is primarily cognitively driven, instrumental, and goal-oriented, which accomplishes a functional task (Strahilevitz and Myers, 1998). Accordingly, we have considered groceries (e.g. rice, bread) and home appliances (e.g. washing machines) as utilitarian goods. Indeed, such goods fulfil fundamental necessities for our daily life. Hedonic goods refer to the ones whose consumption is more affection-driven by aesthetic or sensual pleasure (Hirschman and Holbrook, 1982). The current study includes cosmetics and apparel as hedonic goods since purchasing these items is often deeply tied to self-expression and emotional satisfaction.

Even though past studies examined the effect of category characteristics on customers' choice of online shopping (e.g. Sohn, 2017), the extant research on online shopping has overlooked the differentiating effect of UQ and HQ on web-based retail shopping behaviour across product categories. The importance of utilitarian and hedonic attributes for purchasing different product categories, such as cosmetics and clothing or groceries, is not likely to be equal. For instance, the influence of animation on a retail website (a hedonic quality) on PEU for purchasing clothing and groceries or a book is not likely to be the same. Thus, we postulate that product categories moderate the influence of UQ and HQ on PU, PEU, and PE.¹

H9. The influence of UQ on PU (a) and PEU (b) is dominant for shopping utilitarian product category.

H10. The influence of HQ on PU (a), PEU (b), and PE (c) is dominant for shopping hedonic product category.

Figure 1 presents the proposed research model.

[Insert Figure 1 here]

Methods

Measures

All measures were adapted from past studies to ensure the content validity. Reported reliability values (Cronbach's Alpha, composite reliability, or CFA factor loading) were used as selection criteria for the items. Necessary modifications were labelled in the items to fit to web-based retail shopping context, retaining the original meaning. A five-point Likert-type scale [(1) strongly disagree, (2) disagree, (3) neither agree or disagree, (4) agree, and (5) strongly agree] was used for all items with labelling on all response categories. This also conforms to other similar studies (e.g. Atulkar and Singh, 2021; Lavuri *et al.*, 2023).

Sample and data collection

¹ Many categories have utilitarian and hedonic qualities, but for most of them, one of both has a dominant impact (e.g. clothing more hedonic, groceries more utilitarian).

Participants were actual online customers who were recruited from category-specific (utilitarian and hedonic products) web-based online retailers. Multiple well-known category-specific web-based retailers in Bangladesh were contacted. A purposive sampling approach was employed in this study given that (1) a comprehensive sampling frame is not available; (2) it enables researchers to access the conscious and capable respondents who can provide valuable data according to study objectives; (3) the study needed respondents having prior experience of web-based retail shopping, and the purposive sampling technique is the most suitable to access such respondents (Creswell and Clark, 2011).

The context of data collection (i.e. Bangladesh) addresses a very recent research call urging more research attention to web-based retail shopping behaviour in emerging market contexts (Singh and Basu, 2023). This is a call of the hour as the rising Asian economies (e.g., China, Bangladesh) will constitute 40% of global consumption by 2040 (Tonby *et al.*, 2019), and the revenue of Bangladesh's e-commerce is predicted to escalate from \$7.63bn in 2023 to \$13.71bn by 2027 (Statista, 2023), making Bangladesh a promising market for e-retailers.

An email enclosing the study details, consent forms, and a link to a Google Docs questionnaire was sent to the prospective respondents by the retailers. The "Limit to one response" setting in Google Docs was turned on to prohibit undue responses by respondents. Among 407 returned responses, 370 were deemed usable (53% male, 67% aged between 18 and 30, and 90% graduate or postgraduate). Here, the dominance of Gen Z and millennials (i.e., 18-40) and well-educated (i.e., graduate-above postgraduate) samples is crucial to this study's context, given that online shoppers mostly belong to such demographics (Melović *et al.*, 2021). Data normality was ensured, as skewness (≤ 3) and kurtosis (≤ 10) for each item were within the suggested threshold (Kline, 2015). Structural Equation Modelling was used for data analysis. The respondents' demographic details, study constructs, and corresponding question items with sources are presented in Supplementary_material_appendix_1.

Results

Measurement model validation

The measurement model analysis shows that outer loadings ($>.70$), Cronbach's alpha ($>.70$), composite reliability ($>.70$), and average variance extracted (AVE) ($>.50$) exceed the suggested threshold (Fornell and Larcker, 1981), thereby confirming the convergent validity and internal

consistency of the measurement items. In terms of discriminant validity, the diagonal elements (square root of AVE) are greater than the non-diagonal elements (correlation coefficients) in the corresponding rows and columns, meeting the requirements for adequate discriminant validity (Fornell and Larcker, 1981) (details are available in Supplementary_material_appendix_1).

Thereafter, a three-step technique was followed to validate two second-order formative constructs (Hair *et al.*, 2017). First, the convergent validity of the second-order constructs was assessed by performing two separate redundancy analyses (Chin, 1998) for utilitarian and hedonic dimensions. Second, we examined potential collinearity issues among the lower-order components of utilitarian and hedonic dimensions. Third, an assessment of the significance and relevance of the associations between the eight first-order constructs and their corresponding two second-order constructs was performed by running bootstrapping (5000 subsamples) (Hair *et al.*, 2017). All these performed tests (details are available in Supplementary_material_appendix_1) provided adequate empirical support for our argument that utilitarian quality is formatively formed by information quality, navigability, financial transactions interface, and customer reviews, while hedonic quality is by aesthetics, interactivity, novelty, and social presence.

Structural model validation

Satisfactory reliability and validity of the reflective-formative higher-order measurement model allowed the study to undertake structural model analysis for testing hypotheses. The standardized path coefficients and their significance levels (i.e. *t value and p value* in Table I) were assessed for estimating empirical validation of the structural model, suggesting all the hypothesized paths (H1-H8) are significant. All other statistics, including VIF, f^2 , and Q^2 values, were within the recommended threshold. The R^2 results in Table I further suggest that UQ and HQ cumulatively explain 29% variance in PU and 26% in PEU, while HQ explains 23% variance in PE. Besides, a 14% variance in the WRSB is explained by PU, PEU, and PE.

[Insert Table I here]

Moderation analysis

We applied partial least squares structural equation modelling multi-group analysis (PLS-MGA), reporting the changes between two alike models for different groups (Matthews, 2017) for testing the moderating effect of product category. In this regard, we followed a three-step procedure

(Matthews, 2017) involving subsamples' measurement assessment, measurement invariance of composite model estimation, and final moderation test (details are available in Supplementary_material_appendix_1).

[Insert Table II here]

Table II indicates that for the utilitarian product category, paths from UQ to PU and PEU were dominant and significant. However, the difference between categories was significant only for the path between UQ and PU, suggesting a stronger influence of UQ on PU when customers shop for utilitarian products compared to the hedonic product category. Hence, H9(a) was supported, and H9(b) was not. For the hedonic product category, H10(a) and H10(c) were supported, but not H10(b). Hence, the results suggest that the influence of HQ on PU and PE was stronger for hedonic products compared to utilitarian product categories.

Discussion and theoretical contributions

The main contributions of this study are the extension of the TAM model, the importance of hedonic attributes for utilitarian product purchase on web-based retail platforms, and the identification of attribute impact and interplay across different product categories. These are elaborated below.

The extension of TAM and the importance of hedonic attributes for utilitarian product purchase

The main contribution of this study is the empirical validation of the enhanced TAM model across product categories (i.e. utilitarian and hedonic products) through moderation analysis. This study has investigated how the paths from UQ and HQ to PU, PEU, and PE vary across utilitarian and hedonic product categories. Our extended model suggests that a balance of both utilitarian and hedonic attributes is critical for both utilitarian and hedonic products. Theoretical extension and empirical validation of TAM of this kind are valuable, and our study not only added attributes of utilitarian and hedonic qualities to the TAM model but also outlined how the linking paths between UQ-HQ dimensions and TAM might vary across product categories. The identification of the interplay of attributes is an original contribution, and the study has provided evidence of this interplay rather than the previously established separateness of the attributes, thus extending and revising TAM. Theoretically, this subsequently will add more robustness and rigor to TAM in

examining the role of website attributes while making a hedonic or utilitarian purchase decision. Furthermore, this study adds to the subject domain by identifying that HQ is important in influencing utilitarian web-based retail shopping behaviour. Specifically, the extended model will help future researchers address a very recent research call by Singh and Basu (2023) concerning the key attributes of web-based store atmospherics.

The interplay between utilitarian and hedonic attributes

To the best of the authors' knowledge, this is the first study that integrates different utilitarian and hedonic attributes of a web-based retail platform into a single model. Specifically, the study validates four attributes as proxies for UQ and four attributes for HQ, and in doing so, proposes that all four utilitarian attributes (information quality, navigability, financial transactions interface, customer reviews) significantly contribute to the UQ of web-based retail platforms. *Information quality* as a utilitarian attribute was found to be important not only because it helps mitigate risk (Kim and Park, 2013) and facilitates shopping decisions but also because information overload may reverse purchase decisions (Lv and Liu, 2022). *Navigability* in the functionality of websites had been previously confirmed in smartphone-based retail platforms (Shukla *et al.*, 2022), and this study found it to be important in web-based retail platforms beyond smartphones. We also confirmed, in agreement with Zerbini *et al.* (2022), that retail customers perceive online payment interfaces as a utilitarian attribute (e.g. ease-of-use). *Customer reviews* facilitate online buying decisions (e.g. Atulkar and Singh, 2021; Cocco and De-Juan-Vigaray, 2022), and thus, the current study postulates that customer reviews should be integrated as a utilitarian attribute.

The study further validates four hedonic attributes (aesthetics, interactivity, novelty, social presence) of web-based retail platforms that significantly contribute to HQ. *Aesthetics*, as the 'attractiveness' of the environment, can be used to elevate the hedonic dimension of web-based retail platforms. Website *interactivity* is found to be a crucial sub-dimension of HQ that enhances enjoyment and shopping behaviour, aligning with prior findings (e.g. Yang and Shen, 2018). Besides, the current study suggests that *novelty* in retail sites adds to the HQ, as it generates sensory curiosity (Huang, 2003) and is a primary motivation for many web-based retail shoppers. The results also extend the Social Presence Theory (Short *et al.*, 1976) to a web-based retail context, suggesting online *social presence* amplifies the total hedonic experience.

Several prior studies have illustrated only utilitarian attributes (e.g. website quality) (Yadav and Mahara, 2019), the Technology Readiness Model's constructs (e.g. optimism) (Castillo and Bigne, 2021), or the Theory of Planned Behaviour Model's constructs (e.g. subjective norm) (Driediger and Bhatiasevi, 2019) as predictors of TAM. Extending such earlier findings, our study distinctly adds utilitarian and hedonic attributes and demonstrates the criticality of balancing both.

Managerial implications

The findings of this study have several key managerial implications for the web-based retail context. First, customers shop both for utilitarian and hedonic benefits, and providing such benefits to shoppers requires e-retailers to identify and tailor the attributes highlighted in this study, which are not well documented in the extant literature. For example, utilitarian attributes such as simple and easy website navigation can enable shoppers to shop quickly, while the absence of adequate interactive features (e.g. information control, sharing information with other shoppers) may hinder the purchasing decision. This requires e-retailers to integrate interactive and social content into the shopping site. Such content may include contact details and links to facilitate interaction between shoppers and shopping assistants. E-retailers should also extend the shopping site's presence on social networks and use other communication tools, such as forums and chats, to facilitate interactions.

Second, equally important are the hedonic attributes for more emotional and experiential enjoyment for the shoppers (Mäenpää *et al.*, 2006). For example, aesthetic features, such as pleasant colours and interface design, can enhance shoppers' emotions, and features, such as "talking-face" or chatbot, can provide shoppers with the experience of an interactive social presence on web-based retail platforms. Hence, our findings suggest that web-based retailers need to integrate utilitarian and hedonic attributes to enhance the web-shopping atmosphere and rebalance the previously over-emphasised utilitarian attributes in favour of the previously underplayed hedonic aspects. Unlike brick-and-mortar stores, web retailers need to augment hedonic attributes even when providing utilitarian benefits like PU and PEU. This is especially important in developing country contexts (e.g. the current study context) where consumers prefer hedonic values over utilitarian values (Alam *et al.*, 2020). Hedonic values can be enhanced by augmenting web aesthetics, including attractive themes, fonts, and colours that can give shoppers a high level of pleasure (Srivastava and Thaichon, 2023). E-retailers may also embed human-like

elements such as human audio and video, personalized greetings, socially vibrant scripts, and 3D avatars that could deliver human warmth and enhance a pleasant shopping experience.

The third major managerial implication of the study relates to the differential impact of utilitarian and hedonic attributes on PU, PEU, and PE across product categories. These findings indicate to web-based retailers the need to tailor the retail sites with different degrees of utilitarian and hedonic attributes for utilitarian and hedonic product categories. When consumers buy, for example, any utilitarian product online, such as groceries, they tend to focus on functional attributes such as information quality and navigation that enhance their shopping task. For hedonic product categories such as cosmetics, shoppers are likely to enjoy a pleasant shopping experience that can be enhanced by augmenting relevant non-functional attributes such as aesthetics and social presence.

Limitations and future research direction

The limitations of the study require recognition as they also offer avenues for future research. First, shopping frequency was measured based on self-reporting. Future research may test the model on actual purchase volume and/or frequency in a field experiment. Secondly, the study included only four products (grocery, electronics, clothing, cosmetics) as utilitarian and hedonic product categories. Future research could apply the model to other products in utilitarian and hedonic categories, such as toys, games, sportswear, and books, to examine any differential impact of utilitarian and hedonic dimensions across other product categories. It may also be useful to examine whether the influence of different utilitarian and hedonic attributes on web-based retail shopping behaviour varies across different demographics, such as age and gender.

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