USE ME OR USE ME NOT? A COMMUNICATION TOOL - DIGITAL SIGNAGES FOR FASHION APPAREL STORES

Shweta Saini
Ph.D Scholar, Amity Business School
Amity University, Sector 125, Noida, Uttar Pradesh
Email: shwetasaini2007@gmail.com

Dr. Sanjeev Bansal
Dean & Director
Amity Business School, Amity University, Sector 125, Noida

Dr. Pranay Verma
Professor
Amity International Business School, Amity University, Sector 125, Noida

ABSTRACT

Digital signage is a network of exclusive screens installed in retail stores to display diverse content. Fashion retail stores recognize digital signage as a promising technology in the retail environment. This study investigates how aesthetic appeal and designed information are in the extended Unified Theory of Acceptance and Use of Technology (UTAUT 2) model. Brick-and-mortar retailers have embraced digital signages to converse better and change the way individuals get cues in fashion apparel stores. This research analyses what factors influence an individual's decision to use digital signages in fashion apparel retail stores. The partial least squares method evaluated the research model and validated the hypotheses of the data comprised of 418 self-administered individual responses. The results reveal that designed *i*nformation is the key predictor of behavioural intentions stimulated by digital signages. The results confirm that aesthetic appeal, designed *i*nformation, habit, and performance expectancy of behavioural intentions are significant predictors. In contrast, two constructs, effort expectancy and social influence, are non-significant for fashion apparel retail stores.

Keywords: Digital signage, Fashion apparel, Retail technology, UTAUT2, Aesthetic appeal

1. INTRODUCTION

The rapid proliferation of e-commerce is a phenomenon (Helm et al., 2020). Although a brick-and-mortar retailer's additional online channel presence boosts overall sales, the sales of a brick-and-mortar retailer can be cannibalized to some extent (Timoumi et al., 2022). The estimated percentage share of fashion brick-and-mortar retailing was 97.5 % in 2017 and is estimated to reduce to 85.7% by 2025. Fashion online retailing was 2.5% in 2017 and is estimated to increase to 14.3% by 2025 (*Statista*, 2021). On the other hand, existing fashion brick-and-mortar retailers like Shopper stop, Vera Moda, ONLY, Jack and Jones, etc. (Ibef, 2021), and Online retailers (like Myntra, Faballey, Yepme Vajor) (Lamba, 2019)are expanding their footprints in Brick-and-Mortar format. This expansion of brick-and-mortar and the increasing presence of online retailers in brick-and-mortar format indicates that fashion offline retailing is not on the brink of apocalypse. Still, the individuals' journey is undergoing metamorphosis (Helm et al., 2020). Modern techniques used while integrating marketing communication have a more significant impact on brand equity than traditional marketing communication (Kushwaha et al., 2020). Digital video advertising is a modern marketing communication technique, and it is expected to grow at 12.40% by 2026 (Statista, 2022) .

As a result, offline retailers are adopting technologies like digital signages for communicating (Krymov et al., 2019) with individuals other than print media. Technology is the future of retail and can facilitate decision-making using in-store technology (Grewal et al., 2017). There is a need for the study as many fashion retailers in India have transformed their retail spaces using technology to better communicate with individuals. Fashion retail stores like GAP, Tommy Hilfiger, Being Human, Marks & Spencer, Arrow, Raymond, etc., switched over

their static communication spaces to dynamic digital landscapes using digital signages. (Mairaru et al., 2019) preference for web media communication over TV and print media is evident. Individuals expect the same website communication experience while navigating a brick-and-mortar store (Pauwels et al., 2011).

Digital signage is a network that consists of digital displays centrally managed from a remote location and provides targeted information, merchandising information, advertising, and entertainment(Davies et al., 2014; Sharma et al., 2022b), where product information is a factor of personal belief (Sabharwal & Bhatt, 2021).

Recent literature established that digital signages have surged hypermarket sales (Roggeveen et al., 2016), reduced the perceived waiting time, and developed favourable waiting experiences (Garaus & Wagner, 2019). Further, Digital signages showcased consumption benefits that increase the likelihood of buying the product (van de Sanden et al., 2020). Different in-store technologies are emerging and becoming part of the customer journey (Grewal et al., 2020; Sharma et al., 2022b), making it difficult for the retailer to choose the right technology that exceeds the individuals' expectations. It becomes imperative for the retailer to know the adoption of digital signages as it is the most frequently used technology in retail (Stieninger et al., 2021).

Most of the prior studies on digital signages were field experiments (Ravnik & Solina, 2013) ; (Otterbring et al., 2014) ; (Dennis et al., 2014) ; (Roggeveen et al., 2016) ; (Garaus & Wagner, 2019); (van de Sanden et al., 2020) and qualitative (Newman et al., 2010; (Dennis et al., 2012). Only a few studies on digital signages captured the behavioural effects in retail stores(Burke, 2009), approach behavior in malls (Dennis et al., 2010), and purchase behavior patterns (Kim et al., 2020). There is no study on the acceptance of digital signage technology for aesthetic appeal, incomplete information, effort expectancy, habit, performance expectancy, and social influence. Based on this research gap, further research is required to investigate how willing individuals accept digital signages for fashion apparel retail stores. The current study extends the existing literature on digital signages in fashion retail stores. Further, this research adapts constructs of the UTAUT 2 model, a well-established model in technology acceptance.

This study intended to understand the factors influencing the behavioural intentions to adopt digital signages for fashion apparel retail stores in Delhi/NCR locations. The first objective of this study was to ascertain whether aesthetic appeal and designed information impact behavioural intentions. The second objective was to determine how four constructs of UTAUT 2 effort expectancy, habit, performance expectancy, and social influence affect behavioural intentions for digital signages. This study does not include hedonic motivation, facilitating conditions, and price value. Hedonic motivation explains an individual's pleasure and fun elements for digital signages. Facilitating conditions acknowledge using additional support and resources to use a specific technology when an individual encounters it. But, when individuals visit a fashion retail store, they do not require any extra system to use digital signage. Price value relates to the individual's monetary cost, but individuals do not incur additional fees to access digital signages in fashion apparel stores.

In other words, retailers provide the facility of digital signages at various locations in the retail store to engage the individuals. Still, this study includes aesthetic appeal, which describes fascination, creative and impressive aspects of product-related information displayed more relevant in the context of digital signages in fashion apparel stores. It also includes construct designed Information (Hsu & Mo, 2009); when the design conveys an unclear meaning, individuals disagree with the brand's visual communication. The message is most likely to fail to get the brand's essence (Blijlevens et al., 2009). It is imperative to present accurate insights to the individuals (Simon, 1969) . The designed *i*nformation as envisaged by the retailers should impress the individuals. This study contributes to the existing literature on UTAUT2, aesthetic appeal, and designed information. Further, it enhances the literature of digital signages.

The entire study is organized into six sections; section 2 throws light on the literature review, section 3 as hypothesis development, section 4

deals with methodology, section 5 describes the data analysis, and section 6 proceeds with discussion. Finally, the last sections wrap up with conclusions

2. LITERATURE REVIEW

2.1 Digital signages

The researchers have used various terms for digital communication; namely, plasma screens (Newman et al., 2006), digital signage (Dennis et al., 2012), and digital displays used interchangeably with screens and signages (Roggeveen et al., 2016). Digital signage's location, audio, and video content influenced shoppers in a cross-national qualitative study in the USA, Australia, and the UK (Newman et al., 2010). A field study in a fashion apparel store conducted in Solvenia and evaluation confirmed that individuals were attracted to dynamic content 1.5 times more than static content (Ravnik & Solina, 2013). Similarly (Garaus et al., 2017), the affective content of digital signages influenced impulse purchases and store loyalty mediated by positive emotions. This study was conducted in a supermarket in the fruits category.

Further, a study in South Korea identified entertainment, informativeness, involvement, and targeting as four antecedents that influenced consumer attitude and perception of advertising value for digital signages (Lee & Cho, 2019). Researchers emphasized that the absence of digital signages made the waiting area monotonous and frustrating. In addition, digital signages enhanced affective queuing time evaluation and increased overall store satisfaction (Garaus & Wagner, 2019). On the other hand, researchers found that participants overlooked digital signages; but participants considered that digital signages contribute to building a positive mall image (Willems et al., 2017) . The creative development of the content to be displayed on digital signages requires studying how groups, organizational structures, and individuals respond (West et al., 2019). A study verified that narrowcasting of message type - a threat to freedom leads to lower digital advertisement attitude and lower engagement of individuals but large psychological reactance. A. Sharma, Pathak, et al., (2022c) Identified five factors of digital advertisement: informativeness, message relevance, entertainment, credibility, and irritation. Brands should carefully choose the content for display on digital signages (Shoenberger et al., 2021). A study confirmed the positive influence of brand experience on brand attachment (Arya et al., 2019; Poonia et al., 2021; Habeeb et al., 2021), indicating that brand experience's significant effect on digital signage leads to brand attachment (emotional response). In addition, ethnicity influenced the effectiveness and perception of the showcased videos of the digital advertisement (Terlutter et al., 2021). A recent qualitative study revealed that individuals consider a mall a modern place in the presence of digital signages (Roux & Maree, 2021).

2.2 Theory building

Technology acceptance is the psychological state in which an individual voluntarily uses a particular technology. The extant literature showcased that different theories and models have developed. The widely accepted technology adoption models were the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) and Extended UTAUT 2 (Venkatesh et al., 2012), have relatively explained a large percentage of variance in Technology usage behavior. The literature suggests that various models have been used to describe the use behavior of digital signages (Garaus et al., 2017; Lee & Cho, 2019), but researchers have overlooked aesthetic appeal and designed information and also UTAUT 2 model for digital signages.

2.3 Behavioural Intentions

Behavioural intention is the likelihood of an individual to perform particular behavior to use a specific technology in the future, and the basis of the theory of reasoned action (TRA) (Fishbein & Ajzen, 1975) and later, developed the theory of planned behavior (TPB) (Ajzen, 1991) . It is a dependent variable. The extant literature signifies behavioural intentions as a predicted variable for mobile internet (Alwahaishi & Snášel, 2013), online shopping (Celik, 2016), mobile-based IT solutions for TB treatment monitoring (Seethamraju et al., 2018), online travel reviews (Bakshi et al., 2019), Airbnb app (Nathan et al., 2020) .

2.4 Aesthetic Appeal

Wang et al., (2011) describe aesthetic appeal as something which someone regards as creative and fascinating. Aesthetic appeal is one of the initial things that associate a product with an individual (Bloch et al., 2002).

The aesthetic appeal has a merchandise evaluative component (Rozin & Hormes, 2011) , that leads to positive emotions (Pol, 2013). Certainly, aesthetic appeal contributes to sales (Auger, 2005), and profits (Candi & Saemundsson, 2011). The respondents in a study recognized the unfamiliar product *as* pleasing when displayed in an aesthetically appealing manner (Schnurr et al., 2017) . Thommes & Hubner (2018) explained that the aesthetic appeal of visual stimuli has three features: (a) context (What Information is displayed like image, title, or text?), (b) content (What is illustrated?), and (c) composition (How is the arrangement of the photograph?). Context relates to the aesthetic appeal of the title and other textual information displayed on the digital signages. The content is aesthetic appeal when similar photographs are compared on digital signages. The compositional features of aesthetic appeal are associated with elements and principles of design like forms, lines, golden ratio, symmetry, colour, balance, etc. Type of image also plays a very crucial role in agreement among subjects. Individual aesthetic appeal preferences may differ for visuals. What one finds aesthetically appealing, others may not see it appealing (Thömmes & Hübner, 2020).

2.5 Designed Information

Designed information (incomplete) is when relevant information is unknown to the subject (Black et al., 2009). Incomplete *i*nformation is a two-dimensional construct, designed *i*nformation, and missing *I*nformation (Hsu & Mo, 2009). Under ideal conditions, the disseminated *i*nformation should be complete (Corman, 2020). However, the published information is incomplete (Jevinger & Persson, 2020) . In addition, incomplete *i*nformation increases the uncertainty of choosing the right product (Kivetz & Simonson, 2000). On the other hand, designed information is a deliberately limited stimulus. The retailer's conscious effort is to communicate the brand philosophy, showcasing a few selected merchandise. However, (Chuang et al., 2012) demonstrated that individuals probably prefer the middle path when decision-making in the presence of incomplete information and infer the missing attributes of the merchandise. In addition, the *i*nformation displayed on digital screens may appear fragmented due to restricted space.

2.6 Effort Expectancy

In this study, effort expectancy is an individual's effort to look up to use the technology when the content is helpful, and struggle is minimal (Kang et al., 2015; Venkatesh et al., 2003). For digital signages in fashion apparel stores, effort expectancy (Luceri et al., 2022) is the new technology that an individual believes is easy to learn and effort-free use. The three constructs modelled the foundation of effort expectancy, namely perceived ease of use (technology acceptance model/ extended technology acceptance model 2), ease of use (diffusion of innovation theory), and complexity (the model of PC utilization) (Cimperman et al., 2016; Venkatesh et al., 2003).

2.7 Habit

Venkatesh, et al., (2012) explain habit as displaying some specific involuntary behavior because of an individual's familiarity with the subject. Habit is the automatic use of technology that will come naturally to someone. Habit is a behavioural predisposition to use digital screens. Individuals are exposed to different kinds of screens like mobiles, laptops, and television, and they spend around ten to thirteen hours a day on screens (Nielson, 2020). The prior experience with the screens will develop different viewpoints. If the views are positive, it will make people habitual users of digital screens and induce behavioural intentions. Through the study on smartphones, the dynamic nature of the content on screens causes habitual behavior (Oulasvirta et al., 2012) .

2.8 Performance Expectancy

Performance expectancy explains how individuals believe in utilizing digital screens to choose the appropriate apparel. PE helps the users accomplish a particular task. Individuals who visit the apparel store encounter the technology and embrace it if it improves the chances of selecting the righteous clothes. (Venkatesh et al., 2003) considered performance expectancy as the most potent indicator of behavioral intentions. The five constructs, namely, relative advantage (innovation diffusion theory), extrinsic motivation (motivation model), outcome expectations (the social cognitive theory), perceived usefulness (technology

acceptance model), and job fit (the model of PC utilization), initially sourced for performance expectancy. Individuals measure the utility associated with digital screens. The derived benefits are time-saving, convenience, and stress-free shopping. Suppose digital signages prove profitable to the individuals on a shopping trip to the apparel store. In that case, it may induce behavioral intentions to purchase.

2.9 Social Influence

Social influence refers to an individual's perception of valuable people in their life who would approve of adopting the digital screens in apparel stores. The eminent people who can influence an individual are friends, family, influencers, celebrities, relatives, experts, and public figures. When these crucial people approve digital signages, it persuades them to use them. Thus, the initial emergence represents the construct from social factors (the model of PC utilization, image (diffusion of innovation theory), and subjective norms (Venkatesh et al., 2003).

3. HYPOTHESIS DEVELOPMENT

Many past studies have explored the relationship between UTAUT 2 constructs (effort expectancy, habit, performance expectancy, and social influence) and behavioural intentions (Alwahaishi & Snášel, 2013; Celik, 2016; Tarhini et al., 2017 Baptista & Oliveira, 2017). Similarly, prior studies investigated the relation of aesthetic appeal and designed information with behavioral intentions (Orth & Malkewitz, 2012; F. Wu et al., 2017; Chuang et al., 2012).

The aesthetic appeal has a significant effect on the behavioural intention for smartphones (Toufani et al., 2017), the travel industry (Gallarza et al., 2016), retail apparel stores (Sullivan et al., 2012), mobile ring tones (Turel et al., 2010). The aesthetic appeal of the retail store atmosphere significantly influences product attractiveness and purchase intentions (Orth & Crouch, 2014); (Holmqvist & Lunardo, 2015). There is substantial evidence that digital signages evoke aesthetically appealing sensory, affective behavior (Dennis et al., 2014). Conversely, researchers argued that product aesthetic appeal does not necessarily lead to positive relationships with behavioural intentions to use (F. Wu et al., 2017). Similarly, the aesthetic appeal of a job advertisement was reported to have an insignificant relation to behavioural intentions. It will be interesting to study the aesthetic appeal of digital signages in the context mentioned above (Ganesan & George, 2019). Thus, the current study proposes:

H1: Aesthetic appeal positively influences behavioural intentions towards digital signages in fashion apparel stores

Brand communication is an integral part of a retail store which impacts brand equity through brand attachment (Arya et al., 2021). Retail stores communicate the shopping environment through images (McKinney, 2004) , graphics, and texts (Koo & Ju, 2010). Brand textual information holds equal importance (M. Kim et al., 2021), and SMS advertising (A. Sharma, Dwivedi, et al., 2021) influences behavioural intentions. The deliberate visual design in the limited space is the designed information that generates positive emotions and increases the chances of behavioural intentions to use (Koo & Ju, 2010) displayed on the digital signages. Similar results established the significant effect of designed information on behavioural intentions (Essawy, 2019; Loureiro & Roschk, 2014). Thus, we propose the following hypothesis:

H2: Designed Information positively influences behavioural intentions toward digital signage in fashion apparel stores

Effort expectancy has shown significant results for online shopping (Celik, 2016), ICT (Alwahaishi & Snášel, 2013), plastic money (Makanyeza & Mutambayashata, 2018), digital banking (Nguyen et al., 2020), Airbnb app (Nathan et al., 2020). A study evaluated that effort expectancy was the highest predictor of behavioural intentions (Soomro, 2019). However, Chen & Chancellor (2020) established effort expectancy as an insignificant relation for leisure use of bicycle shared program in Taipei. Hence, investigate the following hypothesis:

H3: Effort expectancy positively influences behavioural intentions towards digital signages in fashion apparel stores

Digital signages are regularly changing, and so are the habits of the individuals. Habit

positively impacts behavioural intentions using a bicycle shared program (Chen & Chancellor, 2020), and learning (Tarhini et al., 2017). The findings of a study observed the positive effect of habit on behavioural intentions moderated by age and gender conducted on mobile banking services utilizing gamification (Baptista & Oliveira, 2017). Similar findings were found for habit positive influence on behavioural intentions to adopt plastic money in Zimbabwe (Makanyeza & Mutambayashata, 2018). A study on mobile app-based shopping evaluated habit as the highest predictor of behavioural intentions (Tak & Panwar, 2017). Hence, we are proposing the following hypothesis:

H4: Habit positively influences behavioural intentions towards digital signages in fashion apparel stores

A study in Saudi Arabia confirmed performance expectancy's positive effect on behavioral intentions for acceptance of ICT (Alwahaishi & Snášel, 2013). Similarly, PE has shown a positive impact on behavioral intentions for e-government (Sharma S.K, 2015), online shopping (Celik, 2016), 3D printing (Holzmann et al., 2020) , and digital banking (Nguyen et al., 2020). A recent study based on online shopping depicted that performance expectancy was the highest predictor of behavioural intentions (Erjavec & Manfreda, 2022). However, a study conducted in Brazil found performance expectancy insignificant relationship with behavioral intentions in a survey of Kaohsiung citizens for I pass (M.-Y. Wu et al., 2012), and similar result was reported for using e-books (Martins et al., 2018). This requires further investigation. Hence, proposes the following hypothesis:

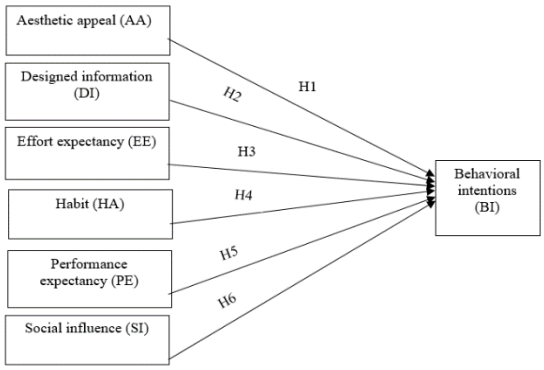
H5: Performance expectancy positively influences behavioral intentions towards digital signages in fashion apparel stores.

Prior studies established that social influence positively influences behavioral intentions for IFRS material education (Alzeban, 2016) and mobile-based IT solutions (Seethamraju et al., 2018). However, published the relationship between social influence and behavioral intentions (Venkatesh et al., 2003) is insignificant, although it supported a significant relationship between social influence, and behavioral intentions for mobile internet use (Venkatesh et al., 2012). Similarly, a study in Brazil found social influence insignificant relationship with behavioral intentions for using e-books (Martins et al., 2018). A recent study evaluated social influence as the highest indicator of behavioural intentions (Rehman et al., 2022). Inconsistent results motivate the researchers to propose the following hypothesis:

H6: Social influence positively influences behavioural intentions towards digital signages in fashion apparel stores

Many recent studies have shown the significant relationship between effort expectancy, habit, performance expectancy, social influence, aesthetic appeal, and designed information with behavioural intentions (Toufani et al., 2017; Chang et al., 2018; Rehman et al., 2022; Jacob & Pattusamy, 2020; Tak & Panwar, 2017; Holzmann et al., 2020. The study proposed the research model (refer to figure 1).

Figure 1: Proposed research model



4. METHODOLOGY

4.1 Data collection

This study employed the snowball technique to collect responses Researchers distributed 500 Self-administered questionnaires, of which the respondents returned 458 questionnaires. Researchers eliminated unresponsive and incomplete questionnaires, and for analysis (Hanaysha et al., 2021)., researchers considered 418 wholly filled questionnaires.

This study employed the stimuli of digital signages installed in fashion apparel retail stores. Most retailers display digital signages on storefronts, inside windows, and behind

cash counters. Visual merchandisers identified those prominent in-store locations of digital signages, which anyone can quickly notice from outside the store. Thus, stimuli included four photos of fashion apparel retail stores using digital signages (1) the presence of sizeable digital signage in the window with two dummies, (2) a photo with a big screen behind the cash counter, (3) a picture near the entrance, and (4) a photo displaying digital signage on a pillar inside a store but visible from outside the fashion apparel store.

The research instrument design comprises two sections where; the first section focuses on the demographics of the respondents, and the second section describes the statements to study the digital screens' usage behavior adopted from prior studies. In the beginning, a filter question was asked, "Have you ever had a shopping experience using digital screens in the apparel stores?" and if the answer was "Yes" for this question, respondents continued answering the questionnaire. A 5-point Likert scale measured each item, denoting 1 for strongly disagree, 2 for disagree, 3 for neutral, 4 for agree, and 5 for strongly agree. Researchers stated that adopting a 5-point Likert scale makes respondents feel motivated and least frustrated to provide the *i*nformation right in the questionnaire.

The four demographic characteristics studied were gender, qualification, age, and occupation for this research. SPSS 27 helped evaluate the frequency of demographic items (refer to Table 1).

Table 1: Demographic analysis

Item	Responses	Count (N)	Percentage
Gender	Male	180	43
	Female	238	57
Qualification	School	116	28
	Graduate	199	48
	Post Graduate & Above	103	25
Age (years)	18-26	323	77
	27-33	50	12
	34-40	23	6
	41-47	16	4
	47 and above	6	1
Occupation	Student	270	65
	Private Service	105	25
	Govt Service	14	3
	Business	12	3
	Self employed	16	4

Source: Author's calculation

4.2 Descriptive statistics

Hair et al., (2022) suggested that the data is considered to be skewed- kurtosis if the values are greater than +1 or less than -1. The excess of kurtosis-skewness within ± 1 is considered non-normally distributed. The output depicts that most of the constructs of the sample dataset were found to be non-normally distributed. Specifically, the majority of constructs showed the skewness value from -0.014 to -0.884, and kurtosis ranged from -0.137 to -0.096. The web power tool was used to verify the non-normal dataset. Mardia's multivariate kurtosis ($\beta = 72.696$, $p < 0.01$) and skewness ($\beta = 6.224$, $p < 0.01$) indicated non-normality of data. PLS-SEM can easily analyse the non-normal dataset (J. F. Hair et al., 2019). Non-normality is the reason to use PLS-SEM for analysis.

5. DATA ANALYSIS

The data was analysed using the PLS-SEM. Researchers examined the data in two phases. The first step evaluates the measurement model, and the second step assesses the structural model (Sharma et al. 2021, 2022a, 2022b; Rashid et al 2022). The measurement model considered item loading values, Cronbach's alpha, composite reliability, ρ_A , AVE, and HTMT. The structural model evaluated the VIF, explanatory power of Q^2, R^2 and the path coefficient significance.

5.1 Reliability and validity

Internal consistency is an essential measure of reliability. Researchers consider reliability when the items of the measuring instrument produce homogenous and stable results. Cronbach's alpha (α) assesses the internal consistency. The Cronbach's alpha value above 0.7 is considered good reliability, but a value above 0.95 is unacceptable (George & Mallery, 2019). Table 2 shows that Cronbach's alpha for all the constructs is above 0.700 and below 0.95 meets the recommended criteria. The mean value varies between 2.920 for habit and 3.656 for effort expectancy. The standard deviation extends from 1.020 for the habit to 1.093 for designed *i*nformation. Composite reliability is the aggregate of actual score variance relative to the overall variance score. The score of composite reliability will always be higher than Cronbach's alpha score. The reliability coefficient rho_A(ρ_A) determines the more dependable value as it overcomes the

Table 2 : Summary of the measurement model

Construct	Items	Factor Loading	Mean	Standard deviation	Cronbach's Alpha	Composite Reliability	Reliability coefficient rho_A	AVE
Aesthetic Appeal (AA)	AA1	0.881	3.606	1.054	0.851	0.910	0.852	0.771
	AA2	0.891						
	AA3	0.862						
Behavioral Intentions (BI)	BI4	0.896	3.364	1.083	0.884	0.928	0.884	0.811
	BI5	0.909						
	BI6	0.897						
Designed Information (DI)	DI7	0.885	3.458	1.093	0.907	0.935	0.907	0.782
	DI8	0.882						
	DI9	0.896						
	DI10	0.875						
Effort Expectancy (EE)	EE11	0.896	3.656	1.032	0.906	0.934	0.910	0.781
	EE12	0.850						
	EE13	0.888						
	EE14	0.900						
Habit (HA)	HA15	0.840	2.920	1.020	0.875	0.914	0.877	0.727
	HA16	0.865						
	HA17	0.869						
	HA18	0.836						
Performance Expectancy (PE)	PE19	0.872	3.312	1.074	0.900	0.930	0.901	0.769
	PE20	0.894						
	PE21	0.873						
	PE22	0.869						
Social Influence (SI)	SI23	0.897	2.921	1.041	0.883	0.927	0.883	0.81
	SI24	0.899						
	SI25	0.903						

Source: Author's calculation

drawbacks of Cronbach's alpha and composite reliability (Dijkstra & Henseler, 2015). The composite reliability and reliability coefficient(ρ_A) values for all the variables are above the threshold value of 0.7. Convergent validity measures the average variance extracted (AVE) for the items that explain the construct. It is calculated by squaring the indicators' outer loadings and computing the mean. The average variance extracted (AVE) for all the constructs is within the acceptable range (>=0.7) (table 2). Multi-collinearity verified through VIF in PLS-SEM. All the values below 3 indicate no threat of multi-collinearity. The VIF values ranged from 2.326 for performance expectancy to 1.594 for aesthetic appeal.

5.2 Discriminant validity

Discriminant validity explains each construct's distinctive contribution and determines the low correlation between two variables. The metric used to evaluate the discriminant validity are Fornell-Lacker criteria and heterotrait-monotrait (HTMT). The Fornell-Lacker measures show the correlation between two constructs, and diagonal values are the square root of AVE. The oblique value should be the highest compared to other constructs' corresponding correlation values. HTMT ratio is considered a more accurate measure of discriminant validity (Ab Hamid et al., 2017). All the HTMT ratio values in Table 3 are below the threshold value of 0.85, indicating discriminant validity(Kline, 2015).

Table 3 : Discriminant validity							
Fornell-Larcker Criteria							
Constructs	AA	BI	DI	EE	HA	PE	SI
AA	**0.878**						
BI	0.605	**0.901**					
DI	0.383	0.691	**0.885**				
EE	0.470	0.596	0.56	**0.884**			
HA	0.416	0.609	0.532	0.447	**0.852**		
PE	0.576	0.697	0.548	0.586	0.504	**0.877**	
SI	0.357	0.533	0.435	0.406	0.577	0.571	**0.900**
Heterotrait-Monotrait Ratio (HTMT)							
	AA	BI	DI	EE	HA	PE	SI
AA							
BI	0.697						
DI	0.435	0.772					
EE	0.535	0.664	0.615				
HA	0.480	0.691	0.595	0.497			
PE	0.658	0.78	0.606	0.647	0.566		
SI	0.411	0.603	0.486	0.452	0.655	0.640	

Source: Author's calculation

5.3 Structural model

After the measurement model's satisfactory analysis, the structural model assesses the coefficient of determination (R^2), cross-validated redundancy measure (Q^2), path coefficients, and statistical significance. The proposed research model examines R^2 for endogenous construct. The R^2 value guiding principle is 0.25 = weak, 0.50 = moderate, 0.75 = substantial (Henseler, et al., 2009; Chin, 2010, Hair, et al., 2011; Hair, et al., 2014). The R^2 for the construct BI = 0.695 interprets that the proposed model's explanatory power is moderate. The cross-validated redundancy measure (Q^2) evaluates the predictive accuracy using blindfolding for the endogenous variable. The Q^2 values follow 0.50 = large, 0.25 = medium, 0 = small predictive relevance. The Q^2 for BI = 0.558 depicts the enormous explanatory power of the model.

5.4 Hypothesis testing

The hypothesis evaluation employs bootstrapping technique at 5000 samples to achieve the sample mean, standard deviation, t statistics, and p-value at a 95% confidence interval. The beta coefficient ranges from 0.056 (SI → BI) to 0.326 (DI → BI). The sample mean stretches between 0.056 (SI → BI) and 0.327 (DI → BI), and the standard deviation values extend between 0.037 (HA → BI) and 0.049 (DI → BI). The result confirmed that aesthetic appeal (AA) had a positive effect on behavioural intentions (BI) ($\beta = 0.224$, $p<0.05$) and thus supports H1. Similarly, the results depict that the construct designed *I*nformation (DI) shows the most substantial relation ($\beta = 0.326$, $p<0.05$) with BI and accepts the hypothesis (H2). In addition, the results show that habit (HA) is another factor that significantly influences behavioural intentions (BI) ($\beta = 0.157$, $p<0.05$) and supports H4. The result is consistent with the prior research (Nguyen et al., 2020). Lastly, performance expectancy (PE) positively influences behavioural intentions (BI) for digital signages ($\beta = 0.231$, $p<0.05$) and confirms H5. The result is consistent with the prior research (Tarhini et al., 2017); (Seethamraju et al., 2018); (Alkhaldi, 2020). Furthermore, performance expectancy (PE) and aesthetic appeal (AA) show a similar impact in the adoption of digital signages. The two hypotheses effort expectancy (EE), and social influence (SI) to behavioural intentions (BI), did not support the model. Thus, H3 and H6 do not support the hypothesis (Table 4).

5.5 Graphical representation of the structural model

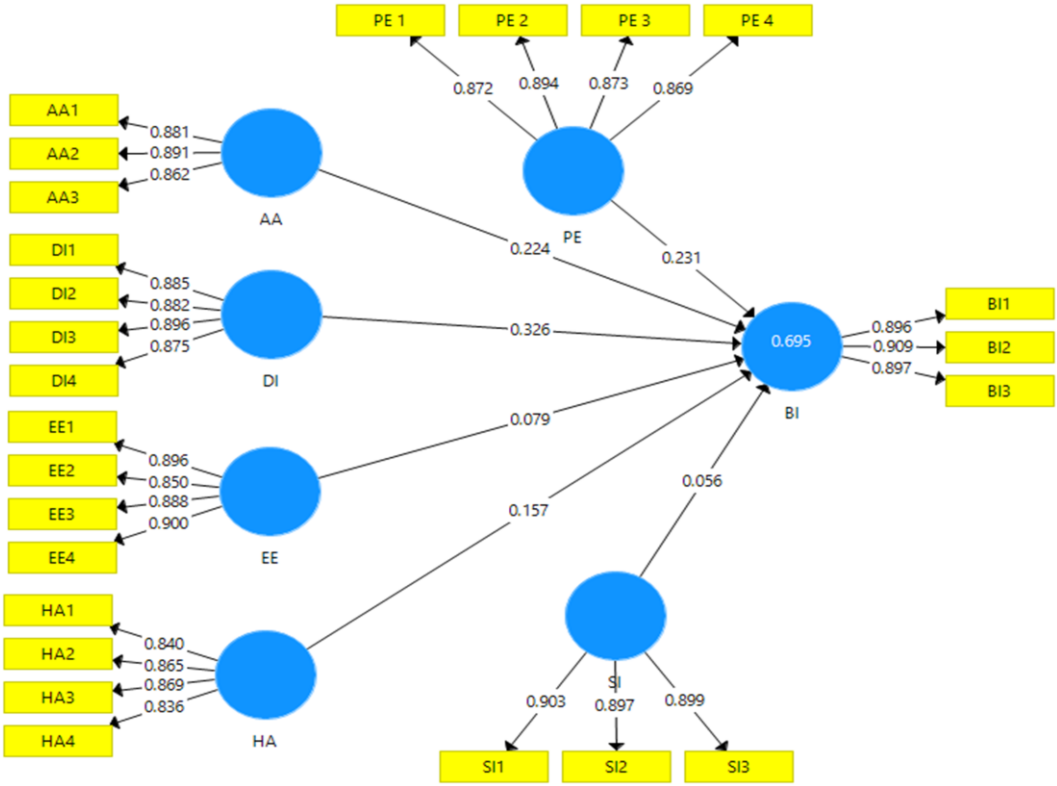
The PLS path model with beta coefficients and outer loadings is shown in Figure 2. The predictive strength of the proposed model BI towards the digital screen is 69.5 percent.

Table 4 : Structural model estimates

Relationship	β coefficient	Sample Mean (M)	Standard Deviation (STDEV)	Percentile 95% confidence interval (bias corrector)	t Statistics	p values	Results
H1 : AA → BI	0.224	0.222	0.041	[0.142 ; 0.302]	5.519	0.000	Supported
H2 : DI → BI	0.326	0.327	0.049	[0.231 ; 0.421]	6.623	0.000	Supported
H3 : EE → BI	0.079	0.080	0.043	[-0.004 ; 0.164]	1.849	0.064	Not Supported
H4 : HA → BI	0.157	0.158	0.037	[0.082 ; 0.232]	4.211	0.000	Supported
H5 : PE → BI	0.231	0.231	0.048	[0.137 ; 0.327]	4.826	0.000	Supported
H6 : SI → BI	0.056	0.056	0.041	[-0.025 ; 0.135]	1.370	0.171	Not Supported

Source: Author's calculation

Figure 2: PLS path model with coefficients



6. DISCUSSION

The main objective of this research was to investigate "how willing individuals to accept digital signages for fashion apparel retail stores". This objective was achieved with the help of PLS-SEM. The study analysed the direct effect of aesthetic appeal and designed information, effort expectancy, habit, performance expectancy, and social influence on behavioural intentions for fashion apparel stores. The results confirm that aesthetic appeal, designed *i*nformation, habit, and performance expectancy (H1-H2, H4-H5) are the key predictors of outcome behavioural intentions.

Designed information emerged as the most significant predictor of behavioural intentions, followed by performance expectancy for digital signages in a fashion apparel store. The result also indicated that designed *i*nformation plays a crucial role in predicting the intentions to use digital signages in fashion apparel stores. These findings enlighten the

understanding of aesthetic appeal, designed *i*nformation, habit, performance expectancy, and behavioural intentions. Thus, this study provides some key insights into the adoption of digital signages in fashion stores.

The positive relation between designed *i*nformation and behavioural intentions suggests that if digital signage is installed at the storefront, it may be the deciding factor for an individual to enter the fashion apparel store. It may become the first touchpoint that individuals encounter before entering the fashion apparel store. It also indicates that in the absence of digital signages, the trip of the individuals to the fashion apparel store may get halted at the beginning, which means individuals may not enter the store. Individuals may prefer a store with digital signage more than a store without digital signage. It may lead to less footfall to a fashion retail store. In addition, installing digital signages in fashion stores may communicate the brand philosophy. Digital signages are more likely to be a differentiating for the retailer to entice the individuals consciously.

The study progresses the existing literature and establishes the two new positive relationships of aesthetic appeal and design information to behavioural intentions for digital signages. It establishes that aesthetic appeal and designed information lead to behavioural intentions. Further, it can be inferred that the greater the aesthetic appeal and designed *i*nformation, the greater the behavioural intentions to adopt digital signages in fashion apparel stores.

Performance expectancy is the second strongest predictor, followed by habit for behavioural intentions to use digital signages in fashion apparel stores. A significant relation between performance expectancy, habit, and behavioural intentions has been established in previous studies (Chen & Chancellor, 2020;Nathan et al., 2020 Tomić et al., 2022; Jain et al., 2021), and found to be consistent with the prior research.

Further, the effort expectancy and social influence emerged as insignificant for behavioural intentions. Although, similar results were established in prior research (Bakshi et al., 2019; Jacob & Pattusamy, 2020; Schapsis et al., 2021).

6.1 Theoretical implications

In recent times, digital signages have attracted much attention from researchers (Garaus & Wagner, 2019; Grewal et al., 2020; Sharma et al., 2022b; Shoenberger et al., 2021; Stieninger et al., 2021; van de Sanden et al., 2020). However, extant literature is not available on behavioural studies focusing on fashion retailers for digital signages. Thus, this study enhances the extant literature on the adoption of digital signages. Further, this research extends the UTAUT 2 to adopt new and innovative technologies. The results established by this study recognize the new conceptual understanding of effort expectancy, habit, performance expectancy, and social influence. The conceptual model analysis provides insight regarding the adoption of digital signages in fashion apparel brick-and-mortar stores. In addition, the conceptual model results predict the significant factors that can facilitate the task of formulating the strategy. Moreover, the research confirms the presence of two other prominent factors, aesthetic appeal, and designed information, that influence the behavioural intentions for digital signages in fashion apparel retail stores.

This research investigates an empirical model based on UTAUT 2 with two new constructs: aesthetic appeal and designed information.

6.2 Practical implications

This study confirms that four factors - aesthetic appeal, designed *i*nformation, habit, and performance expectancy significantly influence the behavioural intentions to use digital screens in apparel stores.

This study provides many practical implications to retailers, strategic marketers, and visual merchandisers. Designed information is the primary concern users consider when searching for fashion clothes on the digital signages in apparel stores. The designed *i*nformation is the array of cues beyond apparel colour, quality, style, and promotions that individuals associate with the brand. That is the brand philosophy cues using digital signages. The brand philosophy is an offshoot of the mission statement of the brand. Individuals know that it is designed information which means that the visual merchandiser consciously displays only a few fashion clothes. It indicates that users are

knowledgeable and keenly observe the information displayed on digital signages. Users look for relevant *i*nformation on digital signages while searching in fashion apparel stores. Moreover, digital signages provide unlimited space and an opportunity for visual merchandisers to create a brand identity consciously.

The result of performance expectancy signifies that digital signage users find improvement in their performance of choosing the merchandise in apparel stores. It indicates that users' performance improves and helps adopt digital signages in fashion stores. In other words, performance expectancy enhances efficiency, provides effectiveness, and facilitates choosing the right apparel. Retailers should focus on precise communication of product attributes. Visual merchandisers should change communication frequently, covering details of more fashion apparel like cross-selling, up-selling, and educating individuals about fashion styling can increase basket sizes and conversion rates.

The primary implication of aesthetic appeal is persuasion. The aesthetic appeal provides signals and reduces uncertainty for behavioural intentions to use digital signages. The aesthetic appeal of clothes relates to colour, design, texture, quality, novelty, and shape. The blown-up apparel videos displaying fabric textures and design will attract more individuals for product evaluation.

Habit (HA) is a significant predictor of behavioural intentions to use digital signages. It reveals that respondents are fallen into the habit of using digital screens in fashion apparel stores. Visual merchandisers should design the display strategy to differentiate the content on digital signages to make it more significant.

The findings of this study conclude that it will help the retailers, decision-makers, visual merchandisers, marketers, and store planners. Digital signages may emphasize appropriate designed *i*nformation. Display of online reviews and influencer endorsements positively influences purchase intentions (Yaacob & Gan, 2021) on digital signages may give the individuals more confidence while navigating the retail store. It may motivate the individual and may facilitate the process of selecting the right merchandise at apparel stores.

6.3 Limitations and future research direction

The limitations of this study are as follows: first, this study employs a convenient sampling method to collect the respondents' data. It may not be easy to generalize the results. Second, the investigation is cross-sectional as the data is collected only once. Third, this study has no moderation effect on age and gender. Fourth, this study gathers only the viewpoint of Indians and may give different results in other cultures. Future research may employ longitudinal studies.

Further, studies may use the quota sampling method to collect an equal proportion of demographic data to analyse the moderation effect. It may provide more detailed information to help retailers plan digital signage promotional strategies better. This research focuses on digital screens in a generic sense. However, future research may take place on different sizes of the signages.

7. CONCLUSION

This research emphasizes the influence of aesthetic appeal, designed information, effort expectancy, performance expectancy, habit, and social influence on behavioural intentions to use digital signages in fashion apparel stores. Further, this research shows the positive effect of aesthetic appeal, designed information, performance expectancy, and habit on behavioural intentions. In addition, this study extends the existing literature on UTAUT 2 for digital signages in fashion apparel stores. Using digital signages, creativity in brand communication account for a driving force (Yagnik et al., 2020). The results signify that the individuals identified digital signage as an effective marketing promotional technique, and it should be in the toolkit of a marketer of fashion apparel retail stores. Although the data collection took place from Delhi NCR, participants are from all parts of India. The results can be generalized to India. The study focuses on fashion apparel retail stores, but it can also be applied to other sectors like FMCG, banking, e-payment, etc.

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