The Impact of Technology on an Omnichannel Apparel Physical Retail Store: Does Generation Matter?

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ABSTRACT

Due to the changing tastes and preferences of customers, retailers today are increasingly adopting Omnichannel strategy which aims at providing a superior customer experience irrespective of the channel used. This has caused many brick and mortar stores to open an online store and vice versa. In such a situation technology plays a critical role in providing an integrated, seamless experience to the customers across channels. In that regard this paper tries to examine the role of in store technology, fitting room technology and Customers own devices on the purchase intention of the consumer. The study further investigates the moderating effect of Generation across two generation cohorts Gen X and Gen Z, on the said relationship. Data was collected using a structured questionnaire and 210 valid responses were obtained. The results showed that Generation only partially moderates the relationship as seen in the case of fitting room technology and purchase intention .Smart PLS 4.0 was used for data analysis and PLS –Multi Group Analysis (PLS – MGA) was used for moderation analysis. The results obtained and implication of the study are discussed.

Keywords: *Apparel; Generation; Moderation effect; Omni channel retailing; Purchase intention.*

1.0 Introduction

The omni channel approach has become a significant trend in recent years, with the fashion industry being one of the earliest adopters. It involves providing customers with a seamless shopping experience across various channels and allowing them to interact with the brand anytime, anywhere. This approach breaks down the barriers between physical and virtual stores (Beck and Rygl, 2015; Lazaris and Vrechopoulos, 2014; Levy et al., 2013; Melero et al., 2016; Rigby, 2011; Verhoef et al., 2015)., and it has both practical and theoretical implications, as well as impacts the consumer behavior. Advances in technology, such as social media, mobile, smart TV, and smartwatches, have led to the emergence of new retail formats (Juaneda-Ayensa et al., 2016; Melero et al., 2016; Piotrowicz and Cuthbertson, 2014; Verhoef et al., 2015). Which are transforming the buying process and changing consumer habits.

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The need of the hour is to integrate the various channels seamlessly so that the provide an uniform uninterrupted experience This scenario warrants that the physical and virtual stores complement each other and use interconnected technology, like the physical store apart from acting as a retail experience theatres should also provide the interactivity and convenience and seamless navigation of the online store, on the other hand the online store should provide the multisensory experience of the physical store. (Alexander and Alvarado, 2017).

There is a growing interest among both practitioners and scholars in implementing new technologies in physical stores to improve the shopping experience by increasing information richness and customer perception of innovation. However, while examples of integrating interactive technologies in physical stores are increasing, there is still a lack of empirical research on the role of technology in an omnichannel retail environment (Brynjolfsson et al., 2013; Cook, 2014; Papagiannidis et al., 2013; Verhoef et al., 2015; Weill and Woerner, 2015). This study aims to identify which omni retailing technologies matter most to consumers and how their intention to use such technologies affects their purchase intention in an omnichannel apparel retail environment. Additionally, the study analyzes the moderating effect of generation on the relationship between intention to use these technologies and purchase intention, as there is a gap in empirical research in this area. Here the customer were divided into two cohorts one of GenX and Gen Z There is a huge gap as far as technology adoption is concerned between the two generations .Gen X customers have some paucity in adopting technology and increasingly dependent on Gen Z to help them, on the generation Z are comfortable with technology, Gen Z customers are more in to the technology as see it as a part of their life as they are born in to it. Some previous studies have examined generation based differences in attitudes towards the use of information and communication technologies (ICTs) and online contexts, but no empirical studies have analyzed generations moderating role on purchase intention in an omni channel environment

2.0 Literature Review and Hypothesis

Over the past two decades, retailing has evolved significantly. In the past, retailing was mainly associated with physical stores, but with the emergence of e-commerce, a new channel viz the online retail was created, leading to the concept of multichannel retailing (Verhoef et al., 2015). However, this approach created a division between physical and virtual stores and made them to function in individual Silos without any interconnectedness among the channels, leading to negative customer experiences(Beck and Rygl, 2015).. The next stage in this evolution that is the omnichannel, which merges offline and online channels to provide customers with a seamless experience. With all channels connected, customers can start and finish their shopping journey in different channels, enhancing convenience and engagement. The omnichannel approach is built on the principle that retailers should prioritize their customers and their shopping experience and not focus only on the channel of delivery .It's a new way of wrapping an old idea that the retailers should establish a connect with the

customers and tell a unique brand story and enhance customer experience. (Gupta, Lehmann, and Stuart, 2004; Hansen and Sia, 2015; Shah et al., 2006). The emergence of channel agnostic customers,i.e those customers who do not care from which channel they buy as long as they get the product they want, has forced the retailers to provide the same brand experience,price and convenience irrespective of the channel used. (Dholakia et al., 2005; Eaglen, 2013; Juaneda-Ayensa et al., 2016; Zhang et al., 2010).

2.1 Role of in- store technology

In store technology has taken various shapes and forms since the beginning of retailing, in this arena of omnichannel retailing technology has played a key role in ensuring seamless delivery of products and has created an integrated experience between channels (Piotrowicz and Cuthbertson, 2014).although online stores have grown in numbers physical stores still remain relevant as they act as an experience museum and act give multisensory satisfaction to the customers. The customers are able to touch and feel the merchandise and are able to gain immediate possession of the product. They also aids in developing long lasting buyer –seller relationships. (Blázquez, 2014).

In addition to being a physical location where customers can physically interact with products, the brick-and-mortar store also serves as a venue for providing customers with immersive and engaging experiences, regardless of whether they use the physical or digital channels to make purchases (Avery et al., 2012; Medrano et al., 2016). As a result, technology is transforming the store experience and layout by facilitating activities such as "click-and-collect," "in-store ordering," "home delivery," "online ordering and in-store return," and other combinations of online and traditional retailing practices that simplify the shopping process (Bell et al., 2014)

Retailers are increasingly adopting interactive in-store technologies to improve the shopping experience for consumers. These technologies include virtual fitting rooms, augmented reality, digital signals, tablets, automatic checkouts, beacons, and retail apps (Choi and Cho, 2012; Poncin and Ben Mimoun, 2014; Burke, 2009; Rigby et al., 2012; Zhu et al., 2013; Shankar, 2014; Pantano and Priporas, 2016). According to Poncin and Ben Mimoun (2014), the experiential aspects of these technologies can attract more shoppers to physical stores, thereby reducing the boundaries between traditional and online atmospherics, and potentially increasing sales. Additionally, Pantano (2016) and Renko and Druzijanic (2014) found that offering more services, while enriching traditional ones, can increase consumers' purchase intention. Verhoef et al. (2009) identified the impact of technology on the shopping experience as a critical research question.

The term in store technology primarily means the technology used inside the store by customers which may include hand held devices like I-Pads, tablets or different digital devices that help customers perform various actions like self-check out, self-scanning of products, analyzing the cost of the purchase basket, gadgets to locate merchandise variety and size inside the store etc. On the other hand fitting room technology enables customers to try

on products virtually, without physically interacting with the items. This technology utilizes augmented reality (AR) or artificial intelligence (AI) to overlay the product on live imaging of the customer, allowing them to assess the size, style, and fit of the item before making a purchase decision (Pantano and Viassone, 2014), These are very critical as most of the purchase decision are made inside the fitting rooms. (Beck and Crié, 2015).

In the light of the literature showing that technology attracts the customers to the store and creates a positive intention to purchase we formulate the following hypothesis that:

H_1: The intention to use in-store technology positively affects purchase intention of the customer.

H_2: The intention to use fitting-room technology positively affects purchase intention of the customer.

2.2 The role of customers own devices

In an omnichannel retail environment, customers' personal devices such as smartphones, smartwatches, and wearables play a significant role. Studies have shown that mobile technology has become an essential tool for consumers before and during the shopping journey (Pantano and Priporas, 2016; Zagel et al., 2017). The convenience and portability of mobile devices allow consumers to search and shop anytime and anywhere (Gao et al., 2015; Rodríguez-Torrico et al., 2017). Customers now prefer to use their own devices to search for information about products, scan QR codes, compare prices, check product ratings, and seek advice (Shankar, 2014; Verhoef et al., 2015; Voropanova, 2015). Furthermore, social media platforms enable consumers to share their feedback about products and brands in real-time (Deloitte, 2015).

Modern consumers are "hyperconnected" and expect a seamless experience across different channels, touchpoints, and platforms (Cook, 2014; Frazer and Stiehler, 2014; Piotrowicz and Cuthbertson, 2014; Van Bruggen et al., 2010). Customers use their personal devices in stores and beyond to engage with retailers and access information. They rely on their devices as an integral part of the shopping experience, viewing them as part of a larger ecosystem of channels and touchpoints.

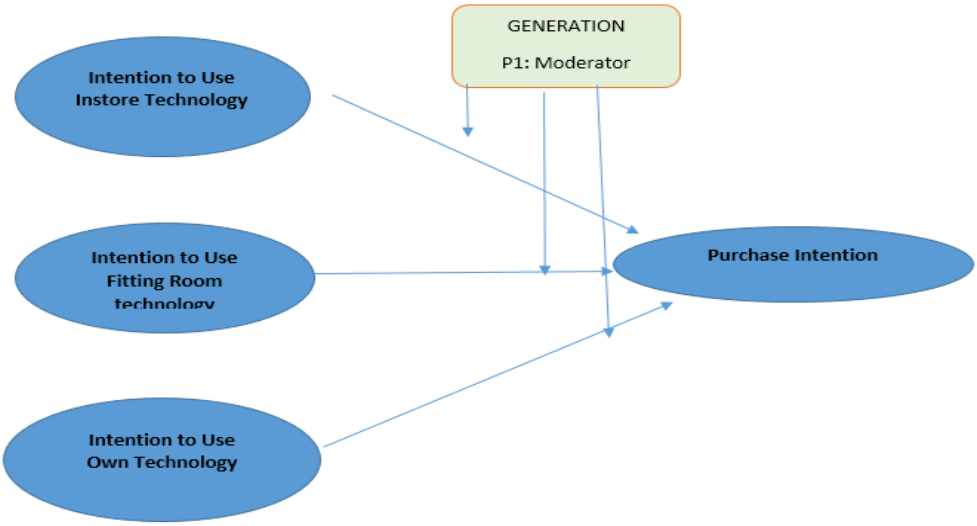
Consumer behavior such as webrooming and showrooming presents challenges for retailers. These practices vary depending on the channel that customers use to search for information and compare alternatives before making a purchase. (Flavián et al., 2016; Wolny and Charoensuksai, 2014). Verhoef et al. (2007) previously identified webrooming as the primary omnichannel behavior. The emergence of smartphones in stores has given rise to showrooming, which refers to the use of personal devices in-store for tasks such as comparing product features or finding offers (Babin et al., 2016; Rapp et al., 2015). Recent research suggests that customers are increasingly relying on smartphone searches instead of traditional methods (Bachrach et al., 2016). This trend is attributed to the inclusion of features in mobile apps that simplify and improve the customer journey. This has also considerably reduced the role of sales people.

Parise et al. (2016) found that "72 per cent of consumers said that a relevant mobile offer delivered to their smartphone while shopping in a store would significantly influence their likelihood to make a purchase.", whereas Rippé et al. (2017) have demonstrated that in-store mobile searches increase the propensity of in-store purchase intention. Keeping the above statement in view, the third hypothesis is proposed which is H3: Usage of customers own technology (like mobile phones, tablets) in store positively increases their purchase intention

2.3 Moderating role of gender

The study proposes to test the moderating role of generation between two generations (Gen X and Gen Z). Generation X, born between 1965 and 1979 are not tech savvy and comfortable with authority. Generation Z is the group of people born between the mid-1990s and the early 2000s (typically after 1995) who are the children of Gen X or later Baby Boomers. They share similar traits with Generation Y, including technological prowess and comfort in a globalized world. However, Generation Z is likely to have distinct consumer behaviors due to experiencing economic recession during their formative years. Four consumer trends that will likely define Generation Z are a focus on innovation, a preference for convenience, a desire for security, and a tendency towards escapism. (Stacy wood, 2016). Though there have been studies using generation as a moderator in the area of Innovation (WA Srisanthan et al, 2022) in the area of green buying behavior (Sharma et al, 2022) and mobile banking usage and gamification (G Cera et al 2020) there is really paucity of literature measuring the moderation effect of generation on the role of technology and purchase intention in the omnichannel fashion context. Given the limited literature on the effect on generation the following hypothesis is formulated and tested.

Figure 1: Proposed Conceptual Model



P1. Generation plays a moderating role in the positive relationship between the antecedent variables and purchase intention.

Based on the above hypothesis we develop the following model, a similar model was used by (Ana Mosquera, Cristina Olarte-Pascual, Emma Juaneda Ayensa and Yolanda Sierra Murillo, 2017) but here we intend to measure the moderating effect of generation as against the previous authors who have measured the moderating effect of Gender.

3.0 Research Methodology

The research was performed on three omni channel apparel retailers in Hyderabad who had their online and off line presence .Apparel was chosen because it is among the top ten categories to be influenced by instore technology (Delloitte 2016).

3.1 Measurement instrument and selection of scales

The questionnaire prepared by Ana Mosquera et al 2017 was adopted for measuring the various constructs mentioned in the conceptual model, who inturn adapted the scales from Burke (2002) and Lazaris et al. (2015). To measure purchase intention, the scale developed by Pantano and Viassone (2015) was adapted.

3.2 Data collection

The questionnaire was administered to 248 shoppers from regular visitors of the omni channel apparel stores selected in the city of Hyderabad, Only respondents belonging to GEN X or Gen Z were allowed to fill the questionnaire .Of the total responses secured 38 responses were invalid and rejected. Of the 210 valid responses 100 were from Generation X and 110 were from generation Z.

4.0 Results

The data was analyzed using SMART PLS 4.0 software for assessing the measurement model and structural model. The Moderation analysis was performed using the PLS, Multi Group Analysis.

4.1 Measurement model assessment

The measurement model was verified for the construct reliability (i.e composite Reliability and Chronbach's Alpha) and convergent validity using AVE values, both these were above the threshold values of 0.7 and 0.5 respectively. The discriminant validity has been assessed using the following criteria. The first criterion is the Fornell–Larcker criterion, which mandates that the root square of AVE for each latent variable should be greater than the correlation with any other latent variable (Fornell and Larcker, 1981).The HTMT criteria was used next and all the values fell below the threshold value of 0.9 .

Table 1: Construct Reliability, Convergent Validity and Discriminant Validity

Construct	CR > 0.7	Cronbach's Alpha>0.7	AVE > 0.5	ST	FT	OT
Gen X						
ST	0.824	0.797	0.609	0.852		
FT	0.932	0.962	0.785	0.713	0.895	
OT	0.812	0.783	0.622	0.721	0.652	0.785
PI	0.741	0.816	0.732	0.744	0.622	0.754
Gen Z						
ST	0.803	0.766	0.662	0.828		
FT	0.840	0.798	0.717	0.586	0.914	
OT	0.815	0.784	0.635	0.625	0.624	0.794
PI	0.946	0.841	0.799	0.618	0.679	0.642

4.2 Structural model assessment

The R^2 for Gen x was found to be 61.9 and 68.5 for Gen Z on the other hand the Q^2 value was 0 .538 for Gen X and 0.579 for Gen Z.

Table 2: Effect of Endogenous Variables and Support for Hypothesis

Relationship	R2 (%)	Q2	Direct effects	Correlations	p- Value	Hypothesis
Gen X	**61.9**	**0.538**				
H1: In-store tech. (+) Purchase intention			0.382	0.774	0.000	Supported
H2: Fitting-room tech. (+) Purchase intention			0.152	0.582	0.005	Supported
H3: Own tech. (+) Purchase intention			0.492	0.864	0.000	Supported
Gen Z	**68.5**	**0.579**				
H1: In-store tech. (+) Purchase intention			0.310	0.678	0.000	Supported
H2: Fitting-room tech. (+) Purchase intention			0.358	0.693	0.000	Supported
H3: Own tech. (+) Purchase intention			0.234	0.672	0.001	Supported

Finally there is a significant effect of In store Technology, Fitting room technology and Intention to use own technology own purchase intention as all the Hypothesis are supported for both Gen X and Gen Z .The results elucidate that own technology has the greatest influence in Gen X customers followed by In store technology and finally fitting room technology. The reason for this could be that the Gen X customers are comfortable using their own devices rather than the devices present in the store as they may not be well aware about their operation .In case of Gen Z however fitting room technology had a predominant effect on the purchase Intention followed by In store technology and own technology.

The reason for this could be that the Gen Z have a totally different perspective on using in-store technology. They prefer to use it to access a wider range of products (ST5), search for specific items or sizes not available in the store (ST3), and avail discounts (ST4). When it comes to using fitting rooms, they are more likely to utilize the technology to seek advice without leaving the fitting room (FT1) and to look for clothing that complements their

existing outfits (FT2). Moreover, they tend to use their smartphones in physical stores only for price comparison (OT2) and to read reviews about the products (OT3).

4.3 Multi group analysis

A multi group analysis was performed with generation as the categorical variable. MICOM analysis was performed prior to PLS –MGA to establish Invariance in the data sets as suggested by (Hult et al., 2008, Henseler et al. (2016)). These procedures involved establishing:

1. Configural invariance
2. Compositional invariance
3. Equality of composite means values and variances.

All the three above variances were established giving a go ahead for MGA Analysis.

Table 3: Multi Group Comparison

Relationship	Gen X Std Beta	Gen Z Std Beta	Path Coefficient Difference	T-Values	P-Values	Sig
ST -> PI	0.382	0.310	0.72	0.101	0.223	n.d
FT -> PI	0.152	0.358	-0.206	0.920	0.003	S.d
OT-> PI	0.492	0.234	0.258	0.415	0165	n.d

n.d - No significant difference S.d –Significant Difference

5.0 Discussion and Conclusions

This research makes a valuable contribution to the study of omnichannel retail by identifying the preferred in-store technologies of omnishoppers and exploring how their intention to use these technologies impacts their purchase decision. With the retail industry becoming increasingly competitive, it is crucial for companies to understand which technologies and omnichannel practices are most appealing to their customers. An omnichannel store combines the benefits of physical and online shopping, providing customers with the opportunity to view and test products in person while also having access to a wider range of products and information online. The omnichannel approach prioritizes the customer experience and aims to facilitate seamless communication between the company and the customer across various channels and touchpoints throughout the shopping journey. This enables customers to interact with the brand through their preferred channels at any given time.

The objective of the study was two fold firstly to examine how instore technology, customers own devices and fitting room technology influence purchase intention, and also to look at the moderating role of generation and see if there is a significant difference between Gen x and Gen z in usage of the above mentioned antecedents .

The study found that the proposed model effectively predicted purchase intention for both Gen X and Gen Z in an Omni channel store, with a 61.5% R^2 for Gen X and a 68.5 % R^2 for Gen Z. This supports the notion that consumers' purchase decisions are influenced by their intention to use various digital technologies and practices while in-store. However, the study did not find any significant differences between both the generations on the impact of the antecedents on the dependent variable except for fitting room technology whose value was significant. when analyzing the three dimensions of the model, the lack of significant difference in the other two factors and significance of fitting room technology can be explained by the fact that Gen Z being digital natives are more comfortable with the fitting room technology and know how to leverage it to make decision, which may be lacking in Gen X.

The study's findings have significant implications for retailers. It highlights the importance of physical stores adapting to the changing retail environment to survive. Retailers must ensure that their physical presence adds value in terms of product availability, engagement, service, and overall customer experience. To achieve this, retailers can implement in-store technologies such as automatic checkout, free Wi-Fi, and tablets to enable customers to browse products and place orders. Fitting-room technology is especially crucial because fitting rooms play a vital role in the shopping process. Customers may avoid trying on clothes if they have to go to the fitting room alone or leave the fitting room to find another size. Retailers can address this issue by implementing intelligent fitting rooms or installing tablets to facilitate and expedite the purchase process, encouraging more customers to visit the fitting room and ultimately leading to more sales.

To enhance the in-store experience, it is essential for mobile app developers and retailers to focus on integrating their shopping assistant interface with hardware features that bridge the physical and online world (Lazaris, 2015). By providing the same offers, conditions, and services across both channels, companies can encourage traffic between the online and physical store and prevent free-riding consumer behaviors (Rodríguez-Torrico et al., 2017). This approach caters to both webroomers and showroomers. Webroomers can come to the store already informed about the product and use the technology implemented at the store to complete their purchase, while showroomers can use their own smartphones or devices available at the store to research opinions, prices, or product features before finalizing their purchase (Rodríguez-Torrico et al., 2017). By adopting these strategies, retailers can enhance the shopping experience and encourage customers to make purchases in-store.

To enhance customer engagement and loyalty, retailers should invest in technologies that create a seamless shopping experience across all channels (Cook, 2014; Pantano & Naccarato, 2010). The technology should be relevant to consumers and provide value by solving existing problems, rather than creating new ones (Blázquez, 2014). The Internet of Things presents new opportunities for retailers, such as connecting physical and virtual stores for streamlined inventory management and integrating technology into garments for improved

efficiency (Blázquez, 2014). This technology can also help retailers to create personalized offers in real-time, based on customer data (Blázquez, 2014).

The current research makes a significant contribution to the existing literature on omnichannel retailing by identifying the key technologies and practices that are most relevant for omnichannel customers and exploring the relationship between the intention to use in-store technology and purchase intention. To the best of knowledge, this is the first empirical study in the academic literature that investigates the intention to use in-store technology in a clothing store in India while also examining the potential moderating effect of generations

6.0 Limitations of the Study

First, the analysis is rather general, examining the use of interactive in-store technologies as a general concept. Another lacuna of the study is it looks at the adoption of the in–store technology without considering its cost to the retailer which may reduce its adoption. Apart from these other factors like atmospherics, store ambience, social factors have not been accounted for which might influence the purchase decision .More over the study focused on omni channel fashion stores in Hyderabad which can limit its geographical and cultural reach.

7.0 Scope for Further Research

The model can be used in other geographical locations and cultures to see whether culture or geography impacts the usage of technology in omni channel fashion stores .An attempt can also be made to study the effect of different demographic moderators like age, income, location etc on the same model.Similarly the study may be extended to other product categories as well.

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