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Impact of Virtual–Try–On Online Apparel Shopping Decisions

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Abstract

Virtual- Try- On of apparels is adopted by e-shoppers and sellers due to its commercial potential. The system is gaining popularity in recent years because they allow users to see them wearing different apparel virtually without the effort of trying them physically. The system supports users to quickly judge their likes/dislikes, fit, size about apparel and can compare the looks too. Virtual Try On systems to some extent relaxes the absence of touch-feel-hear in online apparel shopping likewise, enhances online sellers to sell more in less time and to receive lesser returns as well. Findings of the paper prove that buyers in Rajasthan are familiar and aware about the systems. The present study is based on capital city of Rajasthan. The findings shed light on urban Jaipurites only but at the same time it is useful for online marketers due to limited empirical studies in online apparel segment. It justifies immense scope for researchers in online apparel shopping segment of Indian consumers. The further study with different set of parameters, area, and respondents sample can be carried in other parts of the nation. The paper fits under the broad theme of Consumer Behavior and E-commerce.

Key Words *– Virtual Try-On, Apparel, Touch feel hear, Online shopping, Virtual fitting room.*

Virtual Try-On:It is a technology which facilitates buyers to create their own virtual models based on their measurements, facial characteristics, and hair color and body shape.

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Introduction

Internet is rapidly grasping the pace in modern communication landscape, technology and for business convenience. One of the most important applications of internet is online shopping arena for business as well as customer facilitation. As the internet user increases the number of online shoppers has also grown rapidly over the years. An apparel purchase is one of the fastest growing segments of virtual buying in India. A number of initiatives have arisen recently across the world, evolving around the concepts of Made-to-Measure manufacturing and shopping via the Internet. The combination of these new services is now possible by the emergence of technologies, systems and practices, such as 3D whole body scanners, automatic body measurement, the customization of existing styles and Virtual-Try-On visualization techniques.

However, high product return rates persist, and most consumers are still either hesitant to purchase garments online or are unsatisfied with their online shopping experience (10). Buyers often buy the apparels online yet not 100% satisfied. It has been noted that the apparel which looks interesting and better, might not always be customers' actual choice. This not only leads to buyer's dissatisfaction at times but also affects the revenues of the seller. This also affects the revenues of the e-commerce stores selling all these apparels and accessories. Another issue is that there is no customization that the buyers can make out, especially in terms of the sizes and styles. With no option for trial, the conversion rate of users to buyers also decreases as the customers do not want to invest in something which they're not sure if they like and then in turn waste money if it goes wrong. But by using virtual try on system these hindrances will be sorted out up to an extent.

The present study identified the lack of easy return policy, concern with fit and correct sizing, and the inability to try on items as hurdles of consumers for online apparel shopping. Keeping this in mind, the online portals should fulfil the need of virtual try on for virtual buyer which is missing in virtual buying. The Indian market trend shows virtual try on is practicing presently in the field of eye wear. As well lots of trial apps like StyleU, Fitle, TrialKart, Metail etc exist in the market. Online sellers in apparel segment are penetrating towards these apps just to beat the competition and satisfy customers (Prabha Raghavan & Neha Tyagi, 2015).

Literature Review & Hypothesis Development

Web shops employ virtual try-on applications to reduce product return rates [15]. J. Kim and Sandra Forsythe (2008) andMerle et.al (2012) studied Virtual Try On in online apparel shopping. The anxiety and innovativeness has significant role over virtual try on technology which is more evidenced in Indian context with the

new technology solution in virtual fitting (the facility of online fitting room to check size and fit), being provided by different virtual try on rooms. It is being popularized and the result shown that virtual try on is rather than mandatory an entertainment and enjoyable feature for online shoppers. Adoption of virtual try on is not gender specific. A Valencia based study by Ethan Kent (2015) researched on kids based apparel, on how to make the same as best fit and under EU funded project it allowed parents to create online avtar of their children. Hauswiesuer et.al. (2016) mentioned that virtual try on applications getting popularity because they allow users to try clothes virtually and which contributes in decision making of apparel purchases as well sales efficiency of retailers. These worldwide researches are more evidenced in India by Manali Rohinesh(2015) mentioned that different web portals in India had tied up with Trialcart to facilitate the consumers with virtual try on feel. The Virtual Try on trends present in India is in the field of eye wear. Likewise, Teresa Simon (2016) posits that Lenskart, an eyewear brand enables its users to try glasses on realistic 3D models of themselves just by clicking a selfie using their webcams. As well different virtual try on applications are available in the market. The study objected to identify the impact of Virtual try on facility on online apparel buying decisions. Based on which the following hypothesis is formed.

(a) Ho: Virtual try on does not impact on online apparel buying decisions.

(b) Ho: Virtual try on awareness in online apparel buying decisions is not related to demographics (age & gender).

Research Method

Based on the above hypotheses, a research tool was developed to verify the relationships between virtual try on facility, demographics and online apparel buying decisions. The targeted population for this study consisted of buyers (who deals online) in Rajasthan. Primary data was collected through questionnaire with sample of 150 buyers through snow ball sampling. Out of 150, the actual respondents were 125 only. The questionnaire was consisted of various statements, multiple response questions and 5 point likert scale response questions including demographic data. Very Attractive /Very Often (5), Attractive/Often (4), Sometimes/Neither Unattractive nor Attractive (3), rarely/unattractive (2) and Never/ Very Unattractive (1).For analysis of data different statistical tools has been used such as; Factor analysis, multiple correlation analysis, regression analysis and one way ANOVA were used through SPSS & Excel software.

For purpose of reliability of data reliability test was conducted. As a result of the test, efficiency of ***KMO (Kaise-Meyer-Olklin)*** sample was determined as ***0.632*** and Cronbach Alpha value is ***0.761*** it can be said that the scale is reliable.

Exploratory Factor Analysis (EFA)

Table - 1.1

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.632
Bartlett's Test of Sphericity	Approx. Chi-Square	26.997
	df	6
	Sig.	.000

Source: Output of IBM-SPSS 22

Kaiser-Meyer-Olkin (KMO) and Bartlett's Test has been applied to measure the sample adequacy and strength of the relationship among factors. The KMO measure is greater than 0.5 i.e. 0.632 which is satisfactory for the sampling adequacy and to proceed for factor analysis. From the same table, we can see that the Bartlett's test of sphericity is significant that is, its associated probability is less than 0.05. In fact, it is actually 0.000, i.e. the significance level is small enough to reject the null hypothesis.

Table - 1.2
Communalities

	Initial	Extraction
Shopping apparel over internet, the order placing time is boredom and lowers the enthusiasm.	1.000	.973
Apparel Description	1.000	.571
Virtual Try on	1.000	.586
Image Interactivity	1.000	.656
Extraction Method: Principal Component Analysis.		

Table - 1.3

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Loading			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.765	44.114	44.114	1.765	44.114	44.114	1.763	44.074	44.074
2	1.022	25.540	69.654	1.022	25.540	69.654	1.023	25.581	69.654
3	.657	16.435	86.090						
4	.556	13.910	100.000						
Extraction Method: Principal Component Analysis.									

Source: Output of IBM-SPSS 22

SPSS has extracted 2 factors based on Kaiser's criterion of retaining factors with eigenvalue greater than 1. Kaiser's criterion is accurate when the communalities after extraction are greater than 0.60 or when the sample size exceeds 250 than the average communalities should greater than 0.6. In present data the sample size is 125, there are 4 variables and the average communalities is 0.697 so extraction 2 factors is warranted.

Table 1.4 Result of the Factor Analysis(Roated Component Matrix)

Rotated Component Matrix[a]

	Component	
	1	2
Shopping apparel over internet, the order placing time is boredom and lowers the enthusiasm.	.987	
Apparel Description	.753	
Virtual Try on		.760
Image Interactivity		.786

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

Source: Output of IBM-SPSS 22

From the analysis, it is evident that two variables loaded under factor 1 seem to be associated with equal ***Factor 1***. The second factor comprises two variables which related to***Factor 2***.

From the above table the study has divided into 2 components:

Component 1

1. Shopping apparel over internet, the order placing time is boredom and lowers the enthusiasm.
2. Apparel Description

Component 2

1. Virtual Try on
2. Image Interactivity

Validation of the Data

Table 1.5 Reliablity Statistics

Reliability Statistics

Cronbach's Alpha	N of Items
.761	5

Source: Output of IBM-SPSS 22

Reliability of Data: From the above table we can see that Cronbach's alpha is more than 0.700which indicates a high level of internal consistency for our scale with this specific sample.

HYPOTHEIS TESTING

H_{01}: Virtual try on does not impact on online apparel buying decisions.

In order to examine any significant impact in respect of virtual try on and online apparel buying decisions, a correlation & Regression analysisis carried out. The results are presented in the following tables.

Table: 1.6 **Results of the Multiple Correlation Analysis**

Correlations

			Factor 1	Factor 2
Online Apparel Buying Decision	Pearson Correlation		.562	.452
	Sig. (2-tailed)		.023	.012
	N		125	125

Source: Output of IBM-SPSS 22

The above table revealed that virtual try on does have moderate positive relationship between online apparel buying decisions. It has found that ***Factor 1*** has highest **Pearson correlation *'r'* value 0.562** and ***sigvalue (p value)*** **is 0.023** which indicates that there is a statistically significant moderate positive correlation between ***Factor 1***and***online apparel buying decisions***.

In case of ***Factor 2***the **Pearson correlation *'r'* value 0.452**at ***sig. value(p value)*** **is 0.012**. This being less than the alpha level of significance of 0.05, implies that there is a statistically significant correlation between ***Factor 2*** and***online apparel buying decisions***.

Multiple Regression Analysis

Table: 1.7 **Regression analysis on identified variables of virtual try on and online apparel buying decision**

Model						
Factor 1	**.562**	**.315**	**.302**	**.000**	**.214**	**.000**
Factor 2	**.452**	**.204**	**.201**	**.000**	**.125**	**.006**

Source: Output of IBM-SPSS 22..

The "R" column represents the value of R, the **multiple correlation coefficients**. R can be considered to be one measure of the quality of the prediction of the dependent variable. The "R Square" column represents the R^2 value, which is

the proportion of variance in the dependent variable that can be explained by the independent variables.

In the Model Summary in above **table** onthe basis of factor 1, ***R Square*** is ***0.315*** which means that **factor 1** explain ***31.5%*** of the variability with significant effect on ***online apparel buying decisions***.

Same as on the basis of factor 2***R Square*** is ***0.204*** which means that **factor 2** explain ***20.4%*** of the variability with significant effect on ***online apparel buying decisions***.

The Durbin-Watson in factor 1 and 2 d = 1.534 and 1.521 respectively, which is between the two critical values of 1.5 < d < 2.5. Therefore, we can assume that there is no first order linear auto-correlation in our multiple linear regression data.

The F-ratio in the ANOVA table tests whether the overall regression model is a good fit for the data. The table shows that different identified variables of *virtual try on (independent variables)* statistically significantly predict the *online apparel buying behaviour (dependent variable)*. In the above table F sig. value is less than 0.05in both cases, which means the regression model is a good fit of the data. Unstandardized coefficients indicate how much the dependent variable varies with an independent variable when all other independent variables are held constant. From the above table it shows that the ***virtual try on*** significant predictorsas a ***sig. value*** is less than 0.05 in both identified variables indicate that null hypothesis is rejected. In other words it can say that ***virtual try on does have impact on online apparel buying decisions.***

$\mathbf{H_{02}}$: Virtual try on awareness in online apparel buying decisions is not related to demographics (age & gender).

Table :1.8 Differences in Demographic Variable and Online Apparel Buying Decision

Source of variation	Sum of Squares	d.f.	Mean Square	F	Sig	Null Hypothesis Accept/Reject
AGE	15.946	3	5.315	5.693	***0.001***	**REJECT**
Within AGE	98.972	106	0.934			
Total	114.918	109				
GENDER	4.874	3	1.625	1.828	***0.047***	**REJECT**
Within GENDER	94.217	106	0.889			
Total	99.091	109				

This is the table that shows the output of the ANOVA analysis and whether we

have a statistically significant difference between our group means. It can see that in case of age and gender null hypothesis is rejected as sig. value is less than 0.05 and it has proved that ***Virtual try on awareness in online apparel buying decisions is not related to demographics (age & gender).***

Conclusion and Recommendations

The above study facilitates several useful insights related to Impact of Virtual –Try – On facility on Online Apparel Shopping Decisions. The results received from the study not only determine the impact of virtual try on facility on apparel buying decision but also differences between different demographic variable on apparel buying decision and to predict patronage behavior as well. The study has extracted 2 factors through factor analysis and further we have studied in those two factors. As seen from above analysis the entire hypotheses framed for empirical study. Prime objective of the study is "to identify the impact of Virtual try on facility on online apparel buying decisions" to prove this objective research framed a hypothesis **"**Virtual try on does not impact on online apparel buying decisions". Results concluded with the help of multiple correlation analysis there is a statistically significant moderate positive correlation between ***identified factors of virtual try on*** and ***online apparel buying decisions"***. Further regression analysis have applied and results drawn that the ***virtual try on*** significant predictors as a ***sig. value*** is less than 0.05 in both identified variables indicate that null hypothesis is rejected. In other words it can say that ***virtual try on does have impact on online apparel buying decisions.***

Second hypothesis is "Virtual try on awareness in online apparel buying decisions is not related to demographics (age & gender)".Results concluded with the help of one way ANOVA in case of age and gender null hypothesis is rejected as sig. value is less than 0.05 and it has proved that ***Virtual try on awareness in online apparel buying decisions is not related to demographics (age & gender).***

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