The Role of Artificial Intelligence Constructs of Perceived Usefulness and Perceived Ease-Of-Use Towards Satisfaction and Trust, Which Influence Consumers' Loyalty and Repurchase Intention of Sports Shoes in India

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Abstract: This research is an attempt to address the impact of perceived usefulness, perceived ease of use, brand trust and customer satisfaction on brand loyalty and repurchase intention of sports shoes consumers making online purchases. The study finds out whether or not the artificial intelligence constructs of perceived usefulness and perceived ease of use have a positive impact on customer satisfaction, Trust, Brand Loyalty and Repurchase Intention. The questionnaire was adapted from previous studies and purposive sampling method was used to select a sample of 1000 consumers. SmartPLS software was used to analyze the data through PLS Algorithm technique. Based on data analysis, it was found out that mainly all, the hypothesis showed significant results but perceived usefulness did not affect Brand Trust and Customer Satisfaction. In addition, Brand Trust did not affect Brand Loyalty significantly. It was found that the customers will use the technology which is easy to use only if it's beneficial to them as perceived ease of use has a positive impact on perceived usefulness.

I. Introduction

There has significant increase in Internet users in India over the last couple of years. The percentage of active users who browse the internet regularly, frequently and on a daily basis is 89%. This is according to a study, 'Bharat 2.0' by Nielsen, which is a firm for consumer insights. Because of this phenomenon, there is an increase in online-based business. The two important constructs of Artificial Intelligence that are considered in important in online buying by the consumers are perceived usefulness and perceived ease of use. These two constructs are the main dimensions in the Technology acceptance model [16, 44]. OLX an application used for the purchasing and selling of products which are used has been criticized heavily by its users and has been and has been given one star rate its users as the application has confused many users

Purchasing a product online has become a common norm for consumers in many countries with good marketing infrastructures [38]. Today many customers of different age groups use e-commerce sites for buying goods and services. This is because it is timesaving and convenient to use. Internet users have done some purchases related to E-Commerce, at one time or another [29,33].

Customer Satisfaction, loyalty, and Intention to repurchase are possible if the consumer finds it useful and it is easy, and convenient to use. Usefulness as perceived by the customer is the belief of the customer that usage of technology will benefit them. Technology meets the expectations of customers of perceived usefulness, improves productivity, and benefits its users [16]. Many people might believe that technology provides them with various benefits but it is important that

they find it easy to use as well. People should be able to believe that the usage of technology will not require extra effort. The technology should be clear and easily understandable and easy use to by the customer [17].

Past studies state that TAM positively influences the satisfaction of the customer. The constructs of artificial intelligence namely perceived ease of use and perceived usefulness influence the satisfaction of the customer [5,2]. Customer loyalty towards a product or service is measured and indicated by buying behavior of customers [6]. Satisfaction of the customer is an attitude but loyalty towards the customer is defined as buying behavior. Brand loyalty leads to repurchase intention as the customer likes the product and he will recommend it to others as well. A loyal customer will not switch to another brand even if the competitor provides good offers on the products. This research states that customer satisfaction leads to Brand Loyalty [3]. The usefulness and ease of use as perceived by the customer influence customer loyalty positively [17, 27, 57].

II. Literature Review

Various constructs used in the study include Perceived ease of use, Perceived usefulness, Customer satisfaction, Trust, Brand Loyalty, and Repurchase intention.

A. Perceived Ease of usage

The ease perceived by the customer in the access of a system related to technology and its display is a very important factor. It signifies the effort exerted by the customers in order to understand a new product or technology [24]. This is because the customers understand the features of a standardized product more easily as compared to the product, which may differ across various regions. Even colleagues can discuss the standardized products and give their inputs regarding it rather than goods that vary across various regions. Customers can easily understand the standardized product, which has similar specifications in various countries so companies should be focusing on making products with the same specifications and features in various countries. When someone wants to consider or choose a particular product then perceived ease of use plays an imperative part in it. Many people believe that technology can provide many benefits but most of them believe that it might not be easy to operate it.

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B. Perceived Usefulness

Perceived Usefulness is the perception of customers on the usage of technology in the companies and whether this will have an impact on the business and its profitability [4]. If the customer is dissatisfied then he will show his unwillingness to buy the product and that could halt the efforts of the company which is adapting new technologies and demotivate them to use better technology. Therefore, it can be said that the customer will use the new technology or product only when there is some value addition from the customer's point of view [72] .

When we use perceived usefulness in the online shopping context, it means the degree to which the consumers understand that usage of the internet will enhance their productivity and experience of shopping [18]. The outcome of the shopping experience is related to usefulness as perceived by the consumer [54]. The main advantages of online shopping include convenience, easy accessibility, detailed information and speed [43]. Perceived usefulness measures the belief that using technology increases the productivity or not. People will be using the technology only if they feel it's significantly useful for them. Technology will be able to meet various rules of usefulness as perceived by the customer if technology is able to help in improving the effectiveness, productivity and performance of the customers [18].

C. Customer Satisfaction

According to Cardozo (1965) introduced customer satisfaction into the field of marketing [13]. Customer satisfaction is an imperative area that managers should focus on. If a firm satisfies its customers better than its competitors and surpasses its customers' needs, and knows and understands the wants of the customer better than its rivalries. Satisfying customers in better ways can be a competitive advantage for any firm [53]. Customer satisfaction depends major on the expectation and results of the goods and service [11, 55]. If the results of a good and services exceeded the expectation level, the customers were satisfied; on the contrary, they will be dissatisfied. This study says that customer satisfaction was not only an attitude but it is a kind of post-purchase evaluation made by customers which are reflected by the extent of like or dislikes that develop after consuming the product or service[76].

D. Brand loyalty

Loyalty is defined as the relationship between customers' attitudes and the repurchase intention of customers [20]. This research says that customer loyalty is the repeated intention and strong commitment it has toward the same products/brands purchasing [56]. Loyalty of the customer as they show while buying or making decisions concerning brands and it is more of a psychological role [38]. Loyalty shows the positive attitudes and affirmative repurchased intentions of customers [44]. The success of a business depends on the loyalty of customers toward the business firm [77]. The continued survival and future growth of a business firm depend on customer loyalty [47].Loyalty reflects the long-term relationship and choice of the customer [61]. Factors affecting brand loyalty are the quality of the product, brand image, the satisfaction of the customer, and trust related to the brand [72].

E. Trust

Trust related to the customer has an effect on the commitment and bond, which is developed between customers [35]. If the customer trusts the brand then he will have certain expectations from the company. Firms need to meet the expectations of its customer otherwise; the prospective customers will lose their confidence in the company [74]. Highly engaged customers with a particular brand tend to develop high levels of trust as well. [73, 67].

F. Repurchase Intention

Repurchase is also known as retention [33, 79] which is also deliberated as a significant variable in relationship marketing [26]. The real action, which takes place, is known as the repurchase while the decision of the consumer to involve in upcoming activities with the supplier and retailer is known as the intention [34]. Referrals and word-of-mouth communication are important for an organization on to increase profitability. The brand, which explains the identity of the customer, may help in increasing the repurchase intent.

The repurchase intention of a brand is increased if it becomes the first choice for a customer because the customer may want an association with the brand in the future as well.

This research confirms that trust positively affects the loyalty and purchase decisions of customers [65].

1)Hypothesis

H1: Perceived Usefulness has a positive impact on Loyalty
H2: Perceived Usefulness has a positive impact on Customer Satisfaction
H3: Perceived Ease of use has a positive impact on Perceived Usefulness
H4: Perceived Ease of use has a positive impact on trust
H5: Perceived Ease of use has a positive impact on Customer Satisfaction
H6: Perceived Usefulness has a positive impact on trust
H7: Trust has a positive impact on Loyalty
H8: Customer Satisfaction has a positive impact on Loyalty
H9: Perceived Ease of use has a positive impact on Loyalty
H10: Loyalty has a positive impact on repurchased intention.

H1: Perceived Usefulness has a positive impact on Loyalty.

Perceived Usefulness is understood as the perception of various customers on the usage of technology in the companies and whether this will have an impact on the business and its profitability [39]. This research confirms that the higher the perceived usefulness higher is the loyalty of customers [32].

Hamid et al. (2016) confirmed that usefulness, as perceived by the customer, had a positive effect on the loyalty of the customer [31].

H2: Perceived Usefulness has a positive impact on Customer Satisfaction

Usefulness as perceived by the customer influences positively customer satisfaction. The satisfaction related to customers depends on the perceived experiences customers have with respect to product quality. The customers assess the product after experiencing the product and services. If the perception is positive with regard to the quality of the product customer will be satisfied and content. Past research validates that perceived usefulness significantly influences the satisfaction of customers [52,15, 69].

H3: Perceived Ease of use has a positive impact on Perceived Usefulness

The previous research confirms that there is a relationship between perceived ease of use, and usefulness as perceived by the customer [71]. The effect of perceived ease of use on usefulness as perceived by the consumer in an online context is confirmed by previous studies [10].

H4: Perceived Ease of use has a positive impact on Perceived Usefulness

This study affirms that perceived ease of use has an effect on usefulness as perceived by the customer. The consumers'

intentions to purchase (either laptops or computers) depend on their usefulness [15].

H5: Perceived Ease of use has a positive impact on Customer Satisfaction

The finding of this study validates that perceived ease of use significantly affects the satisfaction of customers. A study related to the computer industry of China confirms that customer satisfaction depends on the ease of use as perceived by customers [75] .

H6: Perceived Usefulness has a positive impact on trust

Following studies support a hypothesis that perceived usefulness significantly affects the trust of customers. This study says that the trust of customers depends on the usefulness perceived by the customer. Like in online health consultations, the guidance patients received from doctors significantly affect the trust of the patient towards the doctor [59].

The antecedent of the trust of an individual is to develop a positive perception and strong belief. The usefulness perceived by the customer is important belief to develop trustworthiness [9] . Patients' trust in doctors depends on perceived usefulness they experiences in online medical services [13] . The trust of customers depends on the ease they feel while friendly interaction with doctors online, and the presentation of diagnosis results.

H7: Trust has a positive impact on Loyalty

This study says trust is a secure state of feeling experience by customer based on their perception and this propagates the loyalty towards a brand [17]. Brand trust shows the reliance of customers and their inclination to towards a particular brand, which brings the loyalty of customer. Brand trust is the results of perceptions based on the beliefs developed because of constant, competent, and reliable features of product and this built the loyalty of customers [22]. Trust is key mediator that builds the long-term relationships that leads to brand loyalty among customers [21,22].

Brand loyalty shows the proximity of consumers towards a particular brand [1]. Loyalty a customer is showing while switching to other brands based on its attributes, price offered by competitors [9]. Loyalty towards brand is a proclamation of commitment of customer they have in a product or service [12]. The attributes of a brand can develop trust in consumers. It lays the foundation of trust that the product will be apt to fulfill the promised value. Trust shows the ability to accept an attribute of a brand based on experiences of customer [48].This study says that trust is like a gateway of loyalty of customer [59]. Past research asserts that trust has positive relation with the loyalty [45].

H8: Customer Satisfaction has a positive impact on Loyalty

The satisfied customers are loyal and spread the positive word of word-of-mouth [50]. Research shows that satisfaction of the customer has a positive effect on loyalty of the customer [27]. This research found a positive relationship between loyalty and satisfaction of customer [45]. This research

affirms that e-satisfaction had a positive relationship with e-loyalty [60] Customer satisfaction is very important and it positively actor behind the loyalty of customers [25].

H9: Perceived Ease of use has a positive impact on Loyalty

Indonesian e-commerce sector evident that ease of use as perceived by the customer had a effect which is significant on loyalty of consumer [41]. This study validates that perceived ease of use has positively related with customer loyalty [75]. This study confirms that by that perceived ease of use significantly affected the consumers' trust, which positively affect the loyalty of consumers [14].

H10: Loyalty has a positive impact on repurchased intention of customers.

If the customers are loyal, they have strong repurchase intention toward a brand [48, 70]. This research shows that brand loyalty has an impact, which was positive on the repurchase intention [66]. The person who is repeating the purchase is inclined toward a particular brand, and shows his repurchase intentions [78].

The repurchase intention of a customer reflects more favorable behavior [78] researchers stated that trustworthiness in e-commerce sites affects the repurchase intention of consumers.

Brand loyalty is the most significant and primary factor in developing repurchased intentions [63, 48]. Trust could be developed if the product's features matching with the expectations of customers. Customers who are content with brand it is difficult for them to replace their favorable product with some other new brand [78].

III. Research Methodology

This study intends to assess the impact of usefulness as perceived by the user, perceived ease of use, brand trust and satisfaction of the customer on brand loyalty of sports shoes consumers making online purchases. Also it aims to assess the effect of brand loyalty on repurchase intention of virtual consumers. Purposive sampling method was adapted to select a sample of 1000 consumers. Questionnaire was taken from existing studies and data was collected on a scale of 1 to 7 (Strongly Disagree to Strongly Agree). Total 740 responses were received, out of which 610 were fit for use and further data analysis. The software used to analyze the data was PLS-SEM. The data was analyzed through PLS-SEM technique. Measurement model was evaluated through internal consistency, convergent validity and discriminant validity. The structural model was assessed with hypothesis testing results, r square value and model fit indices.

IV. Analysis

A model was made through structural equation modelling which depicted the relationship between various contructs related to the study which are perceived ease of use, perceived usefulness, customer satisfaction, brand trust, brand loyalty and repurchase intention.
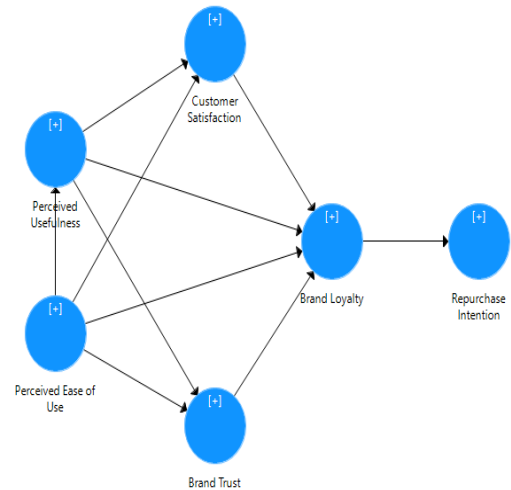

Figure1. Proposed Structural Model

V. Results

Descriptive Statistics
Table 1 shows the descriptive statistics, which indicates that mean score of all the constructs ranges in between 4.82 and 5.715. Furthermore, the standard deviation ranges from 1.336 to 1.883. Out of 610 respondents, 381 were male and 229 were female online users of sports shoes brand.

Table 1. Descriptive Statistics Results

Construct	Mean	SD
Brand Loyalty	4.82	1.336
Brand Trust	5.331	1.458
Customer Satisfaction	4.88	1.763
Perceived Ease of Use	5.715	1.832
Perceived Usefulness	5.663	1.362
Repurchase Intention	5.422	1.883
Number of Respondents	Total	
Male	610	381
Female		229

Source: Author's calculation

Measurement Model Evaluation Results
Measurement model evaluation refers to the confirmation of all indicators loading on its respective constructs and thereby establishing confirmatory factor analysis (CFA). The statements in this study were adapted from existing literature, so EFA was not required to be performed. So, CFA was directly performed and confirmed through factor loading results, convergent and discriminant validity.
Table 2 depicts outer loadings of all the indicators, which were found to exceed the minimum limit of 0.70 [65], explaining the loading of each indicator on its respective construct. Cronbach alpha, composite reliability and rho_A values were computed to assess internal consistency. Table 3 depicts internal consistency of all constructs to lie above the

minimum limit of 0.7. In order to confirm convergent validity, AVE values of all the constructs were computed and as depicted in Table 4, all the values are much above the minimum limit of 0.5.

Table 2. Outer Loadings Results

Brand Loyalty	
BL1	0.786
BL2	0.896
BL3	0.825
BL4	0.850
BL5	0.789
Brand Trust	
BT1	0.803
BT2	0.901
BT3	0.875
BT4	0.866
Customer Satisfaction	
CS1	0.788
CS2	0.890
CS3	0.751
CS4	0.869
CS5	0.872
Perceived Ease of Use	
PEU1	0.882
PEU2	0.842
PEU3	0.889
PEU4	0.753
Perceived Usefulness	
PU1	0.879
PU2	0.875
PU3	0.863
Repurchase Intention	
RI1	0.791
RI2	0.755
RI3	0.797
RI4	0.799
RI5	0.733

Source: Author's calculation

Table 3. Construct Reliability and Convergent Validity Results

Construct	Cronbach's alpha	rho_A	Composite Reliability	Average Variance Extracted
Brand Loyalty	0.849	0.856	0.894	0.629
Brand Trust	0.884	0.886	0.920	0.743
Customer Satisfaction	0.876	0.891	0.911	0.672
Perceived Ease of Use	0.863	0.874	0.907	0.710
Perceived Usefulness	0.843	0.848	0.905	0.761
Repurchase Intention	0.789	0.794	0.855	0.542

Source: Author's calculation

For the purpose of establishing discriminant validity, HTMT ratio was computed. As depicted in Table 4, HTMT ratios were less than the maximum limit of 0.85 [35] for all the constructs. Thus, discriminant validity was confirmed.

Table 4. HTMT Ratio Results

	Brand Loyalty	Brand Trust	Customer Satisfaction	Perceived Ease of Use	Perceived Usefulness	Repurchase Intention
Brand Loyalty						
Brand Trust	0.662					
Customer Satisfaction	0.846	0.660				
Perceived Ease of Use	0.830	0.636	0.714			
Perceived Usefulness	0.681	0.448	0.580	0.557		
Repurchase Intention	0.830	0.441	0.633	0.666	0.702	

Source: Author's calculation

Structural Model Evaluation Results

Structural model was evaluated through hypothesis testing and evaluation of r square. As depicted in Table 5, hypothesis testing results shows that brand loyalty is a strong predictor of repurchase intention ($\beta=0.684$, $p=0.000$) which supports H10. Perceived ease of use strongly leads to customer satisfaction ($\beta=0.521$, $p=0.000$) which supports H5. Similarly, it also predicts brand trust ($\beta=0.486$, $p=0.000$), perceived usefulness ($\beta=0.475$, p-0.000) and brand loyalty ($\beta=0.311$, $p<0.05$) which supports H4, H3 and H9. Customer satisfaction strongly predicts brand loyalty ($\beta=409$, $p=0.000$) which supports H8. Perceived usefulness also leads to brand loyalty ($\beta=0.190$, $p<0.05$) But, the relationships of perceived usefulness with customer satisfaction, perceived usefulness with brand trust and brand trust with brand loyalty were not found to be significant; thereby not supporting H2, H6 and H7.

Table 5. Hypothesis Testing Results

Hypothesis	Structural Relationship	Beta Values	P Values	Assessment
H1	Perceived Usefulness -> Brand Loyalty	0.190	0.002	Supported
H2	Perceived Usefulness -> Customer Satisfaction	0.253	0.065	Not Supported
H3	Perceived ease of use -> Perceived Usefulness	0.475	0.000	Supported
H4	Perceived ease of use -> Brand Trust	0.486	0.000	Supported

H5	Perceived ease of use -> Customer Satisfaction	0.521	0.000	Supported
H6	Perceived Usefulness -> Brand Trust	0.156	0.167	Not Supported
H7	Brand Trust -> Brand Loyalty	0.093	0.211	Not Supported
H8	Customer Satisfaction -> Brand Loyalty	0.409	0.000	Supported
H9	Perceived ease of use -> Brand Loyalty	0.311	0.002	Supported
H10	Brand Loyalty -> Repurchase Intention	0.684	0.000	Supported

Source: Author's calculation

Furthermore, r square value was computed to assess the variance caused in the dependent variables in this study. As depicted in Table 6, the r square value of brand loyalty was computed to 0.697. This clearly indicates that collectively brand trust, perceived ease of use, perceived usefulness and customer satisfaction is causing a variance of 69% in brand loyalty. Moreover, brand loyalty was found to create a variance of 46% in repurchase intention of sports shoes during online buying.

Table 6. R Square value

Dependent Variable	R Square	R Square Adjusted
Brand Loyalty	0.697	0.685
Repurchase Intention	0.468	0.463

Source: Author's calculation

VI. Discussion

This study is an attempt to determine whether perceived usefulness and perceived ease of use have a positive impact on customer satisfaction, Trust, Brand Loyalty, and Repurchase Intention. Data analysis found that all the hypotheses showed significant results but perceived usefulness did not affect brand trust and customer satisfaction. Trust did not affect loyalty significantly. The results show that customer satisfaction affects brand loyalty and brand loyalty further impacts repurchase intention. In addition, perceived ease of use impacts perceived usefulness, brand loyalty, brand trust and Customer Satisfaction.

VII. Conclusion

Data analysis has confirmed that there is positive and significant customer satisfaction on loyalty and brand loyalty influences the repurchase intention of online consumers. This means we need to satisfy customers by providing them the better quality of products as compared to their competitors. By focussing on the customers' needs, and by knowing and understanding the wants of the customer through proper research. Satisfying customers in better ways can be a competitive advantage for any firm [53]. To meet customer satisfaction, companies should put best foot forward to provide the best quality services and products to their customer [43]..A positive and significant influence of loyalty on the repurchase intention of customers. It emphasized that brand loyalty toward products plays a vital role in retaining the customer in a highly competitive scenario. The continued survival and growth of a firm depend on the loyalty of customers [44]. The finding of this study showed that brand loyalty has a positive impact on the repurchase intention of customers [66]. The person who is repeating the purchase is inclined toward a particular brand and shows his repurchase intentions [7]. Perceived ease of use is predominately

affecting perceived usefulness, customer satisfaction, brand trust, and brand loyalty to an extent.

VII. Managerial Implications

This study provides important inputs for the E-Commerce companies as it states that perceived ease of use impacts perceived usefulness which is a construct of AI, data mining and IOT, Customer satisfaction, Brand Trust and Brand Loyalty[72]. It means that the companies should design and develop a mechanism, platform, application or a website which is easy to use by the customer which can be done through AI,IOT and machine learning[80]. If the level of ease of ease is higher it will attract and motivate prospective customers and the satisfaction level and Brand Loyalty will increase significantly. If the website is too complicated to understand then there are chances that the customer will switch to another website. Also, perceived usefulness impacts Brand Loyalty significantly

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