Investigating the impact of website attributes on online purchase intention with the mediating role of consumer internal states: an approach from the stimulus-organism-response model

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ABSTRACT:

As the number of online stores expands, so does the competition. Therefore, one of the essential things in this situation, for online retailers to do, is how to attract more and more consumers to visit their website and how to make a pleasant shopping experience for them, so that they buy the products offered. In this study, The Stimulus-Organism-Response (S-O-R) model was used to better understand online purchasing behavior, where Stimulus refers to product introduction and personalization, and Organism refers to the consumer's trust and satisfaction that could lead to the Response resulting in Online Purchase Intent. The researchers collected 384 questionnaires from customers based in Karaj who have at least once experienced purchasing products from Iranian online stores. By implementing the Partial Least Squares Structural Equation Modelling software to measure the correlation between variables, the result of the research found that product introduction and personalization as stimulus have a significant influence on consumer trust and satisfaction, which lead to the response in online purchase intent.

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1. Introduction

With the advent of the Internet and the Web spreading in the world, great changes have taken place in various aspects of human life. Trade is no exception to these developments, and we could say it has witnessed so many developments. One of the most tangible developments can be clearly seen in the emergence of online retail. In recent years, online retail has developed so much that it can be said to have become an important part of people's lives. As the number of online stores expands, so does the competition. In this competition, it is very important to inspire a sense of satisfaction and trust in the customer, as well as to try to create a good feeling and a pleasant shopping experience for them.

Online shops websites are important places that enable retailers to interact with consumers while enriching their shopping experiences.

Singh's (2019) study shows that the ability of consumers to interact and engage with a website through their understanding as well as the shopping experience leads to overall satisfaction in them.

Previous research has confirmed the impact of website design and atmosphere on consumers' emotional states and confirms that it has a great impact on how consumers react.

Investigating the effect of online retail space and other environmental stimuli on online consumer behavior is essential in order to increase the capacity of online retailers to attract and retain online shoppers. Expanding the research boundaries of the S-O-R model and promoting the sales growth of online stores has great scientific importance and practical prospects. However, there are still few studies that have addressed the influence of the store environment on online consumer behavior.

Moreover, most of the existing studies in this field have been conducted in Western countries, but the culture of different nations may affect consumers' reactions to online stores.

This research, with the help of the S-O-R model framework, examines the impact of product introduction and personalization as the stimulus on consumer internal states (trust and satisfaction) and eventually on online purchase intention.

Research theoretical foundations and development of hypotheses

Stimulus-Organism-Response Model: SOR model was introduced by Mehrabian and Russell in the environmental psychology field in 1974 and in the field of retail, it was first used by Donovan and Rossiter in 1982 These researchers examined the relationship between emotional states caused by different environments and the behavioral reactions of individuals. The stimulus-organism-response model states that physical stimuli could affect a person's internal states such as (pleasure, arousal, and control) and that these feelings, which originate from the

environment, shape a person's response and reactive behaviors. (Mehrabian and Russell, 1974; Zhu et al,2020)

SOR model stimuli in research: In this research, the features of the website are considered as stimuli, which include product introduction and personalization. Singh (2019) examined the Impact of website design on flow in online retail environments. And found out that designing intuitive and attractive websites for online retailers is very important because it creates a positive experience that leads to more online shopping, customer satisfaction, and loyalty.

product introduction: It is the way of presenting the product, expressing its specifications and features, as well as images and videos or any other tool that is used to make the product more tangible for the audience. Among all the studies that have dealt with this category, we could refer to the research of Kim et al. (2020), which examined the effect of product images on the intention to buy and found that users were more likely to buy in response to a 360-degree rotating image than a two-dimensional constants image. Based on these explanations, this study proposes the following hypotheses.

H1: product introduction has a positive and significant effect on customer trust in the online store.

H2: product introduction has a positive and significant effect on customer satisfaction with the online shopping experience.

Personalization: Website personalization is the process of creating custom experiences for visitors to a website. It allows the website to provide unique experiences tailored to the desire and needs of visitors, rather than providing a vast experience. Ho Nguyen et al. (2022) examined and confirmed the effect of personalization on repurchase intention. The present study proposes the following hypotheses in this regard.

H3: Personalization has a positive and significant effect on customer trust in the online store.

H4: Personalization has a positive and significant effect on customer satisfaction with the online shopping experience.

SOR model organisms in research: Internal and emotional states and attitudes that are considered organisms include trust, and satisfaction. Zimmerman (2012) states that trust and satisfaction are the key dimensions affecting emotional and attitudinal states as well as predicting consumer response behavior.

Trust: The concept of trust has been defined inconsistently by many authors in various fields of economics, social psychology, sociology, management, marketing, and information systems. One of the most accepted definitions of trust is: "Surrender of one party to the action of the other

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party, based on the expectation that the trusted party will perform the specific action that is important to the trusting party regardless of the ability of the trusting party to control or monitor the trustee.". (Mayer et al, 1995)

Ha and Nguyen (2019), have described the positive effect of trust on consumers' intention to buy online, in their research. This study also intends to examine the following hypothesis in this regard.

H5: Trust has a positive and significant effect on the customer's purchase intention.

Satisfaction: Customer satisfaction is a very important concept in marketing (Kotler & Armstrong, 2010). Tse and Wilton (1988) define customer satisfaction as "a consumer's reaction to assessing the perceived difference between previous expectations and actual product performance after consumption." Giese and Cote (2000) hypothesize that customer satisfaction is identified by a response (cognitive or emotional) that is related to the shopping experience and occurs at a specific time (after purchase / after consumption).

H6: Satisfaction has a positive and significant effect on the customer's purchase intention.

SOR model response in the research: The behavioral response that is considered as the response in this research is the purchase intention.

Purchase intention: According to Kotler & Armstrong (2010), purchase intention is in the stage of evaluating the options in the customer's decision-making process. purchase intention refers to what the consumer intends or thinks to buy. A person who intends to buy a product shows a higher actual purchase rate compared to customers who do not intend to buy. purchase intention means a situation between the customer and the seller in that the customer is ready to trade with the seller. In other words, purchase intention is defined as the mental stage or decision to act in the decision-making process in which the consumer shows a real desire to buy a product or service (Wells et al, 2011). Spears and Singh (2004) describe purchase intention as the buyer's desire to buy a product. The study by Ling et al. (2010) theorized that behavioral response, especially in the form of purchase intention, is one of the main consequences associated with the internal processing of information, which is also known as an aspect of emotional state.

and there are 4 more hypotheses in the research regarding the mediator's role:

H7: product introduction has a positive and significant effect on the customer's purchase intention with the mediating role of trust.

H8: product introduction has a positive and significant effect on the customer's purchase intention with the mediating role of satisfaction.

H9: personalization has a positive and significant effect on the customer's purchase intention with the mediating role of trust.

H10: personalization has a positive and significant effect on the customer's purchase intention with the mediating role of satisfaction.
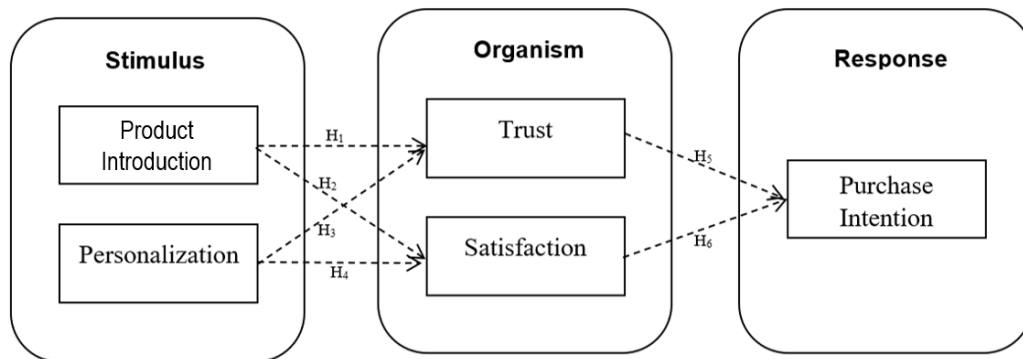

Figure 1. Research conceptual model

2. Methodology

This study was conducted as the descriptive research and survey research technique is applied to provide a general overview of the data collection. The information related to the background and literature of the research and some necessary information to analyze the data have been collected through the library and the field method. Furthermore, the data collection tool is an online questionnaire that was distributed via email and social networks.

The statistical population of this study is people based in Karaj who have at least once experienced purchasing products from Iranian online stores.

The research questionnaire consists of 5 demographic questions, and respondents are asked to name an online store and answer specialized questions based on their shopping experience from the store. The specialized questions of the questionnaire consist of 15 items that measure the research variables. Based on the objectives and nature of the research topic, this questionnaire has been prepared using the Likert scale (five options) from strongly disagree to strongly agree. It should be noted that the items used in the questionnaire are adapted from previous research conducted in this field.

3. Findings

The demographic information of the sample is given in the table below.

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Table 1. Demographic data

Variables		Frequency	%	Variables		Frequency	%
Gender	Female	217	56.5	internet usage type	Web surfing	243	
	Male	167	43.5		Trade in goods and services	112	
Age	18-25	59	15.4		Using social networks and applications	297	
	25-35	137	35.7		Checking emails	179	
	35-45	134	34.9	Online shop	Digikala	202	52.6
	45 and older	54	14.1		Banimode	82	21.4
Education Level	Diploma	12	3.1		Okala	12	3.1
	Associated diploma	25	6.5		Khanoumi	5	1.3
	Bachelor degree	133	34.6		Baneh.com	3	0.8
	Master's degree	168	43.8		Snappmarket	69	18
	Doctoral Degree	46	12		Emalls	4	1
Daily internet usage	Less than 1 hr	11	2.9		Modiseh	2	0.5
	among 1-2 hr	70	18.2		Bazargam	1	0.3
	among 2-4 hr	116	30.2		Eekala	1	0.3
	More than 4 hr	187	48.7		Pinket	1	0.3
					Biziket	1	0.3
					Fardinkesht	1	0.3

In order to test the hypotheses, in this research, the structural equation model (SEM) and the partial least squares method have been used. The SEM model's ability to test theories in the form of equations between variables is One of the most important reasons why researchers are fond of using it. since this method can explain the complexity of the model and the relationships between variables. non-necessity in the normality of data and also the consideration of measurement error is some of their other reasons.

The interpretation of the Kolmogorov-Smirnov test showed that the distribution of research data was abnormal. Therefore, in order to test the measurement model, exploratory factor analysis and confirmatory factor analysis, as well as Cronbach's alpha and combined reliability, convergent validity and divergent validity have been used. In the preliminary study, the validity and reliability of the measurement tool (questionnaire) in measuring the research variables were ensured by obtaining the opinions of professors and experts and applying their effective guidelines.

Convergent validity was also assessed by calculating the Average Variance Extracted (AVE), and the correlation of variables with their indices was confirmed in the divergent validity study. Cronbach's alpha test and SPSS software were used to assess the reliability. Table 2 declares Cronbach's alpha, combined reliability, homogeneous reliability coefficient, and AVE values for the research questionnaire, and table 3 states the root meaning of the Average Variance Extracted and the correlation between the variables of the research questionnaire.

Table 2. Cronbach's alpha, Average Variance Extracted, Composite reliability and Rho data

	Variables	Number of items	Average Variance Extracted	Composite reliability	Cronbach's alpha
Stimulus	Product introduction	6	0.673	0.904	0.903
	Personalization	2	0.775	0.710	0.710
Organism	trust	2	0.814	0.780	0.772
	Satisfaction	2	0.783	0.724	0.723
Response	purchase intention	3	0.635	0.714	0.712

Table 3. $\sqrt{\text{AVE}}$ and Correlation between research questionnaire variables

	Product introduction	personalization	trust	satisfaction	purchase intention
Product introduction	**0.820**				
personalization	0.802	**0.880**			
trust	0.816	0.864	**0.902**		
satisfaction	0.740	0.775	0.757	**0.885**	
purchase intention	0.719	0.747	0.713	0.703	**0.797**

By confirming the validity and reliability of the measurement model, it is time to measure the adequacy of the model through the relationships between latent variables. To do so, in this research, Validation metrics R^2 and Q^2 have been used. The calculated values of the mentioned indices are presented in table 4.

Table 4. Q^2 and R^2

	Variables	Q^2	R^2
Organism	trust	٠.٧٨٦	٠.٧٨٩
	Satisfaction	٠.٦٣٦	٠.٦٤٠
Response	purchase intention	٠.٥٨٧	٠.٧٨٩

The range of R^2 is between 0 and 1, the higher level, the higher the predictive accuracy. According to the defined standards, an R^2 value greater than 0.67 indicates a high predictive accuracy, a range of 0.33 - 0.67 indicated a moderated effect, R^2 between 0.19 and 0.33 indicates a low effect, while the R^2 value below 0.19 is considered unacceptable (the exogenous variables unable to explain the endogenous dependent variable). While a Q^2 value of greater than zero for a particular reflective endogenous latent variable indicates the path model's predictive relevance for a specific dependent construct.

The next step after examining the measurement model is to test the research hypotheses. therefore, the partial least squares method and Smart PLS3 software were used to calculate path coefficient values (β) and significance coefficient (t-value). in order to confirm the relationship between the variables and the research hypothesis at the 95% confidence level, the path coefficient (β) needs to be more than 0.3 and the adequate significance coefficient (t-value) is more than 1.96. Figure 2 and Tables 5 and 6 present the results of this research calculation.
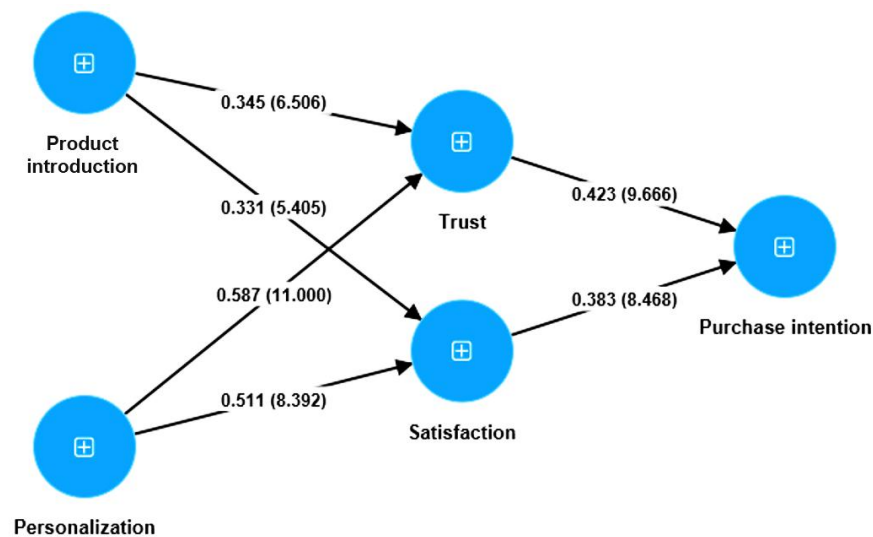

Figure 2. path coefficient (Significance factor) of the model

Table 5. Structural model evaluation results to test hypotheses

hypotheses	Path	Path coefficient (β)	Significance factor (t-value)
H₁	Product introduction-> Trust	0.345	6.506
H₂	product introduction ->Satisfaction	0.331	5.405
H₃	Personalization ->Trust	0.587	11.000
H₄	Personalization ->Satisfaction	0.511	8.392
H₅	Trust ->Purchase intention	0.423	9.666
H₆	Satisfaction ->Purchase intention	0.383	8.468

In order to evaluate indirect relationships in the research, such as the mediator role, Sobel's test has been used. Sobel's test for making inferences about the indirect effect coefficient is based on the same inference theory used for the direct effect. In the Sobel test, if the Z-value criterion exceeds 1.96, it can be confirmed that the mediating effect of a variable is significant at the 95% confidence level. The results of the Sobel test, containing Z-value, are presented in table 6.

Table 6. Sobel test results

hypotheses	Path	Sobel test (t-value)
H_7	Product introduction-> Trust->Purchase intention	5.370
H_8	product introduction ->Satisfaction ->Purchase intention	4.553
H_9	Personalization ->Trust ->Purchase intention	7.243
H_{10}	Personalization ->Satisfaction ->Purchase intention	5.949

4. Discussion and Conclusion

According to the information presented in Figure 2 and Tables 5 and 6, it is clear that; There is a positive and significant relationship between product introduction and trust in customer's online shopping experience, and eventually purchase intention which is consistent with the studies done by Kim et al. (2020) and Zimmerman (2012).

Also, the existence of a positive and significant relationship between product introduction and Satisfaction and its effect on purchase intention was confirmed, which is in line with the results of studies by Singh (2019) and Zimmerman (2012).

The present study, in line with the research of Su et al. (2022) confirms the existence of a positive and significant relationship between Personalization and trust although Bol et al. (2018) imparts otherwise.

The results of this research also confirm the existence of a positive and significant relationship between Personalization and Satisfaction., as in Ilham (2017) research, and indicate that trust has a positive and significant relationship with Purchase intention which is in line with the results of previous studies such as the studies of Ha et al. (2019) Ventre and Kolbe (2020) and Qalati et al. (2021).

A positive and significant relationship between Satisfaction and Purchase intention was also confirmed, in line with the findings of the study of Zhu et al. (2020).

These days, in order to increase the intention of customers to buy and sell their products, retailers spend a lot of money to create a pleasant and enjoyable store environment for customers. Utilizing appropriate environmental components as a strategic marketing tool can increase the

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profitability and popularity of stores by influencing the inner feelings and behavioral reactions of customers. Online retail stores can also attract the opinion of customers to return to their store or even increase their purchase intention by identifying factors affecting emotional states. The results of this study shows that marketers as well as online store owners need to focus on these two dimensions of the website attributes to retain and attract customers. Therefore, in order to attract more customers, online retailers must pay more attention to the personalization of their websites and make an effort to make product introduction in a way that leads to a pleasant shopping experience.

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