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An empirical study of website personalization effect on users intention to revisit ecommerce website through cognitive and hedonic experience

Dr. Darshana Desai[#1]

[#]Asst. Prof., Indira College of Engineering & Management,

Dept of MCA, Pune, India

[1]darshana.j.desai@gmail.com

Abstract:

Personalization is used as an emerging strategy to reduce information overload, attract users and leveraging business by online web portals in recent years. However, less attention is given to study what are different design aspects of web personalization and how it impacts on users decision making. To address this gap, this study draws on both Stimulus-Organism-Response theory and Information overload theory to propose a model for users information processing and decision making. Different personalization aspects induce cognitive and hedonic user's experience during interaction with websites which in turn generates satisfaction and affect on users decision making to revisit the personalized website. This research identifies personalization aspects used in e-commerce websites as information, navigation, presentation personalization and proposed research model and validated it empirically. Using Exploratory Factor Analysis supports the factors identified with model as information, navigation, presentation personalization, cognitive, hedonic experience, satisfaction and intention to revisit the personalized website. Confirmatory Factor Analysis result supports proposed model representing interrelation of constructs information, presentation, navigation, cognitive, hedonic experience, satisfaction and intention to revisit. The model is tested with the data collected from personalized ecommerce website users. 547 out of 600 data from ecommerce website users were used for analysis and for testing the model. Exploratory Factor Analysis of responses extracted seven factors information, presentation, navigation personalization, cognitive experience, hedonic experience, satisfaction and intention to revisit. Confirmatory Factor Analysis confirms model with RMSEA, CFI, NFI value near to .9 which indicates good model fit for ecommerce websites. Structural Equation Modelling results indicates correlation between personalization aspects i.e. information, presentation, navigation personalization and users satisfaction and intention to revisit through cognitive and hedonic experience. Structural Equation Modelling technique result validates proposed model and reveals that different design aspects of personalized website design information, presentation and navigation personalization, plays vital role in forming user's positive cognitive experience by inducing perceived usefulness, perceive ease of use, enjoyment and hedonic experience of control leading higher satisfaction level and revisit of e-commerce website.

Keywords: *Web Personalization, Information Personalization, Navigation Personalization, Presentation Personalization, Cognitive experience, Hedonic experience, satisfaction, perceived ease of use, perceived usefulness, enjoyment, control*

I. Introduction:

With the advent of internet, website has invaluable source for information exchange for users and E-tailers. Today every part of business and social media worldwide are using the website as an integral part of business to interact with the customer, brand promotions, marketing, after sales services and support. Diversity of its users and complexity of web application leads to information overload and one-size-fits-all issue. Cognitive limitation of user information processing lead to lost users in the world of information and result into inefficiency in decision making. Website personalization has emerged as an effectual solution to overcome this difficulty of information overload in recent years. Many firms are developing personalized websites by investing in development of personalization tools to attract the users and retain the customers. Ecommerce websites like amazon.in, flipkart.com, ebay.in etc provide personalization features, personalized offerings with categories of products and services to attract and retain users. Previous research shows significant effect of perceived usefulness of personalized e-services [22], users interest in personalized services[15], and indicated that various personalized services affect differently on customer satisfaction[8,9]. Web personalization has become a pervasive phenomenon in a wide range of web applications, e.g. Internet banking, e-commerce etc. Accordingly, a boom in research on real-world implementation of personalization features has been witnessed recently, and typically focusing on the impact of isolated, one-dimensional personalization features on users. It has been recognized that necessary and well-designed personalization features facilitate the effectiveness, perceived usefulness, perceived ease of use and efficiency as well as the feeling of enjoyment, control and satisfaction while using a website. Such features have become increasingly diverse and multifaceted in Information System (IS) and Human Computer Interaction (HCI) Research. In light of this, and in view of a continuing gap in the contemporary literature, we would like to investigate different personalization aspects, the role played by these aspects of personalization used in ecommerce website design and how they impact the user intention to revisit or reuse the website. We would also like to study personalization design aspects of e-commerce websites and its impact on user information processing and aspects related to it. This paper is organized as follows: section II discusses previous studies on various personalization dimensions. Section III represent Research Framework derived from previous studies and corresponding hypotheses. Section IV describes research methodology, research design and data collection with analysis. Section V summarizes the results of the data analysis with EFA, CFA, and SEM. Results are discussed with major findings, theoretical and practical contributions, limitations, and possible directions for future work in section VI.

II. Literature Review

Personalization is the process of catering tailored content, website structure and look & Feel of Website with presentation by identifying users' implicit and explicit needs. Personalization has been researched by large community of researchers from diverse fields; personalization research according to literature review is classified into three areas of research [26]. The first stream researches personalization technologies used like mining data, adaptable and adaptive personalization, and push technologies. The second stream researches user-centered personalization, e.g. users' working, privacy issues, and the application context. The third stream of research investigates presentation features which users personalize, and how the effectiveness of the website should be measured [7]. In different areas personalization has been defined as a toolbox, a feature, or a process.

Personalization Dimension:

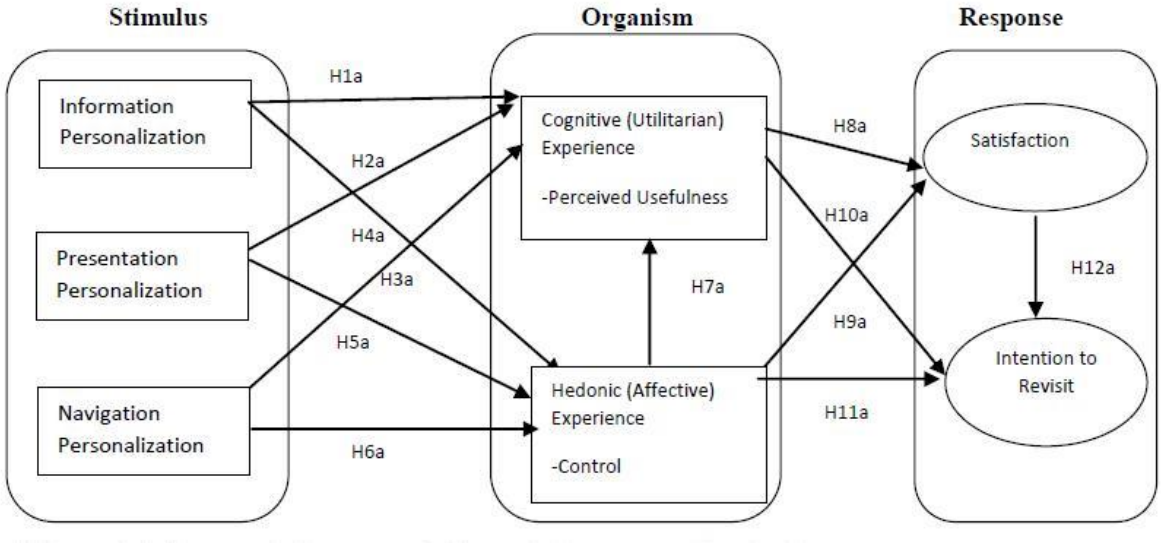
In previous literature, there exist at least three perspectives in interpreting the effect of personalization: information and effort reduction, personal persuasion, and relationship building [24]. The relationship building perspective adopts the concept of relationship marketing, and treats personalized services as a tool for building a close relationship between the sender and the receiver. Personalized messages intend to develop positive affection between the sender and the receiver. This feeling may include care, trust, and other related emotions. For instance, Komiak and Benbasat(2006)[1] proposed a trust- centered perspective in studying the adoption of personalized recommendation agents. Both cognitive trust and emotional trust have been found to influence the intention to adopt personalization agents. This finding indicates that personalized services induces individual's emotional process and give the user a sense of togetherness with the personalized service and its provider. In addition, Liang, et al. (2009a)[21] found that perceived care (an emotional factor) was more influential than transaction costs reduction (a rational factor) on the users' perceived usefulness with personalized services offered by online bookstores. These findings suggest that personalization may have significant affective influence on consumer.

Among all the issues pertaining to personalization, "what" to personalize is the most fundamental problem researched for the effective personalized website design. Different design aspect of personalization may have different impact on users' information processing and decision making. Moreover, the different roles played by different personalization features in website design have not been comprehensively investigated. Effective personalized website design is an important issue to be researched to meet the expectation and dynamic need of the users. Different design aspects of personalization impact differently on user's perception, and fulfill different kinds of user requirements. However in previous literature, studies often have focused on only one or more aspects of personalization, e.g. information personalization [4, 17, 1, 8, 9, 27, 30] or visualization [7, 23] but little is researched on effectiveness of the design aspects of personalization. Few studies investigate the roles played by multiple dimensions of personalization [9, 30]. In fact, the existing literature has serious deficit in actionable guidance on personalization design issues and effective personalized web design. To address this research gap, this study comprehensively reviews literature in personalization and develops methodologically construct framework for personalized website design and test the impact of different aspects of personalization. Based on environmental psychology theory and TAM, this paper investigates the different roles played by dimensions of personalization, i.e. information personalization, presentation personalization, and navigation personalization.

III. Research Framework:

This research aims to study, firstly various personalization design aspects i.e. information personalization, presentation personalization, and navigation personalization used in websites which are web stimuli, secondly impact of personalization aspects (Web Stimuli) on hedonic, utilitarian state of user, thirdly its effect on user's behavioral response and satisfaction. Moreover, interaction among cognitive/hedonic experience, utilitarian/affective state, satisfaction and intention to revisit are also taken into consideration, which is missing in prior literature.

The proposed research model is derived from the environmental psychology theory, S-O-R (Stimulus- Organism-Response) theory, Information Overload theory, TAM (Technology Acceptance Model) and Information System success model. Definitions of different personalization design aspects are presented based on environmental psychology. Impact of different aspects of personalization effects on decision making process, is described with cognitive/ hedonic and utilitarian experience of user like perceived ease of use, perceived usefulness, enjoyment and control. User with positive hedonic and utilitarian experience has more satisfaction and is likely to revisit / reuse the personalized websites. More specifically, this study focuses on how user perceives personalization aspects and their influence in decision making to reuse the website. Hypotheses are proposed to address the research questions.



[Figure 1: Research Framework for website personalization]

Eroglu et al. (2001) defined website stimuli e.g. environmental cues in two different categories like low task-relevant and high task-relevant cues presented online. Low task-relevant cues are responsible to create a mood or an image for the online website with environment or aesthetic view of website. High task-relevant cues comprise textual contents represented verbal or pictorial contents and where as low task- relevant cues represent peripheral contents like color, background themes, typestyles, fonts and images. Research shows that low task-relevant cues can lead to a more pleasant online shopping experience, these cues do not directly influence the completion of the shopping task.[10].

Personalization is the process of tailoring website by satisfying user's implicit and explicit need [7, 8]. The objective of web personalization is to deliver right content to users based on its individual implicit or explicit preferences at the right time to induce a favorable response to the personalized offerings and to increase user satisfaction to build loyalty for future interaction. Personalization is the process perceived to provide information / interface / navigation personalized to cater unique needs of each user. Information personalization is the extent to which information can be catered according to user's' implicit or explicit requirement [7]. Users can specify their requirements of the information through customization choices to search or get recommendations from the website. Presentation personalization is the extent to which interface can be modified according to user implicit or explicit requirement (e.g. color, layout, background, themes etc.). Navigation personalization

is the extent to which navigation can be modified in according to user requirement (e.g. new tabs and re-organized the elements to new tabs). User can reorganize the website structure by creating new categories and move information into them or generating quick links.

Research in environmental psychology conceptualized the affective states along three dimensions [11], i.e. pleasure, arousal, and dominance (PAD). Cognitive state refers to user internal mental processes and states including attitudes, beliefs, attention, comprehension, memory, and knowledge. User's cognitive or utilitarian and affective/hedonic states are induced by environmental stimuli and also influence response. Users experience utilitarian benefit with the relevant personalized information reduces information search.

Hypotheses:

Personalization and Cognitive/Utilitarian Experience:

User experiencing perceived usefulness of information and ease of use of website are more likely to enjoy using ecommerce website and creates positive shopping experience. So researcher say that users' cognitive/utilitarian experience is associated with perceived usefulness, ease of use and enjoyment. Content of Personalization can be considered as degree to which customers are provided with uniquely tailored information in the form of text, look and feel of website and structure on the basis of users' individual needs as gathered with the consumer's interaction on website visit [3, 20, 29]. Personalized content reduces the cognitive effort needed by user in order to process information, proposed hypotheses as:

H1a: Users' Cognitive Experience is positively associated with Information personalization.

The perceived ease of use while interacting with website and personalized layout influences consumers' internal states and behavior [24]. Wang 2010[9,30] posit that Navigation personalization is positively associated with user's' cognitive state perceived usefulness and ease of use. Navigation personalization facilitates users with system initiated personalized structure that reduces users efforts of searching for information. Also, it provides quick links to minimize navigations, resulting in less cognitive load, user feel enjoyment and increased cognitive experience with perceived ease of use and usefulness. User initiated personalization can be produced by explicitly giving users choice of quick links and producing personalized website structure, hypothesis can be proposed as:

H2a: Users' Cognitive Experience is positively associated with presentation personalization.

Modification of the interface to users' need helps, reduce information processing complexity and facilitate the effectiveness and efficiency with which user can personalize a website[9,14]. When there are more choices in modifying the presentation feature, e.g. layout and background, the higher level of personalization will give more flexibility in alleviating the complexity. Therefore, more presentation personalization facilitates the user task effectively. Personalized interface induce positive cognitive feeling in user with improved aesthetics, finds ease of use and enjoy operating with the personalized system [23]. So researcher posit hypothesis:

H3a: Users' Cognitive Experience is positively associated with navigation personalization.

Personalization and Hedonic experience

Personalization provided with the choices to users generates high level of perceived control and users experience flow with personalization process [9,16] are more likely to have comfort level and enjoy[9] the interaction with the website. So author postulate hypotheses

H4a: Users' Hedonic Experience is positively associated with information personalization.

Website content like structure of information presentation and navigation positively persuade the consumer's perception of being in control during the online shopping episode in interaction [12]. So, researcher proposes:

H5a: Users' Hedonic Experience is positively associated with presentation personalization.

H6a: Users' Hedonic Experience is positively associated with navigation personalization.

Greater customer control of the shopping experience increased the pleasure of shopping [8,11]. Users with a high level of perceived control during usage of personalized website are expected to feel increase in high comfort level with the activity. Thus, they would be more inclined to feelings of joy using the website more frequently [8, 9]. Studies in Human Computer Interaction also found that more control correlates with enjoyment [23]. Therefore, it is proposed that:

H7a: Users' Cognitive Experience is positively associated with hedonic experience.

DeLone and McLean (1992) reported that user satisfaction has been widely adopted in practice as a substitute measure of information systems effectiveness [5]. So, author posits that:

H8a: Users' satisfaction is positively associated with cognitive experience using personalized website.

Prior research suggested that emotions mediate the impact of environment on user intention [19]. We expect the effects on using a Web Portal to be similar. If the users enjoy their experience in interacting with the Web Portal, they are more likely to visit the Web Portal again. Echoing TAM3 research study showed that the degree of perceived ease of use positively influence users perception of usefulness and their intention to continue to use the website [28].

H9a: Users' intention to revisit is positively associated with cognitive experience using personalized website.

Research shows that accurate personalization process reduces information overload, increases user involvement with increase efficiency, performance and satisfaction [7, 17, 22, 28]. User with positive hedonic experience of control with personalization features like user interface, information, and navigation over website with involvement using website is more satisfied and likely to revisit the personalized website. So author propose hypothesis as:

H10a: Users' satisfaction is positively associated with hedonic experience (Control) using personalized website.

H11a: Users' intention to revisit website is positively associated with hedonic experience (Control) using personalized website.

DeLone & McLean's (1992) identified satisfaction and usage of system to measure the Information system success which is found as an antecedent of information and system quality [4]. DeLone & McLean's (2003)[5] in Updated IS Success Model states that user's intention to reuse the system is highly associated with Satisfaction. So authore propose hypothesis as:

H12a: Users' intention to reuse/revisit the personalized website is positively related to user satisfaction.

IV. Research Methodology:

The survey method is used for data collection to test the proposed research model/framework. Author collected data from web users using both ecommerce websites having personalization features on their web portal. Selection of website was done with most popular and frequently visited ecommerce personalized websites for study. Besides dimensions of personalization (i.e. information personalization, presentation personalization, and navigation personalization), all other research variables are measured using multiple-item scale adapted from prior studies. Constructs of information personalization, presentation personalization, and navigation personalization are developed from previous literature that relates to the definition of personalization in our context. This research is descriptive research with qualitative nature of study as we investigate effect of personalization on user's behavioral intentions and satisfaction. Data collection was done through online questionnaire form filling as well as manual form filled by respondents.

Data Collection and Analysis:

Pilot study conducted with 50 online users (Students, Business owners, IT Professionals, and Housewives) who have used ecommerce web portals. Select ecommerce websites was done for study as it adapts all the aspects of personalization features implemented in websites like Amazon.in, eBay.in, flipkart.com, Pilot study was conducted to first verify the reliability of the questionnaire items, and to determine, if survey items needed to be elucidate or changed. Responses from fifty users were collected through questionnaires by asking them about their general online shopping experiences with personalized websites, their perceptions and attitudes towards different personalization aspect when using ecommerce websites. Non-Probability sampling method i.e., convenience sampling was adopted as data collection method for main survey for online users of e commerce websites in India. The population for the study is the online users of e commerce web portals in India. After completion of pilot study in two stages, final questionnaire was developed with several revisions. Data was collected with 600 responses through online form filling both by mailing users using social media sites and also visiting users personally from all over India. Researcher adopted multi item scales to measure user's cognitive/ utilitarian and hedonic experience like perceived usefulness, perceived ease of use, enjoyment and control which is adopted from previous literature [30]. Construct satisfaction and intention to revisit is adopted from [5,8]. All construct items use five point Likert scale.

After collection of 600 responses from ecommerce website users in India, incomplete and inconsistent data from responses were cleaned in data screening process. After initial screening of data, further responses with less standard deviation (i.e. below .30) were also removed to get valid responses. Before proceeding with the final analysis data was cleaned by removal of incomplete and inconsistent data from both responses of ecommerce website out of which 547 valid responses were used from ecommerce. Cleaned data were analyzed with tool SPSS 20.0 for Exploratory Factor Analysis(EFA) and Confirmatory Factor Analysis(CFA), The final model was tested with SPSS Amos 21.0 with Structural Equation Modelling (SEM) technique.

The Cronbach's Alpha coefficient for assessing reliability of survey items(variables) and analysis result indicate that all survey items were in the range of 0.70~0.93 which shows high level of internal consistency for questionnaire items used of scales in this survey. According to Nunnally (1978), reliability coefficients representing internal consistency of construct items which is 0.70 or more are considered internal consistency of scale constructs of survey items. Thus, all survey items in constructs in Table below were reliable and appropriate to use in an actual research study.

Table:1 Cronbach Alpha Coefficient of constructs

Web Portal	Constructs	No. of items	Cronbach's Alpha
Ecommerce Questionnaire	Information Personalization	6	0.777
	Presentation Personalization	6	0.816
	Navigation Personalization	5	0.767
	Utilitarian/Cognitive Experience (Perceived Ease of Use, Perceived Usefulness, Enjoyment)	9	0.892
	Hedonic Experience(Control)	2	0.772
	Satisfaction	2	0.945
	Intention to Revisit	3	0.989

V. Results & Findings:

Table 2: Age wise responses of users Ecommerce website

		Frequency	Percent
	18-25	424	77.5
	26-35	81	14.8
Valid Responses	36-50	40	7.3
	above 60	2	0.4
	Total	547	100.0

For analysis of data factor analysis technique is used to summarize data, to interpret the relationships and understand the patterns of variables. This technique is used to regroup the variables in set of clusters based on their shared variance. Exploratory factor analysis is used to identify the number of factors with group of variables and named that factors or constructs. Confirmatory Factor Analysis (CFA) is used to find interrelationship among constructs. CFA confirms hypotheses and uses path analysis diagrams to represent variables and factors, whereas Exploratory Factor Analysis (EFA) is used to uncover complex patterns by exploring the dataset and testing predictions. In this study, EFA is needed to explore different aspects or dimensions of personalization and items of satisfaction. Maximum likelihood method of extraction is used as it gives correlation between factors in addition to factor loadings and promax oblique rotation technique is used because it is relatively efficient in achieving a simple oblique structure. The larger the sample size, smaller loadings are allowed for a factor to be considered significant [25]. Factor loading score of variable above 0.32 is statistically significant for sample size above 300 (Tabachnick & Fidell 2007). The factor loadings in the table 6.2 of ecommerce websites show fairly desirable factor loadings above 0.32.

EFA for Ecommerce website:

Kaiser-Meyer-Olkin Measure of Sampling Adequacy plays an essential role for accepting the sample adequacy, KMO ranges from 0 to 1 value, and the accepted index is over 0.6. Results in table 3 shows KMO value 0.926 which is above 0.6 depicts good sampling adequacy for our research.

Table 3: KMO and Bartlett's Test (Ecommerce Website)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.926
Bartlett's Test of Sphericity	Approx. Chi-Square	12420.300
	Df	496
	Sig.	0.000

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	11.770	36.783	36.783	8.515	26.608	26.608	9.732
2	2.803	8.759	45.541	1.876	5.861	32.469	7.670
3	2.283	7.133	52.674	3.979	12.436	44.905	5.056
4	1.544	4.826	57.500	2.112	6.601	51.507	7.249
5	1.259	3.934	61.434	.812	2.538	54.044	6.149
6	1.077	3.366	64.800	1.152	3.599	57.643	5.793
7	1.005	3.140	67.940	.939	2.935	60.578	5.112
8	.785	2.453	70.393				
9	.742	2.318	72.711				

Figure 2: Total Variance Explained for ecommerce websites (SPSS EFA result snapshot)

Table 4 states factor loadings of through pattern matrix generated with maximum likelihood extraction method and promax rotation method. Pattern matrix result gives all the factors, their loadings with items with similarity in exploratory factor analysis. Appropriate name of the factors were given based on nature of the questions and measuring variables falling under each factors. Exploratory factor analysis identified seven factors as information personalization, navigation personalization, presentation personalization, cognitive\utilitarian experience, hedonic experience (control), satisfaction and intention to revisit. Table 4 below mentions factor loadings of variables with underlying constructs of ecommerce web portals' personalization design aspects and its interrelationship with users cognitive experience, control, satisfaction and intention to revisit.

Table 4: Factor loadings with ecommerce website

Constructs	Variables	Factor						
		1	2	3	4	5	6	7
Cognitive Experience	ECPEU4	.820						
	ECPEU1	.820						
	ECENJ1	.801						
	ECENJ2	.772						
	ECPU1	.661						
	ECPEU3	.594						
	ECPEU2	.555						
	ECPU3	.473						
	ECPU2	.463						
Presentation Personalization	ECPP5		.837					
	ECPP3		.813					
	ECPP2		.674					
	ECPP1		.657					
	ECPP4		.629					
	ECPP6		.628					
Information Personalization	ECIP2			.813				
	ECIP3			.755				
	ECIP4			.717				
	ECIP6			.633				
	ECIP1			.631				
	ECIP5			.627				
Intention to Revisit	ECINT1				.970			
	ECINT3				.947			
	ECINT2				.916			
Navigation Personalization	ECNP2					.838		
	ECNP1					.706		
	ECNP3					.674		
	ECNP4					.619		
Satisfaction	ECSAT1						.983	
	ECSAT2						.914	
Control	ECCON1							.875
	ECCON2							.502
	Extraction Method: Maximum Likelihood.							

	Rotation Method: Promax with Kaiser Normalization. Rotation converged in 7 iterations

The communality estimate values represent estimated proportion of variance of the variable which is free of error variance which is shared with other variables in the matrix and common with all others together [13]. There are 20 (4.0%) non-redundant residuals with absolute values greater than 0.05. A good fit model have less than 50% of the non-redundant residuals with absolute values that are greater than .05 which is true for our result. After comparing the Reproduced Correlation Matrix with the original Correlation Coefficients Matrix our result in Figure 3 shows 4% of residual which shows good model fit of factors.

ECPP5	.003	.005	-.005	.005	.000	.006	.001	.019	-.029
ECPP6	.010	-.035	.013	.005	-.004	-.012	-.001	.024	-.007
ECSAT1	.000	.001	.000	.000	.000	.002	-.002	.003	.000
ECSAT2	.002	-.004	.001	.001	-.001	-.007	.005	-.009	.005

Extraction Method: Maximum Likelihood.

a. Reproduced communalities

b. Residuals are computed between observed and reproduced correlations. There are 20 (4.0%) nonredundant residuals with absolute values greater than 0.05.

Figure 3: Non redundant Residuals with ecommerce website (SPSS EFA result snapshot)

Factor Correlation Matrix

Factor	1	2	3	4	5	6	7
1	1.000	.609	.447	.664	.561	.576	.529
2	.609	1.000	.392	.419	.568	.434	.441
3	.447	.392	1.000	.248	.257	.260	.282
4	.664	.419	.248	1.000	.427	.531	.512
5	.561	.568	.257	.427	1.000	.330	.351
6	.576	.434	.260	.531	.330	1.000	.455
7	.529	.441	.282	.512	.351	.455	1.000

Extraction Method: Maximum Likelihood.
Rotation Method: Promax with Kaiser Normalization.

Figure 4: Factor Correlation Matrix (SPSS EFA result snapshot)

Above Figure No. 4 is SPSS EFA result snapshot which shows correlation matrix of all seven identified matrix with good correlations amongst factors. Information, navigation, presentation personalization is highly correlated with cognitive, hedonic experience, satisfaction and intention to revisit.

CFA & SEM for Ecommerce website:

Our result of CFA for ecommerce website shows Minimum Discrepancy which is chi-Square divided by degree of freedom i.e. CMIN/DF 2.393 which should be less than 5 so my parsimonious model is fit. All NFI, RFI and TLI are nearer to 0.9 which is good. RMSEA is 0.051 which is less than 0.06 so the model is having good fit. The Root Mean Square Error of Approximation (RMSEA) is associated with to the residuals in the model, good fit model ranges from zero to one [32]. The research results of the model estimation are shown in

Figure which is less than 0.06 showing better model fit of confirmatory factor analysis. The confirmatory factor analysis showed an acceptable overall model fit and hence, the theorized model fit well with the observed data. It can be concluded that the hypothesized factor CFA model fits the sample data very well.

Structural Equation Modeling (SEM) technique tests the models stating causal relationships between latent variables which are hypothesized. Structural Equation Modeling of ecommerce website data shows that all the hypotheses are supported. This indicates that personalized ecommerce website has positive effect on users satisfaction and intention to revisit website through positive cognitive and hedonic experience

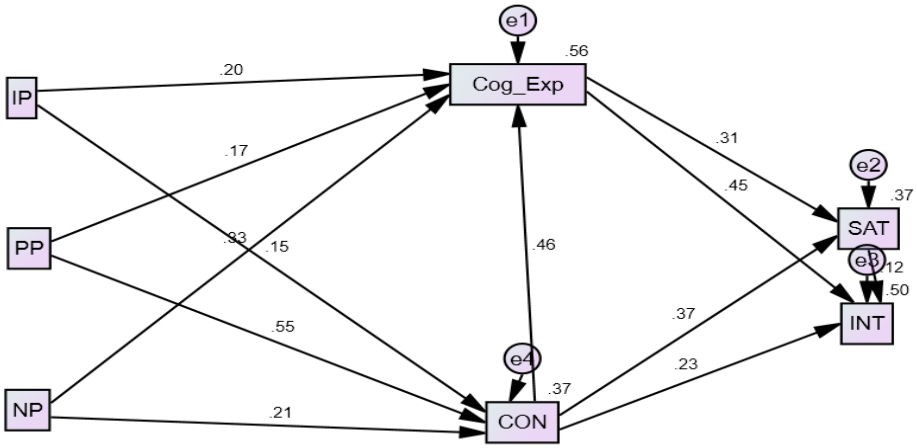


Figure 5: SEM for personalized ecommerce website **(SEM result snapshot from SPSS Amos)**

VI. Conclusion:

This study addressed two related research questions: what and how personalization features have impacts on the cognitive and hedonic experience determining users' satisfaction and intention to continue to use a website. Our results suggest that different design aspects of personalization play a different role in this decision making process. Users experience better enjoyment when the level of presentation personalization is perceived to be higher. Users also value information, presentation and navigation personalization very much as it enhances the perceived usefulness, perceived ease of use of a website, enjoyment and give users the experience of control. Among all the decision variables, cognitive experience with perceived ease of use, perceived usefulness and enjoyment are found to be the most important antecedent factor determining the decision to continue using a website. Some of the findings in the thesis are consistent with previous research, while others stand in contrast to other studies.

Presentation personalization adjust the layout of user interface and provide content with good look and feel in the form of personalized themes, font and background color generating ease of use and enjoy while browsing personalized ecommerce and social networking websites. Navigation Personalization also makes the website ease to use by giving internet users more flexibility and control. Result shows that information, presentation and navigation personalization increases Perceived Usefulness, Perceived Ease of Use and enjoyment inducing positive cognitive experience with both ecommerce and social networking website. Our result supports finding by Koufaris 2002 that user experience

positive impact on enjoyment and control as user may experience flow during the personalization process. Eroglu et al. (2001), Desai 2017 identified that the presence of low task relevant cues like look and feel of website positively affect the organism, e.g. pleasure, our results Therefore, the presentation personalization can arouse the enjoyment [8, 11]. Personalization is a process that changes the website, information content, or distinctiveness functionality, interface of a system to increase its personal relevance to an individual user of website [1] and this finding is in line with our research findings.

Major findings of our research show that personalization reduces cognitive efforts of user by personalized information provided which, in turn, decreases search time of user and increases efficiency. Also, relevant personalized information induces perceived usefulness with increased ease of use and enjoyment, user experience flow using personalized ecommerce and social networking websites. Also, users feel satisfied with positive cognitive experience with personalized websites and likely to revisit the website, and this finding is consistent with similar findings in earlier research [11, 16, 30]. Tam Ho 2006 proposed conceptualization of web personalization and posit that the effectiveness of personalization is determined by the use of self- referent cues and the timely display of content relevant to the processing goal of the user. Such a conceptualization captures many of the functionalities of contemporary personalization agents such as adaptive content generation, customer profiling, web mining, and click stream analysis. Earlier research considers control as important aspect of PAD emotional experience of pleasure, arousal and dominance as intervening organismic state. User's positive cognitive and hedonic experience with personalization aspects lead to satisfaction [11, 5, 31]. In accordance with previous research findings this study finds that user with higher satisfaction is likely to revisit the personalized websites. Result in this research reveals that users, who experience satisfaction with personalization features through positive cognitive and hedonic experience, intend to return with personalized ecommerce websites.

Future Scope Research:

Future research can be conducted in several directions. First, different methodology can be applied to cross-validate the findings in current study. Longitudinal study can be done to study different role of personalization features as user gains more experience over the period of time. Second, added dimensions of personalization from different viewpoint are also interesting and can be the subject of investigation, e.g. personalization strategies. Then, more mediating and moderating factors could also be taken into consideration.

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