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Effect of Social Media Adoption and Media Needs on Online Purchase Behavior: The Moderator Roles of Media Type, Gender, Age

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Abstract

Penetration of smartphones and increasing use of social media on always-on devices has attracted the attention of enterprises and organizations to benefit from such platforms for better understanding of customers' needs and more effectively communicate with potential consumers. For this purpose, the present study investigates the impact of social media adoption and media needs on online purchasing behavior. This study has also examined the moderating role of media type, gender and age in the relationship between variables of social media adoption and online purchasing behavior. A total of 410 questionnaires were collected on social media such as Instagram, Telegram and WhatsApp. SEM technique using PLS used as the analytical method to empirically test the proposed hypotheses. Results show that the effects of tension dimension on online purchasing behavior is mediated by social media adoption. Moreover, the effects of social media adoption on online purchasing behavior are

moderated by age and medium type based on Multi-Group Analysis. The IPMA matrix shows that social media adoption had the highest importance, but the lowest performance. This study is significant in terms of innovation due to the use of new indicators effective in the area of statistical analyses. The use of FIMIX, CTA, permutation test, MGA, and IPMA matrix analyses is part of it.

Keywords: Social media adoption, Media needs, Online purchasing behavior, Media type, IPMA matrix

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Introduction

Penetration of always-on smartphones devices, in addition to numerous impacts on the societies, evolved in the access of users to social media applications anywhere, anytime, and the concept of ubiquitous social media coined (Atzmueller et al, 2012; Trueger, 2018), referring to their persistent presence in the lives of people. From the customer side, social media is a source of information that enables them to compare products and services across the world and to communicate with retailers in different geographical locations (Zare Ravasan et al, 2014; Nel et al, 2020), without time constraint and just by electronic devices such as laptops and mobile phones (Hossain, 2019; Horst and Hitters, 2020). For organizations on the other hand, such access to social media and the increase in the time spent in such platforms is an opportunity for promoting their services and products (Ma et al, 2015) as well as improving of communication with customers to better understand of their needs (Demmers et al, 2020). For such aim, enterprises have evolved to adopt new practices and tools (Sohrabi et al, 2012), such as business intelligence (Rouhani & Savoji, 2016) and social media analytics (Stieglitz et al, 2018), to be more prepared for use of social media for better enterprise performance.

However, use of social media does not necessarily means use of a specific social media platform for a long time. in the other words, few users are loyal to specific platform and most of users migrate from a specific platform to another, while multi-platforming is also a regular trend (Doyle, 2013). Whether users use one specific platform or a portfolio of platforms, social media adoption is a key question for marketers and practitioners of online commerce to set their agenda and promotional activities, targeting the customers (Sharafi Farzad et al, 2019). Various studies have been conducted on social media adoption (Dokhanchi et al, 2019; Campbell et al. 2014; Pan et al. 2014; Pearce 2015; Siamagka et al. 2015; Comunello et al. 2016; Shareef et al. 2019; Wang et al. 2019; Cha, 2020). Social media users use a medium only as long as it provides them a certain level of pleasure (Khajeheian et al, 2018). Many reported cases show that younger users migrate faster to other social media that meet their needs more (Kumar et al, 2011). Hence, tendency to accept the media relies on psychological

reasons of Internet users (Dholakia et al. 2004; Quan-Haase and Young 2010; Cheung et al. 2011; Lee and Ma 2012). Studies conducted in the area of media needs have been very few (Zolkepli and Kamarulzaman 2011; Zolkepli and Kamarulzaman 2015) and currently in 2020 are still rare. Existing studies have linked media needs to social media adoption and show the impact of these two variables on each other.

In countries like Iran, government severely tried to encourage users to migrate into domestic social media. The main reason is for national security and to keep the country data out of access for foreign governments. This migration pushed by promotional plans as well as filtration of global social media such as Facebook, Twitter, YouTube and many other ones. However, the rate of migration to domestic social media has not been satisfactorily, at least until the time of writing of this paper (Shanmugam et al, 2019). Even filtration of telegram, the most popular social media for Iranians during 2014 couldn't migrate users to domestic social media and according to statistics, the level of use of Telegram has remained unchanged. Among various reasons for staying in Telegram, one of the major discussions is around the commercial use of Telegram and Instagram for Iranians. According to many researches (Ghaffari et al, 2017; Ghorbanzadeh and Saeednia, 2018; Asnafi et al, 2017; Zomorodian and Lu, 2019; Rezaei et al, 2016), these two social media are main platforms for online shopping and a considerable amount of online purchases in Iran happens on these platforms.

For this reason, the present study addresses the question of how social media adoption and media needs effect on online purchasing behavior of users; and how variables of gender, age and media type moderate this effect.

Literature Review and Hypothesis Development

Media Needs and Social Media Adoption

Media needs is a concept that has been rarely discussed from the business perspective. This rooted in use and gratification theory and implies that people have some needs that can be met by use of different contents and channels of media. For example, people need to watch a TV reality show to get relaxed in home or need to watch a football match to feed their needs to excitement. Zolkepli & Kamarulzaman (2015) classified media needs into three main categorizes of personal needs, social needs and tension needs. This concept has attracted attention of scholars again in recent years, for example, Steiner and Xu (2020) use the theory of use and gratification to explain binge-watching motivation of video content. Chan-Olmsted et al (2020) studied the video consumption by a spectrum of theories that imply on different media needs. Meshi et al (2020) conducted a cross-sectional study to explain problematic social media use of elders to overcome social isolation. Muniz-Rodriguez et al (2020) studied media needs to use social media in emergency response to natural disasters. Cha (2020) stresses on citizens' media needs to receive new information for feeling free and self-

governed. Crespo et al (2020) revealed a social need of counter-power people to the media that tell stories that cannot be found in other media.

On the other hands, the factors that influence social media adoption have been studied from various perspectives (Lin et al. 2011; Hopp and Gangadharbatla 2016; He et al. 2017; Laing 2017; Veldeman et al. 2017; Ahmad et al. 2018) and researchers such as Preece (2001) and Phang et al. (2009) showed the factors that impact directly on adoption and use of media. Inspiring from the model that Zolkepli & Kamarulzaman (2015) presented, the first set of hypotheses is to test the relationship of these three classes of needs with social media adoption. According to this classification of them, the following hypotheses are proposed:

H1a: Personal dimension positively effects on social media adoption.

H1b: Social dimension positively effects on social media adoption.

H1c: Tension dimension positively effects on social media adoption.

Media Needs and Consumer Behavior

Media needs are the motivation of many social interactions in social media, including both C2C (Chen et al. 2016; De Vries et al. 2017; Wang et al. 2018) and B2C (Swani et al. 2014) business and marketing activities to meet personal and social needs (Zolkepli and Kamarulzaman 2015; Emami and Khajeheian, 2019).

H2a: Personal dimension positively effects on online purchase behavior.

H2b: Social dimension positively effects on online purchase behavior.

H2c: Tension dimension positively effects on online purchase behavior.

Social Media Adoption and Online Purchase Behavior

Social media are increasingly used for commercial purposes (Raeesi Vanani, 2019; Aral et al. 2013; Baethge et al. 2016) and widespread growth of social media use affects consumer behavior (Khajeheian and Ebrahimi, 2020; Daugherty and Hoffman 2014; Wang et al. 2019). There is a direct relationship between social media, consumers, and promotion of products and services (Hajli 2014; Erkan and Evans 2016; Kwahk and Kim 2017; Kizgin et al. 2018; Khajeheian, 2018b; Ebrahimi et al, 2019; Hamidi et al, 2020). Social media enabled customers to compere products and services presented by different retailers and also to consult each other by direct communication or by comments, recommendations or other ways for share of information and experienced (Christodoulides et al. 2011). Consequently, social media evolved marketing and the way that retailers approach customers to identify and promote their products or services (Vasquez and Escamilla 2014).

H3: Social Media adoption positively effects on online purchase behavior.

The Mediation Role of Social Media Adoption

By above mentioned and use of Zolkepli and Kamarulzaman (2015) it can be concluded that social media adoption mediates the effects of media needs on online purchase decision.

H4a: The effect of personal dimension on online purchase behavior is mediated by social media adoption.

H4b: The effect of social dimension on online purchase behavior is mediated by social media adoption.

H4c: The effect of tension dimension on online purchase behavior is mediated by social media adoption.

The Moderation Effect of Gender, Age and Media Type

Demographic factors such as age (Holt et al, 2013) and gender (Barker, 2009; Nadeem et al, 2015) as well as experience of using social media effect on social media adoption of individuals (Arshad and Akram 2018). Wirtz and Göttel (2016) argue that the way users adopt social media, determine the role of social media application if the future, as expansion of public internet access causes social media such as Twitter, Facebook replace email for messaging and more enriched communication (Gruzd et al. 2011; Khajeheian, 2018a). Today, various types of media, from social media such as Instagram (Carah and Shaul 2015), Telegram (Xodabande and Popescu 2017), WhatsApp (Aharony and Gazit 2016; Alkhalaf et al. 2018), Facebook (Cheung et al. 2011; Chen and Widjaja 2016), Twitter (Ortega 2017), to websites and weblogs (Clark et al. 2018), YouTube (Koller et al. 2016; Bärtl 2018), and mass media such as radio and television (Scannell 1995; Drinkwater and Uncles 2007) and so forth, facilitate sharing of information, communication and exposure of self. Platforms such as Amazon and Ebay must be added to this list, because they enable customers to review and rank the products and to share their experience of purchase and use of products and services (Forman et al. 2008). In such social platforms, like Amazon and Ebay, social interaction of customers creates trust (Lu et al. 2010) and effect purchase decision of users (Gefen 2002). Also user generated contents such as sharing of photo and video effect on purchase decision (Zolkepli and Kamarulzaman, 2011). Considering these mediators, the following hypotheses are developed:

H5a: The effect of social media adoption on online purchase behavior is moderated by gender.

H5b: The effect of social media adoption on online purchase behavior is moderated by age.

H5c: The effect of social media adoption on online purchase behavior is moderated by medium type.

The conceptual model of this research has been developed by the authors from Zolkepli and Kamarulzaman (2015) and Wang (2017) and has been presented in Figure (1).

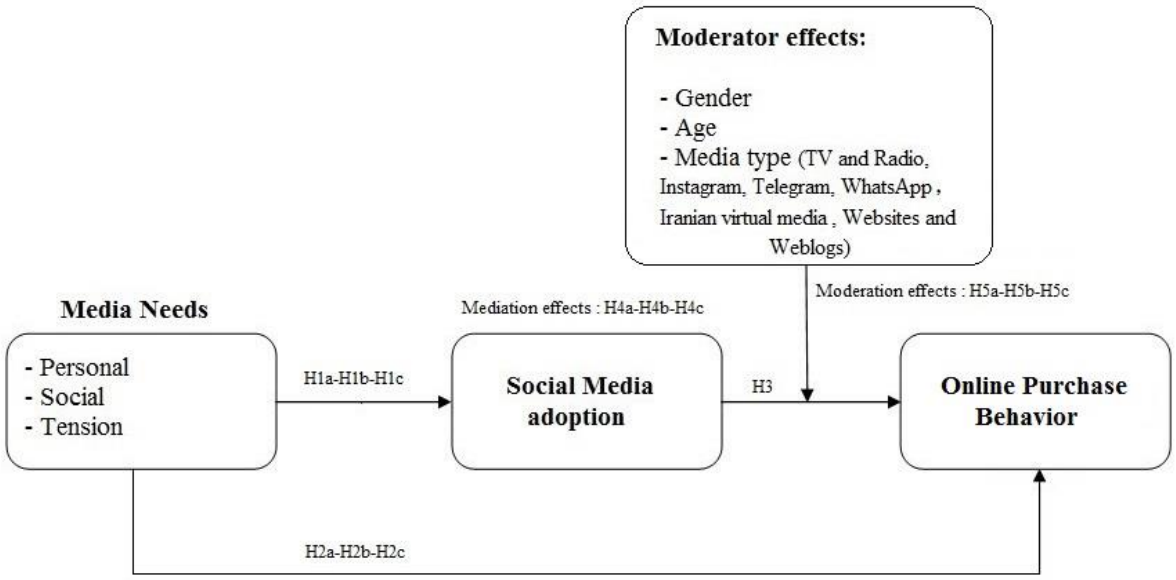

Figure 1. The conceptual model

Methodology

Sample size

The statistical population of the present study consists of Iranian users of social network who have purchased from social media shops at least once. Considering the size of population, random sampling has been used. The largest number variables in set multivariate Regression model is 4 where considering confidence level of 95%, power of increment of 0.95 and increment to R-squared of 0.10, the minimum value of sample size was obtained 360. For higher reliability, 15% further questionnaires were distributed (414 questionnaires), and after removing some flawed questionnaires, a total of 410 questionnaires were identified appropriate for analysis and were applied in the analysis.

Measurement of Variables, Reliability and Validity of Measurement

The questionnaire has been used as the means of data collection. An online questionnaire shared on popular social media including Instagram, Telegram and WhatsApp and also through website link and Emails to users. This questionnaire consists of two sections including demographic information as well as a main body that includes 18 closed questions. A 5-point Likert scale divided the responses from 5 (“strongly agree”) to 1 (“strongly disagree”).

Each dimension of media needs, including personal, social and tension needs, measured by three items (adapted from Zolkepli and Kamarulzaman 2015). For example, the item “This medium gives me a sense of satisfaction” has been used to measure personal dimension. The

item “I meet new people in this medium” has been used for social dimension, and the item “I’m attached to this medium” has been used to measure tension dimension. The variable of social media adoption has been measured by 4 items (adapted from Srinivasan et al. 2002) and items such as “I use social media widely and continuously”. The variable of Online Purchase Behavior has been measured by 5 items (adapted from Wang 2017) and items such as “I pay the cost of purchased services or products through mechanisms of this medium”.

The items of the questionnaire were approved in terms of content validity by referring to experts in the study area. In order to confirm content validity, at the beginning of designing the questionnaire, ICC coefficient value was confirmed in terms of consistency and absolute agreement. Reflective nature of measurement models was confirmed both through careful consideration of meaning of the questions and by Confirmatory Tetrad Analysis (CTA) (p-value > 0.05) (Hair et al. 2018, p. 88).

The characteristics of respondents have shown in Table (1). The majority of respondents have undergraduate degree (37.6%) and postgraduates degree (31.2%). Also the highest number of respondents have been in the age range of 20-30 years (38.8%). Most of the respondents use Telegram (41.5%) and Instagram (38.8%) which means that these two media cover a wider range of audiences in Iran.

Table 1. Demographics features

Features	Levels	Frequency	Percentage
Gender	Male	227	55.4%
	Female	183	44.6%
Age	Under 20 years	36	8.8%
	20-30 years	159	38.8%
	31-40 years	141	34.4%
	41-50 years	49	12%
	Over 50 years	25	6.1%
Education	Secondary School and Lower	75	18.3%
	Associate degree	53	12.9%
	Bachelor degree	154	37.6%
	Postgraduate	128	31.2%
Media type	TV & Radio	27	6.6%
	Websites & Weblogs	24	5.9%
	WhatsApp	24	5.9%
	Telegram	170	41.5%
	Instagram	159	38.8%
	Domestic online media	6	1.5%

SmartPLS software version 3 has been used to assess measurement models (Hair et al. 2016). Measurement models have been examined based on outer loadings values and AVE

index (Henseler et al. 2015). Discriminant validity has been carefully examined at the level of construct and at the level of items. In order to examine convergent validity, given the reflective measurement models, AVE values have been examined and values greater than 0.5 (Hulland 1999) represent convergent validity of the measurement models (Table 2). Convergent validity has also been examined given the outer loadings where the values greater than 0.4 (Hair et al. 2006; Ebrahimi et al. 2018b) imply convergent validity of the measurement models (Table 2).

Table 2. Measurement models, Convergent validity and Reliability

Constructs and items	Outer loadings	AVE	C.alpha	CR	DG.rho	Model type
Online Purchase Behavior (SD=1.299, M=2.908)		0.801	0.938	0.953	0.947	Reflective
CB1	0.887					
CB2	0.888					
CB3	0.924					
CB4	0.860					
CB5	0.914					
Personal need (SD=0.983, M=3.952)		0.756	0.839	0.903	0.859	Reflective
PER1	0.845					
PER2	0.906					
PER3	0.855					
Social need (SD=1.123, M=3.674)		0.697	0.782	0.873	0.786	Reflective
SOC1	0.837					
SOC2	0.866					
SOC3	0.799					
Tension need (SD=1.090, M=3.738)		0.722	0.807	0.886	0.810	Reflective
TEN1	0.860					
TEN2	0.826					
TEN3	0.863					
Social Media Adoption		0.705	0.860	0.905	0.861	Reflective
(SD=0.941, M=3.940)						
SMA1	0.833					
SMA2	0.842					
SMA3	0.867					
SMA4	0.815					

Notes: AVE, average of variance extracted; C.alpha, Cronbach's alpha; CR, Composite Reliability; DG.rho, Dillon-Goldstein's rho; SD, Std. Deviation; M, Mean

"Generally, indicators with outer loadings between 0.40 and 0.70 should be considered for removal from the scale only when deleting the indicator leads to an increase in the composite reliability above the suggested threshold value" (Hair et al. 2014).

Reliability of the questionnaire was evaluated by Cronbach's alpha, CR and DG rho (Table 2). Some researchers suggest 0.7 and above as the favorable point for Cronbach's alpha and CR (Sanchez 2013; Hair et al. 2014; Ebrahimi and Mirbargkar 2017). As the value of these coefficients is higher than 0.7, the reliability of research means is confirmed. "Another metric used to assess the unidimensionality of a reactive block is the Dillon-Goldstein's rho which focuses on the variance of the sum of variables in the block of interest. As a rule of thumb, a block is considered as unidimensional when the Dillon-Goldstein's rho is larger than 0.7" (Sanchez 2013, p. 57).

Discriminant Validity was assessed at the construct level by HTMT, as it has been shown in Table 3. Values less than 0.9 are considered favorable for this index (Henseler et al. 2015). Cross Loadings index has been used to examine discriminant validity of items. Table (4) implies discriminant validity of items and in fact, items of each variable only measure that variable well.

Table 3. Heterotrait-Monotrait Ratio (HTMT)

Variable	online purchase behavior	Personal	Social	Social Media Adoption	Tension
Online Purchase Behavior					
Personal	0.436				
Social	0.395	0.861			
Social Media Adoption	0.541	0.777	0.826		
Tension	0.501	0.862	0.873	0.885	

Table 4. Cross loadings

	online purchasebehavior	Personal	Social	Social Media Adoption	Tension
CB1	**0.887**	0.393	0.338	0.495	0.438
CB2	**0.888**	0.443	0.412	0.495	0.470
CB3	**0.924**	0.302	0.243	0.394	0.353
CB4	**0.860**	0.293	0.245	0.373	0.330
CB5	**0.914**	0.330	0.287	0.420	0.376
PER1	0.296	**0.845**	0.522	0.515	0.613
PER2	0.420	**0.906**	0.667	0.658	0.740
PER3	0.313	**0.855**	0.628	0.549	0.663
SMA1	0.366	0.546	0.573	**0.833**	0.687

	online purchasebehavior	Personal	Social	Social Media Adoption	Tension
SMA2	0.442	0.565	0.537	**0.842**	0.676
SMA3	0.410	0.558	0.606	**0.867**	0.727
SMA4	0.438	0.567	0.561	**0.815**	0.663
SOC1	0.274	0.557	**0.837**	0.536	0.621
SOC2	0.352	0.579	**0.866**	0.586	0.665
SOC3	0.242	0.621	**0.799**	0.575	0.706
TEN1	0.350	0.767	0.671	0.691	**0.860**
TEN2	0.312	0.554	0.708	0.701	**0.826**
TEN3	0.469	0.660	0.652	0.700	**0.863**

Also, in assessment of measurement models, VIF index has been used with the help of Smart PLS3 software in order to examine multicollinearity between independent variables. Regarding VIF index, values less than 3 are considered desirable for this index (Hair et al. 2014; Ebrahimi et al. 2018a). In other words, according to Table (5), there is no multicollinearity between the independent variables.

Table 5. Multicollinearity with VIF

Variable	online purchase behavior	Personal	Social	Social Media Adoption	Tension
Online Purchase Behavior					
Personal	2.664			2.653	
Social	2.869			2.859	
Social Media Adoption	2.896				
Tension	2.993			2.901	

Notes: VIF, Variance Inflation Factor

Data analysis and findings

After examination and confirmation of reflective measurement models and to assess the structural model and test of the hypotheses, PLS-SEM approach with the help of SmartPLS3 software has been used (Ringle et al. 2015). In order to obtain better and more precise results, outlier data were examined before testing the hypotheses. FIMIX approach was used to examine unobserved heterogeneity of the statistical population, and Entropy Statistic Normed is EN=0.976 which is a positive and acceptable value (Ramaswami et al. 1993; Ebrahimi et al. 2018a; Hair et al. 2018). The assumption about homogeneity of the community is confirmed and the results of testing the hypotheses are confirmed with more confidence. Looking at the scatter plot in Figure (2) also, one can see absence of outlier data.

The software output has been calculated after testing conceptual model of research (Fig. 4). The most important indicators are coefficient of determination (R^2) and R^2 Adjusted (Table 6). Another indicator is (f^2). The values of 0.02, 0.15 and 0.35 are considered as small, medium and large effect sizes, respectively (Cohen, 1988). The values of this index have been used to examine model explanation (Table 7). For the model's prediction power, Q^2 index including Construct Cross-validated Redundancy (CC-Red) and Construct Cross-validated Communality (CC-Com), has been used in which, the closer the values are to 1, the more desirable they are (Stone 1974; Geisser 1974). Also, SRMR index has been used as the main indicator in order to assess the whole model including the structural model and the measurement models. Given some criticisms by researchers about GOF index (Henseler and Sarstedt 2012), SRMR index is more desirable, and values less than 0.08 are considered desirable for SRMR index (Hair et al. 2016). Some researchers consider values less than 0.1 to be acceptable (Hu and Bentler 1998). In the present study, SRMR value in the estimated model output is 0.065 and in the saturated model output is 0.065 which are desirable. Another indicator for fit of the model is RMS-theta.

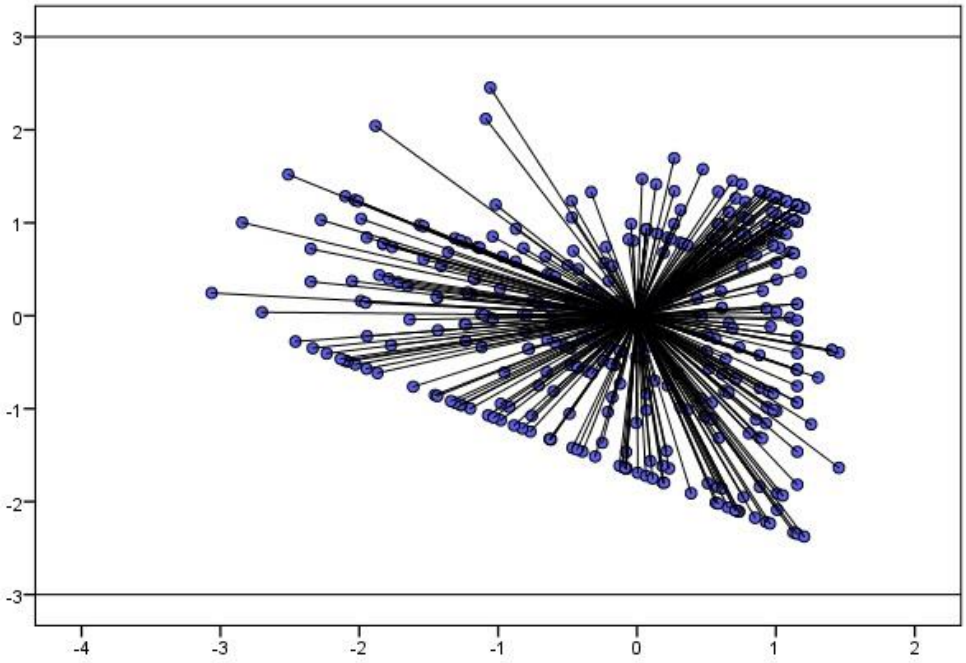

Figure 2. Scatter plot of outlier data

RMS_theta values below 0.12 indicate a well-fitting model, whereas higher values indicate a lack of fit (Henseler et al. 2014). Also, NFI index or Bentler and Bonett index were used. NFI results in values between 0 and 1. The closer the NFI is to 1, the better the fit (Bentler and Bonett 1980).

Table 6. Assessment of structural model indicators

Variable	R^2	R^2 adjusted	CC-Red	CC-Com	Model fit
Online Purchase Behavior	25.5%	24.8%	0.187	0.653	SRMR(Saturated model) = 0.065 SRMR(Estimated model) = 0.065 RMS_theta = 0.108 NFI = 0.834
Personal				0.469	
Social				0.379	
Social Media Adoption	67.6%	67.4%	0.447	0.480	
Tension				0.416	

Table 7. Cohen effect size (f^2)

Variable	Online Purchase Behavior	Personal	Social	Social Media Adoption	Tension
Online Purchase Behavior					
Personal	0.068			0.054	
Social	0.062			0.053	
Social Media Adoption	0.064				
Tension	0.062			0.446	

In order to test the hypotheses H1a-H1b-H1c, direct effect was assessed. According to the results in Table (8), H1a (β = 0.061, SD = 0.052, t = 1.167, p = 0.244, perc.025 = -0.044, perc.975 = 0.160) at 95% confidence level, considering confidence intervals and $p<0.05$, has not been supported. Similarly, H1b (β = 0.057, SD = 0.050, t = 1.137, p = 0.256, perc.025 = -0.040, perc.975 = 0.150) has also not been supported considering the confidence intervals. However, results show significance of H1c and the impact of tension on social media adoption (β = 0.728, SD = 0.052, t = 14.049, p = 0.000, perc.025 = 0.618, perc.975 = 0.823).

Direct effect coefficients of H2a-H2b-H2c also show not supporting of these hypotheses (Table 8). Regarding H3 hypothesis and the impact of social media adoption on Online Purchase Behavior, this hypothesis has not been supported, given the confidence intervals and $p<0.05$ (β = 0.383, SD = 0.069, t = 5.517, p = 0.000, perc.025 = 0.251, perc.975 = 0.508).

In the case of H4a-H4b-H4c, mediation effect was examined. Regarding H4a, the indirect effect (Personal-SMA-CB) does not show a significant effect (Indirect effect: β = 0.023, SD = 0.021, t = 1.122, p = 0.262, perc.025 = -0.014, perc.975 = 0.064). Also, given the no significance of direct impact of personal dimension on Online Purchase Behavior, existence of mediation effect in this hypothesis is not supported. Similarly, for H4b, the indirect impact (Social-SMA-CB) does not show a significant impact (Indirect effect: β = 0.022, SD = 0.019, t = 1.114, p = 0.266, perc.025 = -0.015, perc.975 = 0.062). Also, given the no significance of direct impact of social dimension on Online Purchase Behavior, existence of mediation effect in this hypothesis is also not supported. However, in the case of H4c, the indirect impact (Tension-SMA-CB) shows a significant effect (Indirect effect: β = 0.279, SD = 0.055, t = 5.036, p = 0.000, perc.025 = 0.175, perc.975 = 0.380). Given the no significance of direct impact of tension dimension on Online Purchase Behavior, (Direct effect: β = 0.094, SD = 0.096, t = 0.974, p = 0.330, perc.025 = -0.087, perc.975 = 0.278) and significance of the total effect (Total effect: β = 0.373, SD = 0.077, t = 4.833, p = 0.000, perc.025 = 0.228, perc.975 = 0.522), existence of full mediation effect is supported in this hypothesis.

In order to examine H5a and the moderation effect of gender, Permutation test approach (Sanchez 2013; Hair et al 2018) has been used to compare the two groups of women and men. Considering the value of p-value> 0.05 as well as confidence intervals, it can be stated that no statistically significant difference was observed between the two groups of women and men. In fact, the effect of social media adoption on Online Purchase Behavior is not moderated by gender.

In order to examine H5b and the moderation effect of age, Multi-Group Analysis (MGA) approach (Hair et al. 2018) has been used to compare the five age groups of respondents. The results showed that the two age groups of 20 to 30 years old (t = 3.377, p = 0.001) and 41 to 50 years old (t = 5.455, p = 0.000) had significant difference with other age groups and in fact, the impact of social media adoption on Online Purchase Behavior has been higher in these two age groups and the effect of social media adoption on Online Purchase Behavior is moderated by age.

Also, in order to examine H5c, MGA approach has been used to compare the 6 social media groups. The results showed that the two Instagram (β = 0.600, SD = 0.099, t = 6.087, p = 0.000, perc.025 = 0.380, perc.975 = 0.784) and Telegram (β = 0.320, SD = 0.104, t = 3.084, p = 0.002, perc.025 = 0.129, perc.975 = 0.541) media had significant difference with the other media and in fact, the impact of social media adoption on Online Purchase Behavior has been higher in these two media, especially Instagram; and the effect of social media adoption on Online Purchase Behavior is moderated by medium type.

Figure 3. MGA coefficients and frequency of media

Table 8. Results of research hypotheses

Hypotheses	Direct effect	Indirect effect	Total effect	t-statistics	Low CL	High CL	p-value	Decision	Mediation	Moderation
H1a	0.061			1.167	-0.044	0.160	0.244	Not Supported		
H1b	0.057			1.137	-0.040	0.150	0.256	Not Supported		
H1c	0.728			14.049***	0.618	0.823	0.000	Supported		
H2a	0.123			1.936	-0.010	0.242	0.053	Not Supported		
H2b	-0.072			1.117	-0.206	0.042	0.264	Not Supported		
H2c	0.094			0.974	-0.087	0.278	0.330	Not Supported		
H3	0.383			5.517***	0.251	0.508	0.000	Supported		
H4a	0.123	0.023	0.147					Not Supported	No	
H4b	-0.072	0.022	-0.051					Not Supported	No	
H4c	0.094	0.279***	0.373***					Supported	Full Mediation	
H5a				The effects of social media adoption on Online Purchase Behavior is not moderated by gender based on permutation test						No
H5b				The effects of social media adoption on Online Purchase Behavior is moderated by age based on Multi-Group Analysis (MGA)						Yes
H5c				The effects of social media adoption on Online Purchase Behavior is moderated by medium type based on Multi-Group Analysis (MGA)						Yes

Note: t>1.96 at * p<0.05; t>2.58 at ** p<0.01; t>3.29 at *** p<0.001; two-tailed test

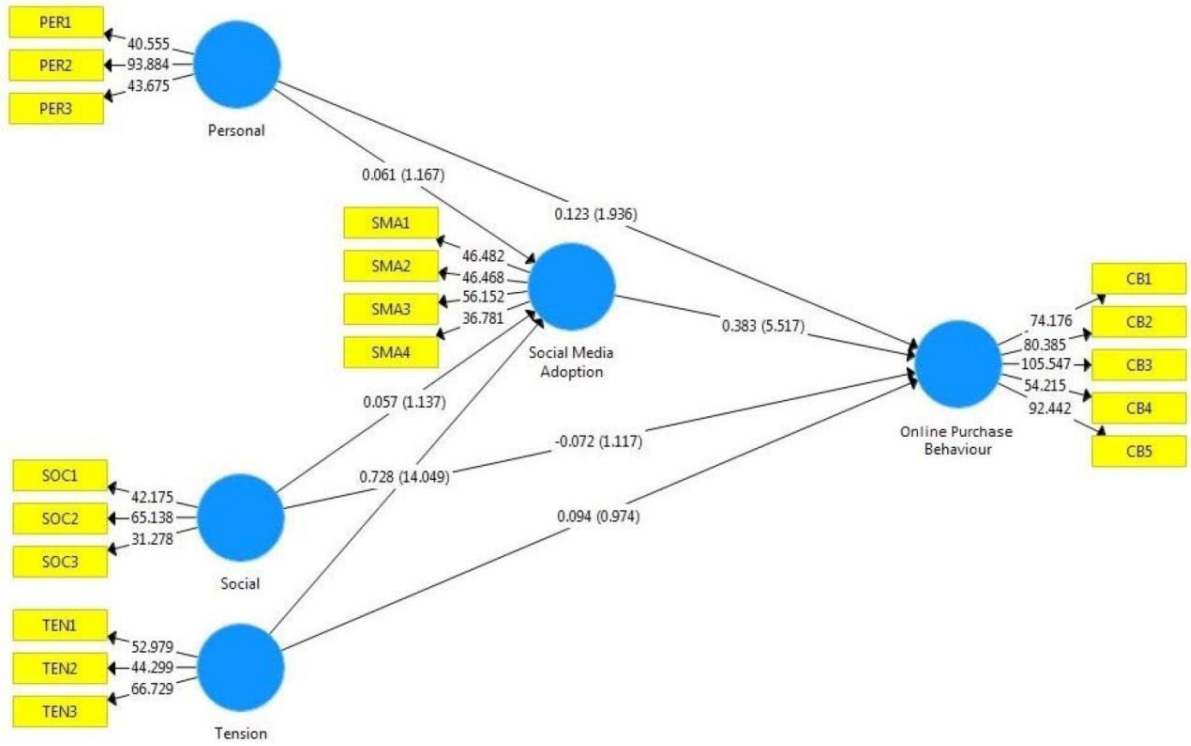

Figure 4. Path coefficients and T-statistics

Also, IPMA matrix has been implemented by targeting Online Purchase Behavior variable. The best state in terms of management is to find a variable that has the highest importance and the lowest performance (Hair et al. 2018). The IPMA matrix shows that social media adoption had the highest importance, but the lowest performance. Therefore, this variable, in terms of management and given its high importance in the analysis, needs the highest possible focus in order to achieve maximum Online Purchase Behavior.

Discussion

Theoretically, this study has presented a research model for assessing the impact of media needs and social media adoption on user's online purchase behavior. Results showed that the impact of tension on social media adoption was the strongest hypothesis that is confirmed; also it is worth noting that among the dimensions of media needs, only tension has had a significant effect on social media adoption. Looking at the tension items, it can be concluded that in a society such as Iran which has a young population, factors such as attachment to the media, maintaining social relations and interactions with friends or new people, and ultimately, avoiding problems, will led to adoption. While the impact of social and personal dimensions was not significant alone, but tension tendencies, which involves psychological aspects of using media, have been very influential in a society like Iran, which raise questions and provide the ground for some psychological researches in this regard.

While the results of IPMA matrix indicate highest importance of social media adoption in change of online purchase behavior, but this variable currently shows the least performance. Looking at the items that have been of great importance in IPMA analysis, it reveals that psychological needs are very important in perception of usefulness of social media. This has been emphasized by many of previous studies, that emphasized on the usefulness of social media (Kizgin et al. 2018) and the impact of importance of psychological dimensions (Cheung et al., 2011; Lee and Ma 2012; Zolkepli and Kamarulzaman 2015) on media adoption.

In regard with social media adoption, this is worth to pay attention to the low adoption rate of domestic social media. Only 1.46% of respondents tended to view advertisements and marketing in domestic media, while a medium such as telegram with 41.46% adoption by respondents, despite being filtered in the country. Also, Instagram with 38.78% is one of the popular media among various retailers and consumers for sharing products and services. Results of MGA analysis showed that Instagram has the highest impact on Iranian consumers' online purchase behavior. Considering the efforts of Iranian government to encourage users to migrate to domestic social media, the variable of social media adoption is potent for more researches.

Theoretical contribution of this research is to innovatively study medium type, age and gender of customers in one research model by use of multivariate Regression. Few published have studied such combination of variables in one model and by such number of data. It is expected that future researches will use this researches to more detailed study of this subject.

Conclusion

This study has examined the importance of the impact of social media adoption on consumer behavior in different terms. Effect size of 0.6 shows that Instagram has the highest impact on the consumers. The features of attractiveness of design, conversation, attractive environment, and ease of use are among the most important factors that contribute to greater adoption to this social media.

The present study examined the impact of social media adoption on online purchase behavior using permutation test, where no significant difference was observed between the two groups of women and men, and both groups emphasized the role of media as an important factor in consumers' online purchase behavior. Also, examining the age groups, it was determined that the two age groups of 20 to 30 years and 41 to 50 years of age had been more influenced by social media. This can stress on the necessity of further and more accurate studies on different age groups.

While Zolkepli & Kamarulzaman (2015) show that social and personal needs affect significantly on social media adoption and tension do not, the findings of this study present that personal and social needs do not affect meaningfully on adoption, and tension do. Such opposing results can be interpreted that need and interest to a specific medium can be effective in media adoption. Also the tensions related-items show that fun and entertainment are important aspects of social media.

Results show that low number of respondents use domestic social media. The reasons of such result can be studied in the future researches. In addition to this, use of international social media are different too. most of respondents expressed that Instagram is their main social media, while many of researches show that Facebook has such position for people in most of countries. The reason can be filtration of other social media in exception of Instagram. However, the number of users in Twitter and Facebook and use of anti-proxy software shows that there might be other reasons for such difference in use of social media.

Research limitations

The first limitation of this research is that the population of study is bound to Iran. While many of global popular social media such as Facebook, Twitter and Youtube are filtered in Iran, part of the tendency to Instagram might be influenced by ease of access to this application with no need of anti-filters. This effects on the generalization of the results of this research to other societies and populations. Another limitation of research is that the data have been collected at a cross section of time, and for this reason, that the research objectives may not be fully expandable.

Recommendations for future researches

It is suggested that future researches should use a longitudinal design instead of cross-sectional one, because longitudinal research can fully determine dynamic and interactive nature of many variables and express their causal relationships. Also, this research is limited by the model. Use of new models and adding other influential variables is recommended to future researchers. Furthermore, the results of comparisons in MGA approach about media types can be focused in future research.

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