

The Influence of Enterprise Online Information Behavior on Consumer Satisfaction

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Abstract

Based on findings from previous studies a model of the influence of enterprise online information behavior on consumer behaviors was formulated, analyzed, and developed using data collected by questionnaire from a sample of 479 consumers in the context of China. Enterprise behavior is represented by three constructs (information disclosure, interaction, and utilization) which influence consumer behaviors related to perceptions of pleasure, control, and attention and in turn consumer satisfaction. Many of the findings related to direct effects that have been reported in previous studies conducted in the context of western societies were confirmed. However, there were new findings related to significant direct, indirect, and total effects on consumer satisfaction due to information disclosure, interaction, and utilization. Apart from the theoretical contribution of the study, especially the analysis of indirect and total effects, there were practical implications. These are discussed with the objective of improving enterprise online behaviors with positive consequences for consumer behaviors and especially for improved consumer satisfaction. Importantly, the study addresses the limited number of previous studies conducted with Chinese consumers in online environments in China.

Keywords: online information behavior, stimulation-organism-response model, flow experience, consumer satisfaction

Introduction

Information and communication technologies create opportunities for an enterprise to use information resources to attract and service consumers. The characteristics of novel network applications and information dissemination cater to diversified demands among consumers and provide a primary platform to access information resources, realize emotional closeness, and achieve self-worth.

Although many Chinese enterprises have investments in information platforms, many of them are not fully aware of the nature of the online information environment and the need for them to develop strategies for online behaviors that will enhance their competitive position and have positive influences on consumer behaviors. The purpose of this study is to examine the influences of enterprise information behaviors (information disclosure, interaction, and utilization) on consumer behaviors (perceptions of pleasure and control, consumer concentration and satisfaction). Examples of previous studies which motivated the study include: Choi and Kim (2004), Mouri, (2005), Kim and Lennon (2010), Su Hailin et al., (2014), and Jorge & Iguacel (2019).

This is one of very few studies conducted in the online environment of Chinese enterprises and consumers. The findings contribute to theory and practice. From a theoretical perspective, the study tests hypotheses derived from previous studies but, unlike previous studies, indirect and total effects among variables are analyzed. Practical implications of the findings are derived from the theoretical findings.

Research Design and Methodology

A cross-sectional field study design was used to collect data with a self-administered questionnaire designed to measure personal characteristics of the respondents and variables in the theoretical model. English and Chinese versions of the questionnaire were prepared and reviewed by a focus group of five experts. Suggested modifications concerned mainly with language translation were included in revised versions of the questionnaire. A pilot study was conducted with a sample of 10 suitable respondents. No further modifications were required, and the Chinese version was then used in the full study. Questionnaire items used to measure model variables are included in the Appendix.

The subjects were Chinese individuals who had online information gathering experience. In China, the size of this population certainly exceeds 100,000. Consequently, with 5% precision and a 95% confidence level a minimum sample size of 400 was determined which satisfied criteria for the statistical validity of the study (Kline, 2016). Since no reliable sampling frame was available a purposive sampling method was used. Questionnaires were distributed to members of the target population using online platforms to direct participants to the questionnaire.

Related Literature and Model Constructs

Overview of Previous Studies

Table 1 presents characteristics of previous studies related to enterprise online information behavior and consumer behaviors especially related to consumer satisfaction in online environments. The overview focuses on studies that used quantitative methods to evaluate theoretical causal models.

Model Constructs

Based on the overview in Table 1, it was evident that it was appropriate to develop a theoretical model based on an extension of the Stimulation-Organism-Response Model using seven behavioral constructs organized into two groups (Enterprise Behavior and Consumer Behavior). The constructs were identified in previous studies as having important relationships with consumer satisfaction in online environments.

Three constructs represent Enterprise Behavior:

Information Disclosure: Information disclosed online relates to basic information about the enterprise's image, products, activities, and online applications. The information reflects product quality, professional technology, research and development capability, manufacturing level, industry leadership, and the capabilities of the enterprise (Xie Yi &

Peng Siqing, 2009). Information disclosure establishes a dynamic environment enabling the enterprise to test information quality and propose solutions to improve information quality as a result of qualitative and quantitative evaluations (Kahn et al., 2002; Zhang Jizhe, 2006; Wang Guilan & Zhang Congqun, 2011);

Information Interaction: Consumers are free to feedback their ideas, opinions, and problems to an enterprise through a network architecture model which facilitates sharing in order to find satisfactory answers in the shortest possible time. Communication between enterprises and consumers is no longer in a closed state and the information behaviors of enterprises are being supervised by all relevant online users. Consequently, a process for response and answer exists between the enterprise and consumers which reflects the need for individuals to respond to others

Table 1*An overview of related studies*

Reference	Theory	Focus of Study	Behavior Examined	Constructs Studied	Reference	Theory	Focus of Study	Behavior Examined	Constructs Studied
Belk, (1975)	Stimulation-Organism-Response Model	Investigation of how products stimulate consumers to respond.	Consumer purchasing responses	Situation, Product, Consumer, Behavior	Kahn et al. (2002)	Information Quality	How well organizations develop and deliver information products.	Assessment of the quality of a healthcare information	Information product or service: Conformance, Consumer expectations, useful, dependable
Bitner (1992)	Consumer Behavior Model	Change in the external cognition stimulated consumer behavior.	Consumer behavior	Cognition Environment, Significance of Symbols, Attitude, Emotion, Comfort, Misery, Avoidance Behavior	Molm (2001)	Social Exchange Theory	Social behavior which depends on mutual reinforcement and the ratio of costs and rewards.	Knowledge sharing	Exchange: of main content; resources; structure; and process
Maon et al. (2017)	Information Seeking Behavior	Activities that are performed as a result of stimulating problems	Online Information Seeking Behavior	Behavior patterns prior to, initial, during, and post seeking behavior	Zhang Xiangxian et al. (2014)	Social Networking Information Ecosystem	Information sharing between subjects in the network, and a chain of dependency	Information Sharing	Information consumer and producer, Question and answer interaction.
Hsieh-Yee (2001)	Information Retrieval Behavior	Study behavior at the micro level where users interact with information to perform tasks.	Web Search Behavior	Information, organizations, and presentation; Types of search task; Web experience; Cognitive abilities; Affective states; and Interaction	Johnson & Meischke (1993)	Information Inquiry Model	Causal relationships among the driving forces for information seeking, information carrier factors, and seeking actions.	Online information exchange with health providers	Antecedents (demographics, experience, salience, beliefs), Information carrier characteristics and utilities, seeking actions

Krikelas (1983)	Information Browsing Behavior	Reducing a state of uncertainty by increasing information retrieval speed, and accuracy.	Information seeking behavior in work-oriented contexts	Information gathering and giving; Need-creating; Needs; Source; Memory; Direct observation; Personal files	Csikszentmihalyi (1998)	Flow Experience	The mental state in which a person is fully immersed in a feeling of full involvement in the activity.	Performance of a task for intrinsic purposes	Challenge and skill levels, Worry, Apathy, Boredom, Relaxation, Control, Flow, Arousal, Anxiety
Defleaur (2017)	Information Transmission Theory	Information transmission as a two-way interactivity between sources and receivers.	Information diffusion through communities	Mass media device, Source, Transmitter, Channel, Receiver, Destination, Noise, Feedback device	Finneran & Zhang (2003)	Person-Artifact-Task Model	Humans, tools, tasks, and flow experience as the main factors related to computer activity.	Flow experience in Computer-mediated Environments	Artifact, Person, Task, Flow experience and consequences

(Ha & James, 1998; Peng Lang, 2001). After a consumer checks various links online to seek information they evaluate and feedback information based on their experiences. This affects an enterprise's behavioral performance and the cognitive experience of potential consumers (Bauer et al., 2002). The effects on the cognitive experience of a potential customer are complex. Consequently, this study only considers a consumer's evaluation of and feedback on the enterprise's products and services and how the enterprise responds to evaluation and feedback (Molm, 2001; Zhang Xiangxian et al., 2014) ;

Information Utilization: This is the process by which the enterprise knows and understands consumer needs by obtaining consumer information, feelings about products, and related improvement proposals. This process is useful for establishing and maintaining a stable relationship with consumers. Consequently, information utilization should be a process which enables an enterprise to recognize customers, expand customer scope, subdivide environment and operation, and reveal new concepts through information detection and inquiry (Ling Jinru & Deng Jiati, 2000; Gong Yiming et al., 2003).

Four constructs represent Consumer Behavior:

Perceived Pleasure: This is the extent to which the enterprise's online information behavior is perceived to be enjoyable, apart from any anticipated performance consequences (Csikszentmihalyi, 1990). When the enterprise's information platform establishes interaction, vitality, and materiality the consumer derives more pleasure from using the platform because flow experience has a strong influence on cognitive processes (Csikszentmihalyi, 1998; Choi et al., 2007; Jorge & Iguacel, 2019);

Perceived Control: Consumers can control an online task if the characteristics of the task match their personal skills. For complex tasks if the purpose is clear and easy to accomplish then the consumer perceives that they are in control. The consumer has control over their internal state, behaviors, and the place, people, things, feelings, or activities produced by the enterprise (Csikszentmihalyi, 1998; Moneta & Csikszentmihalyi, 1996);

Attention Concentration: This is the consumer's ability to focus on the task at hand while ignoring distractions (Csikszentmihalyi, 1990; Jackson & Csikszentmihalyi, 1999). Information requiring long periods of concentrated attention is likely to cause consumers a loss of self-consciousness (Koufaris, 2002);

Consumer Satisfaction: This is the consumer's cumulative satisfaction based on their expectations and evaluations of the enterprise's products or services, the total communication experience, and the performance of the enterprise's information behaviors (Philip, 1967; Fornell, 1992; Hellier et al., 2003; Mouri, 2005).

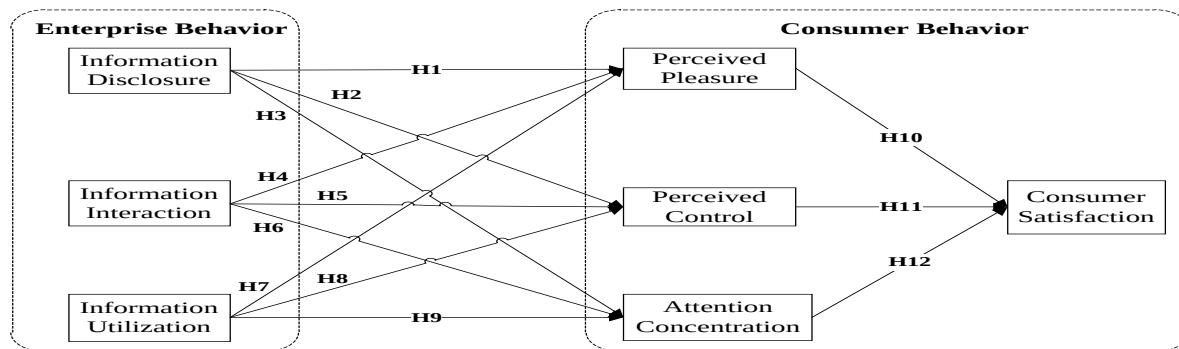
Theoretical Model

The theoretical model in Figure 1 is notated to indicate the 12 research hypotheses associated with direct causal effects. There are two groups of variables representing Enterprise Behavior and Consumer Behavior. The Enterprise Behavior variables are exogenous, three of the

four Consumer Behavior variables are endogenous intervening (mediating) variables and the fourth (Consumer Satisfaction) is the endogenous dependent variable.

Figure 1

Theoretical model



The 12 hypotheses associated with the direct effects in Figure 1 are stated in Table 2 which includes references that motivated the formulation of the hypotheses.

Table 2

Research hypotheses for direct effects

Research Hypothesis	Reference	Research Hypothesis	Reference
Information Disclosure has a significant positive direct effect on: H1. Perceived Pleasure, H2. Perceived Control, H3. Attention Concentration.	Moneta & Csikszentmihalyi, (1996); Gao Zhiyong et al., (2006); Choi et al., (2007); Kim & Lennon, (2010); Jorge & Iguacel, (2019)	Information Utilization has a significant positive direct effect on: H7. Perceived Pleasure, H8. Perceived Control, H9. Attention Concentration.	Jackson & Csikszentmihalyi (1999); Johnson & Meischke (1993); Moneta & Csikszentmihalyi (1996); Choi et al., (2007); Jorge & Iguacel (2019)
Information Interaction has a significant positive direct effect on: H4. Perceived Pleasure, H5. Perceived Control, H6. Attention Concentration.	Moneta & Csikszentmihalyi, (1996); Saracevic, (1997); Bauer et al., (2002); Choi et al., (2007); Su Hailin et al., (2014); Jorge & Iguacel, (2019)	The direct effect on Consumer Satisfaction due to: H10. Perceived Pleasure, H11. Perceived Control, H12. Attention Concentration	Kotler (1967); Csikszentmihaly (1990); Fornell (); Moneta & Csikszentmihalyi (1996); Hellier et al. (2003); Mouri (2005); Choi & Kim (2004); Jorge & Iguacel (2019)

Note: Throughout H1 – H12 significant refers to statistical significance at a level of 0.05 or less.

Table 3 presents definitions for each of the seven latent variables in the theoretical model with references for the definition and existing measuring instruments that were used.

Table 3*Definitions and measurement of model variables*

Variable (Indicators)	Definition	Reference for Definition	Existing Measuring Instrument
Information Disclosure (ID1-5)	The extent to which: Online information disclosed by the enterprise is: comprehensive, current, reliable, accurate, attractive, and well organized.	Ballou & Pazer (1985); Zhang Jizhe (2006); Gao Zhiyong et al. (2006)	Kahn et al. (2002); Gao Zhiyong et al, (2006); Kim & Lennon (2010)
Information Interaction (II1-6)	The enterprise answers questions from consumers appropriately, conducts surveys of consumer feelings and opinions about products and services, understands consumer needs and responds quickly to those needs.	Feiner (1992); Saracevic (1997); Bauer et al. (2002)	Saracevic (1997); Bauer et al.(2002) ; Zhang Xiangxian et al. (2014)
Information Utilization (IU1-6)	Information provided by the enterprise is communicated properly, useful, meets consumer needs, personalized, improves consumer efficiency, and available at anytime and anywhere.	Johnson & Meischke (1993)	Johnson & Meischke (1993); Johnson et al. (1995)
Perceived Pleasure (PP1-4)	The activity of using the enterprise's online information behavior is perceived to be enjoyable, apart from any anticipated performance consequences.	Csikszentmihalyi (1990,1998); Lee et al. (2002); Choi et al. (2007); Jorge & Iguacel (2019)	Csikszentmihalyi (1990,1998); Choi et al. (2007); Jorge & Iguacel (2019)
Perceived Control (PC1-5)	Using the enterprise information platform makes a consumer feel calm, free, unrestricted, in control, and able to search for information independently.	Csikszentmihalyi (1990,1998); Moneta & Csikszentmihalyi (1996)	Csikszentmihalyi (1990,1998); Moneta & Csikszentmihalyi (1996); Chen et al. (2018)
Attention Concentration (AC1-5)	Enterprise online information attracts, focuses, and maintains the attention of the consumer.	Csikszentmihalyi (1990,1998); Jackson &Csikszentmihalyi (1999)	Jackson & Csikszentmihalyi (1999); Koufaris (2002)
Consumer Satisfaction (CS1-4)	Overall the enterprise and the performance of its products satisfy consumer expectations.	Philip (1967) ; Fornell (1992); Hellier et al. (2003); Mouri (2005)	Fornell (1992); Hellier et al. (2003); Mouri (2005); Su Hailin et al. (2014)

In Table 3 each of the indicators is measured on a 5-point Likert scale and the measures are treated as interval scale in analyses.

Data Preparation and Descriptive Analyses

This section presents the results of analyses. The discussion of these results is addressed in the next section.

Data Preparation

Data from 479 questionnaires were entered into an SPSS worksheet and a random selection of 10 percent (48) was checked for accuracy of data entry. No errors were found and none of the questionnaires included missing values or an outlier measure for any of the indicators for the latent variables.

Principal Component factor analysis was used to examine the construct validity of the latent variables. This required indicators to load onto only the latent variable that they were proposed to

measure with a factor loading of at least 0.4 in magnitude and an associated eigenvalue of at least 1 (Straub & Gefen, 2004). The equivalence reliability of the sets of indicators was assessed using Cronbach alpha coefficients. The satisfactory results for construct validity and equivalence reliability are shown as part of Table 5.

Participants and Model Variables

Descriptive statistics for the distributions of the personal characteristics of the 479 participants are summarized in Table 4.

Table 4

Descriptive statistics for personal characteristics of respondents

Characteristic	Descriptive Statistics	Characteristic	Descriptive Statistics	Characteristic	Descriptive Statistics
Gender	247 males (52%) and 232 females (48%)	Source of Monthly Income	Mode = Employment (68%)	Device used to access the internet	Mode = Smartphone (66%)
Age (Years)	Mean = 32, Median = 28, Mode = 33 (22%), Standard Deviation = 10	Monthly Income (Yuan)	Mean = 5,540, Median = 6,000, Mode = 6,000 (19%), Standard Deviation = 3,253	Communication channel used to seek information about products or services	Mode = Online Social Media (59%)
Level of Education (Years)	Mean = 15, Median = 16, Mode = 16 (59%), Standard Deviation = 2	Monthly Expenditure (Yuan)	Mean = 3,486, Median = 4,000, Mode = 2,000 (35%), Standard Deviation = 2,373	Number of years of experience using the internet to seek information about products or services	Mean = 5, Median = 4, Mode = 5 (19%), Standard Deviation = 4
Occupation	Mode = Full Time Student (21%)	Internet Usage (Hours /day)	Mean = 5, Median = 5, Mode = 3 (20%), Standard Deviation = 3		

Table 5 includes descriptive statistics for the indicators of model variables.

Table 5

Model variables: validity, reliability and descriptive statistics

Variable and Indicator	Validity/Reliability		Descriptive Statistics					Variable and Indicator	Validity/Reliability		Descriptive Statistics				
	Factor Loading	Eigen value (% of Variance)	Cronbach Alpha	Mean	Standard Deviation	Skewness	Kurtosis		Factor Loading	Eigen value (% of Variance)	Cronbach Alpha	Mean	Standard Deviation	Skewness	Kurtosis
Perceived Control	PC1	.77	.93	2.50	1.08	.41	-.44	Information	ID1	.79	(6.1)	2.60	.94	.38	-.10
	PC2	.76		2.58	1.02	.46	-.32		ID2	.73		2.48	.98	.52	-.00
	PC3	.72		2.48	1.03	.56	-.16		ID3	.79		2.55	1.01	.50	-.01
	PC4	.79		2.63	.94	.42	-.03		ID4	.78		2.43	.98	.49	-.15

Perceived Pleasure	PC5	.77			2.57	.99	.56	.02	Information Interaction	ID5	.74				2.55	.94	.51	.06
	PP1	.88			3.22	.85	.15	.08		II1	.75				2.85	.95	.21	-.31
	PP2	.82	1.4		2.93	.96	.28	-.37		II2	.77				2.92	.92	.10	-.30
	PP3	.82	(3.9)	.91	2.94	.94	.19	-.24		II3	.79	16.1			2.95	.94	-.07	-.18
	PP4	.87			2.99	.94	.14	-.39		II4	.79	(46.0)	.93		2.94	.95	.03	-.43
Attention Concentration	AC1	.79			2.55	.97	.43	-.03	Information Utilization	II5	.77				2.85	.91	.22	-.39
	AC2	.79			2.44	1.00	.60	-.08		II6	.76				2.91	.86	.12	-.15
	AC3	.75	1.5		2.53	.92	.49	.09		IU1	.73				2.57	1.01	.46	-.18
	AC4	.77	(4.2)	.92	2.54	.99	.41	-.13		IU2	.70				2.64	.98	.32	-.23
	AC5	.77			2.69	.88	.31	.10		IU3	.75	2.7			2.68	.96	.23	-.35
Consumer Satisfaction	CS1	.70			2.71	.94	.32	-.10		IU4	.72	(7.8)	.94		2.48	1.01	.46	-.20
	CS2	.77			2.68	.98	.40	-.02		IU5	.74				2.56	1.00	.37	-.21
	CS3	.76	1.1		2.61	.98	.42	-.16		IU6	.74				2.45	.96	.59	.06
	CS3	.76	(3.2)	.91														
	CS4	.73			2.54	.94	.41	-.18										

Note for Factor Analysis: *Extraction Method:* Principal Component Analysis. *Rotation Method:* Equamax with Kaiser Normalization. Rotation converged in 10 iterations. Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.96. Bartlett's Test of Sphericity Approx. Chi-Square = 14688.93, df = 595, Significance = 0.00. Components with eigenvalues less than 1 are not shown. Percentage of total variance explained = 78.34%.

From Table 5 it is seen that the magnitudes of skewness and kurtosis for each indicator are within the acceptable limits of 3 and 7, respectively, required for the use of maximum likelihood estimation in SEM analyses (Kline, 2016). For the purpose of descriptive analyses the latent variables were converted to single interval scale measures using the weighted mean of the values of their indicators with the standard deviations as the weights. These single scale measures are used only in the following descriptive analyses. The separate values of the indicators were used in the SEM analyses.

T-tests showed that the mean values of the model variables were significantly greater than the neutral value of 3 on their 5-point scales except for Perceived Pleasure where the mean was not significantly different from 3 ($p < 0.05$). T-tests showed that there were no significant differences between the mean values of variables for males and females except for years of education where the mean for females (15.4) was significantly greater than the mean for males (15.0) with approximately equal variances for both groups ($p < 0.05$).

Correlations among variables are shown in Table 6 where bold type indicates statistical significance at a level of 0.05 or less.

Correlations

Variables	Personal Characteristics						Model Variables					
	Age	E	MI	ME	U	EX	ID	II	IU	PC	PP	AC
Level of Education (E)	.06	1										
Monthly Income (MI)	.44	.34	1									
Monthly Expenditure (ME)	.38	.25	.70	1								
Internet Usage (U)	-.17	-.01	-.09	.00	1							
Experience (EX)	.40	.15	.32	.35	.09	1						
Information Disclosure (ID)	.02	.05	.04	.01	.01	-.057	1					
Information Interaction (II)	-.01	-.03	-.05	-.06	.03	-.044	.48	1				
Information Utilization (IU)	.04	.01	-.00	.01	-.06	-.047	.66	.53	1			
Perceived Control (PC)	.02	-.04	-.05	-.03	-.02	-.057	.57	.49	.60	1		
Perceived Pleasure (PP)	.04	.06	.02	-.04	-.06	-.027	.34	.37	.38	.28	1	
Attention Concentration (AC)	.03	.01	.01	.03	-.05	-.015	.50	.42	.55	.61	.41	1
Consumer Satisfaction (CS)	.06	.00	-.03	-.01	-.00	.021	.59	.54	.66	.61	.47	.60

From Table 6, all of the coefficients associated with causal effects in the theoretical model are significant and positive. There are three significant correlations which suggest plausible effects that may be added to the theoretical model (Information Disclosure, Information Interaction, and Information Utilization → Consumer Satisfaction). These plausible additions are considered in the next section as part of the development of the model.

Model Analyses and Development

Figure 2 shows the results of the SEM analysis using Amos software for direct effects in the theoretical model. The notations * and NS indicate statistical significance at a level of .05 or less and not statistically significant at that level, respectively. Unstandardized effects are shown first with standardized effects in parentheses and an interpretation of their magnitude according to Cohen (1988): ≤ 0.1 indicates a small effect (S); between 0.1 and 0.5 a medium effect (M); and ≥ 0.5 a large effect (L). These notations are used throughout all of the results for model analyses.

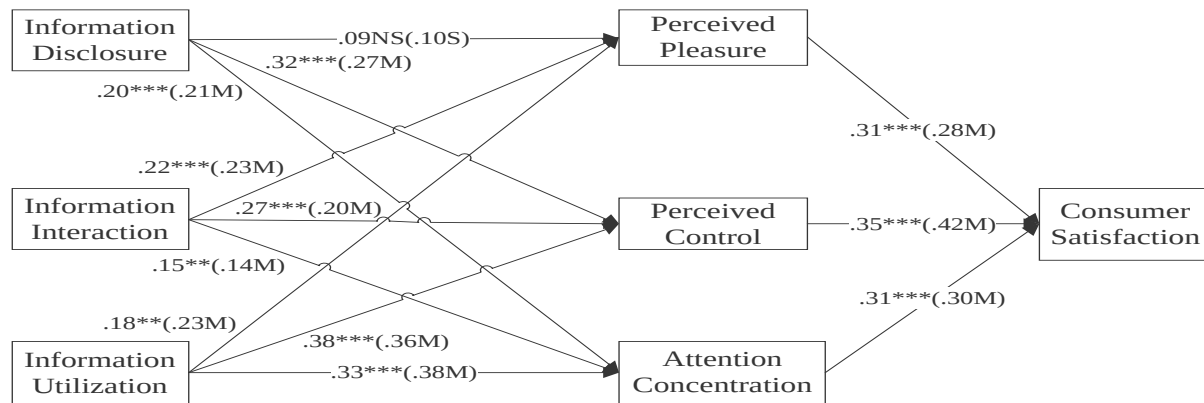
Figure 2*Direct effects in the theoretical model*

Table 7 shows a range of fit statistics for the theoretical model as recommended by Kline (2016).

Table 7*Fit statistics for theoretical model*

Theoretical Model	N	Normed Chi-square (NC = χ^2/df)	RMR	GFI	AGFI	NFI	IFI	CFI	RMSEA
	479	938.55/545 = 1.72	0.06	0.90	0.88	0.94	0.0.97	0.97	0.04
		R ² : AC (0.41), PC (0.52), PP (0.23), CS (0.60)							

From Table 7 it is seen that the fit statistics RMR and AGFI are slightly less than satisfactory and the effect of Information Disclosure on Perceived Pleasure in Figure 2 is small and not statistically significant. Consequently, it is desirable to seek an improved model. Three additional direct effects suggested by the significant correlations in Table 6 were added to the theoretical model and, together with the effect of Information Disclosure on Perceived Pleasure, these four effects were made optional in a specification search using Amos. The 16 models in the hierarchy were analyzed and among these the model with the least value for NC was selected as the final model (Kline, 2016). Fit statistics for the final model are shown in Table 8 and direct effects are shown in Figure 3.

Table 8*Fit statistics for final model*

Final Model	N	Normed Chi-square (NC = χ^2/df)	RMR	GFI	AGFI	NFI	IFI	CFI	RMSEA
	479	872.622/543 = 1.61 R² : AC (0.40), PC (0.50), PP (0.22), CS (0.66)	0.05	0.91	0.90	0.94	0.98	0.98	0.04

The final model has improved fit statistics and reasonable proportions of the variance of the endogenous variables (R^2) are explained by the model.

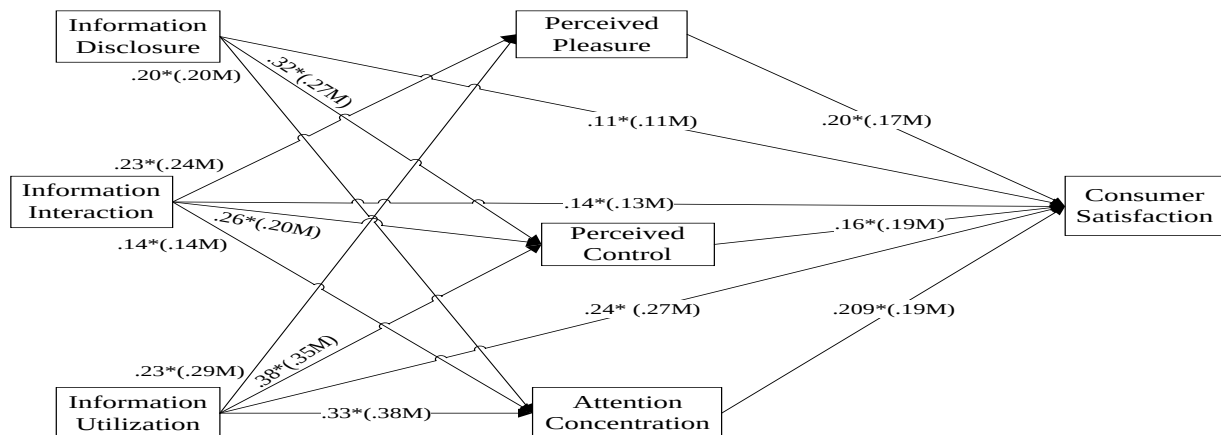
Figure 3*Direct effects in the final model*

Table 9 shows the indirect effects, the totals of indirect effects, and the totals of indirect and direct effects in the final model.

Table 9*Indirect effects and total effects in the final model*

Causal Variable	Indirect Effects on Consumer Satisfaction				Total Effects			
	Mediating Variable			Total of Indirect Effects	Affected Variable			Consumer Satisfaction
	Perceived Pleasure	Perceived Control	Attention Concentration		Perceived Pleasure	Perceived Control	Attention Concentration	
Information Disclosure	Nil	.05NS(.05S)	.04 NS (.04S)	.09* (.09S)	Nil	.32* (.27M)	.20* (.20M)	.20* (.20M)
Information Interaction	.05NS(.04S)	.04NS(.04S)	.03 NS (.03S)	.12* (.11M)	.23* (.24M)	.26* (.20M)	.14* (.14M)	.26* (.23M)
Information Utilization	.05NS(.05S)	.06NS(.07S)	.07 NS (.07S)	.18* (.19M)	.23* (.29M)	.38* (.35M)	.33* (.38M)	.31* (.45M)
Perceived Pleasure	Nil	Nil	Nil	Nil	Nil	Nil	Nil	.20* (.17M)

Causal Variable	Indirect Effects on Consumer Satisfaction				Total Effects			
	Mediating Variable			Total of Indirect Effects	Affected Variable			
	Perceived Pleasure	Perceived Control	Attention Concentration		Perceived Pleasure	Perceived Control	Attention Concentration	Consumer Satisfaction
Perceived Control	Nil	Nil	Nil	Nil	Nil	Nil	Nil	.16*(.19M)
Attention Concentration	Nil	Nil	Nil	Nil	Nil	Nil	Nil	.20*(.19M)

Note: The statistical significance of: indirect effects were determined following Cohen and Cohen (1983); and total effects were determined using nonparametric bootstrapping with 1,000 random samples.

Discussion of the Findings

Participants

From Table 4, it is evident that the participants are mature, well educated, in responsible positions, and experienced with online interactions. None of the variables included in the model were considered to be unimportant in relation to online behaviors. There were no significant differences between males and females except that females had significantly more years of formal education (15.4) compared to males (15.0).

From Table 6, it is seen that compared to younger participants the older participants have high monthly incomes and expenditures and they have more experience in finding information online. However, on a daily basis they do not use the internet as often as the younger participants. None of the personal characteristics was correlated significantly with any of the Enterprise or Consumer behaviors.

Research Hypotheses for Direct Effects

The findings supported all of the 12 research hypotheses for direct effects (Table 2) except for *H1: Information Disclosure has a significant positive direct effect on Perceived Pleasure* which was derived from Gao Zhiyong et al. (2006), Choi et al. (2007), Kim and Lennon (2010), and Jorge and Iguacel (2019). Consequently, there is no evidence to suggest that increasing information disclosure will lead to significant increases in pleasure among consumers. However, from Table 6 it is evident that consumers who derive the most pleasure from disclosed information consider that information to be very, current, reliable, accurate, attractive, and well organized.

Indirect and Total Effects

The analyses of indirect and total effects provide more accurate and detailed information than is obtained by only considering direct effects. From Table 9, the eight separate indirect effects of information disclosure, interaction, and utilization on consumer satisfaction are small and not statistically significant but in each case the totals of the indirect effects on consumer satisfaction are statistically significant, medium for information interaction and utilization and small for information disclosure.

In Table 9, all of the total effects in the final model are statistically significant, positive, and medium in magnitude. Considering standardized total effects on consumer satisfaction the order from greatest to least effect starts with the three enterprise behaviors (information utilization, interaction, and disclosure) followed by the three consumer behaviors (perceived control, attention concentration, and perceived pleasure). In contrast, if only direct effects are considered the order of effects on consumer satisfaction is quite different with attention concentration, perceived control, and pleasure appearing to be more important and information interaction and disclosure less important.

Among the three enterprise behaviors information utilization has the strongest influence on each of the three intervening consumer behaviors (attention concentration and perceptions of pleasure and control) and consumer satisfaction. Information disclosure has its strongest influence on perceived control and information interaction has its strongest influence on perceived pleasure.

New Findings

Table 10 summarizes findings that have not been reported in previous studies.

Table 10

New findings

Direct effects on Consumer Satisfaction due to Information Disclosure, Information Interaction, and Information Utilization are positive, medium, and significant.

The direct effect on Perceived Pleasure due to Information Disclosure is not statistically significant.

The total of the indirect effects on Consumer Satisfaction due to Information Disclosure, Information Interaction, and Information Utilization are positive and significant.

Total effects on Consumer Satisfaction due to Information Disclosure, Information Interaction, and Information Utilization are positive, medium, and significant.

These new findings require validation in further studies. In particular, they highlight the important need for studies of causal effects to analyze and report indirect effects and total effects rather than only direct effects.

Practical Implications of the Findings

From total effects in Table 9 it is possible to develop a hierarchical set of practical actions that increase consumer satisfaction. These are described in Table 11 with actions 1, 2, and 3 in decreasing order of their influence on consumer satisfaction.

Table 11*Practical actions to increase consumer satisfaction*

Enterprise Action to Increase Consumer Satisfaction	Enterprise Behavior	Comment
1. Ensure that information provided by the enterprise about products and services is: (a) Communicated properly; (b) Useful to the consumer; (c) Personalized for the consumer; and (d) Available at anytime and anywhere.	Information Utilization	The actions in 1 are the best means for increasing the consumer's: (a) Pleasure; (b) Feeling of calmness, unrestricted freedom, and ability to search for information independently; and (c) Attention to the enterprise information.
2. Ensure that the enterprise: (a) Answers questions from consumers appropriately; (b) Conducts consumer surveys of feelings and opinions about products and services; and (c) Understands consumer needs and responds quickly and willingly to those needs.	Information Interaction	Also, the actions in 2 contribute to achieving the same outcomes.
3. Ensure that online information is: (a) Comprehensive; (b) Current; (c) Reliable; (d) Accurate; and (e) Attractive and well organized.	Information Disclosure	The actions in 3 contribute to increasing the consumer's: (a) Feeling of calmness, unrestricted freedom, and ability to search for information independently; and (b) Attention to the enterprise information.

The comments in Table 11 indicate additional direct influences on other consumer behaviors (Attention Concentration, Perceived Pleasure, and Perceived Control) that act as mediators in the indirect effects of enterprise behaviors on consumer satisfaction.

Conclusion

The study has shown that in an online environment the most important influence on a consumer's satisfaction is Information Utilization (i.e. enterprise information must: be personalized, useful, and meet consumer needs; improve consumer efficiency; and be available anywhere at any time). Second, is Information Interaction (i.e. the enterprise's ability to: answer questions, conduct useful surveys of consumer feelings and opinions; understand consumer needs and respond quickly and willingly to those needs). Third, is Information Disclosure (i.e. online information must be: comprehensive; current; reliable; accurate; attractive; and well organized).

The enterprise behaviors have indirect influences on consumer satisfaction by increasing: Perceived Control (i.e. consumers feel calm, free, unrestricted, knowledgeable, and able to search for information independently); Attention Concentration (i.e. information attracts, focuses, and maintains the attention of the consumers); and Perceived Pleasure (i.e. the disclosed information is enjoyable). However, Perceived Pleasure is not influenced significantly by Information Disclosure but is influenced mainly by Information Utilization.

The theoretical contributions of the study confirm that: **(a)** effects among these behaviors in the western societies are also evident in the context of China; and **(b)** there are new theoretical findings as shown in Table 10. New findings require further validation but certainly highlight the advantages of analyzing indirect and total effects rather than only direct effects. The discussion of the findings includes practical implications which follow from the theoretical results.

There are limitations on the findings. The external validity must be confirmed by further studies. Students formed a large part of the sample and consequently older individuals were outnumbered by younger participants. It is possible that other enterprise and consumer behaviors are relevant and should be included in the model. However, the findings are useful and certainly contribute to an increased understanding of the relationships between enterprise and consumer behaviors in online environments in the context of China.

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