An Empirical Study For Investigating How Politeness in Virtual Commercial Contexts Influence Customer Satisfaction and Loyalty

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Abstract—Politeness exhibited in a commercial context influences a business. E-commerce emerges a major way to conduct business; by contrast, politeness issues in virtual commercial contexts receive rare attention. This work aims to investigate whether politeness influence customer satisfaction and loyalty in online storefronts. The present work extended the American customer satisfaction index (ACSI) model by taking the politeness construct into account. The instrument's reliability and validity were confirmed through empirical data analysis. By using the extended model, business can examine to which extent the politeness will influence their customers' satisfaction and loyalty. Besides its practical applications, this work sets a stage for future studies trying to investigate the relationships between the politeness construct and other constructs interesting business administrators.

Keywords - E-commerce; online storefronts; politeness; ACSI model; SEM.

I. INTRODUCTION

Politeness broadly refers to legitimate and considerate interactions among persons, which was found as a foundation of modern civilization [1] and a key factor upholding prosperous and peaceful societies [2]. Particularly, politeness is significant within commercial contexts. A merchant will lose its customers gradually if it cannot treat them politely; even it has other merits such as competitive pricing, plentiful product choices, advanced facilities, convenient layout, etc. Impoliteness in commercial contexts often hurts people's feelings and faces, thus will overshadow the above merits, and leave customers negative impression and words-of-mouth. Based on practical experiences and rationales, politeness in commerce contexts influences peoples' perceptions, satisfaction, and loyalty. Many prior academic studies [3]-[5] confirmed the influence of politeness on customer satisfaction, which is a key driver of customer loyalty [6], sustainable revenue [7][8], and successful business.

In addition, according to prior studies that developed measurements for measuring service quality in different segments, politeness was treated as one of the determinants of business' service quality [9][10], which in turn has been proved as a significant influence on customer satisfaction [11][12], and on buyers' re-purchasing and referral behaviors [13], which is called customer loyalty.

In light of its significance in operating a successful business and the latent relationships with customer Shueh-Cheng Hu Department of Computer Science & Comm. Engineering Providence University Taichung 43301, Taiwan, ROC e-mail: shuehcheng@gmail.com

satisfaction and loyalty, the present work aims to formally investigate how politeness will influence customer satisfaction and loyalty in online storefronts and to which extent the influence will be.

The remaining parts of this article are organized as follows: Section II briefs prior studies regarding the politeness and the ACSI model; Section III describes the research method; Section IV analyzes the research findings; and the concluding remarks, implications, and future directions were provided in Section V.

II. PRIOR WORKS REVIEW

A. Politeness and Business Administration

Prior study found that people expect politeness from computers reciprocally, just like they treat their computers with politeness [14]. The findings indicate that people do care about the politeness of computers with which they interact. Another study indicated that the politeness shown by computers will make users behave reciprocally with more politeness [15]. Besides, a number of prior studies [16]-[19] also confirmed the influence of politeness on human-computer interactions.

Regarding the commercial contexts, Berry [20], Reynolds and Beatty [21] found that rapport consisting of enjoyable interactions and personal connections, is a major determinant affecting customers' satisfaction and loyalty, which contribute to a successful business. Kim and Davis [22] further pointed out that politeness plays a key role in early stage of nourishing rapport between sales representatives and customers. The implication of the above studies is that merchants not likely to build a satisfying and loyal customer base without paying attention to the politeness issues in their commercial contexts.

When waves of computer and Internet keep on permeating into various aspects of our daily life, customers eventually will well recognize the politeness issues in online storefronts, just like they do in physical commercial contexts. Whitworth [23] stated that impolite software is one kind of social error, which likely to drive away users. In light of the significance of politeness in widely-computerized societies, Whitworth established a "polite computing" framework [24] that took a multi-facet viewpoint to examine cyberspace's politeness beyond linguistic strategies. The framework consists of five principles for judging whether computer-initiated actions in five different facets are polite or not, based on users' perceptions. The 5 principles for judging politeness are summarized as follows:

1. Respect user's rights; polite software respects and thus does not preempt users' rights. Besides, polite software does not utilize information before obtaining the permission from its owner.

2. Behave transparently; polite software does not change things in secret, in contrast, it clearly declares what it will do or is doing, the real purpose of the action, and who it represents.

3. Provide useful information; polite software helps users make informed decisions by providing useful and comprehensible information, in contrast, they avoid providing information that distract or even mislead users.

4. Remember users; polite software memorize its past interactions with a specific user, thus can bring that user's choices and preferences to future interactions.

5. Respond to users with fidelity; polite software must respond to users' requests faithfully rather than trying to pursue its own agenda.

B. Customer Satisfaction and the ACSI

According to prior studies, customer satisfaction plays key role in improving revenue [25]-[27] and increasing profit [28]-[30]. Furthermore, because it also positively affects stock investment returns [31][32], smart investors incline to those enterprises with higher customer satisfaction. In view of its significance, enterprises must be concerned about how to satisfy their customers, in effective and efficient ways.

The ACSI [33], is a benchmark for measuring customer satisfaction with the quality of products and services available to household consumers in the United States. The ASCI periodically reports customer satisfaction scores ranging from 0 to 100 on four different levels: national, 10 economic sectors, 47 major industries, and more than 230 companies/agencies, according to the perceived experience of consumers. To collect data, roughly 70,000 customers are randomly picked and surveyed annually.

Many research works have been conducted based on the rationales of the ASCI model, some used the original ACSI model, while many others applied variant models that were adjusted according to specific requirements. By using the ACSI, profitability and firm value in the hospitality and tourism industry were proved to be related with customer satisfaction [34]. The reliability of ACSI was studies and confirmed in different industries of other countries [35]. Antecedents of aggregate customer satisfaction were investigated by analyzing the relationships between cross-country economic indicators and national customer satisfaction data [36]. A model derived from the ACSI was successfully applied to identify factors which most significantly affect customer satisfaction of low-priced housing industry in Beijing, China [37]. An index for gauging customer satisfaction in online re-tailing in Taiwan (e-CSI), was developed based on the ACSI and was found to be effective in measuring customer satisfaction and predicting customer loyalty accordingly [38]. Overall speaking, the ACSI methodology have been proved to be a reliable and valid instrument for gauging customer satisfaction in national, sector, industry, and company levels.

III. RESEARCH METHOD

A. Hypothesis Model Development

Responses from surveyed customers are fed into the extended ACSI model, which is a multi-equation econometric model developed by the University of Michigan's Ross School of Business, American Society for Quality, and the CFI group in 1994. As Figure 1 illustrates, the extended ACSI model is a cause-and-effect model with 4 constructs for representing antecedents of customer satisfaction on the left side: customer expectations, perceived quality, perceived value, and politeness; construct of customer satisfaction in the center; while two constructs for representing consequences of satisfaction on the right side: customer complaints and customer loyalty [39]. Customer loyalty consists of the re-purchase intention and the price tolerance; the former gauges customer's professed likelihood to repurchase from the same supplier in the future, while the latter one gauges customer's likelihood to purchase a company's products or services at various price points. Customer loyalty is a critical construct in the model since it is a key determinant of firm profitability.

Each construct is a multivariable component, which could be measured by several questions that are weighted within the model, and the questions assess customer evaluations of the determinants of each construct. Since the present study adopted the extended ACSI model to investigate the antecedents and consequences of customer satisfaction. Being consistent with prior studies adopting the similar model, the following 11 hypotheses are made about customers' perceptions in the context of online commerce:

- H₁: Customer expectations (CE) will have a positive impact on perceived quality (PQ).
- H₂: Perceived quality (PQ) will has a positive impact on perceived value (PV).
- H₃: Perceived quality (PQ) will has a positive impact on customer satisfaction (CS).
- H₄: Customer expectations (CE) will have a positive impact on perceived value (PV).
- H₅: Customer expectations (CE) will have a positive impact on customer satisfaction (CS).
- H₆: Perceived value (PV) will has a positive impact on customer satisfaction (CS).
- H₇: Customer satisfaction (CS) will has a negative impact on customer complains (CC).
- H₈: Customer satisfaction (CS) will has a positive impact on customer loyalty (CL).
- H₉: Customer complains (CC) will have a negative impact on customer loyalty (CL).

- H₁₀: Politeness (PL) will has a positive impact on customer satisfaction (CS).
- H₁₁: Politeness (PL) will has a positive impact on customer loyalty (CL)



Figure 1. The hypothesis model of the extended ACSI

B. Instrument

To verify the hypothesis model, a field study technique was employed through a survey. A structured questionnaire was used to survey customers' perceptions. The questionnaire contains total 21 items as Table. I shows; each construct (dimension) have number of corresponding items reflecting the manifest variables. The items basically came from the methodology report of the ACSI [40] and the polite principles proposed by Brian Whitworth and his colleagues [41], all these question items were devised according to the relevant studies and theories. All items in the survey were on a seven-point scale, ranging from strongly disagree (1) through neutral (4) to strongly agree (7). A pretest of the survey was conducted to check if there exist any ambiguous loadings before administration of the survey.

C. Participants

An online questionnaire was used to collect participants' opinions; the participants were, in part, recruited from information management majored college students in Taiwan. Besides, to broaden the sampling population, friends and family members of the recruited students were also invited. Before answering the questionnaire, a short instruction was provided for guiding the participants to assess online storefronts. After the orientation, 536 participants filled the online survey in May and June 2014, and 346 completed the survey effectively. The subjects whose responses were considered to be effective must have more than 5-year experience in online shopping. 182 (52.6%) out of 346 effective respondents were female, respondents were aged between 18 to 63 year-old, and their average age is 45.2.

IV. FINDINGS & ANALYSIS

The analysis of collected data was conducted with the Statistical Product and Service Solutions (SPSS). After that,

Latent	Variable	le Manifest Variable (Question) Description			
	PQ1	Overall evaluation of quality experience			
		Final and the control of the control			
Perceived		Evaluation of customization experience, or			
	PQ2	how well the service fits the customer's			
Quality		personal requirements (post-purchase)			
		Evaluation of reliability experience, or how			
	PQ3	often things have gone wrong with service			
		(post purchase)			
Perceived	PVI	Rating of price given quality			
Value	PV2	Rating of quality given price			
	CS1	Overall satisfaction			
Customer	CS2	Expectancy disconfirmation (performance			
Satisfaction	052	that falls short of or exceeds expectations)			
Satisfaction	CS3	Performance versus the customer's ideal			
	035	product and service in the category			
		Has the customer complained to the			
Customer	CC1	company regarding the product/service			
Complaints		quality			
Comptaints	CC^{2}	Has the customer complained to the			
	002	company regarding the service encounter			
	CL1	Repurchase likelihood rating			
Customer	CL2	Price tolerance (increase) given repurchase			
Loyalty	CL 3	Price tolerance (decrease) to induce			
	CL5	repurchase			
	CL4	Say good things about the merchant to other			
	CL4	people			
	CE1	Overall expectation of quality (pre-purchase)			
		Expectation regarding customization, or how			
Customor	CE2	well the product and service fits the			
Expostations	CE2	customer's personal requirements			
Expectations		(pre-purchase)			
	CE2	Expectation regarding reliability, or how			
	CE5	often things would go wrong (pre-purchase)			
	DI 1	Merchants do not display disturbing but			
	PLI	irrelevant messages			
Politeness -	PL2	Merchants use member information only			
		after notification and getting permission			
	PL3	Merchants provide well-organized			
		catalogues and/or search engines, so patrons			
		can find particular products with ease			
	PL4	Merchants remember my preferred choices			

CONSTRUCT AND INSTRUMENT ITEMS

TABLE I.

an advanced statistics method - structured-equation model (SEM) was employed to carry out the subsequent analysis by applying the LISREL 9. The LISREL takes into account all co-variances in the data set and thus allows users to simultaneously examine the correlations, shared variances, the casual relationships between constructs (hypothesis), and the significance level and coefficient of the lines.

A. Reliability of the Instrument

Reliability of the questionnaire, which comprises 7 constructs, was evaluated using Cronbach's alpha. As Table II shows, the Cronbach's alpha values of all constructs were close to 0.6, except the customer loyalty (CL), which composite reliability value is 0.53. These values indicated the instrument has a moderate reliability. Besides, other measurement model fit indices all exceed the common threshold values recommended by domain experts [42][43]. The figures also indicated that all items load significantly on

their corresponding construct demonstrating adequate convergent validity.

Variable	Standardized item loading	Measure error	Indicator reliability (SMC)	Composite reliability (CR)	Variance extracted (VE)
PQ1	0.78	0.4	0.61		
PQ2	0.79	0.37	0.62	0.60	0.775
PQ3	0.76	0.43	0.58		
PV1	0.87	0.24	0.76	0.74	0.960
PV2	0.85	0.28	0.72	0.74	0.860
CS1	0.59	0.65	0.35		
CS2	0.84	0.29	0.71	0.58	0.763
CS3	0.83	0.31	0.69		
CC1	0.85	0.28	0.72	0.65	0.806
CC2	0.76	0.42	0.58	0.05	0.800
CL1	0.80	0.37	0.64		
CL2	0.78	0.4	0.61	0.53	0 728
CL3	0.81	0.34	0.66	0.55	0.728
CL4	0.47	0.78	0.22		
CE1	0.78	0.39	0.61		
CE2	0.78	0.4	0.61	0.62	0.790
CE3	0.81	0.34	0.66		
PL1	0.75	0.43	0.56		
PL2	0.86	0.26	0.74	0.68	0.824
PL3	0.85	0.28	0.72	0.08	0.624
PL4	0.83	0.31	0.69		

TABLE II. MEASUREMENT MODEL FIT INDICES FOR CONVERGENT VALIDITY

B. Discriminant validity and goodness-of-fit

Discriminant validity was assessed according to the Holmes-Smith [44] stating that variance extracted estimates should exceed square of the correlation between the two constructs. In this work, correlation matrix approach and factor analyses were applied to examine the convergent and discriminant validity. As summarized in Table III, the smallest within-factor correlations are adequate. Besides, each smallest within-factor correlation was considerably higher among items intended for the same construct than among those designed to measure different constructs. These data suggest that adequate convergent and discriminant validity of the survey.

TABLE III. INTER-CONSTRUCT CORRELATIONS MATRIX

Latent	PQ	PV	CS	CC	CL	CE	PL
PQ	0.775*						
PV	0.40	0.860*					
CS	0.46	0.39	0.763*				
CC	0.00	0.00	-0.37	0.806*			
CL	0.00	0.00	0.58	-0.03	0.728*		
CE	0.68	0.18	0.17	0.00	0.00	0.790*	
PL	0.00	0.00	0.09	0.00	0.02	0.00	0.824*
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The eight common goodness-of-fit indexes, summarized in Table IV, exceed their respective common acceptance levels, suggesting that the research model exhibited a good fit with the collected data.

GOODNESS-OF-FIT MEASUREMENTS		
Level of Acceptable fit	Model Result	
$P \ge 0.05 [12]$	388.23 (p=0.0)	
<3 [2]	388.23/177=2.193	
< 0.08 [13]	0.059	
≥ 0.9 [11]	0.97	
≥ 0.9 [10, 21]	0.90	
≥ 0.8 [11, 21]	0.87	
≥ 0.9 [12]	0.95	
≥ 0.9 [12]	0.97	
	GOODNESS-OF-FIT ME Level of Acceptable fit $P \ge 0.05 [12]$ $<3 [2]$ $<0.08 [13]$ $\ge 0.9 [11]$ $\ge 0.9 [10, 21]$ $\ge 0.8 [11, 21]$ $\ge 0.9 [12]$ $\ge 0.9 [12]$	

C. Influential Effects Analysis

TABLE IV.

The LISREL was used to calculate the coefficients (factor loadings) indicating the extent to which the latent variables affect the measured variables. In summary, Figure 2 and Table V show the standardized LISREL path coefficients and corresponding t-values. They show that 9 out of the 11 original hypotheses (the corresponding relationships between construct nodes) are significant, except the two: one is between politeness and customer loyalty; another is between customer complaints and loyalty.



Figure 2. Standardized LISREL solution (*:p< 0.05; **:p< 0.01)

TABLE V. HYPOTHESES RESULTS OF RESEARCH MODEL

Hypothesis	Path coefficient	t-value	Acceptable
H₁: Customer Expectations →Perceived Quality	0.68**	10.57	Yes
H ₂ : Perceived Quality →Perceived Value	0.40^{**}	4.38	Yes
H ₃ : Perceived Quality →Customer Satisfaction	0.46**	5.74	Yes
H₄: Customer Expectations →Perceived Value	0.18**	2.08	Yes
H ₅ : Customer Expectations →Customer Satisfaction	0.17**	2.48	Yes
H ₆ : Perceived Value →Customer Satisfaction	0.39**	6.33	Yes
H ₇ : Customer Satisfaction →Customer Complaints	-0.37**	-5.21	Yes
H ₈ : Customer Satisfaction →Customer Loyalty	0.58**	7.36	Yes
H ₉ : Customer Complaints →Customer Loyalty	-0.03	-0.51	No
H ₁₀ : Politeness →Customer Satisfaction	0.09**	2.25	Yes
H ₁₁ : Politeness →Customer Loyalty	0.02	0.45	No

^{*.}p<0.05: **.p<0.01

Table VI summarizes the total causal effects on latent independent variables.

TABLE VI	ANALYSIS OF INFLUENTIAL EFFECTS	
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	Complaints	Loyalty	-0.03		-0.03	

--:no path; *:p<0.05; **:p<0.01

V. DISCUSSION AND CONCLUSIONS

A. Managerial Implications

The research findings provide 3 major implications for online business administrators as follows:

1) The customer expectations, perceived quality, perceived value, and politeness will influence customer satisfaction, but at different scales. Among the 4 antecedents, the perceived quality influence satisfaction most significantly, which means if customers cannot get products or service with good quality, they will be unsatisfied. This is rational for online customers because they usually spend some time on doing research before they purchasing particular items online, and the research work dilutes the impact of perceived expectation and value.

2) The politeness in virtual contexts positively influences customer satisfaction. Thus, to construct a satisfactory virtual commercial environment; online merchants need to take politeness into account, besides those factors including visual design, functionality, operational procedure, and performance of Web sites. Although the findings did not support the direct the causal relationship between politeness and customer loyalty, but customer satisfaction does influence customer loyalty, which still implied the indirect impact brought by politeness on customer loyalty that is a key factor affecting company's performance.

3) There was no significant and negative relationship between customer complaints and loyalty. That means customers who complained about an agent/vendor during the course of a prior transaction still might shop with the same agents/vendors in the future, or they will not incline to the same agent/vendor that they did not complain about. This is not in line with most prior studies adopting the ACSI model. A rational explanation is that customers can find new online merchants with ease, comparing with finding a substitute merchant in physical context. Thus, complaining toward an online merchant looks time-consuming since customers can switch to a new merchant easily, not to mention the processing duration and responses might be unpredictable in virtual contexts. In addition, unhappy online patrons usually tend to file complains toward a customer servant rather than to fill a Web form [45] since they usually can expect to obtain more instant and concrete responses from real persons.

B. Conclusion and Contribution

In a civilized society, people dislike verbal and behavioral impoliteness, regardless of contexts. Obviously, various forms of impoliteness in virtual storefronts that customers tend to avoid will be harmful to online merchants. Both prior studies and rationales told us that politeness in e-commerce contexts are well worth notice and consideration.

In view of the politeness issue's significance in the contexts of commerce, this work developed a model and an instrument for examining the effects of the politeness. The findings confirmed that the instrument is reliable and valid, also indicated that 9 out the 11 hypotheses are accepted in the extended ACSI model. This extended model could be used by business to measure the impact of politeness on their customers' satisfaction and loyalty.

C. Limitation and Future Directions

One major limitation of this work is that there might exist geographical and cultural factors contributing to the research findings; most surveyed subjects are domestic customers who possess different perspectives toward the politeness from customers in other regions or countries. However, e-business models spread over the globe nowadays. Therefore, broader sampling of subjects is necessary to study the same issue from a global viewpoint. Besides, demographic aspects of subjects including gender, age, income, and occupation may result in some of the differences in customer satisfaction, its antecedents and consequences, and is a worthy topic for further research. Furthermore, this work could be extended by adopting a more delicate research model that take dimensions that are associated with e-commerce, such as Web site usability, service encounter, and trust into consideration.

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