TECHNOLOGY ACCEPTANCE MODEL AND THE PATHS TO ONLINE CUSTOMER LOYALTY IN AN EMERGING MARKET

MODEL PRIHVAĆANJA TEHNOLOGIJE I PUTEVI DO ONLINE LOJALNOSTI POTROŠAČA NA TRŽIŠTIMA U RAZVOJU

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technology acceptance model, online shopping, emerging markets, customer loyalty

SAŽETAK

Model prihvaćanja tehnologije (*engl. technology acceptance model – TAM) dobro* je poznat već desetljećima. Međutim globalno prihvaćanje interneta potiče novo zanimanje za primjenu TAM-a u e-trgovanju i postkupovnoj namjeri, posebice na tržištima u razvoju. Podaci su prikupljeni online anketiranjem 758 potrošača u Vijetnamu. Poseban doprinos rezultata jest u tome što pokazuju da percipirana korisnosti jednostavnost

ABSTRACT

The technology acceptance model (TAM) has been well-known for decades. However, the global adoption of the Internet creates new interests in utilizing TAM in e-commerce and the post-consumption intention, especially in emerging markets. Data was collected from 758 online customers via a web-based survey in Vietnam. Particular contribution of the results is that perceived usefulness, perceived ease of use, fair-

korištenja, poštenje, povjerenje i kvaliteta korisničkog sučelja imaju izravan ili neizravan utjecaj na zadovoljstvo i lojalnost potrošača. Nadalje, na tržištima u razvoju povjerenje je istaknuto kao najsnažniji čimbenik stvaranja zadovoljstva potrošača koje vodi lojalnosti potrošača.

ness, trust and the quality of the customer interface have direct or indirect impacts on customer satisfaction and customer loyalty. Moreover, in emerging markets, trust was outlined as the strongest factor contributing to customer satisfaction and leading to customer loyalty.

1. INTRODUCTION

The Technology Acceptance Model (TAM) was introduced in 1986 and has since been developed through many validations, applications and replications. The fundamental salient beliefs of TAM, the perceived ease of its use and its perceived usefulness have been considered as important determinants of computer acceptance behaviors. However, the proliferation of Internet and e-commerce transactions has created a new context within which the models can be tested, as we move from traditional consumer/user behaviors to the spectrum of online shopping behaviors and from the pre-consumption/using intention to the post-consumption intention. Moreover, customer loyalty has been recognized as a key factor for the success of e-stores; therefore, research of the post-consumption intention will enhance our understanding of the individuals' responses.

Other motivations of the study are the roles of other factors on customer loyalty. Fairness, trust, customer interface quality are also very important elements in online shopping. However, very few TAM-based studies include them in their frameworks to determine whether perceived ease of use and perceived usefulness are enough to keep customer loyalty or not (Gefen, Karahanna & Straub, 2003; Pavlou, 2003). Furthermore, the focus of other studies is mainly on developed countries, where e-commerce is popular and customers heavily use virtual transactions. But what about the situation in emerging markets, where customers are hesitant to utilize virtual transactions for shopping?

2. LITERATURE REVIEW

TAM was first introduced by Davis (1986), based on the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), and was later completed by Davis, Bagozzi and Warshaw (1989). According to TRA, behavioral intention that may lead to actual behavior consists of the attitude toward behavior and subjective norm. More specifically, one's attitude toward behavior is estimated by multiplying salient beliefs and evaluations, whereas subjective norm is calculated by a multiplicative function of normative beliefs and motivation to comply. At the beginning, TAM is not as general as TRA, as it focuses on causal linkages between two key beliefs: from perceived usefulness to perceived ease of use. Perceived usefulness is the belief that using a specific application system will raise performance. Perceived ease of use is defined as a specific application system that is free of effort. In TAM, these two particular beliefs are of primary relevance for computer acceptance behaviors. The effects of external variables (for example: system characteristics, development process, training) on attitude toward using, behavioral intention to use and actual system use are mediated by perceived usefulness and perceived ease of use. The attitude toward using that is affected by perceived usefulness and perceived ease of use results in behavioral intention to use, followed by actual system use. Usefulness is a major determinant of behavioral intention to use which will then lead to actual system use. Perceived ease of use has an indirect effect on behavior to use via usefulness. Practical implications of TAM posit that the acceptance of a new system by users is predictable by increasing the acceptability of systems in order to enhance the business impacts ensuing from large investments of time and money in introducing new information technologies. Improving use acceptance is also important since the key impediment to use acceptance is insufficient 'user friendliness' of current systems while adding usability-increased user interfaces is a prerequisite for achieving success (Nickerson, 1981). Perceived usefulness is more important than perceived ease of use because users will tolerate a difficult interface if they wish to access functionality. However, there is little tolerance for a system perceived as not useful.

TAM has had numerous empirical developments through validations, application and replications.

For example, Davis (1993) continued developing TAM by checking system design features as an external stimulus and obstacle for behavioral intention to use. Davis (1993) finds that design choices influence perceived ease of use and from there, can impact user acceptance; Szajna (1994, 1996) conducted an empirical test of the revised TAM and found that self-reported usage may not be an appropriate surrogate measure for the actual usage. Davis and Venkatesh (1996) excluded the attitude construct because attitude toward using did not fully mediate the effect of perceived usefulness on the intention based upon empirical evidence of Davis et al. (1989). Gefen and Straub (1997) inserted social presence and information richness as external variables, also adding gender due to the belief in the effects of gender and cultural factors on the information technology diffusion model. Hu, Chau, Sheng and Tam (1999) applied TAM to explaining physicians' decision to accept telemedicine technology in the health care context. Venkatesh (1999) applied a revised TAM to compare a traditional training method with a training using an intrinsic motivator during training.

After considering the overall development of TAM, Venkatesh (2000) and Venkatesh and Davis (2000) extended the model, referred to as TAM2, to have a better understanding of the determinants of perceived usefulness and intention to use. In TAM2, subjective norm, image, job relevance, output quality and result demonstrability are inserted as determinants of perceived usefulness; subjective norm also impacts on image and intention to use; experience and voluntariness change the effects of these determinants.

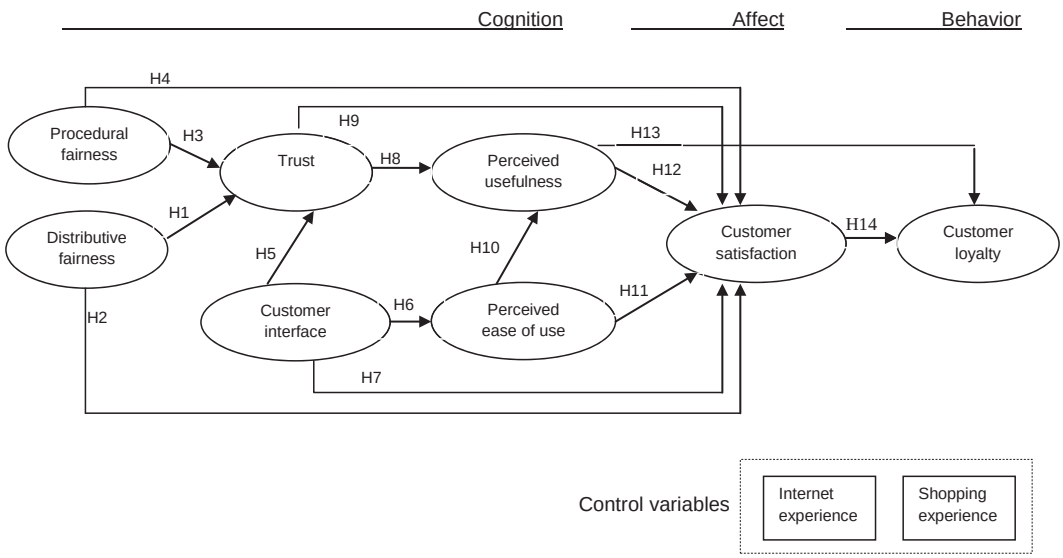
The predictive power of TAM makes it applicable across a variety of contexts, so it has been successfully adopted to study online shopping behavior (Gefen et al., 2003; Pavlou, 2003; Pavlou & Fygenson, 2006; Vijayasarathy, 2004). The parsimony of TAM is both its strength and limitation. TAM has predictive ability but it does not give necessary information for system designers to create user acceptance for new systems (Mathieson, 1991). Additionally, there are few studies on the post-consumption intention, such as customer satisfaction or customer loyalty after shopping. Lind, Ambrose and Park (1993), Chiu, Lin, Sun and Hsu (2009) and Chang and Chen (2009) emphasized the important role of fairness, trust and customer interface quality in maintaining relationships in online shopping; still, seldom do TAM-based studies mention fairness (Chiu et al., 2009). Furthermore, prior studies evaluate TAM in developed countries in which e-commerce is popular (Gefen & Straub, 2003; Pavlou, 2003). However, the questions of whether such a model can be applied in an emerging market, and whether perceiving that online shopping is easy to use and useful is enough to keep e-customers. This paper will bridge all above mentioned gaps.

3. RESEARCH MODEL AND HYPOTHESES DEVELOPMENT

This paper proposes a research model that extends beyond the model of Chiu et al. (2009) by adding one more variable; it is Customer Interface Quality that affects trust and customer satisfaction. In addition, it clarifies the impact of trust on perceived usefulness. Moreover, the research model identifies the position of variables following a cognition-affect-behavior model that has dominated consumer research for a long time. The paradigm of the model holds the response order, based upon Cognition ⇢ Affect ⇢ Behavior (Chang & Chen, 2009; Davis, 1993; Davis & Venkatesh, 1996) (see Figure 1).

In the research model, following two previous studies (Gefen et al., 2003; Pavlou, 2003; Chiu et al., 2009), the research integrates two salient variables of TAM (Perceived usefulness and Perceived ease of use) and applies them to the new scope: from traditional information technology acceptance models to the spectrum of online shopping behaviors, and from the pre-con-

Figure 1: Research model



Source: modified by authors from Chiu et al. (2009)

sumption/using intention to the post-consumption intention.

3.1. Distributive fairness

Distributive fairness (Adams, 1965), is the correlation between input and expected outcomes. The impact of distributive fairness on trust has been found in many previous studies. According to equity theory, if individuals are treated fairly in distribution, they are likely to be encouraged in their trust (Adams, 1965). Pilai, Williams and Tan (2001) argued that the higher fair outcome distributions are, the stronger customers trust the sellers. Particularly in the case of e-commerce, Chiu et al. (2009) empirically proved the influence of distributive fairness on trust, consolidating the correlation.

Further, distributive fairness is a good predictor of customer satisfaction. Regarding equity theory, distributing fairly by sellers will result in customer satisfaction (Huppertz, Arenson & Evans, 1978). In marketing settings, Oliver and Desarbo (1988) stated that distributive fairness adds to customer satisfaction in the gain, resulting in high customer satisfaction. In the e-commerce context, Chiu et al. (2009) also showed the correlation between distributive fairness and customer satisfaction.

Thus, based on the above discussion, we propose the following hypotheses:
H1: Distributive fairness is positively related to trust.
H2: Distributive fairness is positively related to customer satisfaction.

3.2. Procedural fairness

Procedural fairness is utilized to ensure the provision of accurate, unbiased, correctable and representative information and compliance with standards of ethics or morality (Leventhal, 1980).

The causal relation between procedural fairness and trust is found in a number of studies. Trust ensues from procedural fairness in co-workers (Pearce, Bigley & Branyiczki, 1998). Cohen-Charash and Spector (2001) revealed that procedural

fairness is related to trust in organizations. In the online shopping context in particular, Chiu et al. (2009) posited that the perceived fairness of policies and procedures of shopping in the virtual markets are positively related to trust.

On the other hand, Lind and Tyler (1988) emphasized the importance of procedural process on customer satisfaction in which the receivers do not feel satisfied even though they get favorable returns. In contrast, they are happy with fair procedures even if the outcomes are not proportional (Lind & Tyler, 1988). Teo and Lim's (2001) research affirmed the importance of procedural fairness in the assessment of customer satisfaction. Consistent with the theoretical discussion in psychology, other studies have supported the positive effects of procedural fairness on customer satisfaction in service encounters (Bolton, 1998), in complaint handling (Tax, Brown & Chandrashekaran, 1998), in organization (Brockner & Siegel, 1995), in service quality (Smith, Bolton & Wagner, 1999) and also in online shopping (Chiu et al., 2009).

Therefore:

H3: Procedural fairness is positively related to trust.

H4: Procedural fairness is positively related to customer satisfaction.

3.3. Customer interface quality

Customer interface quality is a multi-faceted concept and is measured in different ways. This study just focuses on information and character displays because, for online shoppers, friendly and effective user interfaces with an appropriate mode of information presentation are very important (Chang & Chen, 2009). Information is the overall content display on a website. Character is the overall image, design, organization and function that makes the visual content and creates the friendly atmosphere to users. It includes fonts, graphics, colors and background patterns, and navigation structure.

The influence of the customer interface quality on trust, perceived ease of use and customer satisfaction is found in previous studies.

For trust, the most dominant determinant of e-trust is the information and character displays on the website (Thakur & Summey, 2007). Chau et al. (2000) confirmed that sellers should pay more attention to establishing a friendly user environment with a suitable amount of information and character presented on the interface because they are the key of acceptance and usage of a website. Hoffman, Novak, & Peralta (1999) emphasized that customers may not trust website providers because they are suspicious of entity data. Therefore, information and the character of the website play a very important role in consolidating trust in online shopping.

As regards perceived ease of use, a well-designed and organized web interface with sufficient information (designing user-friendly interfaces, easy-to-comprehend layouts, effective search engines, updated information, effective navigation schemes and simple checkout procedures) can encourage initial consumer interest and pleasure. From that aspect, the website can facilitate approach behaviors and then perceived ease of use (Menon & Kahn, 2002). Consumers are likely to experience greater enjoyment with an e-store that establishes high quality in terms of information, as well as character (Ha & Stoel, 2009).

As for customer satisfaction, the online information quality and character displays actually improve customer satisfaction by facilitating store traffic and sales (Lohse & Spiller, 1999). Considerations of more extensive, higher quality information and character might lead to higher levels of e-satisfaction on that online channel (Montoya-Weis & Voss, 2003).

Therefore:

H5: Customer interface quality is positively related to trust.

H6: Customer interface quality is positively related to the perceived ease of use.
H7: Customer interface quality is positively related to customer satisfaction.

3.4. Trust

In an online shopping context, trust is conceptualized as beliefs in competence, benevolence and integrity (Pavlou & Fygenson, 2006).

Trust has a positive influence on perceived usefulness. According to social exchange theory, trust is prominent in a relationship of perceived usefulness (Homans, 1961). In the online atmosphere, trust is one of the determinants of perceived usefulness because the expectation of customers from the web interfaces depends on the people behind the websites (Gefen, 1997). If the retailer cannot implement trust according to consumers' beliefs, there is no connection between the utility of consumers and the website (Chircu, Davis & Kauffman, 2000). Gefen et al. (2003) posited that trust also raises certain aspects of the perceived usefulness of a website. Whenever a website is viewed to be trusted, it means that the website is beneficial to the extent to which customers are likely to pay a premium price to add special relationship with an e-vendor (Reichheld & Schefter, 2000).

Moreover, based on the social exchange theory (Blau, 1964), some scholars theorize that trust will create strong impacts on customer satisfaction (Chiou, 2003). The key role of trust is to indicate the level of customer satisfaction (Morgan & Hunt, 1994). In terms of e-commerce, it is undeniable that trust, as the strongest factor, affects customer satisfaction in the study by Chiu et al. (2009).

Therefore:
H8: Trust is positively related to perceived usefulness.
H9: Trust is positively related to customer satisfaction.

3.5. TAM

The fundamental salient beliefs of TAM, perceived ease of use and perceived usefulness have been considered as important determinants of the model.

3.5.1. Perceived ease of use

The perceived ease of use occurs when customers believe that online shopping will be effortless (Chiu et al., 2009; Davis, 1989).

According to TAM, other things being equal, improvements in the ease of use will lead to the improvement in performance and, in turn, have a direct effect on perceived usefulness (Davis et al., 1989; Venkatesh & Davis, 2000). It has been applied in a wide range of information technologies and in e-commerce as well. Gefen & Straub (2000) examined the relationship between perceived ease of use and perceived usefulness in the e-commerce context.

Furthermore, the correlation between the perceived ease of use and customer satisfaction has been proven in some studies. The perceived ease of use is a good indicator if one is to examine customer satisfaction (Saade & Bahli, 2004). In online shopping, perceiving the ease of use will cause shoppers to be more motivated and satisfied, thereby, to continue shopping (Chiu et al., 2009).

Therefore:
H10: Perceived ease of use is positively related to perceived usefulness.
H11: Perceived ease of use is positively related to customer satisfaction.

3.5.2. Perceived usefulness

Perceived usefulness occurs when customers believe that using online shopping will enhance their transaction performances (Chiu et al., 2009; Davis, 1989).

Perceived usefulness is essential to shaping consumer attitudes and customer satisfaction with e-commerce channels (Devaraj, Fan & Kohli, 2002). The usage of Internet-based learning systems relies on an extended version of TAM because it will be useful in helping increase customer satisfaction and intentions of use (Saade & Bahli, 2004). Ajzen and Fishbein (1980) explain that a person will have a positive feeling, followed by customer loyalty when they believe that, if they perform a given behavior, it will most likely lead to positive outcomes. According to Davis et al. (1989), customer loyalty is established when customers have a cognitive appraisal that a behavior will help them improve their performance. Babin & Babin (2001) argued that customers are likely to repurchase if they are shopping in an effective manner, having perceived usefulness. In e-commerce, Chiu et al. (2009) proved that perceived usefulness is one of the factors contributing to customer loyalty.

Therefore:

H12: Perceived usefulness is positively related to customer satisfaction.

H13: Perceived usefulness is positively related to customer loyalty.

3.6. Customer satisfaction

In e-commerce, customer satisfaction occurs when customers are content with a given e-commerce store (Anderson & Srinivasan, 2003). In Oliver's (1980) research, customer satisfaction is a function of expectation and expectancy disconfirmation and, in turn, customer satisfaction has direct and indirect impacts on attitude change and purchase intention. Swan and Trawick (1981) argued that positive disconfirmation and expectation increase satisfaction and consequently, as a domino effect, intention will increase. Other studies also support the impact of customer satisfaction on customer loyalty in online shopping (Chang & Chen, 2009; Devaraj et al., 2002).

Therefore:

H14: Customer satisfaction is positively related to customer loyalty.

3.7. Control variables

3.7.1. Internet experience

Increased Internet experience motivates individuals to conduct online transactions smoothly (Chiu et al., 2009; Pavlou, Liang & Xue, 2007). Therefore, Internet experience is considered a control variable on customer loyalty.

3.7.2. Shopping experience in e-commerce

Shopping experience is used as a control variable on customer loyalty in the study of Chiu et al. (2009). Shim, Eastlick, Lotz and Warrington (2001) argued that shopping experience may lead to impacts on future online intentions. Therefore, shopping experience is considered a control variable on customer loyalty.

4. RESEARCH METHODOLOGY

4.1. Data collection

The data was collected over a three-month period (July-September 2011) through a survey website www.nothan.vn, posted on the largest forum of e-commerce in Vietnam (diendantmdt.com). Respondents were volunteers participating in the forum who were interested in the research topic and had previous shopping experiences. The survey collected 1,025 responses, out of which 267 were invalid and incomplete; the remaining 758 questionnaires with a response rate of 74% were used for the analysis. The demographic profile of respondents was summarized in Table 1.

Table 1: Demographic profile (N = 758)

Characteristics	Frequency	%
Gender		
Male	222	29.3
Female	536	70.7
Age		
< 20	245	32.3
20-25	423	55.8
> 25	90	11.9
Education background		
Junior high school	1	0.1
High school	16	2.1
Vocational school	17	2.2
Technical college	39	5.1
University	676	89.3
Master's degree or higher	9	1.2
Job		
Student		
Full-time student	380	50.1
Part-time student*	197	26.0
Employed	171	22.5
Unemployed	6	0.8
Housewife	2	0.3
Retired	2	0.3
Years of experience with the Internet	64	8.4
1 year	474	62.5
2-5 years	217	28.6
5-10 years	3	0.5
10+ years		
Number of visits for last six months	81	10.7
	417	55.0
< once	148	19.5
once	85	11.2
twice	19	2.5
3-5 times	8	1.1
6-10 times		
10+ times		
The website on which the respondent used the online shopping experience for the questionnaire	121	16
	86	11.3
	48	6.3
	42	5.5
www.enbac.com	34	4.5
www.vatgia.com	23	3
www.muachung.vn	39	5.1
www.chodientu.vn	14	1.8
www.muaban.net	108	14.2
www.muare.vn	243	32.1
www.cungmua.com		
www.nhommua.com		
www.rongbay.com		
www.hotdeal.vn		

**Despite holding permanent jobs, they are enrolled in courses to have a higher degree*
Source: authors

4.2. Measurement

The questionnaire (see Appendix) was designed to measure research constructs by using multiple-item scales adapted from previous studies that reported high statistical reliability and validity. Each item was evaluated on a five-point Likert scale ranging from 1 – strongly disagree to 5 – strongly agree. Distributive fairness, procedural fairness, trust, perceived usefulness, perceived ease of use, customer satisfaction, customer loyalty, Internet experience and shopping experience were measured using the scales adopted from Chiu et al. (2009), which was adapted from Folger and Konovsky (1989), Thakur and Summey (2007), Davis (1989) and Gefen et al. (2003) and Anderson and Srinivasan (2003). The variable customer interface quality was adopted from Chang and Chen (2009), which was based on Srinivasan, Anderson and Ponnavolu (2002).

5. DATA ANALYSIS

The confirmatory factor analysis (CFA) was developed for the measurement model, and then structural equation modeling (SEM) was applied to test the hypotheses. Two steps were carried out by the maximum likelihood method using the AMOS software (version 20). In order to check the fit of the models, some indices needed to be satisfied above the recommended values: the chi-square with degrees of freedom (χ^2/df) was less than 3; the goodness-of-fit index (GFI), the comparable fit index (CFI); the Tucker-Lewis Index (TLI) and the normed fit index (NFI) were greater than 0.9; the adjusted goodness-of-fit index (AGFI) was greater than 0.8; the root mean square error of approximation (RMSEA) was less than 0.08.

5.1. Analysis of the measurement model

The measurement model satisfied all goodness-of-fit indices χ^2/df = 2.736; GFI = 0.93; CFI = 0.97;

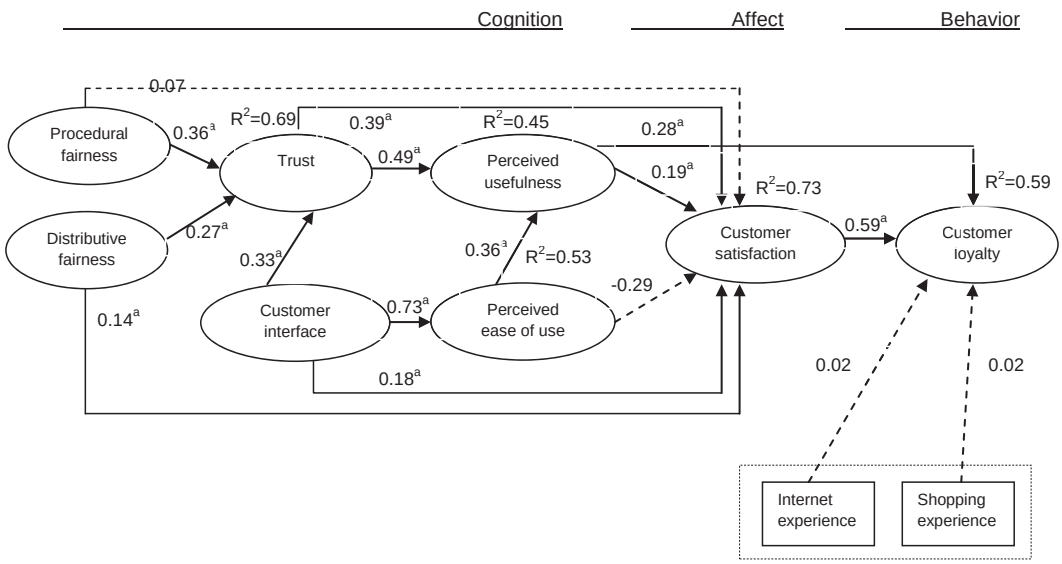
TLI = 0.96; NFI = 0.95; AGFI = 0.90; RMSEA = 0.048); therefore, the observed data was considered to fit with the model.

All the loadings of the items on their latent constructs had a t-value larger than 2. From then, in order to check the reliability, the comparable fit index (CR) and the average variance extracted (AVE) were used. CRs ranging from 0.85 to 0.92, and AVE ranging from 0.65 to 0.87 were both above their recommended cut-off levels of 0.70 and 0.50, suggesting reliability. Regarding the convergent validity, all the items loading between 0.75 and 0.93, or above the recommended cut-off level of 0.60, suggested reasonable convergent validity. Discriminant validity was tested by the greater square root of the AVE than the correlation shared between the construct and other constructs in the model.

5.2. Analysis of SEM results

Figure 2 and Table 2 show the result of the SEM. All fit indices achieved the recommended values. H1, H2 were supported. This means that distributive fairness had significant coefficient paths to trust and customer satisfaction. Procedural fairness was associated with trust but not with customer satisfaction; therefore, H3 was supported but H4 was not supported. H5, H6, H7 were supported, meaning that the customer interface quality positively influenced trust, perceived ease of use and customer satisfaction. With H8 and H9 positing that trust would positively affect perceived usefulness and customer satisfaction, the results were significant and, therefore, H8 and H9 were supported. H10 was supported but H11 was not supported because the perceived ease of use had a significant positive influence on perceived usefulness but no significant influence on customer satisfaction. H12 and H13 were supported by the significant co-efficiencies from perceived usefulness to customer satisfaction and customer loyalty. Customer satisfaction significantly affected customer loyalty, so H14 was supported.

Figure 2: Graphic representation of SEM results analysis



Control variables

Note: [a]p< 0.01

Table 2: SEM results

Hypotheses	Path	Coefficient (t-value)	Result
H1	Distributive fairness ⇢ Trust	0.27(6.56)[a]	Supported
H2	Distributive fairness ⇢ Customer satisfaction	0.14(3.53)[a]	Supported
H3	Procedural fairness ⇢ Trust	0.36(8.80)[a]	Supported
H4	Procedural fairness ⇢ Customer satisfaction	0.07(1.88)	Not supported
H5	Customer interface quality ⇢ Trust	0.33(8.95)[a]	Supported
H6	Customer interface quality ⇢ Perceived ease of use	0.73(18.09)[a]	Supported
H7	Customer interface quality ⇢ Customer satisfaction	0.18(3.62)[a]	Supported
H8	Trust ⇢ Perceived usefulness	0.49(10.72)[a]	Supported
H9	Trust ⇢ Customer satisfaction	0.39(6.97)[a]	Supported
H10	Perceived ease of use ⇢ Perceived usefulness	0.36(8.29)[a]	Supported
H11	Perceived ease of use ⇢ Customer satisfaction	-0.29(-0.70)	Not supported
H12	Perceived usefulness ⇢ Customer satisfaction	0.19(6.14)[a]	Supported
H13	Perceived usefulness ⇢ Customer loyalty	0.28(7.32)[a]	Supported
H14	Customer satisfaction ⇢ Customer loyalty	0.59(12.65)[a]	Supported
Overall goodness-of-fit indices $\chi^2 = 982.83$ (p = 0.000); df = 333; $\chi^2/df = 2.95$ GFI = 0.91; CFI = 0.96; TLI = 0.95; NFI = 0.94; AGFI = 0.90; RMSEA = 0.051			

Note: [a]p< 0.01
Source: authors

6. DISCUSSION AND IMPLICATIONS

First, distributive fairness and procedural fairness are good predictors of trust but only distributive fairness has a significant influence on customer satisfaction. This may be due to their non-perfected implementation in procedure-problem-solving systems. It is possible that, in an emerging market such as Vietnam, procedural fairness is imperfect and is not implemented in every transaction. Trust and the customer interface quality are implemented well and have an impact on their targeting factors; therefore, they can be considered as good anchors for cognitive responses to create the background for the next domino responses. The added value of this paper compared to previous studies not only shows a significant impact among variables, but also identified the domino responses: Cognition ⇢ Affect ⇢ Behavior.

Second, the results show that most links in the original TAM are proven, except the link from the perceived ease of use to affective response (customer satisfaction). One possible reason is that when customers feel a website is easy to use, it is not enough to create satisfaction until they complete their transactions, and it is the difference between the perceived ease of use and perceived usefulness. Moreover, besides the orthodoxy orders going through two salient variables of TAM, other cognitive responses, such as distributive fairness, trust and customer interface quality, apart from procedural fairness have their own ways to directly jump to affective responses. This means that in the paths to customer satisfaction, the perceived ease of use and perceived usefulness have to share their monopoly with other factors, especially trust and the customer interface quality. New findings compared to previous studies are that, in e-commerce, the paths through two salient variables of TAM are not the only ones leading to customer satisfac-

tion anymore. In fact, there are three variables (distributive fairness, trust and the customer interface quality) that can lead to customer satisfaction.

Third, trust has the strongest impact on customer satisfaction. The explanation is that trust seems to be more important in an emerging market than other determinants because customers do not believe strongly in e-commerce, in which everything is done by virtual systems and thus contains high risks; therefore, if customers trust a website, they will quickly achieve satisfaction with transactions and continue shopping there. In contrast, in mature e-commerce markets, top sellers care about their reputation and, therefore, create safe websites. Because of this, customers are more concerned about the performances and effective points of the website than they are about trust (Chiou, 2003; Chiu et al., 2009; Gefen et al., 2003). Therefore, in emerging markets, if vendors can create trust among customers, it is likely to quickly lead to customer satisfaction, followed by customer loyalty. Moreover, as for the customer interface quality, it mainly leads to the perceived ease of use; therefore, website developers need to think about the information and character to facilitate navigation and improve use by customers.

Overall, the results mostly support TAM, thus motivating the research community to get a deeper understanding of the correlation between the perceived ease of use, perceived usefulness and the repeat purchasing intention of customers in online shopping by conducting the research that expands TAM to e-commerce settings. However, the application needs to be flexible to adapt it to a new situation.

7. LIMITATION AND FUTURE RESEARCH

Besides contributing to the literature and finding out some interesting points, the current study also has some limitations that open avenues for future researchers. First, there were issues in terms of the sample collection that could be improved. It would be better if the sample could be collected from other emerging countries as well. In addition, the questionnaire was designed to force the respondents to answer all the questions. Respondents might prefer not to answer certain questions which may cause them to answer erroneously. The online survey could add some other choices for that type of respondents. Another point is that the age structure of the sample could have influenced the results.

Second, the customer interface quality is a multi-faceted concept, but we could not include every component and, instead, just focused on information and character that were most related to the online context. The results of analysis may not be the same with different components.

Third, regarding the post-consumption intention, we just stopped at trust and customer satisfaction. It would be more comprehensive if the study mentioned not only loyalty, as the major driver of success in e-commerce (Aderson & Mittal, 2000; Reichheld, Markey & Hopton, 2000), but word-of-mouth as well.

8. CONCLUSION

This paper focused on the technology acceptance model (TAM) that has been well-known for decades. Through using SEM on the data collected from 758 online customers via a web-based survey in Vietnam, the research results point to perceived usefulness, the perceived ease of use, fairness, trust and the customer interface quality having direct or indirect impacts on customer satisfaction and customer loyalty. Moreover, in emerging markets, trust was pointed out as the strongest factor in the process of a achieving customer satisfaction and, from then on, leading to customer loyalty. These results have valuable implications for both academicians and practitioners.

For academics, the research contributes to a comprehensive scenario by integrating the perceived ease of use, perceived usefulness, distributive fairness, procedural fairness, trust and the customer interface quality as, theoretically, cognitive anchors. It suggests that all factors can contribute to improving the affective response (customer satisfaction) and the behavioral response (customer loyalty) in online shopping. In the e-commerce field, the relationships among some of these constructs have been theorized and empirically validated; for instance, distributive fairness, procedural fairness, trust, customer satisfaction, the perceived ease of use, perceived usefulness and customer loyalty in the study of Chiu et al. (2009); customer interface quality in the study of Chang and Chen (2009). However, the categorization of constructs into three clear psychological responses, as well as incorporating all constructs into such a comprehensive scenario has been synthesized.

For practitioners, firstly, the importance of distributive fairness and procedural fairness suggests that e-enterprises should ensure the proportion between inputs and outcomes, the equity of the process of how outcome are determined, as well as fair treatment throughout the online shopping process. Secondly, the vital role of the customer interface quality mentions the necessity to concentrate on the interface environment and necessary information including details of the product/service, and on shopping procedures to help customers make proper purchasing decisions in online shopping. Website developers need to think about the information and character of their front offices. Thirdly, to be different from mature markets, in emerging markets, practitioners need to pay more attention to creating trust of the website because customers hesitate to take participate in risky virtual systems; therefore, if e-vendors can make buyers trust the website, buyers are likely to be satisfied with transactions more quickly and continue shopping there. Finally, the e-vendors also need to take care of the perceived ease of use and perceived usefulness. Website developers may design back office systems and provide personalized products/services.

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APPENDIX

Construct Measured

Perceived ease of use (PEOU)

PEOU1. It is easy to become skillful at using the website.
PEOU2. Learning to operate the website is easy.
PEOU3. The website is flexible to interact with.
PEOU4. My interaction with the website is clear and understandable.
PEOU5. The website is easy to use.

Perceived usefulness (PU)

PU1. The website enables me to search and buy goods faster.
PU2. The website enhances my effectiveness in goods searching and buying.
PU3. The website makes it easier to search for and purchase goods.
PU4. The website increases my productivity in searching and purchasing goods.
PU5. The website is useful for searching and buying goods.

Distributive fairness (DF)

DF1. I think what I got is fair compared with the price I paid.
DF2. I think the order fulfillment process is appropriate.
DF3. I think the value of the products that I received from the online store is proportional to the price I paid.
DF4. I think the products that I purchased at the online store are considered to be a good buy.

Procedural fairness (PF)

PF1. I think the procedures used by the online store for handling problems occurring in the shopping process are fair.
PF2. I think the online store allows customers to complain and state their views.
PF3. I think the policies of the online store are applied consistently across all affected customers.
PF4. I think the online store would clarify decisions about any change in the website and provide additional. information when requested by customers.

Trust (TR)

TR1. Based on my experience with the online store in the past, I know it is honest.
TR2. Based on my experience with PChome in the past, I know it is not opportunistic.
TR3. Based on my experience with the online store in the past, I know it keeps its promises to customers.
TR4. Based on my experience with PChome in the past, I know it is trustworthy.

Customer satisfaction (CS)

CS1. I think purchasing products from the online store is a good idea.
CS2. I am pleased with the experience of purchasing products from the online store.
CS3. I like purchasing products from the online store.
CS4. Overall, I am satisfied with the experience of purchasing products from the online store.

Customer loyalty (CL)

CL1. I intend to continue purchasing products from the online store in the future.
CL2. It is likely that I will continue purchasing products from the online store in the future.
CL3. I will continue purchasing products from the online store in the future.

Internet experience (IE)

IE1. How many years have you been using the Internet?

Shopping experience (SE)

SE1. How many times have you purchased products from the online store in the past six months?

Customer interface quality (CI)

CI1. This website design is attractive to me.
CI2. For me, shopping at this website is fun.
CI3. I feel comfortable shopping at this website.
CI4. The website keeps me well informed with the current information.
CI5. The website keeps me well informed about new products/services.