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BUYER-SUPPLIER RELATIONSHIPS IN ACCOUNTING SOFTWARE INDUSTRY: THE EFFECTS OF TRUST AND SWITCHING COST

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Abstract

The purpose of this work is to investigate the effects of relationship antecedents; perceived ease of use (PEOU), perceived usefulness (PU) and service quality, on technology adoption in the accounting software industry via trust and switching cost. The paper uses a causal modeling approach and proposes a conceptual model after an extensive review of literature. A large quantitative survey was conducted with 709 professional accountants in Turkey, who are accounting software program users and the model was tested using structural equation modeling. We found that service quality, PEOU and PU had positive effects on trust, whereas only perceived usefulness was positively correlated with switching cost. Trust showed positive influence on switching cost. Trust was found positively correlated with long-term affective commitment, whereas switching cost had positive and significant effect on calculative commitment in the short-term. The paper discusses different criteria that lead to accounting software usage and works as a strategic guideline for software firms in order to keep professional accountants in the relationship.

Keywords: Buyer-seller Relationship, Relationship Marketing, Trust, Switching Cost, Technology Adoption, Commitment.

Jel Codes: M31, M41, M2.

I. INTRODUCTION

The subjectivity of the service/product provider's perceptions of customer retention policies causes complexity in relationship marketing. In this study, two streams of literature were combined: a) the commitment-trust theory of relationship marketing and b) switching cost-trust relationship on technology adoption. Because of the current vulnerable competition

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in business environment, firms concentrate on holding customers either in affective way or with the creation of constraints and obstacles to eliminate switching intentions. Indeed, switching cost variable is added to the model, where relationship termination costs and relationship benefits criteria from commitment-trust (Morgan and Hunt 1994) theory are combined under switching cost's sub-dimensions including new uncertainty, benefit-loss, learning, search, set-up and monetary costs (Burnham et al 2003, Jones et al 2002, Klemperer 1995).

Commitment and trust are also the keys for relationship marketing (Geyskens et al., 1996). The positive relationship between trust and commitment is studied between buyers and sellers from different industries (Aydın-Ozer 2005-2006; Jahanzeb et al., 2011; C˘ ater, 2007; Geyskens et al., 1996; N'Goala, 2007; Jih et al., 2007; Prior 2012). Some studies especially focused on the relationship between trust and technology use (Lee et al., 2011; Wu et al., 2011; Li et al., 2006; Good and Harris, 2007) and even on the role of trust on risk perceptions in different technology markets (Zhang and Gosain, 2003; Grabner-Kra¨uter and Faullant, 2008; Zhu, 2011; Lee et al., 2011). However the direct relationship of trust with switching cost in a technolgy adoption process has not been researched. The information system performance is found critical for software usage (Hsu et al., 2009). The relationship of PEOU and PU of other technological products with perceived risks have been researched (Hsu et al., 2009; Zhang and Gosain, 2003; Amoako and Gyampah, 2007), but their direct effects on switching cost is a new issue for technology acceptance.

The accounting industry in Turkey is a growing industry and programs like "Eta, Luca, Logo, Link, Orka, Zirve, GMS, SAP, Datasoft, Mikro " are all homogenous in their fundamental structure but have different advantages and disadvantages compared to each other with regards to their perceived ease of use and usefulness like sectoral adjustability, efficient menu-account management with data export-import facilities, automatic back-up or upgrade tools, online reporting facilities and the privacy level of customer portfolios. In literature, Herzberg's Motivation-Hygiene Theory is taken as base to measure accountants' professional motivations where motivation factors create affective, hygiene factors and calculative commitment (Mustata et al., 2011). Thus, an accounting software program is not just a product but a bundle of products and services, all long-term in nature. So, it requires an affective commitment.

Indeed, this paper finds answers for some questions that should be answered like: Why do accountants stay when they have reasons to switch to another service/product provider

(core service failures, low product performance, pricing problems, etc.)? Should software companies implement switching costs and develop calculative commitment to prevent accountants from switching? Does the accounting software company's perceived trust (credibility and benevolence) lead accountants to maintain the relationship voluntarily? Would an accountant be more reluctant to leave a service provider if the exchange with the service provider is trustworthy and fair? The additional effect of switching cost in trust-commitment relationship for a technology adoption has to be filled-out in the literature.

II. CONCEPTUAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

Switching costs are defined as the trade-offs and sacrifices associated with moving between providers (Jones et al 2002) and also consumers' perceived time, money and effort cost (Jones et al 2002, Klemperer 1995, Burnham et al 2003) they incur while changing alternatives. Switching cost is defined by monetary, benefit-loss, uncertainty, learning and evaluation costs. Economic risk cost, involves the uncertainty of new firm's service/product performance (Burnham et al 2003 and Klemperer 1995). Evaluation and learning costs occur when selecting and learning of alternative products/services (Burnham et al., 2003 and Jones et al., 2002). Furthermore, set-up cost is a new configuration cost (Burnhamet al 2003) while monetary loss cost is a one-time cost incurred when starting a new relationship. Also, benefit loss cost reflects extra discounts and technical supports (Burnham et al., 2003; Guiltinan, 1989; Jones et al., 2002; see Appendix A). The high costs from transaction-specific investments, additional adjustment costs while moving to a new provider and learning new business tools reduce buyers' willingness to evaluate other alternatives (Burnham et al., 2003). The influence of service quality on switching cost in technology use has been studied previously (Hsiao, 2011; Xu et al., 2011), however those of product performance measures (PU and PEOU) have not been looked into so far.

Trust is that, one party has confidence in (Morgan and Hunt, 1994) and willingness to rely on the opposite party (Moorman et al., 1992). Customer trust is belief in the supplier's honesty, goodwill, and competence (Geyseken et al., 1996). Doney and Cannon (1997) similarly defined trust as the 'perceived credibility and benevolence of a target of trust'. Credibility reflects the buyer's perception of supplier's sufficient expertise to perform the job effectively and reliably able to fulfill their promises (Ganesan, 1994; Doney and Cannon,

1997). Benevolence is the buyers' perception of how much sellers have benevolent intentions devoid of any opportunistic behaviors toward they the buyers (Ganesan, 1994). Previous researches indicate that service quality of the supplier and product performance criteria like perceived ease of use and usefulness have significant and positive effects on customer trust (Zhu 2011; Kaur et al 2012; Xu et al., 2011). Although trust relationship with different on-line risks are seen in literature (Zhu 2011; Koenig-Lewis et al 2010), trust-switching cost relationship on technology use has not been analyzed yet.

Indeed, one side switching cost is assumed to provocate more obligatory and calculative comitment based on the trade-off between loose of previous investments and future benefits, and on the other side trust will encounter affective, "voluntary" commitment with honesty, reliability and benevolence. Many firms have began to recognize switching costs as a mean of customer retention (Jones et al., 2007; Yanamandram and White, 2010). The study therefore examines professional accountants' adoption to software programs under trust-switching cost relationship.

II.I. Relational Antecedents

II.I.I. Efffects of Service Quality, Peou, Pu on Trust

Hoxmier (2000) proved the critical effect of receiving error-free and reliable software on company's reputation and credibility**.** Besides, positive relationships are found between e-shopping quality and trust (Sejin Ha and Stoel, 2009) as well as among online site appearance, design and online shopping intermediaries' reputation (Goode and Harris, 2007). On transaction quality in Brazilian service market, capabilities to have reliable transactions with partners, is found positively correlated with trust (Vieira et al., 2011). Different studies in other industries also proved the positive effect of service quality on trust in telecommunication (Aydin and Ozer, 2005), in construction (Jiang et al., 2012) and in service (Liu et al., 2011) industries. Jih et al (2007) found that service quality positively and significantly impacts trust in computer and consumer electronic industries after the consolidation of their retailing operations.

Hypothesis 1a: Service quality positively affects trust

In short, the product performance depends on its PU and PEOU and it must continously show positive performance in order to assure customer trust (Doney and Cannon, 1997; Suh and Hun, 2002). Perceived ease of use and perceived usefulness' direct and

significant effect on consumer trust is seen on trust of e-investors' using online dealers' and stockbrokers' services (Carlos Roca et al., 2009). Herna´ndez-Ortega (2011) also proved the positive effect of perceived ease of use in e-invoicing on firm's post-use trust. Perceived ease of use of e-commercial setting increases trust of consumers to the e-vendor (Zhu, 2011; Wu et al., 2011).

Hypothesis 1b: Perceived ease of use has a positive and significant effect on trust.

Hypothesis 1c: Perceived usefulness has a positive and significant effect on trust.

II.I.II. Effects of Service Quality, PEOU and PU on Switching Cost

Aydın and Ozer (2005), proved the positive correlation effect between service quality and switching cost. Kaur et al (2012) found that quality has significant effects on predicting switching barriers for Indian banking customers. Similar to switching barriers, service degradation barriers are found related with continuous pay intentions for social networking services and defined as one of the major constraining determinants involving sunk and lost performance costs (Hsiao, 2011). Perceived sacrifice for additional fee (Hsiao, 2011), time and effort that customers need to assess their product attributes, and the sacrifice needed to evaluate other products, are all associated with online loyalty (Xu et al., 2011). Moreover, Sejin Ha, Lesley Stoel (2009) proved positive effect of service quality on consumer e-shopping acceptance. Bedard, J. C. et al (2003) proved the positive effect of training on auditors' acceptance of electronic work system.

Hypothesis 2a: Service quality positively affects switching cost

Zhang and Gosain (2003) found that greater usability of web interface will reduce online retailers' potential customers' perceived learning costs. Moreover, Amoako-Gyampah (2007) mentioned about the resistance of workers to change the familiar current information system with an unfamiliar complex ERP system. Hesitations on capacity, effort and strategy beliefs are all found to be negatively correlated with intention to adopt open source software (OSS) for a motivated non-adopters (Li et al., 2011). To our knowledge, perceived usefulness effect on switching cost has not been studied yet. However, some studies have concentrated the reversed version of this relationship based on negative effects of perceived risk. The negative effect of anxiety of on-line MBA students about technical ability to use statistical programs on perceived software usefulness (Hsu et al., 2009), and perceived ease of use (Venkatesh, V. And Bala H., 2008) have been discussed already. On the contrary, increase in

PU is expected to decrease uncertainty cost and the risk of being technically capable to use software programs.

Hypothesis 2b: PEOU has a positive effect on switching cost

Hypothesis 2c: PU has a positive effect on switching cost

II.I.III. Effects of Trust on Switching Cost

Consumers look for a trustworthy company in order to avoid the risk and complexity of buying a new product (Doney and Cannon, 1997). Trust was found negatively correlated with uncertainty about the current supplier increasing the uncertainty of other alternatives, and in turn, switching costs (Aydin and O¨ zer, 2005; Aydin and Ozer, 2006). Trust had shown significant effects on predicting switching barriers between Indian banks (Kaur et al 2012) and also on perceived switching cost in Taiwan electronic industry (Yen et al., 2011). Indeed, customers continue to keep relationships with the company that they already know or are familiar with to decrease post –purchasing cognitive dissonance (Klemperer, 1995).

On the other hand, although trust relationship with different on-line risks like purchasing, evaluation or uncertainty risks in e-business has been widely studied, its direct influence on switching cost, that has been borne from these risks, has not been analyzed. For example, trust is found negatively correlated with perceived risk of internet banking (Koenig-Lewis et al., 2010; Grabner-Kra¨uter and Faullant, 2008), and other mobile internet and 3G services (Zhou 2012). Zhang and Gosain (2003) found that online retailers who are registered with popular search intermediaries will reduce their potential customers' perceived evaluation costs and the ones who establish hypertext links with well-known websites reduce the perceived uncertainty costs. Moreover, trust significantly reduces online consumers' perceived purchasing risk from e-vendor (Zhu 2011). Lee et al (2011), mentioned that as users utilize the virtual market more frequently, they use the physical market less regularly, proving the positive effect of online trust on switching attitude towards virtual market.

Hypothesis 3: Trust has a positive effect on switching cost

II.II. Relational Consequences,

II.II.I. Effects of Trust on Affective Commitment

Trust encourages the continuity and growth of the relationship by keeping information confidential and assuring privacy (Doney and Cannon, 1997). Different studies in the

literature show the positive trust-commitment relationship between suppliers and buyers in industries like telecommunication (Aydın and Ozer, 2005; Aydın and Ozer, 2006; Jahanzeeb et al., 2011), construction (Jiang et al., 2012) , customer electronics (Jih et al., 2007). Clients' trust is found positively correlated with affective commitment in professional service industries (C˘ ater, 2007) and financial services for retail banking customers (N'Goala, 2007). Other examples are seen between trust and technology adoption. Goode and Harris (2007) proved that online reputation and website reliability are both positively associated with usage intentions of retail consumers. Other positive effects of trust on technology use intentions are presented in commercial and student settings (Wu et al, 2011) as well as in the use of mobile internet, 3G services (Zhou, 2012). Its positive relationship with affective commitment for web-site use is also proven (Li et al., 2006). Moreover, Prior (2012) mentioned that trust and commitment as basis for the ongoing relationship developments between partners and firms can obtain a competitive advantage in customer retention in this way. In short, with a lack of trust it is unlikely that the partners would be affectively committed.

Hypothesis 4: Trust has a positive affect on affective commitment.

II.II.II. Effects of Switching Cost on Calculative Commitment

In commercial setting, switching costs may still be a barrier to exit although satisfaction declines (Jones et al., 2007; Yanamandram and White 2010). Yen (2010) found that customers will tolerate more on-line dissatisfactions under the perception of high economic and psychological costs toward the websites in e-commerce business. At the calculative level, the customer escapes from switching and stays with a feeling of "obligation" due to previous investments, prospective adjustment costs to the new provider or alternatives' deficiencies in the market (Jones et al 2002, Klemperer 1995, Burnham et al., 2003). Among dissatisfied customers, higher levels of uncertainty costs, benefit-loss, pre-switching search, evaluation and set-up and post-switching costs are associated with higher levels of calculative commitment (White and Yanamandram, 2010). Calculative commitment takes place in relatively negative side of the relationship because customers feel like they have to stay in the relationship (Bansal et al., 2004, Geyskens et al., 1996). As much as the buyer becomes dependent on the supplier, the supplier will benefit from the situation in proportion to that, and even in an opportunistic way (Ganesan, 1994)**.**

Lots of studies have focused on relationship between switching risks and technology use intentions. Zhang et al (2009) found that bloggers' intention to switch their blogging

services is strongly associated with sunk costs, where the earned benefits cannot be transfered to another product (Ganesan, 1994). The negative effects of switching cost on attitude towards switching online banking (Lee et al., 2011) and its positive effect on customer retention for Indian mobile phone service providers (Edward and Sahadev, 2011) were also proven. Low perceived risk of an Internet store is associated with increase in consumer's willingness to purchase from that store (Zhu, 2011). Indeed, switching cost is assumed to create calculative commitment in software usage for professional accountants, and not an affective commitment engaged in positive motivations.

Hypothesis 5: Switching cost has a positive effect on calculative commitment.

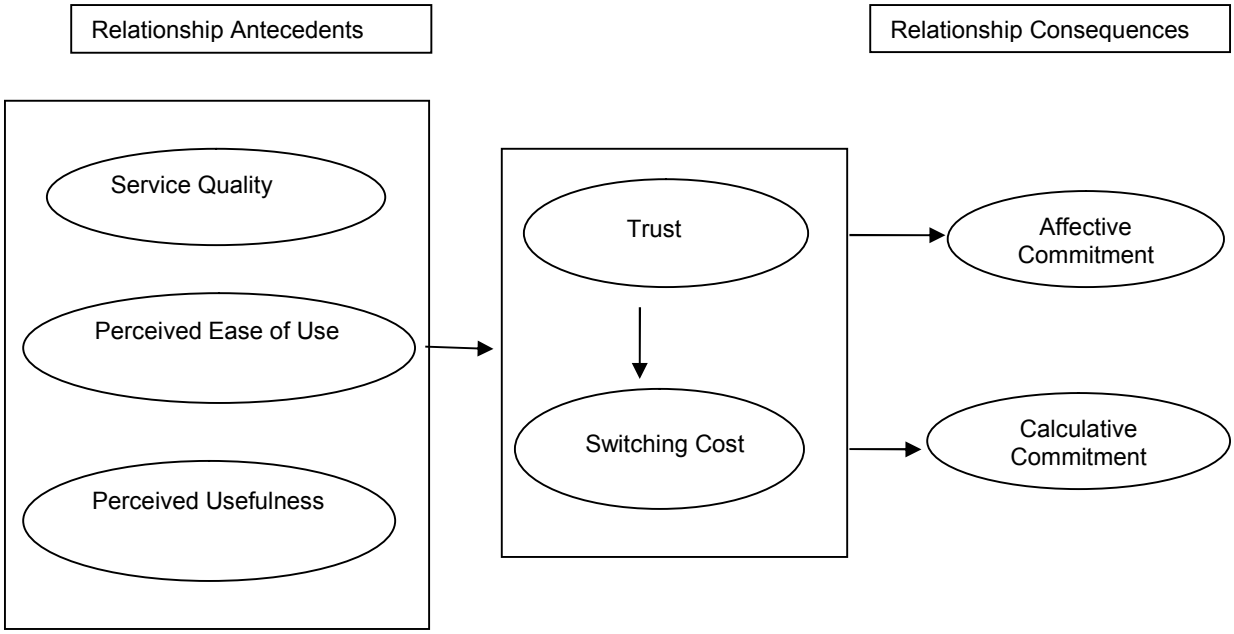

Figure I. Structural Equation Model

III. METHODOLOGY

III.I. Sample and Data Collection

In this study, the population is the professional accountants using accounting software programs in Turkey. These professional accountants are from accounting bureaus who have been authorized to choose and give purchasing decisons on accounting softwares for their work. These accountants include accounting clerks, accounting managers, chartered accountants, public accountants and certified public accountant (CPA). In order to represent this population optimally, sampling was carried out in 20 cities spread across the different

regions of Turkey. The distribution of the sample among these cities is consistent with their population and location to have a sample data that represent the whole population in a good balance. A total of 1020 questionnaires were collected by face-to-face surveys. These questionnaires were distributed in meetings and conventions organized in Istanbul and Ankara by the "Chamber of Turkish Accountants", and majority of the questionnaires was collected on the spot. With the exception of those from Istanbul and Ankara, the representatives from the other 18 cities brought their copies with them. Others were sent the questionnaires by e-mail who respondended and returned the responded questionnaires during the convention under the coordination of "Technology and Innovation Department of Istanbul Chamber of Accountants". However, some questionnaires were eliminated after examining the responses to the control questions in the questionnaire form. As a result, to collect error-free data, the final data set was reduced to 709 accountants.

III.II. Non Response Bias

In order to test non-response bias, X^2 difference test was applied between the later and earlier respondents and no any significant difference was found at $p<0.01$ level (Armstrong and Overton's, 1977). Moreover, telephone surveys were used. We contacted a random sample of 160 contacts by telephone who had not responded to the survey, and briefly asked these accountants a sunset of the overall questionnaire. Statistical t-tests showed that there were no significant differences between this new sample and original survey data**.**

III.III. Common Method Bias

We tested for common method bias by first adopting the widely used Harman's single-factor test (Podsakoff et al., 2003). We thus loaded all measurement variables into an exploratory factor analysis and examined the unrotated factor solution. The results showed that neither a single latent factor emerged from the factor analysis, nor that a single factor accounted for all the variance in the data. According to Harman's single factor test, in the case of all variables collected under one single factor, this single factor should not explain more than %50 of the total variance in the model. In our model, it only explains %38,5 of (<%50) total variance, so no common method bias problem has occurred.

III.IV. Measurement Development

In this study, responses to all items were measured on a 5-point Likert scale from 1=strongly disagree to 5=strongly agree. In addition, the fitness of the measurement variables was validated through interviews with employees who were professional accountants using accounting software programs in Turkey. Moreover, face-to-face interviews with the chamber of Turkish accountants provided important benefits in the preparation of the questionnaire form. The survey instrument which has been developed in large part on the basis of the literature review, measured all constructs by multi-item scales. All factors are estimated using a reflective approach, the more traditional in marketing settings. (MacKenzie et al., 2005).

Switching cost is measured by monetary, benefit-loss, uncertainty, learning, evaluation/set-up costs. Economic risk cost is measured by five items adopted from Burnham et al (2003) and Klemperer (1995). Evaluation and learning cost scales are based on Burnham et al (2003) and Jones et al (2002) studies and each is assessed by four items. Set-up cost is measured by two items from Burnhamet al (2003). Monetary loss cost and benefit loss cost are measured by six and three items respectively, adopted from Burnham et al (2003), Guiltinan (1989) and Jones et al (2002) (Appendix A).

Research construct measurements were collected from existing literature (Appendix B). Trust was measured by a seven item scale with its two key components of credibility and benevolence taken from Ganesan (1994) and Morgan and Hunt (1994) studies. Affective and calculative commitment scales are measured by six and five items respectively adopted from Meyer and Allen (1991) and Bansal et al (2004). Perceived service quality is modified based on five items from Brown and Swartz (1989) and Gronrooos (1982) scales. Perceived ease of use and perceived usefulness are measured by four and nine items in sequence adopted from Davis et al (1989) and Venkatesh and Davis (2000) scales.

III.V. Descriptive Statistics

Descriptive characteristics of the respondents were summarized in Table I. Among the 709 respondents 22.5 % were females; 73,5% of the sample is accumulated between the middle-age group (30-50 yrs), the other 26,5% forms the youngest (below 30) and oldest (above 50) sample population. Education levels were generally high; 56.4% of the sample has university degree. In addition to these, 81% of the respondents had more than 7 yrs of experience (table 1).

Table I. Respondents' Profile

Variables	Frequency	Percentages(%)
Gender		
Female	156	22,5
Male	538	77,5
Age		
Under 30	66	10,3
30-39	254	39,6
40-49	215	33,5
50 and above	107	16,7
Education level		
High school	104	15,1
College	143	20,7
University	389	56,4
Graduate school	54	7,8
Years of experience		
0-3	104	4,9
3-5	143	8,1
5-7	389	5,8
More than 7	54	81,1

III.VI. Measurement of Switching Costs

Switching cost is operationalized as a second-order factor model made up of monetary, benefit-loss, evaluation, learnnig, set-up, uncertainty costs**.** To assess the reliability and validity of the measurement model, first 24 switching cost items were analysed by exploratory factor analysis using varimax rotation and the missing values in the data set are substituted with a series of means. The initial analysis resulted in five factors with 23 items in total where evaluation and set-up costs were loaded under the same factor because one item from evaluation cost had to be dropped. Factor loadings were between 0.805 and 0.597 for monetary cost, between 0.840 and 0.526 for benefit-loss cost, between 0.814 and 0.757 for learning cost, between 0.773 and 0.606 for evaluation/set-up cost, and between 0.818 and 0.560 for uncertainty cost.

III.VII. Confirmatory Factor Analysis for Switching Cost

After exploratory factor analysis, 21 items under five first-order factors (monetary, benefit-loss, uncertainty, evaluation/set-up, learning costs) were directed to a second-order switching cost variable**.** A maximum likelihood method of estimation by LISREL 8.51 was used for confirmatory factor analysis. The scales were redefined by deleting one item from each of evaluation-set up and monetary cost to reach better fit indices. The second-factor analysis, omitting these two factors is found to be statistically significant ($X^2_{(181)} = 3.20$, $p<0.01$). As X^2 is sensitive to sample size, other fit indices were also applied and all suggested a good model fit. (RMSEA=0.056, CFI=0.95, IFI=0.95, NFI=0.93, RFI=0.92, SRMR=0.057, GFI=0.93, AGFI=0.91). (Hair et al., 1998; Jöreskog and Sörbom 1994). The structure of confirmatory factor analysis is shown in Figure II and Table II**.**

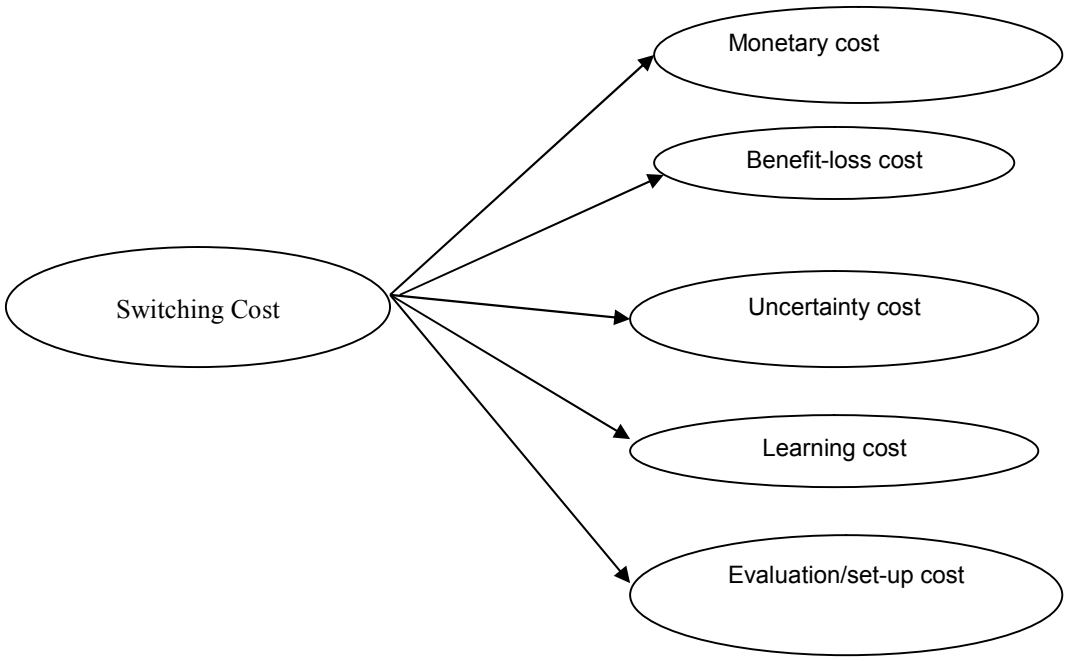

Figure II. Second-order measurement model of switching cost

Convergent validity was assessed based on the criteria that the standardized loading is significant on its posited underlying construct factor (Anderson and Gerbing, 1988)**.** Each of the factor loadings (λ_{ij} for items, β_{ij} for first-order factors, γ_{ij} for second-order factors) was significant at the 0.01 level supporting convergent validity for all the constructs in the study. Discriminant validity was assessed using a series of X^2 difference tests by constraining the correlation parameters between pair of constructs at one (Mak and Sockel, 2001). Each time, only one correlation parameter was fixed. The chi-square of the first model where the correlation was a free parameter should be much smaller than the other model where it's fixed at one. Ten different models were first tested by chi-square for the first-order factors, and

discriminant validity is achieved with minimum $X^2_{(1)}$= 63.77, p<0.01**.** Thus, all reliability and validity analyses indicated that the second-order measurement model for switching cost market was statistically reliable and valid.

Table II. Switching cost mesurement model assessment results

Scale items		Stand Loadings	t Values	SMC
Monetary Cost (α=0.81 CRC=0.85 pv=0.52 ג=0,72)				
	MC2	0.69	18.81	0.48
	MC3	0.72	19.83	0.52
	MC4	0.81	-	0.66
	MC5	0.73	19.97	0.53
	MC6	0.65	17.59	0.42
Benefit loss Cost (α=0.73 CRC=0.74 pv=0.51 ג=0,69**)**				
	BLC1	0.40	9.44	0.16
	BLC2	0.80	14.37	0.64
	BLC3	0.86	-	0.74
Uncertainty Cost (α=0.89 CRC=0.88 pv=0.60 ג=0,77**)**				
	UC1	0.72	21.34	0.52
	UC2	0.75	22.81	0.56
	UC3	0.81	25.32	0.66
	UC4	0.86	-	0.74
	UC5	0.73	21.69	0.53
Learning Cost(α=0.91 CRC=0.90 pv=0.69 ג=0,83**)**				
	LC1	0.78	23.97	0.61
	LC2	0.83	26.68	0.69
	LC3	0.86	-	0.74
	LC4	0.85	28.10	0.72
Evaluation/Set-up Cost (α=0.83 CRC=0.81 pv=0.52 ג=0,72**)**				
	ESC2	0.77	19.77	0.59
	ESC3	0.80	-	0.64
	ESC4	0.64	16.27	0.41
	ESC5	0.66	16.75	0.44
Switching Cost *second order* (α=0.79 CRC=0.85 pv=0.55 ג=0,72**)**				
Monetary Cost	MC	0.72	17.44	0.52
Benefit Loss Cost	BLC	0.45	9.47	0.20
Uncertainty Cost	UC	0.83	20.51	0.69
Learning Cost	LC	0.78	19.31	0.61
Evaluation-setup Cost	ESC	0.84	18.90	0.71

Notes: SE: Standardized parameter estimation from confirmatory factor analysis (significant at p<0.01). CRC: Composite reliability; pv (AVE); average variance extracted, ג: average factor loading

In addition to that, to see whether the measurement variable was representative of the related construct, composite reliability (CCR) and average variance extracted (pv) were calculated. Composite reliability for each construct was analyzed by the calculation of total coefficients of determination, all of which were found greater than 0.70 cut-off value

assessing the acceptability of all constructs (Fornell and Larcker, 1981). Moreover, AVE shows directly the amount of variance accumulated in a construct in relation to the measurement error. As shown in Table II, the values for all factors were greater than 0.50, supporting the standard of Fornell and Larcker (1981). Moreover, the Cronbach's alpha values for all factors were greater than 0.70, confirming the criteria of Nunnally (1978). Another method for reliability measurement is the average factor loadings ($\bar{\lambda}$) (Morgan ve Hunt, 1994), which were also above the required critical value, above 0.50 (table 2).

III.VIII. Dimensionality, Convergent and Discriminant Validity of "Structural Model"

Perceived service quality, perceived ease of use, perceived usefulness, trust, affective commitment, calculative commitment, all were loaded on a single factor supporting the uni-dimensionality principle for each scale. The items used to measure each of the five components of switching cost were averaged to arrive at a single score for each component and defined under switching cost as composite variables. Indeed, switching cost is successfully integrated into the structural model. As a result, the scale validity of 39 items under 7 factors, including switching cost, were subjected to confirmatory factor analysis. First, one item from each of trust and calculative commitment variables were dropped due to their low factor loading. Secondly, because there were several items with high standardized residuals, the model fit was not acceptable initially (GFI= 0.89, AGFI= 0.87, SRMR= 0.045). As a result, one item from affective commitment, one from service quality, and two from percieved usefulness were removed (Anderson ve Gerbing, 1988). A better outcome was obtained with 33 items at the end (SRMR=0.039, GFI=0.92, AGFI=0.90) and all other fit indices suggested a good model fit too ($X^2_{(500)} = 2.16$; RMSEA=0.041, CFI=0.96, IFI=0.96, NFI=0.93, RFI=0.93).

Based on the significance of parameter estimation (Anderson and Gerbing, 1988), each of the factor loadings was significant at the 0.01 level. Therefore, convergent validity was achieved for all the constructs in the study. To assess discriminant validity, a chi-square difference test was used following the standards set by Mak and Sockel (2001). As a result, 21 different chi-square values were obtained for 21 different models confirming discriminant validity with minimum X^2=13.13, $p<0.01$. According to these results, convergent and discriminant validitiy for **7** factors have been proven (Mak and Sockel, 2001). Cronbach's alpha values for all factors were greater than 0.70, meeting the critera of Nunnally (1978). In

addition to that, composite reliability (CRC), average factor loadings ($\bar{\lambda}$) and average variance extracted (pv) were above the acceptable limits (Table III)**.** Thus, all reliability analyses indicated that the structural model is statistically reliable.

Table III. Structural measurement model assessment results

Scales and scale items		Stand loadings	t values	SMC
Service Quality (α=0.88 CRC=0.87 pv=0.62 ג=0.79**)**				
	ServQ1	0.75	27.49	0.56
	ServQ2	0.76	-	0.58
	ServQ4	0.81	20.63	0.66
	ServQ5	0.82	20.90	0.67
Trust (α=0.89 CRC=0.pv=0.53 ג=0.73**)**				
	TR1	0.78	18.30	0.62
	TR2	0.69	16.24	0.48
	TR3	0.68	-	0.46
	TR4	0.72	27.93	0.52
	TR5	0.69	16.51	0.48
	TR6	0.79	18.43	0.62
Perceived Ease of Use (α=0.91 CRC=0.90 pv=0.70 ג=0.84**)**				
	PEOU1	0.84	28.63	0.70
	PEOU2	0.88	-	0.77
	PEOU3	0.77	24.51	0.59
	PEOU4	0.85	28.66	0.72
Perceived Usefulness (α=0.93 CRC=0.93 pv=0.66 ג=0.81**)**				
	PU2	0.84	30.14	0.71
	PU3	0.71	22.56	0.50
	PU4	0.65	19.86	0.42
	PU5	0.87	32.84	0.76
	PU6	0.89	41.19	0.79
	PU7	0.88	-	0.77
	PU8	0.82	28.91	0.67
Calculative Commitment (α=0.75 CRC=0.75 pv=0.50 ג=0.73**)**				
	CC1	0.72	-	0.52
	CC2	0.66	13.47	0.44
	CC3	0.73	13.79	0.53
Affective Commitment (α=0.89 CRC=0.89 pv=0.63 ג=0.79**)**				
	AC1	0.74	22.95	0.55
	AC2	0.86	-	0.74
	AC3	0.87	28.51	0.76
	AC4	0.81	25.29	0.66
	AC6	0.68	20.31	0.46

Notes; SE: Standardized parameter estimation from confirmatory factor analysis (significant at p<0.01). Items wth *, CC5 and TR7is eliminated according to the confirmatory factor analysis. Due to high standardized residuals PU (1,9), ServQ3, AC5 are eliminated.

III.IX. Structural Equation Model Analysis and Hypothesis Testing Results

The proposed structural model was found statistically significant ($X^2_{(508)}$: 2.26, $p<0.01$) and all other fit indices (RMSEA=0.042, CFI=0.96, IFI=0.96, NFI=0.93, RFI=0.92, SRMR=0.047, GFI=0.91, AGFI=0.90) show that the data fit well in the structural model.

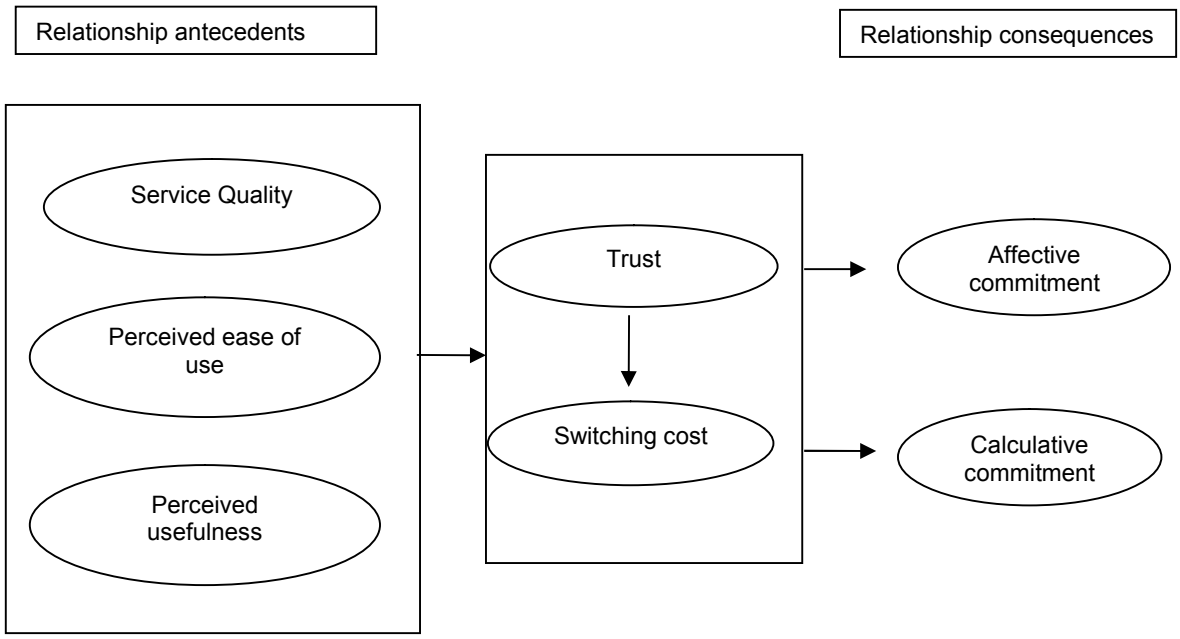

Figure III. Structural equation model

Hypothesized structural relationships could explain 57% of affective commitment and %17 of calculative commitment based on their SMC values. Other SMC values were 0.28 for switching cost and 0.62 for trust. High SMC values for trust and affective commitment variables, showed that the exploratory power of the model was also high (Hair et al., 1998; Jöreskog and Sörbom, 1994).

Table IV. Descriptive statistics and correlation matrix

Constructs	1	2	3	4	5	6	7	Mean	SD
1. Perceived usefulness	1							4,1849	,84106
2. Perceived ease of use	,72(**)	1						4,3025	,86502
3. Service quality	,57(**)	,46(**)	1					3,9170	,95195
4. Switching cost	,51(**)	,40(**)	,36(**)	1				3,7488	,77039
5. Trust	,81(**)	,68(**)	,70(**)	,49(**)	1			4,2053	,80610
6. Affective commitment	,60(**)	,50(**)	,52(**)	,37(**)	,75(**)	1		3,9974	1,04089
7. Calculative commitment	,17(**)	,13(**)	,12(**)	,33(**)	,16(**)	,25(**)	1	3,0054	1,24842

Note/ All items were measured on a 5=point Likert type scale ranging from `1 =strongly disagree to 5=strongly agree. A higher score indicated a more favourable response. ** Correlation is significant at the 0.01 level (2-tailed).

The correlations between the variables were significant (see Table IV). As shown in Figure IV and Table V, all other hypotheses were found statistically significant except the ones betweeen service quality, ease of use and switching cost with ($\beta_{2a:}$ 0.02, β_{2b} : 0.02), so $H_{2a,b}$ are not supported. The signs of all structural paths were also consistent with the hypothesized relationships. Service quality, perceived ease of use and perceived usefulness positively and significantly effect trust, so $H_{1a,b,c}$ are supported (β_{1a} : 0.34, $\beta_{1b:}$ 0.16, β_{1c} :0.49, $p < 0.01$). As proposed in $H_{3,4}$ trust was found positively and significantly related to switching cost, and also to affective commitment. (β_3: 0.21 $p<0.05$, β_4: 0.75, $p < 0.01$). Switching cost has positive and significant relationship with calculative commitment, so H_5 is supported (β_5 : 0.33, $p < 0.01$).

Table V. Structural equation model analysis and hypothesis testing results

Hypothesized Paths		**Direct Effects**		**Indirect Effects**	**Total Effects**	**Remarks**
		Path Coefficients	**t-values**			
H1a	ServQ → TR	0.49	8.69**	-	0.34	Supported
H1b	PEOU → TR	0.16	3.91**	-	0.16	Supported
H1c	PU→ TR	0.49	9.85**	-	0.49	Supported
H2a	ServQ → SC	0.02	0.29	0.07	0.09	Not supported
H2b	PEOU → SC	0.02	0.37	0.03	0.06	Not supported
H2c	PU → SC	0.31	3.83**	0.10	0.42	Supported
H3	TR → SC	0.21	2.18*			Supported
H4	TR → AC	0.75	15.81**			Supported
H5	SC → CC	0.33	6.75**			Supported
	PU → AC			0.37	0.37	
	PEOU → AC			0.12	0.12	
	ServQ→ AC			0.26	0.26	
	PU → CC			0.14	0.14	
	PEOU → CC			0.02	0.02	
	ServQ→ CC			0.03	0.03	
	R^2 *TR*	0.62				
	R^2 *AC*	0.57				
	R^2 *CC*	0.17				
	R^2 *SC*	0.28				

Note: Total effect=Direct effect+indirect effect; *Significant at $p<0.05$, **Significant at $p<0.01$. ServQ; service quality, TR; trust, PEOU; perceived ease of use, PU; perceived usefulness, SC; switching cost, AC; affective commitment, CC; calculative commitment.

Note: Calculative commitment and affective commitment are correlated since they reflect the traditional cognitive (calculative commtimet)-affective (affective commitment)-conative(loyalty) (think → feel → do) causal ordering. (Davis-Sramek et al 2009), so calculative and affective commitment should precede each other.

IV. DISCUSSION AND CONCLUSION

As hypothesized, all of the antecedent factors, service quality, perceived ease of use and perceived usefulness had significant and positive effect on trust, where perceived usefulness appears as the strongest predictor of trust, followed by service quality. Among all, only perceived usefulness had an influence on switching cost. Trust was the most important variable with higher explanotary power in the model, followed by indirect effect of perceived usefulness to obtain a long-term affective commitment. We found that trust significantly affects switching cost in a technology adoption process**.** The more trustable a software program is, the more difficult to intend to switch. On the other hand, no relationship is found among PEOU, service quality and switching cost. Perceived service quality of the accounting software company increases trust to the company with good technical assistance and easy accessibility. However it is not a criteria that has an influence on switching decisions among software programs. The same insignificant relationship is also seen for mobile phone service providers in India (Edward and Sahadev, 2011). Moreover, the majority (81%) of our sample population has more than 7 yrs of software experience (table 1), which may automatically disregard the importance of PEOU in switching decisions, since ease of use comes with habit. The longer that someone has used a system, the more likely it will become a routine tool and users will not need to assess its PEOU each time they use it.

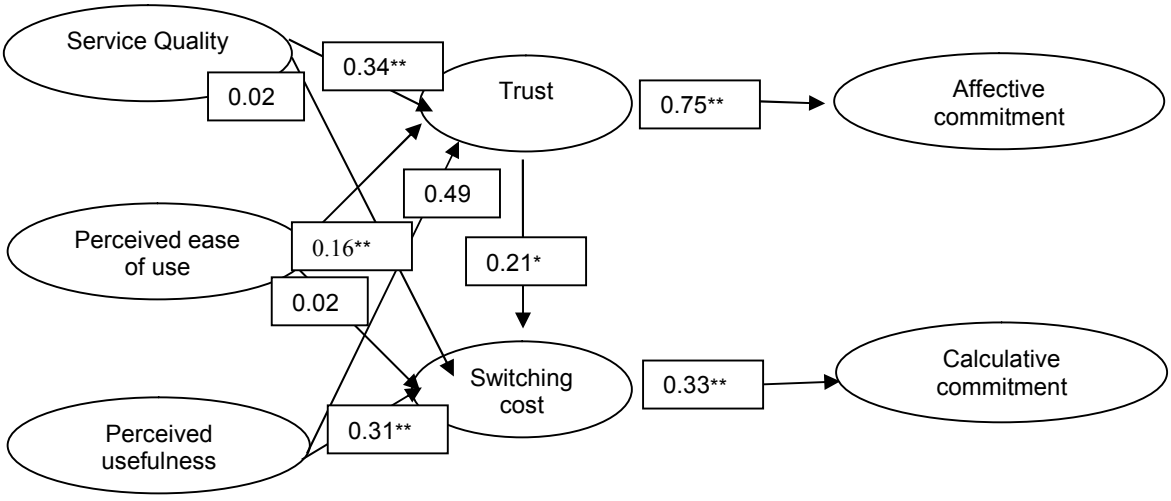

Figure IV. Structural equation model analysis and hypothesis testing results

Overall, the results show that switching costs positively affects calculative commitment. And on the other hand, trust is needed in order to obtain a long-term affective commitment. Although the partial effect of each switching cost sub-dimensions has not been

researched, it can be conluded that the fear of losing company benefits like additional technical support, education, program upgrades and gifts, beside time and effort cost for learning, evaluation/set-up and uncertainty cost of a new program, altogether keep accountants to the relationship. Moreover, financial penalty also compels them to use the current program. Kuo and Yen (2009) proved the negative effect of "excessive usage fee" on 3G mobile value added services use intentions. Similarly, the license fee required to buy a new software program is quite high. According to survey results, the new software should be at least %46.6 cheaper than its alternatives to be worth a switch. However, the prices in the market are slightly different from each other. Moreover, the relationship between trust and calculative commitment in technology adoption is a question-mark. Geyskens et al. (1996) indicated that calculative commitment was negatively influenced by trust. According to them trust exists with credibility, benevolence and honesty which create voluntarily and positively motivated pertnership relationships. On the other hand, C˘ ater (2007) found no relationship between trust and calculative commitment. Thus, this relationship has not been taken into consideration in our research.

V. MANAGERIAL DIRECTIONS AND PRACTICAL IMPLICATIONS

Managers should focus on creating trust, and then affective commitment. Calculative commitment do not provide sustainable loyalty since it can be threatened by other alternatives' attractiveness (Yanamandram and White, 2010) if future benefits of new software company weight higher than sunk costs from the current relationship. Calculative commitment only comes with switching barriers and it is artificial, so aiming to create calculative commitment shouldn't be a strategy for software firms. Indeed, management should focus on trust in order to retain customers on hand in the long-term. Trust comes with increased service quality, perceived usefulness and ease of use. Thus, it is necessary for accounting firms to maintain comprehensive customer databases capturing clients' personal profile in privacy and adapt customization strategies in software programs development, especially for web-based softwares, encouraging online information exchange and reporting among accountants, individual/organizational customers, and the government. Customization may also include automated information to the customer about recent updates on their financial situations. Moreover, in order to be successful, the software company should improve the software features. These features should allow better menu and account

management with more flexible data export-import tools and sectoral adaptation to increase customer porfolio. Beside functionality, user-friendly software programs are necessary to accomplish the job in a shorter time and obtain trust and long-term commitment at the end.

In Turkey, professional accountants are more conservative in using accounting programs and show resistance to change. However, in other countries that are more open to novelties, the strong influence of switching cost on calculative commitment might diminish. There is an aggressive competition between Orka, Logo, Luca and Eta software companies which are mostly prefered by professional accountants. However, in practice, accounting software firms in Turkey generally focus on switching costs to hold customers on hand, and do not pay too much attention to R&D projects due to their high financial cost. In this way, not only does the customer stick to the company in the calculative level, but also they cut-off the flow of prospective customers with negative word-of-mouth. Previous studies indicate that calculative commitment brings together negative WOM communications (Nusair et al., 2010; Jones et al., 2007, Lee and Romaniuk, 2009). Indeed, IT has to be a strategic weapon to obtain competitive advantages in accounting based job accomplishments.

VI. FUTURE RESEARCH AND LIMITATIONS

Our analysis was restricted to one service context and needs to be tested over numerous contexts in order to be certain of its applicability to other domains. The target market is limited by only accounting firms. In future, the sample might also include international auditing firms and accountants in other professional firms, which will increase the validity of the research.

However, irrespective of the limitations, this study highlights a number of potentially interesting future research projects. For example, the possible effects of switching cost antecedents such as alternative attractiveness, investment and relationship length (Burnham et al., 2003; Zhang and Gosain, 2003) can be analyzed. Moreover, the relationships might change under the situations of high and low alternative attractiveness in the market. Sharma and Patterson (2000) found that trust has a stronger effect on commitment under low alternative attractiveness, however satisfaction becomes the main criteria under high alternative attractiveness. Furthermore, switching cost can become a “moderator” instead of a “mediator” in the model between trust and commitment (Sharma and Patterson, 2000; Good and Harris, 2007). Rather than trust, the role of `perceived value of accounting software

programs` on commitment and purchasing behaviors can be analyzed too (Jih et al., 2007). Indeed, the relative importance of perceived monetary sacrifice and perceived benefit like enjoyment and social value on continuous pay for a web service via perceived value has been proven (Hsiao, 2011). The potential harmful effects of switching cost on behavior intentions like negative WOM may be another research subject (Jones et al., 2007). Moreover, the research model can comparatively be tested based on different regions and cities of Turkey, to follow whether or not the results of he hypotheses are changing.

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APPANDIX

Appendix A. Switching Cost Measurement Items

Monetary Cost	
MC1	*Buying a new software program causes monetary cost
MC2	Switching to a new software program might lead to monetary problems.
MC3	The implementation cost and one-time licence fee will be high
MC4	Time and effort cost of moving to a new software program is high
MC5	Buying a new program causes extra cost.
MC6	Cost of buying a new program will be high.
Benefit Loss Cost	
BLC1	Switching to a new software program would mean losing extra discounts, promotions, gifts, etc. that I have already gained
BLC2	Switching to a new software program would mean losing free software upgrades, additional technical support, etc. that I have already gained
BLC3	These extra services and discounts that I have gained with my current software company are important for me.
Uncertainty Cost	
	If I switched to a new software program;
UC1	The new service offered might not be as good as expected
UC2	Service support might be non-satisfactory after a while
UC3	Its performance might not be as good as expected
UC4	Unpredicted costs can appear (new licence fee, set-up and tutorial costs…)
UC5	Quality, speed and efficiency on the job processing might decrease.
Learning Cost	
	If I switched to a new software program,
LC1	I cannot figure out to use some tools until I learn the software program deeply
LC2	It takes time to learn the new tools
LC3	Time required to learn new tools shouldn't be so long
LC4	I will not feel comfortable with the new way of use for a certain period of time.
Evaluation/Set-up Cost	
	If I switched to a new software program,
ESC1	The evaluation and decision process takes a lot of energy, time and effort
ESC2	*Although I could have enough information, comparing software programs requires lots of time and effort
ESC3	I do not have time to collect information for software evaluation.
ESC4	The installation process will require extra effort and time
ESC5	I should deal with a lot of procedures during the installation process.

Note: questions with *, MC1, ESC2, are eliminated basedonconfirmatory factor analysis results

Appendix B. Structural measurement model assessment results

	Scale Items	
Service Quality		
ServQ1	How do you perceive the quality of your accounting software company's technical service? (Proficiency, technical problem solving, etc…)	0.79
ServQ2	How do you perceive your accounting software company's customer services? (Responsiveness, accessibility and punctuality of the sales team)	0.81
ServQ3	*How do you perceive the quality of your accounting software company's adding services, (additional technical support, education, discounts, gifts, etc…)?	0.77
ServQ4	How do you perceive the quality of your accounting software company's campaigns (special promotions, version upgrades, etc…)?	0.81
ServQ5	How would you rate the satisfaction level from your expectations met by the accounting software program?	0.79
Trust		
TR1	I trust the response rate and technical support of the software company that I'm currently involved	0.78
TR2	It is important to work with a trustable accounting software company (in terms good price, service quality, technical ability etc…)	0.69
TR3	If I buy a new or upgraded version of this program the given technical support will meet my expectations	0.68
TR4	If I buy a new or upgraded version of this program, the company will also meet my needs in the best way.	0.72
TR5	My collegues think that this software company is trustable.	0.70
TR6	In general belief, this program meets all needs of the accountants.	0.79
Perceived Ease of Use		
PEOU1	My interaction with the accounting software program is clear and understandable	0.84
PEOU2	It find it easy to navigate the software to do what I want to do	0.88
PEOU3	I find an accounting software program easy to use.	0.77
PEOU4	Interacting with accounting sofware programs does not require a lot of mental effort.	0.85
Perceived Usefulness		
PU1	*Using an accounting software program would enable me to accomplish my job more quickly	0.77
PU2	Using an accounting software program can facilitate to do my job and reach required information	0.83
PU3	The program that I use avoid data loss and also provide security and privacy for clients' information	0.72
PU4	The program that I use shows flexibility and easy sectoral adaptation	0.65
PU5	Using an accounting software program can increase productivity in job	0.87
PU6	Using an accounting software program can improve my job performance	0.88
PU7	Using an accounting software program can increase my efficiency and control on job.	0.88
PU8	Using an accounting software program can help me to accomplish more complex duties in a shorter time	0.82
PU9	*Using an accounting software program can provide support in critic times	0.74

Calculative Commitment		
CC1	I feel somehow locked in use of this accounting software company	0.71
CC2	Although I am not totally satisfied, I feel sort of stock with this software company	0.66
CC3	I feel like I use this company's software product because I have to	0.73
CC5	*I cannot take the risk of trying other companies' products since I feel like I don't have another choice	0.43
Affective Commitment		
AA1	I will stay with this company since I feel a strong sense of attachment to it	0.74
AA2	If I buy a new software program, I would prefer the same brand again.	0.86
AA3	I will recommend this program to other collegues because I really like it	0.86
AA4	I will encourage my collegues who plan buying this program	0.81
AA5	*Although other company's products might be adventageous in someway, I would continue to use this program*	-
AA6	Even if the other companies' softwares might be cheaper, I would continue to use the same brand.	0.68

Note: *CC5 and TR7 is eliminated according to confirmatory factor analysis. Other questions with with *, Due to high standardized residuals, ServQ3, PU1, PU9, AC5 are removed from the analysis to reach better fit indices.