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A Schema Approach to Cognitive Resonance and Its Decision-making Performance

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Abstract

This paper is aimed at proposing a new framework to predict decision performance, by investigating decision maker's cognitive resonance. We assume that every decision maker has two kinds of schema-emotional schema and rational schema. Cognitive resonance is believed to have a close relationship with the two schemata and decision performance. In literature on decision performance there is no study seeking relationship among the two schemata and cognitive resonance. Therefore, our research purposes are twofold: (1) to provide a theoretical basis for the proposed framework describing the causal relationships among two schemata, cognitive resonance, and decision performance, and (2) to empirically prove its validity applying to Internet shopping situation. Based on the questionnaires from 138 respondents, we used a second order confirmatory factor analysis (CFA) to extract valid constructs, and structural equation model (SEM) to calculate path coefficients and prove the statistical validity of our proposed research model. Experimental results supported our research model with some further research issues.

Keywords: Emotional schema, Rational schema, Cognitive resonance, Confirmatory factor analysis, Structural equation model, Decision performance

1. Introduction

In the fields of decision making with IS, many researchers proposed important theoretical contributions such as TRA (Theory of Reasoned Action) (Fishbein, 1967), TPB (Theory of Planned Behavior) (Ajzen, 1985), and TAM (Davis, 1989; Davis et al., 1989). Main thrust of those theories is summarized as sequential cause-effect relationships like *external variables-beliefs-attitude-behavioral intention.* In literature regarding IS topics, a great deal of studies have been published applying these theories successfully (Venkatesh, 2000; Venkatesh and Davis, 2000).

However, we argue that there exist still theoretical void where new constructs and perspectives should be dealt with rigorously. Studies searching for new constructs seem rather obsolete because most of many researchers are focusing on this topic. In the meantime, this study is aimed at proposing a new theoretical perspective to enhance the decision performance related with using IS. In other words, the research void we want to fill out is a need to investigate the need to tackle the problem of enriching the decision performance stemming from using a particular IS from a perspective of *cognitive resonance.*

Decision makers are known to have a pre-existing assumption about the way the surrounding world is organized (Axelrod, 1973; Bartlett, 1932; Rumelhart, 1980), which is termed schema in literature regarding cognitive science. Then it may be theoretically seamless if we assume that this pre-existing assumption will also affect decision quality significantly. Our research motivation starts with this assumption. First, all the decision makers are believed to have two kinds of schema such as emotional schema and rational schema. Second, each schema may cooperate with each other to influence cognitive resonance depending on the decision situation. Third, cognitive resonance will be created from those two schemata being activated. Fourth, decision performance depends on the quality of cognitive resonance.

Theoretical contributions of this study are as follows:

(1) Investigating new three constructs such as emotional schema, rational schema, and cognitive resonance.

(2) Proving the theoretical validity of replacing the traditional framework, *external variables-beliefs-attitude-behavioral intention,* describing how the behavioral intention is created, with a new framework like *external variables-schemata-cognitive resonance-decision performance,* where schemata and cognitive resonance are newly introduced.

(3) Experimenting with real data to prove the empirical validity of the proposed research framework.

2. Theoretical Background

2.1 Technology Acceptance Model

Understanding why people accept or reject computers has proven to be one of the most challenging issues in information systems (IS) research. Investigators have studied the impact of users internal beliefs and attitudes on their usage behavior, and how these internal beliefs and attitudes are, in turn, influenced by various external factors, including: the system's technical design characteristics; user involvement in system development; the type of system development process used; the nature of the implementation process; and cognitive style. In general, however, these research findings have been mixed and inconclusive.

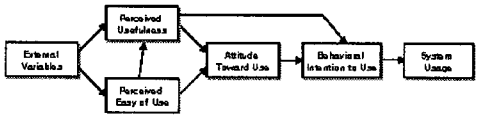
Davis (1989) introduced an adaptation of TRA (Ajzen and Fishbein, 1980; Fishbein, 1967), the technology acceptance model (TAM), which is specifically meant to explain computer usage behavior. TAM uses TRA as a theoretical basis for specifying the causal linkages between two key beliefs: perceived usefulness and perceived ease of use, and user's attitudes, intentions and actual computer adoption behavior. TAM is considerably less general than TRA, designed to apply only to computer usage behavior, but because it incorporates findings accumulated from over a decade of IS research, it may be especially well suited for modeling computer acceptance (Davis et al., 1989).

Perceived usefulness is the degree to which a person believes that a particular information system would enhance his or her job performance. This follows from the definition of the word useful: "capable of being used advantageously." Within an organizational context, people are generally reinforced for good performance by raises, promotions, bonuses and other rewards. A system high in perceived usefulness, in turn, is on for which a user believes in the existence of a positive use-performance relationship (Davis, 1989).

Perceived ease of use, in contrast, refers to "the degree to which a person believes that using a particular system would be free of effort". This follows from the definition of "ease": "freedom from difficulty or great effort." Effort is a finite resource that a person may allocate to the various activities for which he or she is responsible. All else being equal, an application perceived to be easier to use than another is more likely to be accepted by users.

Two other constructs in TAM are attitude towards use and behavioral intention to use. Attitude towards use is the user's evaluation of the desirability of employing a particular information systems application. Behavioral intention to use is a measure of the likelihood a person will employ the application (Ajzen and Fishbein, 1980). TAM's dependent variable is actual usage. It has typically been a self-reported measure of time or frequency of employing the application. Figure 1 shows the generic TAM model.

Figure 1. TAM model



Several recent studies that have considered additional relationships (Adams et al., 1992; Bhattacherjee, 2000; Mathieson, 1991; Taylor and Todd, 1995; Venkatesh, 2000; Venkatesh and Davis, 1996, 2000). For instance, Venkatesh (2000) and Venkatesh and Davis (2000) has been applied and tested in several subsequent user technology acceptance/adoption investigations.

2.2 Schema Theory

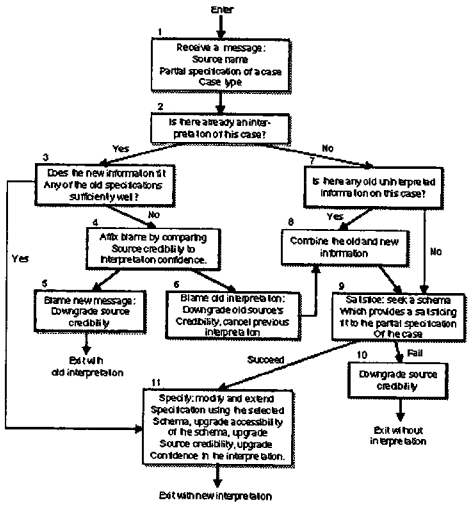
Basic notion of schema

Bartlett (1932) first proposed the concept of schema to provide a mental representation (or framework) for understanding, remembering and applying information coming from outer world. Schemas are created through experience with the world, and the person's character and culture, which includes the interactions with people, objects and events within that culture. Axelrod (1973) addresses the process related to the schema theory, which is depicted in Figure 2. The process model for schema proposed by Axelrod (1973) enabled cognitive science researchers of schema to solve several decision-making problems more systematically (Marshall, 1995). For example, an individual decision-maker's schema can be represented as a vehicle of memory, leading to (1) organization of an individual's similar experiences in such a way that the individual can draw inferences, make estimates, create goals, and develop plans using the schema process framework as shown in Figure 2, and (2) calculation of individual's decision by using symbolic reasoning like expert systems rule (Waterman, 1986) and connectionist processing like neural network (Rumelhart et al., 1986).

Therefore, schema theory helps us understand how a person's mental perceptions about a specific object can be organized through experience. As a person's schema is constructed, then he/she can understand a particular object more clearly. We propose that such schema may be divided into two kinds such as *rational schema* and *emotional schema*. Rational schema depends on a prior knowledge which has been accumulated through education and professional experience. Meanwhile, emotional schema is related to describing psychological process leading into a

specific behavior or satisfaction. To view these two schemas from its intrinsic definition, we can easily conjecture that rational schema may be influenced by systematic learning related constructs, while emotional schema by individual characteristics and cultural factors.

Figure 2. Process Model for Schema Theory (Adapted from Axelrod (1973))



Why schema instead of attitude

To understand schema concept more easily, let us contemplate the concept of attitude. Eagly and Chaiken (1993) addressed that attitude is a *psychological tendency* that is expressed by *evaluating* a particular entity with some degree of favor or disfavor. The psychological tendency refers to a state that is internal to a person, and evaluating encompasses all classes of evaluative responding, whether overt or covert, cognitive, affective, or behavioral. Depending on the responses that express evaluation, people's attitudes can be or should be divided into three classes- cognitive attitude, affective attitude, and behavioral attitude (Katz & Stotland, 1959; Rosenberg & Hovland, 1960).

Meanwhile, schema is a broader classification of cognitive structures that has been investigated quite extensively by cognitive psychologists and cognitive social psychologists. Schema is typically said to be "cognitive structures of organized prior knowledge, abstracted from experience with specific instance" (Fiske and Linville, 1980, p.543). In other words, schema exists in a form of a higher order or abstract cognitive structure that people holds in his past experience. Since attitude is related to a psychological tendency from people's cognition or abstract cognitive structure, schema is partly related with a cognitive aspect of attitude (Taylor and Crocker, 1981), but a broader concept than attitude. Besides, while attitude plays a role of determinant for intention and behavior (Ajzen and Fishbein, 1980; Ajzen 1985; Fishbein 1967), schema is an indicator for decision performance (Lamkin and Courtney, 1993). Another difference between schema and attitude is that attitude has been extensively used in IS research (Davis, 1989; Venkatesh and Davis, 1996, 2000; Venkatesh, 2000), those IS researches using schema are rare.

3. Methodology

3.1 Constructs

Emotional Schema

As mentioned in previous section, emotional schema is related to individual's character and culture. Since we limit our research focus to the issue of how decision performance on the Internet shopping is affected by causal relationships among *external variables-schema-cognitive resonance*, the three constructs like computer anxiety, trust propensity, individualism are suggested as external variables describing the emotional schema.

Computer Anxiety: Computer anxiety is defined as an individual's apprehension when she/he is faced with the situation of using computers (Simonson et al., 1987). Different from computer self-efficacy (Bandura, 1978) positively related to using computer, computer anxiety is a negative affective reaction toward computer use.

Trust Propensity: Hofstede (1980) found that people with different cultural backgrounds, personality types, and developmental experiences vary in their propensity to trust. This propensity to trust is viewed as a personality trait, describing propensity which might be thought of as the general willingness to trust others (Lee and Turban, 2000).

Individualism: Hofstede (1997) asserts that individualism pertains to how everyone in a society or organization is expected to look after his/her own interests or immediate family. However, this study views individualism as a negative subjective norm which indicates that he/she tends to focus on his/her own tastes and interests despite the influence or pressure coming from external environment such as society and/or organization they are working in.

Rational Schema

In the meantime, rational schema, which is related to addressing a rather objective and professional experience accumulated through long-term learning and education, can be supported by the three external variables such as computer self-efficacy, facilitating condition, and system experience.

Computer Self-efficacy: Self-efficacy is defined by Bandura (1978, p.240) as a judgment of a person's ability to execute a particular behavior pattern which has a highly correlation with environment and

cognitive factors (i.e., outcome expectations). Therefore, computer self-efficacy is related to judgment of an individual's ability to perform a computer use.

Facilitating Condition: Facilitating condition is an external control aspect of the computer self-efficacy, describing resource availability and personal ability to facilitate a computer use (Bhattacherjee, 2000; Taylor and Todd, 1995; Venkatesh, 2000) .

System Experience: We assume that a variety of computer outcomes may be derived from user's system experience which enables accumulation of knowledge about using the computer. Levin and Gordon (1989) found subjects owning computers more motivated to familiarize themselves with computers and to possess more affective attitudes toward computers than did subjects not owning computers. Through system experience, users can become knowledgeable about computer use for various purposes to obtain what they want (Martin, 1988).

Cognitive Resonance

Resonance usually occurs when a fit among factors describing a particular thing is made. Similarly, cognitive resonance is believed to be generated in a decision maker's psychology and mental realm when emotional schema fits well with rational schema.

Emotional schema is directed at describing user's emotional aspect which seems relevant to solving a particular decision making problem. Therefore, it is related with a kind of psychological terms such as anxiety, propensity, and individualism. Rational schema is linked with rational aspect of user's knowledge which seems relevant to solving a problem.

We posit that cognitive resonance is strongly affected by a fit among the two schemata above, positively influencing four properties of decision making like speed, reliability, confidence, and consistency.

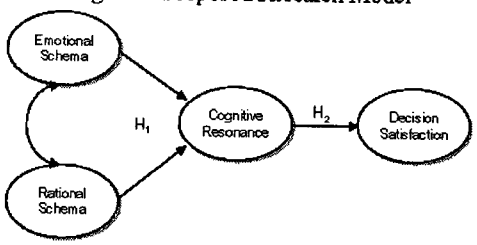
Decision Performance

Decision performance in this context relates to the accomplishment of decision making by an individual. Higher decision performance implies some mix of higher satisfaction. So in this study, decision performance was measured by decision satisfaction measurements in lieu of performance measurements (Bhattacherjee, 2001).

3.2 Research Model

Our proposed research model is basically based on both two schemata and cognitive resonance to describe the relationship to decision performance. Since we assume that cognitive resonance starts with congruence between emotional schema and rational schema with having a positive relationship to decision performance, the following relationships are organized as shown in Figure 3.

Figure 3. Proposed Research Model



From the research model in Figure 3, we can assume additionally that two schemata users possess have a direct impact on cognitive resonance, while having an indirect influence on decision performance. One of the most trickiest research issues we want to resolve herein is whether two schemata will influence cognitive resonance *concurrently* or not. "Concurrently" means that both of two schemata affect cognitive resonance directly at the same time. Therefore, the reverse of this premise is that only one of the two schemata will directly influence cognitive resonance.

Summarizing these research issues and assumptions yields the following research hypotheses.

Hypothesis 1: Both of two schemata influence cognitive resonance concurrently.
Hypothesis 2: Cognitive resonance has a direct and positive influence on decision performance.

4. Experiments

4.1 Measurement Development

The unit of analysis used is individuals who have experience shopping on the Internet. To develop questionnaire, we use several constructs described in section 3, most of which are validated by literature with an exception of cognitive resonance. The validity of items representing each construct stems from relevant literature, which is listed in Table 1. An initial version of questionnaire was tested by three experts having practical and academic expertise on the Internet shopping as well as research issues of this study.

Table 1. Operationalized questionnaire item

Construct	Measure	Source
Emotional Schema	Computer Anxiety: Working with a computer makes me nervous. (CA1)† I do feel threatened when others talk about computers. (CA2)† It would bother me to take courses using computers. (CA3) Computers make me feel uncomfortable. (CA4) Computers make me feel uneasy. (CA5)	Bandura (1978), Simonson et al. (1987), Venkatesh (2000)
	Trust propensity: It is easy for me to trust a person/thing. (TP1) My tendency to trust a person/thing is high. (TP2) I tend to trust a person/thing, even though I have little knowledge of it. (TP3)† Trusting someone or something is not difficult. (TP4)	Hofstede (1980), Lee and Turban (2000)
	Individualism: I prefer looking after myself and my immediate family. (IN1) Having sufficient time for personal and family life is important to me. (IN2) It is important for me to have challenging tasks and get a personal sense of satisfaction. (IN3)†	Hofstede (1997)
Rational Schema	Computer Self efficacy: I could complete the job using the system .... If I had never used a package like it before. (CS1)† .... If I had seen someone else using it before trying it myself. (CS 2) .... If I had a lot of time to complete the assignment for which the system was provided. (CS 3) .... If someone showed me how to do it first. (CS 4) .... If I had used similar packages before this one to do the same job. (CS 5)	Bandura (1978), Venkatesh (2000)
	Facilitating Condition: I have control over using the system depending on my needs and situations. (FC1)† I have the resources necessary to use the system. (FC2) I have the knowledge necessary to use the system. (FC3) Given the resources, opportunities and knowledge it takes to use the system, it would be easy for me to use the system. (FC4)†	Bhattacherjee, (2000), Taylor and Todd (1995), Venkatesh (2000)
	System Experience: I am very skilled at using the Internet. (SE1) I consider myself knowledgeable good search techniques on the Internet. (SE2) I know much about using the Internet than most users. (SE3) I know how to find what I want on the Internet using a search engine. (SE4)	Levin and Gordon (1989), Martin (1998)
Cognitive Resonance	Supposing that you take into consideration two dimensions above such as individual tendency, and individual knowledge and experience, how much do you think does the following decision quality factor about the Internet shopping improve? - Decision making speed (CR1)† - Decision making reliability (CR2) - Decision making confidence (CR3) - Decision making consistency (CR4)	New Measurement
Decision performance	Supposing that you take into consideration two dimensions above such as individual tendency, and individual knowledge and experience above, how much do you think you are satisfied with your decision about the Internet shopping? - Very dissatisfied / Very satisfied (DS1) - Very displeased / Very pleased (DS2) - Very frustrated/Very contented (DS3) - Absolutely terrible/Absolutely delighted(DS4)	Bhattacherjee (2001)

Likert 1-7 scale, 1=Very Low, 7=Very High
†These items were dropped from the final scales.

Keeping it in mind that our basic research is focused on analyzing the validity of a new relationship *external variables-schemata-cognitive resonance-decision performance* in case of the Internet shopping, it should be noted that operationalization of two schemata is very complex because they include a great deal of sophisticated concepts or constructs to represent their meaning more clearly in the Internet shopping environment. For example, we found from literature (Venkatesh, 2000; Hofstede, 1980, 1997) that emotional schema should be supported by additional three constructs such as computer anxiety (Venkatesh, 2000), trust propensity (Hofstede, 1980), and individualism (Hofstede, 1997), all of whom seem relevant to describing user's emotional framework to be used in the Internet shopping. Likewise, rational schema to be used in the Internet shopping situation is presumed here to be supported by additional three constructs like computer self-efficacy (Venkatesh, 2000), facilitating condition (Venkatesh, 2000), and system experience (Levin and Gordon, 1989).

On the basis of complexity to operationalize the meaning of two schemata precisely, we need to represent the two schemata with a second order factor analysis, which belongs to the confirmatory factor analysis (Hair et al., 1998). Its specifics will be demonstrated in the sequel.

4.2 Data collection

Questionnaire data was gathered from 138 undergraduate students enrolling in a big private university located in Seoul, Korea. Those students took the courses applying Internet in managerial issues, which authors were administering as instructors. We described the characteristics of questionnaire and the cautious points to be paid a due attention while answering the questionnaire. We announced in class before questionnaire survey that each respondent who completed questionnaire successfully within one week would be given an incentive in final grade with a fixed portion. In this way, the validity regarding questionnaire survey was guaranteed. Final number of successful respondents was 104 with demographic information as shown in Table 2. The way of collecting questionnaires was through the web where our questionnaire was posted. We adhered to the procedures as shown in Birnbaum (2000) to ensure the validity of the web-based questionnaire survey.

Table 2. Demographic information for the respondents

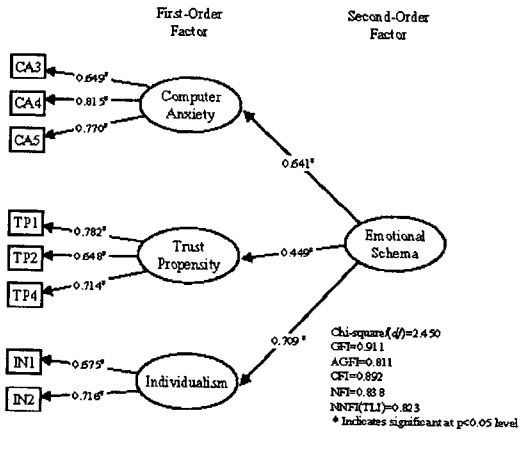
Classification	Item	Frequency	Percentage
Gender	Male	81	77.9 %
	Female	23	22.1 %
Age	Less than 20	1	1.0 %
	20 – 30	101	97.1 %
	Greater than 30	2	1.9 %
Income	Less than 100 million won	92	88.5 %
	100 – 200 million won	12	11.5 %
Internet Experience	Less than 2 Years	9	8.7 %
	2 – 3 Years	25	24.0 %
	Greater than 3 Years	70	67.3 %

4.3 Results

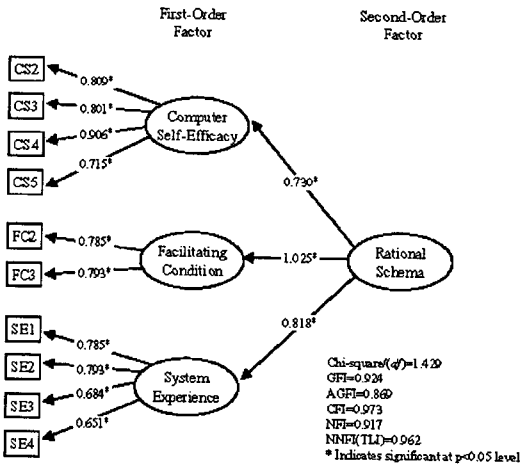
Basic statistical methods used in experiment are structural equation analysis (SEM) and a confirmatory factor analysis. SEM evaluates a number of linear regression equations holistically, resulting in various fit measures to show how the path coefficients calculated can be used validly for further analysis (Hair et al., 1995). Recently, confirmatory factor analysis has been receiving favorable attention from both researchers and practitioners (Anderson and Gerbing, 1981; Fornell and Larcker, 1981; Hair et al., 1998) because the traditional exploratory factor analysis was identified to have several inherent limitations (Ahire et al., 1996).

Figure 4. Second order CFA results for the two schemata constructs

(A) Emotional schema



(B) Rational schema



Three steps were used for our experiments-confirmatory factor analysis (CFA), SEM, and hypotheses test. CFA was applied to verify the validity of relevant constructs from the data obtained by questionnaire survey. Regarding the validity of two schemata constructs, we performed a second order factor analysis (Hair et al., 1998). The overall fit measures for the emotional schema indicated a fairly good model fit (Chi-square/df=2.450; GFI=0.911; AGFI=0.811; CFI=0.892; NFI=0.838; NNFI=0.823). In case of the rational schema, the overall fit measures showed the more improved

model fit than the emotional schema (Chi-square/df=1.429; GFI=0.924; AGFI=0.869; CFI=0.973; NFI=0.917; NNFI=0.962). Figure 4 depicts the second order CFA results for the two schemata. Table 3 describes the measurement properties for all the constructs used in data analysis. The next section describes the SEM analysis of the conceptual framework.

Table 3. Properties of final measures†

Construct	Item	Standardized Loadings	Indicator measurement error	Construct reliability	Variance extracted
Emotional Schema	CA4	0.815	0.336	0.791	0.559
	CA3	0.649	0.579		
	CA5	0.770	0.407		
	TP4	0.714	0.490	0.759	0.514
	TP2	0.648	0.580		
	TP1	0.782	0.388		
	IN2	0.716	0.487	0.652	0.484
	IN1	0.675	0.544		
Rational Schema	SE5	0.715	0.489	0.884	0.657
	SE4	0.906	0.179		
	SE3	0.801	0.358		
	SE2	0.809	0.346		
	FC2	0.595	0.646	0.679	0.521
	FC3	0.829	0.313		
	EXP3	0.684	0.532	0.820	0.534
	EXP2	0.793	0.371		
	EXP1	0.785	0.384		
	EXP4	0.651	0.576		
Cognitive Resonance	CR2	0.829	0.313	0.801	0.577
	CR3	0.814	0.337		
	CR4	0.617	0.619		
Decision Satisfaction	DS1	0.766	0.413	0.894	0.679
	DS2	0.851	0.276		
	DS3	0.816	0.334		
	DS4	0.860	0.260		

Construct reliability= (sum of standardized loadings)^2 / {(sum of standardized loadings)^2+ sum of indicator measurement error}
Indicator measurement error = 1-(standardized loading)^2
Variance Extracted = sum of squared standardized loadings/(sum of squared standardized loadings + sum of indicator measurement error)

Second step is to apply SEM to the proposed research model shown in Figure 5. The overall fit measures were fairly good (Chi-square/df=1.391; GFI=0.890; AGFI=0.838; CFI=0.957; NFI=0.866; NNFI=0.946). All the path coefficients computed are acceptable under $p < .01$ except a parameter on the path from emotional schema to cognitive resonance. Basic premise is that cognitive resonance is positively related to the two schemata. However, the problem we want to investigate here is whether such relationship is concurrently based on the two schemata or not. Table 4 shows the correlation matrix of the final measurements.

Table 4. Correlation matrix used for data analysis

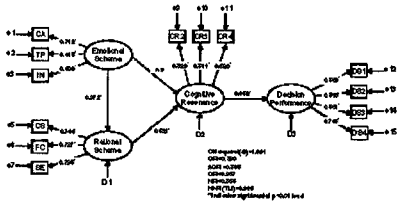
	CA	TP	IND	SE	FC	EXP	CR2	CR3	CR4	DS1	DS2	DS3	DS4
CA	1.000												
TP	0.237*	1.000											
IND	0.344**	0.249*	1.000										
SE	0.467**	0.250*	0.395**	1.000									
FC	0.462**	0.230*	0.349**	0.578**	1.000								
EXP	0.612**	0.284**	0.375**	0.559**	0.593**	1.000							
CR2	0.278**	0.071	0.209*	0.406**	0.249*	0.229*	1.000						
CR3	0.366**	0.073	0.104	0.336**	0.245*	0.254**	0.698**	1.000					
CR4	0.224*	0.003	0.168	0.428**	0.235*	0.304**	0.538**	0.450**	1.000				
DS1	0.387**	0.109	0.267**	0.380**	0.250*	0.379**	0.247*	0.367**	0.245*	1.000			
DS2	0.433**	0.152	0.162	0.356**	0.275**	0.400**	0.244*	0.328**	0.241*	0.673**	1.000		
DS3	0.340**	0.164	0.141	0.311**	0.267**	0.371**	0.241*	0.344**	0.312**	0.749**	0.694**	1.000	
DS4	0.356**	0.110	0.211*	0.377**	0.274**	0.480**	0.113	0.214*	0.293**	0.664**	0.674**	0.619**	1.000

**: p<0.01, *:p<0.05

Third step is hypotheses testing. Experiment result in Figure 5 shows that only one of the two schemata is positively related to cognitive resonance at the same time, not supporting the hypothesis 1. After experiments with another combinations of paths among two schemata and cognitive resonance (for example, either rational schema->emotional schema->cognitive resonance or emotional schema->rational schema, cognitive resonance), interesting facts were found such that (1) all the fit measures and path

coefficients are almost the same, and (2) once one schema is positively related to cognitive resonance the remaining schema is always denied a significant relation to cognitive resonance. Rather, the remaining schema always supports the schema proved to have a positive relation with cognitive resonance. This fact implicitly implies that one of the two schemata is dominating another one in a relation to cognitive resonance. Hypothesis 2 is significantly supported with a positive coefficient .452 under 99% confidence level.

Figure 5. SEM result for the proposed research model



5. Concluding Remarks

As the advent of the Internet usage, many researchers proposed a variety of methods regarding how and why users show a specific attitude, behavioral intention, and satisfaction on the Internet shopping sites, in the name of electronic commerce researches. However, no studies were reported in literature as to how emotional and rational aspects of user's perception in his/her deep psychological realm create cognitive resonance leading into decision performance obtained from performing shopping on the Internet.

To prove this kind of pioneering research issue, we borrowed a basic metaphor from theories TRA, TPB, and TAM, all of which attempt to describe the rationalized behavior of users in a specific decision-making situation. We introduced three new constructs such as emotional schema, rational schema, and cognitive resonance. Especially, since emotional schema and rational schema are rather complicated to be operationalized precisely in the situation of the Internet shopping, we used a second order CFA analysis successfully. Valid items representing cognitive resonance were also proven by CFA to include three decision properties such as reliability, confidence, and consistency, all of which are thought to be derived when a desirable decision making is made. CFA results as to all the constructs used in our proposed research model showed a fairly good fit measures with path coefficients being valid under $p < .01$ except one on the path between emotional schema and cognitive resonance. The proposed research model turned out to be statistically valid from a overall viewpoint. Accordingly, we could say that hypothesis 1 is rejected implying that only one of the two schemata is positively related to cognitive resonance, and that hypothesis 2 is strongly supported.

Remaining research issues worthy of further analysis are as follows:

(1) Investigation of more relevant constructs describing the two schemata in a specific application domain.

(2) Refinement of items for cognitive resonance

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