Does Computer Anxiety Has Effects On Academic Library Electronic Catalogue Success?

Mahendra Adhi Nugroho[1)]

Abstract

Information System (IS) success model had been firstly introduced by DeLone and McLean (D&M) in 1992. They combined Theory Reaction Action (TRA) and Technology Acceptance model (TAM) to build the first information systems success model. In further development, many researchers implement that model in various IS and their research studies have result on D&M Success model validation. Previous researchers made one weakness on D&M model validation process that they only use variables that have positive effect (hypotheses positive) on that model. They neglect the negative side (negative effects), especially the human personality factors that could be have negative effect to the model. This research modifies D&M's (1992) IS success model by adding anxiety as a factor that have negative effect to the model. It is aimed to know academic library electronic catalogue success and to explore direct effect and moderating effect of computer anxiety to the model.

Using 220 academic library electronic catalogue users from four universities, this research tries to explore computer anxiety effect on academic library electronic catalogue success. Before run hypothesis test this research runs statistical power analysis. Aims of statistical power analysis are to reject type 1 and type 2 statistical errors and to get practical significations on hypotheses. This research use Partial Least Square (PLS) technique to test research model. The research model run twice, the first runs use the full research model (include computer anxiety variabel) and the second runs use model without computer anxiety variabel. First runs show system quality and electronic catalogue use have significant positive correlation to user satisfaction. Another result from first runs are electronic catalogue use anda user satisfaction have positive significant correlation to individual impact. Computer anxiety has negative significant correlation to electronic catalogue use but, hypotheses that show negative correlation between computer anxiety and user satisfaction has not significant negative correlation. In other hand, moderation role of computer anxiety on correlation between electronic catalogue use and user satisfaction has not significant negative correlation. Interesting phenomena find in second runs. In second runs (model without computer anxiety variable), positive significant correlation between information quality and electronic catalogue use is found. That mean information quality has effect to electronic catalogue use that cannot be found in first run (model use computer anxiety variable). That phenomena show role of computer anxiety on IS success model.

This research discusses all hypothesis results. To explain unsupported hypotheses and other phenomena, advance survey had been taken. The advance survey takes almost similar samples with samples that use in hypotheses test. Research discussion and result explain the factors that make hypotheses supported or not supported. From discussion result, the rest of this research suggest correction on D&M model implementation that further researcher should be consider in information character (urgency level) of system information content before measure system success.

Keywords:*DeLone and McLean's IS Success Model, Academic Library Electronic Catalogue, Computer Anxiety*

1. INTRODUCTION

Library is one of university facilities that support over all university services. Not only support facility, library but also holds role as academician's knowledge resources. However, Indonesian academic library face general problems such as lack of facilities, seek time problems because of lack settlement system, and still use manual catalogue system and lack applied electronic catalog system (Muttaqien, 2006). Indonesian academic libraries do improvement to cover those problems. The improvements not only focused on physical facility but also focused on service quality. Indonesian libraries make improvement by adopt information technology (IT) to use in electronic catalog.(e-catalog) It is two types library catalog, first web base e-catalog and second, database e-catalog that use local area network. This research focused on second type of catalog.

[1] Lecturer of Accounting Study program of Yogyakarta State University (Universitas Negeri Yogyakarta), FISE UNY Kampus Karangmalang, Yogyakarta, Indonesia, 55281; Tel: +62 0274 586168 ext. 296;
e-mail: mahendra_adhi_n@yahoo.com / mahendra@uny.ac.id; blog: http//:www.blog.uny.ac.id/mahendra

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Improvement and modification had been found in technological acceptance model since it is first introduced by Davis (1986). DeLone and McLean (1992) combined Theory Reaction Action (TRA) and Technological Acceptance Model (TAM) to suggest a success model that uses six components. Those components are system quality, information quality, system use, user satisfaction, individual impact, and organizational impact. Many researchers validated DeLone and McLean (1992) model in various system types and environments. All validation done by prior researcher only uses factors that have positive impacts on success model. Nevertheless, they only change criteria to fit with their research setting and only use positif effect on system use and neglect personality factors. They consider in positive technological effect but forgetting negative effect especially human role in system success.

Personality hold important role in information system acceptance. McElroy *et al.* (2007) study find personality factors are more predictable in acceptance and use of technology than cognitive factors. In book search systems use database base e-catalogue individual characteristic will influence library visitor using technology for searching library collections. Two dominant individual characters on technology (computer) use are self-efficacy and compute anxiety. Self-efficacy will influence positively on system use. In contrast, anxiety will influence negatively on system use. In information system, anxiety show as personality variable that influence system use (Agarwal, 2000 in Brown, et al 2004). This research study uses anxiety variable as variabel that influence e-catalogue use.

Computer anxiety influence system use in two ways. First, anxieties will influence directly on system use. It is means, anxiety factors will influence individual decision to use or not use information system. Computer anxiety, like computer self-efficacy, influences how individuals perceive and use IT (Harrison and Rainer; 1992 in Kang and Lee; 2006). Second, anxiety will be disturbing relationship between information system use and user satisfaction on information system use. In environments that forced user to use information system, anxiety will reduce satisfaction level. On those conditions computer anxiety will make moderation effect on that relationship. This research focused on computer anxiety both direct and moderating effects on system use in DeLone and McLean (1992) success model.

All phenomena in previous paragraphs motivated researcher to research effect human personality factor that have negative impact (computer anxiety) on academic library e-catalog success. This research modify DeLone and McLean (1992) success model with integrating computer anxiety to that model. This research is using Partial Least Square (PLS) to test all hypotheses. Result of this research will contribute in information system success model development and will help in choosing, planning, and evaluating e-catalog system.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT.

2.1 Personality Influence in Technological Acceptance

Personnel's acceptance at computer system has positive relationship with IS success (DeLone, 1988). In various information system research studies, personality factors have been used in previous studies. McElroy et al. (2007) use five dimensions of personality and compare them with cognitive factors to know those effects on technological acceptance. McElroy et al. (2007) used personality factors because personality is more stable then cognitive factors that base on perceptions. Their research found the personality factors are more predictable than cognitive factors. Ramdhani (2007) did meta-analysis using 16 articles from 1996 to 2006 at e-mail as communication mediation. Ramdhani (2007) found relationship between three personality dimensions (extraversion, neuroticism, and openness to experience) with technology use (e-mail).

Pervious researchers had already used individual characteristics as integral part of personality trait. Wu et al. (2007) used computer self-efficacy and computer enjoyment as individual factors that have positive influence on system actual use. Many researchers used anxiety as integral part of neuroticism in research. Using e-learning setting, Fuller et al. (2006) found computer anxiety is factor that influence in system use as reflection of system acceptance. In modification Technological Acceptance Model (TAM), Venkatesh (2000) used computer anxiety as extension of the model. Venkatesh (2000) found computer anxiety is extension that has influence on technological acceptance.

2.2 DeLone and McLean's (1992) Success Model

DeLone and McLean's (1992) did comprehensive review of different Information System (IS) success measurements made conclusions on a model of interrelationships between six IS success variable categories. The categories of the taxonomy are System Quality, Information Quality, IS Use, User Satisfaction, Individual Impact and Organization Impact (see Figure 1). The model makes two important contributions to the

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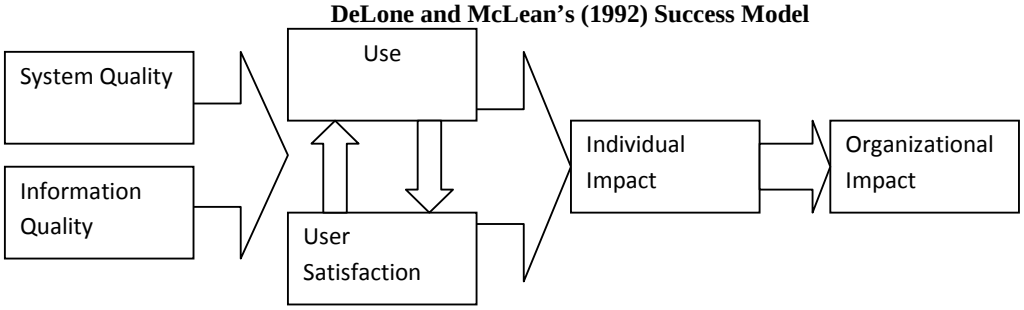
understanding of IS success. First, it provides a scheme for categorizing the multitude of IS success measures that have been used in the literature. Second, it suggests a model of temporal and causal interdependencies between the categories (Seddon, 1997). Since 1992, a number of studies have undertaken empirical investigations of the multidimensional relationships among the measures of IS success.

Figure 1:
DeLone and McLean's (1992) Success Model



Prior researchers had done many research studies in Information system success. Relationships summary between constructs that used by previous research studies show in table 1.

2.3 System Quality and Information Quality

System quality and information quality are dimensions that measure information success. The dimensions are adopted and validated prior research studies. This research adopts information quality and system quality concepts that used by DeLone and McLean (1992). DeLone and McLean (1992) validate both dimensions with review 12 articles that use system quality and 9 articles that use information quality as dimensions of information system success. Information success research studies found influence of information quality and information system to individual impact (Teo and Wong, 1998). Significant influence relationship between information quality and system quality had been founded (Seddon dan Kiew, 1994 in DeLone dan McLean 2003)

Information quality and system quality as dimensions that measure information system success are validated by many research studies, not only in applications or validations but also in modification of DeLone and McLean's (1992;2003) IS success model. Wang (2007), Iivari (2005), and Wang and Liao (2007) apply information quality and system quality as main components that influence system use and user satisfaction that impact overall system success in DeLone and McLean's model. All of the research studies have significant relation between information quality and system quality with system use and user satisfaction. Nevertheless, Almuatairi and Subaramanian (2005) found negative significant correlation between system quality and user satisfaction and correlation between information quality and system use.

Sabherwal et al. (2007) and Halawi et al. (2007-2008) use system quality as variable that influence user satisfaction. Sabherwal *et al.* (2007) combine DeLone and McLean's model with TAM to measure system success and used individual and organizational determinants to do meta-analysis on that model's combination. The meta-analysis show important role system quality on user satisfaction. Halawi *et al.* (2007-2008) modify DeLone dan McLean's (2003) success model to measure Knowledge Management Systems (KMS) success. Halawi *et al.* (2007-2008) found positive significant relation between system quality and user satisfaction.

Base on system quality and information quality above, we can see that information quality and system quality hold important role on overall information system success. Previous paragraphs explain that system quality and information quality will be significantly influence in individual impact on direct way or indirect way trough system use or user satisfaction. The conditions show that information quality and information quality will hold strong role on information system success. Base on that argument, this research use both variables to test academic librarian e-catalogue success.

H1a: System Quality will have positive correlation with System Use.
H1b: System Quality will have positive correlation with User Satisfaction.
H2a: Information Quality will have positive correlation with System Use.
H2b: information Quality will have positive correlation with User Satisfaction.

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Table 1:
Literature Review

Researchers	Relationships									
	SQ→SU	SQ→US	CA→SU	CA→US	SU→US	SU→II	US→II	IQ→US	IQ→US	CA*SU→US
Almutairi and Subramanian (2005)					(-)	(+)	(-)			
Compeau and Higgs (1995)			(-)							
Fagan *et al.* (2003-2004)			(+)							
Gumaraes and Igbaria (1997)					(+)	(+)	(+)			
Howard and Mendelow (1991)			(-)							
Igbaria and Iivari (1995)			(-)							
Igbaria and Pasuraman (1989)			(-)							
Igbaria and Tan (1997) [3]						(+)	(+)			
Iivari (2005)					(+)	(+)	(+)			
Kang and Lee (2006)[2]										(+)
Law *et al.* (2004); Ghorbhani *et al.* (2002) [2]				(-)						
Marcouldies (1989) [1]			(-)							
Sander and Courtney (1986)							(+)			
Torkzadeh and Doll (1997)						(+)	(+)			
Wang (2007)	(+)	(+)			(+)			(+)	(+)	
Wang and Liao (2007)	(+)	(+)			(+)			(+)	(+)	
Yuthas and Young (1998) [3]						(+)	(+)			

Terms:

SQ	= System Quality	CA*	= Moderating effect of Computer Anxiety
SU	= System Use	(+)	= Positive Relation
CA	=Computer Anxiety	(-)	= Negative Relation
US	= User Satisfaction	[1]	= In McElory *et al.* (2007)
II	= Individual Impact	[2]	=Those research to conclude relation
IQ	= Information quality	[3]	= In DeLone and McLean (2003)

2.4 Roles of Computer Anxiety in system use

Many information system research studies identify individual differences that effect attitude toward using computers and use of systems (e.g.; Agarwal and Prasad, 1999; Igbria et al., 1995). The term anxiety is most often used to describe a condition which is characterized by subjective feelings of tension, apprehension, and worry. Computer anxiety is "the tendency of individuals to be uneasy, apprehensive, or fearful about current or

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future use of computers" (Igbaria et al., 1996). Computer anxiety show negative reactions or effect (Torkzadeh, and Angulo, 1992 in Fagan et al. (2003-2004). Negative reactions have effect on information system use and satisfaction. Many research studies found relationship between computer anxiety and technology use especially computer use. Computer anxiety is a significant predictor of computer achievement (Marcoulides 1988; in McElory et al., 2007) and computer use (Howard and Mendelow, 1991). Others researchers that found relationship between computer anxiety and computer use are Compeau and Higgis, (1995); Igabaria and Iivari, (1995); and Igbaria and Pasuraman, (1989).

Psychology research studies use big five-personality trait (Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience) to see relationship between personality and satisfaction. The five broad personality dimensions represent only the behavioral dispositional approaches to the understanding of personality (Mischel and Shoda 1995 in Wong et al. 2004). Life satisfaction has been found to be positively correlated with emotional attention, emotional repair, and emotional clarity in Hong Kong (Law et al. 2004). Anxiety has been found to be negatively correlated with emotional clarity, and emotional repair in United States (Ghorbani et al. 2002). Wong, et al. (2007) in his life satisfaction research found negative relationship between anxieties and emotional clarity.

Computer anxiety not only has direct relation to system use and user satisfaction but also has influence on relation between system use and user satisfaction. Within innovation diffusion research, computer self-efficacy and computer anxiety are well-established dynamic, situation-specific individual differences; the individual differences reflect malleable inclinations that influence responses to stimuli within a specific situation (Thatches; and Penrewe 2002). Computer anxiety, like computer self-efficacy, influences how individuals perceive and use information technology (Harrison and Rainer; 1992 in Kang and Lee; 2006). Base on those findings, we can see that computer anxiety hold important role as stimuli to respon information and user satisfaction. Kang and Lee (2006) found computer anxiety have moderation effect in relation between system use and user satisfaction.

Base on literatures review above, we can see satisfaction will positively affect emotion and anxiety will negatively affect emotion. Anxiety will negatively effect satisfaction. If that concept applied in computer-base information system context, we can conclude that anxiety will has negative effect on user satisfaction. In library-information-system context, computer is applied in e-catalog searching system. On the other hand, computer anxiety will hold moderating role in relationship between system use and user satisfaction.

H3a: Computer anxiety will have negative correlation with e-catalog use.
H3b: Computer anxiety quality will have negative correlation with user satisfaction.
H3c: Computer anxiety will have moderate effect on correlation between system use and user satisfaction.

3.5 System Use

Relation between use and individual impact as system-success measurement dimension has been tested and validate by many research studies. Davis (1989) put down basic model on technological acceptance that base on technology use and individual impact. A technology to be successful if that technology can be accepted. Technological acceptance can be indicated by intention to use and use as final effect of that intention. DeLone and McLean's (1992) literatures review found 27 research studies use "use" and 38 research studies use "individual impact" as information-system-success measurement dimension. Further, DeLone and McLean (2003) clarify the importance of "use" as dimension of technology-base information-system-success-model measurement.

System use and user satisfaction had been used as system success indicators by many previous researchers (e.g. Alavi and Henderson, 1981, Ginzberg, 1981; and Raymond, 1985). On the other hand, system use and individual impact that related on system success had been use by King and Rodriguez (1978). Further, validation of DeLone and McLean's (1992) success model had been done by Torkzadeh and Doll (1999). Guimaraes and Igbaria (1997) found positive relationship between system use and individual impact.

Using DeLone and McLean's (2003) success model in Taiwan e-commerce context, Wang (2007) found positive relation between system use and user satisfaction. Further, Wang and Liao (2007) applied the model in Taiwan eGovernment also showed positive relation. Almuatairi and Subramanian (2005), and Iivari (2005) had done positive validation between relations of system use, and user satisfaction with individual impact. Both research studies use DeLone and McLean's (2003) system success model. In this research context, "use" refers

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to e-catalog use as tools to search literature information. Base on above literatures review, this research proposes hypotheses below:

H4: E-catalog use will have positive correlation with user satisfaction.
H5: E-catalog use will have positive correlation with individual impact.

2.6 User Satisfaction

User satisfaction is dimension that used by many previous research studies to measure information system success. In the system success, user satisfaction usually has relation with individual impact. Sander and Courtney (1986) use user satisfaction and individual impact as information-system-success predictors.

DeLone and McLean's (1992) literature review found 31 research studies use user satisfaction to measure sistem success. Torkzadeh and Doll (1999); and Guimaraes and Igbaria (1997) validate DeLone and McLean's (1992) success model in further researches. Iivari (2005) applied DeLone and McLean's (2003) success model in Finland public sector system. Iivari (2005) showed positive relationship between user satisfaction and individual impact.

Four research studies above showed significant positive relationship between user satisfactions and individual impact. In this research context, user satisfaction refers to user satisfaction of e-catalog use. Base on above validations, this research propose hypothesis below:

H6: User satisfaction use will have positive correlation with individual impact.

3 RESEARCH METHODOLOGIES

31. Samples

Samples of this reaserch are economic and business students who use academic library from Gadjah Mada University, Indonesian Islamic University, Sanatadharma University and Muhammadiyah Yogyakarta University. This research use convenience-sampling survey method. Sample size is determined by 10 times most complex latent variable (Gefen, et al. 2000) and a priori power analysis. Power analysis is done to avoid type I and type II statistic's error (Erdfelder, et al. 1996). In business research, power analysis can use power 0.80 and alpha 0.50 (Hair et al. 1995). In further explanation Hair et al. (1995) explain that Cohen (1988) categorize effect size in term "small", "medium", and "large" with value 0.2, 0.5 and 0.8. Base from both concepts above, minimum samples this research is 98 samples.

3.2 Variable Definitions and Measurements

3.2.1 Computer anxiety

Computer anxiety is "the tendency of individuals to be uneasy, apprehensive, or fearful about current or future use of computers" (Igbaria et al., 1996). Computer anxiety is measured based on cognitive component so that can be measurable apply questionnaire (Koksal and Power, 1990). Computer anxiety instrument is adopted from Fagan et al. (2003-2004) with eight items and 1-7 Likert scale.

3.2.2 System Use

System use is interaction between library visitors and e-catalog. System use is measured by actual use that adopted from Iivari (2005) and adjusted to research context. System use is measured by 1-7 Likert scale.

3.2.3 User Satisfaction

User satisfaction is degree of library visitor satisfaction on the system. Six items are adopted from Iivari (2005) that use 1-7 Likert scale to measure user satisfaction.

3.2.4 Individual Impact

Individual impact is benefit that can be captured by individu when he or she uses the system. Six items 1-7 Likert scale is adopted from Davis (1989) and developed by Iivari (2005).

3.2.5 System Quality

System quality is quality which is given by a system as completely. System quality is adopted from Bailey and Pearson (1983) and is adapted in research context. System quality is measured with flexibility, ability to recover error and ease of use. System quality is measured by 1-7 Likert scale.

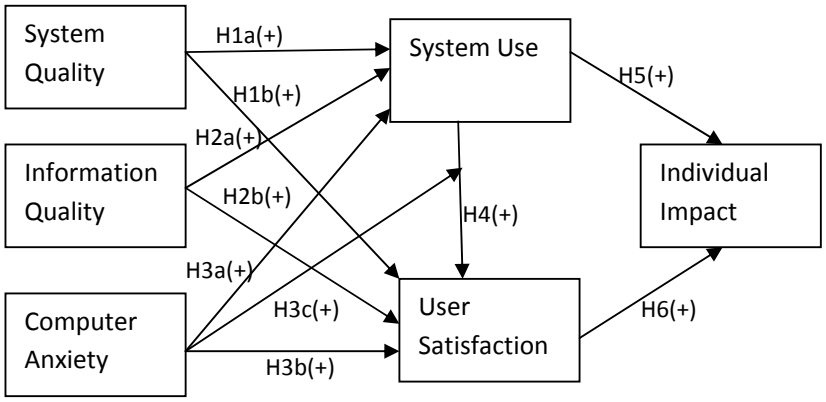
3.2.6 Information Quality

Information quality is quality of information output which is given by system. Information quality is adopted from Bailey and Pearson (1983) and is adapted by research context. Information quality measured with completeness of output, precision, and format. Information quality is measured by 1-7 Likert scale.

3.3 Research Model

Hypotheses of this research are tested use Partial-least-square (PLS) model. PLS proper to prediction and theoretical building, and relatively need small sample minimum ten times of most complex item construct (Gefen et al., 2000). The others advantage of using PLS are, first; it estimates a measurement model to ascertain construct validity and reliability of measures. Second, using indicators of latent constructs, it yields estimates of the structural model parameters, which test the strength of hypothesized relationships. Finally, it is not restricted by the distribution requirements and sample size limitations of other structural equation modeling tools (Campbell and Fiske, 1959 in Ho et al., 2003). Figure 2 show research model. The research model runs twice. The first runs use the full research model (include computer anxiety variabel) and the second runs use model without computer anxiety variabel

Figure 2:
Research Model



4. FINDINGS

4.1 Sample's Descriptions

Survey use 319 distributed directly questioners to respondents. 220 questioners are valid and 99 questioners are not valid (respon rate 55%). Post hoc power analysis, use alpha 0.05 and "small" effect size (0.2), show power 0.950. Table 2 show demographic and samples distribution.

Table 2:
Respondents Description

Panel A.		
Categories	**Average**	**N**
Age	21,2 years	213
Study Length	2,3 years	203
Computer use	6,4 years	192
Invitation per month	5,51 times	220
Panel B.		
Categories	**Amount**	**Percentage**
Gender (N=202)		
Male	98	49%
Female	104	51%
Collage student (N=217)		
Undergraduate	187	86%
Master	28	13%
Doctoral	3	1%
Computer use at home (N=218)		
Use	199	91%
Not use	19	9%
Computer knowledge (N=212)		
Office	212	100%
Graphic	72	34%
Programming	50	24%
Games	176	83%
Others	39	18%
Purpose going to library (N=220)		
Searching literature for homework	210	95%
Searching extra reading materials	71	32%
Want to read in library	55	25%
Others	48	22%
Reason using e-catalog (N=220)		
Know precise literature	138	63%
Limit information about literature	80	36%
Want find literature immediately	175	80%
Just want to try	27	12%
Others	9	4%

4.2 Validity and Reliability

Construct validity and reliability of the instrument is shown in table 3. Table 3 show all AVE and communality value are bigger than 0.5 (>0.5) and all of composite reliability and Cronbach's Alpha has value bigger than 0.7(>0.7). The values show convergent validity and reliability of construct are fulfilled. Discriminant validity can be shown by compares construct correlation with root AVE. Table 4 show that discriminant validity has fulfilled.

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Tabel 3:
Constructs validity and reliability

	AVE	Communality	Composite Reliability	Cronbach's Alpha
CA	0,695302	0,695302	0,919279	0,890739
II	0,822422	0,822422	0,958573	0,945804
IQ	0,671556	0,671556	0,957274	0,95054
SQ	0,691791	0,691791	0,930859	0,910923
SU	1	1	1	1
SU * CA	0,63001	0,63001	0,8944	0,85516
US	0,750879	0,750879	0,937662	0,916494

Tabel 4:
Discriminant validity

	CA	II	IQ	SQ	SU	SU * CA	US
CA	**0,833848**						
II	-0,14335	**0,906875**					
IQ	-0,09682	0,633834	**0,819485**				
SQ	-0,02102	0,492796	0,741717	**0,83173974**			
SU	-0,24894	0,312825	0,202139	0,181209	**1**		
SU * CA	-0,31237	-0,00588	-0,07625	-0,093294	0,011205	**0,793732**	
US	-0,08026	0,638535	0,834521	0,728689	0,235664	-0,10804	**0,866533**

4.3 Hypotheses test result

This research split the model in two parts and runs separately. First model use all variabel that use in hypotheses test and the second model remove computer anxiety variabel from the model (see figure 3). Computer anxiety is the central issue of this research. Removing computer anxiety from the model is aimed to know real influence the computer anxiety variable on the model. Twice runs can also use to sharpen analysis in making conclusions. Hypotheses test result shown in table 5.

Analysis result show positive significant correlations system quality with user satisfaction (H1b), information quality with user satisfaction (H2b), system use with user satisfaction (H4), system use with individual impact (H5), and user satisfaction with individual impact (H6). Significant negative correlation only found in correlation between computer anxiety variable and system use variable. On the other hand, correlations between computer anxiety and user satisfaction (H3b) and moderation effect computer anxiety on relationship between system use and user satisfaction (H3c) only have weak negative correlation (not significant). Weak positive correlation (not significant) have found on corrections between system quality and system use (H1a) and system quality with system use (H2a). All correlations analyses explain that H1b, H2b, H4, H5, and H6 are supported and H1a, H2a, H3b, and H3c are not supported. However, this research found unique phenomena when second model was runs. Different from others correlation that have stable result, in the first runs correlation between information quality and system use have weak positive correlation (not significant) but in the second run the correction have relative strong positive correlation (significant in p>0.1).

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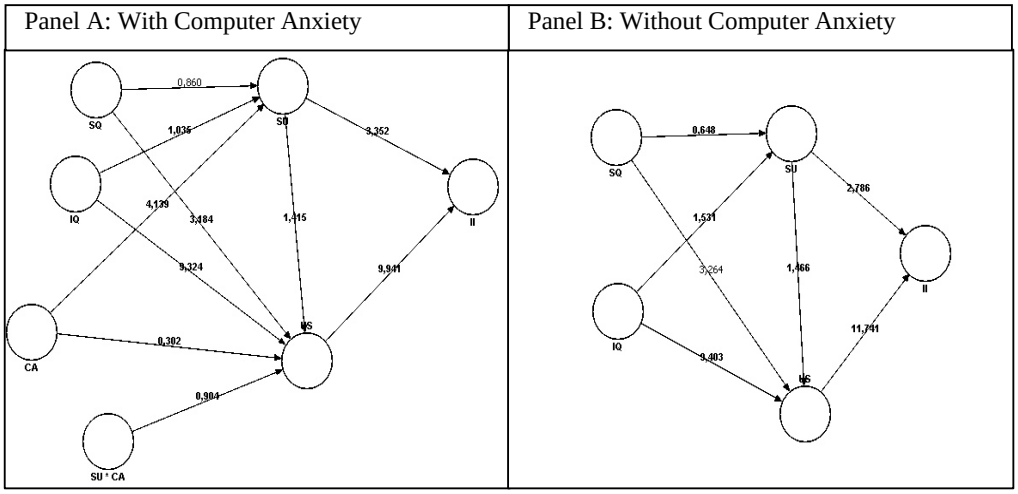
Figure 3:
Hypotheses test model



Tabel 5;
Hypotheses test results

Panel A : With Computer Anxiety				**Panel B : Without Computer Anxiety**			
	Correlation coefficients	**t-values**	***p*-values**		**Correlation coefficients**	**t-values**	***p*-values**
CA -> SU	-0,23647	3,956427	0,00005				
CA -> US	-0,01083	0,299358	0,38247				
IQ -> SU	0,107868	0,990681	0,16146	IQ -> SU	0,150561	1,313317	0,09522
IQ -> US	0,641904	9,613591	0,00000	IQ -> US	0,644243	9,374098	0,00000
SQ -> SU	0,096231	0,892513	0,18655	SQ -> SU	0,069536	0,599573	0,27470
SQ -> US	0,23754	3,237907	0,00070	SQ -> US	0,23964	3,262668	0,00064
SU -> II	0,171892	3,015572	0,00143	SU -> II	0,171915	3,061813	0,00124
SU -> US	0,060629	1,360121	0,08759	SU -> US	0,061979	1,446049	0,07479
SU * CA -> US	-0,04099	1,013322	0,15601				
US -> II	0,598026	11,59429	0,00000	US -> II	0,59802	11,42427	0,00000

5. DISCUSSIONS

This research makes an advance survey to answer unsupported hypotheses that found in hypotheses result test. The survey uses almost similar respondent that use to prior survey. Purpose of advance survey is to know librarian helps recommendations to library visitor when the visitors search a literature. The advance survey results show in table 6.

Advance survey show that 44% respondents feel the librarian help visitor to use e-catalogue. Forms of that help are suggestion to use e-catalogue (32%) and helps in use e-catalogue (44%). When respondents gets problem with incomplete information in e-catalogue, 63% respondents tend to ask librarians helps. Above data explain that library visitor can almost always get help from librarian when they visit the library. In other word, library visitor have alternative (ask the librarian) to search literature besides using e-catalogue. These phenomena explain unsupported moderation effect on correlation between system use and user satisfaction (H3c) and unsupported negative correlation between computer anxiety and user satisfaction (H3b).

On the other hand, unsupported H3b not only because phenomena that explain in previous paragraph, but also because the respondents have long computer experiment it is around 6.4 years (see table 2 panel A) and have good skill in computer programs (office 100%, graphics 34%, programming 24%, games 83% -- see table

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2 panel B). Both factors will cover respondent's computer anxiety so respondent will keep satisfy with the system because computer is not new anymore.

Table 6:
Librarian Recommendations

Categories	Amount	% (N=57)
E-catalog usage help		
Help	25	44%
Not help	32	56%
Literature helps search		
Suggest e-catalog usage	18	32%
Help search using e-catalog	25	44%
Help search at book shields	16	28%
Others	3	5%
Visitor action when e-catalog information is incomplete		
Ask librarian	36	63%
Search without ask librarian	24	42%
Stop search	12	21%
Others	2	4%

This research finds unsupported positive correlation between systems quality and system use (H1a). This finding opposite with Wang (2007) and Wang and Liao (2007) findings. Both research studies found significant positive correlation between system quality and system use. The differences find because this research use system that use to search literature with respondents that use the system to search well-know-exactly literature (63%) and 80% respondents want to find the literature as fast as possible (see table 2 panel B). Willingness to find exact literature in fast way represent respondents has high level of priority to find literature. The conditions explain that information content of system is use to find urgent materials. All of that conditions can make people ignore others factors with the result that respondents still use the system by ignoring system quality. In other words, user tend to deny use system if they have enough time to search manually (system not give urgent information). The conditions also explain unique phenomena on correlation between information quality and system use (H2b).

Unique phenomena find in H2a test. First model include computer anxiety into the model show not significant positive correlation between information quality and system use. On the other hand, second model that excluding computer anxiety variable from the model show significant positive correlation on $p>0.1$. Signification level change explains strong role of computer anxiety in the tested model. In other words, computer anxiety is viable that can influence information system success.

Hypotheses test on H1b, H2b, H4, H5, and H6 are not find any single unique phenomena in all model's run (with and without computer anxiety). All of variables correlations that use in the hypotheses have significant positive correlations. All of supported hypotheses (H1b, H2b, H4, H5, and H6) are agree with previous research studies. In other way, this research strongly support uses variables and correlations between variables that use in H1b, H2b, H4, H5, and H6 in DeLone and McLean's model.

6. CONCLUSIONS AND LIMITATIONS

This research is aimed to know influence anxiety variables in information success model. This research modifies DeLone and McLean's (1992) model with including computer anxiety variables an use that variabel both directly and indirectly as moderating variable. The main question of this research is "Does computer anxiety has effects on system success?"

This research use academic library e-catalogue to answer the research questions. This research had been done use 220 valid samples from four universities that have almost similar academic library e-catalogue systems. Before runs hypotheses test, this research did power analyses to get practical significance. Research model split in to two parts to know the true role of computer anxiety into the model. Brief hypotheses tests result show in table 7.

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Table 7
Conclusions

Hypotheses	*p-value*		Corr.	Conclusions
	1st run	2nd run		
H1a: System Quality will have positive correlation with System Use.	0,18655	0,27470	(+)	Unsupported
H1b: System Quality will have positive correlation with User Satisfaction.	0,00070	0,00064	(+)	Supported
H2a: Information Quality will have positive correlation with System Use.	0,16146	0,09522	(+)	Partially supported
H2b: information Quality will have positive correlation with User Satisfaction.	0,00000	0,00000	(+)	Supported
H3a: Computer anxiety will have negative correlation with e-catalog use.	0,00005	--	(-)	Supported
H3b: Computer anxiety quality will have negative correlation with user satisfaction.	0,38247	--	(-)	Not supported
H3c: Computer anxiety will have moderate effect on correlation between system use and user satisfaction.	0,15601	--	(-)	Not supported
H4: E-catalog use will have positive correlation with user satisfaction.	0,08759	0,07479	(+)	Supported
H5: E-catalog use will have positive correlation with individual impact.	0,00143	0,00124	(+)	Supported
H6: User satisfaction use will have positive correlation with individual impact.	0,00000	0,00000	(+)	Supported

Other conclusion can be taken besides the result of hypotheses test are:

1. Computer anxiety hold important role in information system success. Computer anxiety will influence other variabel if it is entering into model.
2. High level urgency of material that should be found using information system will influence on system use and user satisfaction. The system user will reject information quality and system quality when they face with very important and urgent material. In other word, user tend to deny use system if they have enough time to search manually (system not give urgent information).

This research has some limitations (1). Sampel had only been taken from four universities in the same city that have homogeneous culture, (2). Sampel been taken from system that already implement. This limitation make this research cannot take whole picture of system life cycle, (3). Biases on self-reporting survey technique.

On the rest of this research suggest to next researcher: first, the next researcher should be consider and information urgency level before implement DeLone and McLean's system success model. Second, the next researcher should be considering on computer anxiety role in system success.

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