DOES COMPUTER ANXIETY HAVE EFFECTS ON ACADEMIC LIBRARY ELECTRONIC CATALOGUE SUCCESS?

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Abstract
This research modifies DeLone and McLean's (1992) Information system success model by adding anxiety as a factor that have negative. It aime to find out the academic library electronic catalogue success and to explore the direct and moderating effects of computer anxiety. Using 220 academic library electronic catalogue users from four universities, this research explores computer anxiety effects on academic library electronic catalogue success. Before running a hypothesis test a statistical power analysis is made. The aims of statistical power analysis are to reject type 1 and type 2 statistical errors and to get practical significations on hypotheses. This research uses Partial Least Square (PLS) technique to test the research model. The research model is run twice, the first run uses the full research model which (include computer anxiety variable) and the second run uses the model without computer anxiety variable. The first run shows system quality and electronic catalogue system have significant positive correlation to user satisfaction. Another result from the first run is that the electronic catalogue use and user satisfaction have positive significant correlation. Computer anxiety has negative significant correlation to electronic catalogue use but, the hypothesis that shows the negative correlation between computer anxiety and user satisfaction has no significant negative correlation. On the other hand, the moderation role of computer anxiety in correlation between electronic catalogue use and user satisfaction has no significant negative correlation. An interesting phenomenon is found in the second run. In the second run (model without computer anxiety variable) , a positive significant correlation between information quality and electronic catalogue use is found. That means information quality has an effect on electronic catalogue use. This cannot be found in the first run (model use compter anxiety variable). That phenomenon shows the role of computer anxiety on Information system success model.

Keyword : *Information system success model, Academic Library Electronic Catalogue, Computer Anxiety,*

Introduction

The library is one of the facilities that support all university services. The library also contains the academician's knowledge rescources. However, the Indonesian academic library faces general problems such as lack of facilities , lack of settlement system , the use of the manual catalogue system and lack of applied electronic catalogue sytem (Muttaqien , 2006). The Indonesian academic libraries make improvements to cover those problems . The improvement   not only focus on physical   facility but also on   service quality . Indonesian libraries make improvement by adopting information technology (IT) to use in electronic catalogue (e-catalog) There are two types library catalog, first the web

base e-catalog and second , the database e-catalog both of which local area network. This research focused on the second type of catalogue.

Improvements and modification have been found in the technological acceptance model since it was first introduced by Davis (1986) . DeLone and McLean (1992) combined Theory Reaction Action (TRA) and the Tehnological Acceptance Model (TAM) to suggest a model that uses six components. These components are the system quality , information quality , system use , user satisfaction , individual impact , and organizational impact. Many researchers validated DeLone and McLean's (1992) model in various system types and environments. Validation done by prior researchers used factors that had positive impacts on the success model. Nevertheless, they only changed the criteria to fit their research setting and only used positive effects on system use and neglected personality factors. They considered the positive technological effect but forgot the negative effects especially on the human role in the system .

Personality hold plays an important role in the information system acceptance. McElroy *et al.* (2007) study finds personality factors more predictable in acceptance and use of technology that cognitive factors.In book search systems which uses databased e-catalogue individual characteristic will influence the library user using technology for searching library collections. Two dominant factors 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 is shows as personality variable that influenced system use (Agarwal, 2000 in Brown , *et al* 2004) . This research study uses anxiety variable as a variable that influences e-catalogue use.

Computer anxiety influences system use in two ways. First, anxieties will influence directly on system use. It means that anxiety factors will influence an individual's decision to use or not use information system. Computer anxiety, like computer self-efficacy, influence how individuals perceive and use IT (Harrison & Rainer ; 1992 in Kang and Lee ; 2006). Second, anxiety has a disturbing relaltionship between information system use and user satisfaction on information system use. In environments that force the user to use the information system, anxiety will reduce satisfaction level. Based on those conditions computer has a moderation effect on that relationship. This research focuses on the direct and moderating effects of the complete anxiety on system use in DeLone and McLean's (1992) success model .

All the phenomena in the previous paragraphs motivated the researcher to conduct research on the effects computer anxiety on academic library e-catalog success. This research modifies DeLone and McLean (1992) success model bt integrating compiter anxiety to that model. This research uses Partial Least Square (PLS) to test all hypotheses. The result of thi research will contribute information system success model development and will help in choosing, planning and evaluating the e-catalog system.

Personality Influence in Technological Acceptance
A persons's acceptance of the computer system has a positive relationship with the IS success (DeLone , 1988). In various information system research studies, personality factors have been used in previous studies. McElroy , Hendrickson , Townsend and DeMArie (2007) used five dimensions of personality and compared them with cognitive factors to discover their effects on technological acceptance. McElroy *et al* . (2007) used personality factors because personality is more stable then cognitive factors that are based on perceptions. Their research found that the personality factors were more predictable than cognitive factors. Ramdhani (2007) did a meta-analysis using 16 articles from 1996 to 2006 using e-mail as communication mediation. Ramdhani (2007) found relationship between three personality dimensions (extraversion, neutroticism, and openness to experience) with technology use (e-mail).

Previous researchers had already use individual charateristics as an integral part of personality trait. Wu, Chen and Li (2007) used computer self-efficacy and computer enjoyment as individual factors that had positive influence on the system's actual use. Many researchers used anxiety an integral part of neuroticism in research. Using e-learning setting, Fuller *et al.* (2006) found computer anxiety a factor that influenced in system use as reflection of system acceptance. In modification Technological Acceptance Model (TAM) , Venkatesh (2000) used computer anxiety an extension of the model . Venkatesh (2000) found computer anxiety an extension that had an influence on technologival acceptance.

DeLone and McLean's (1992) Success Model   DeLone and McLEan's (1992) did a comprehensive review of different information System (IS) success measurement. 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 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 suggest a model of temporal and causal interdependencies between the categories (Seddon, 1997) . Since 1992, a number of studies have been undertaken to investigate the multidimensional relationships among the measures of IS success.
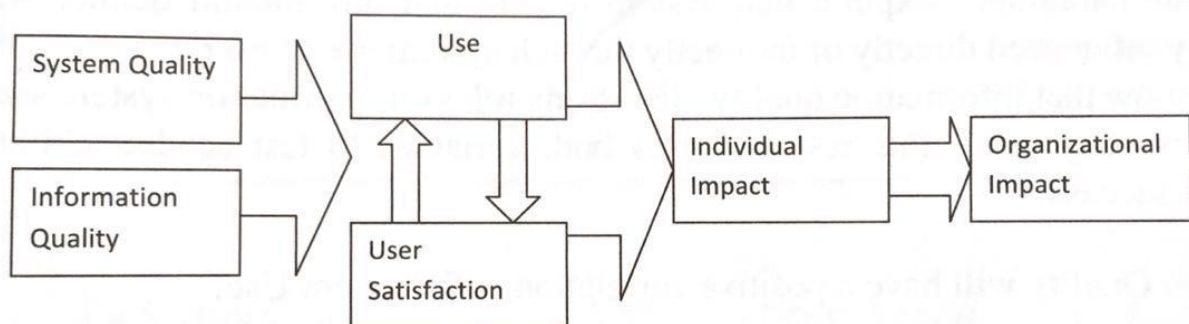

Figure 1 DeLone and McLean's (1992) Success Model

Prior researchers had done many research studies in Information system success. The relationships between constructs used by previous research studies are shown in table 1.

System quality and Information Quality System quality and information quality are dimensions that measure information success. The dimensions are adopted and validated in prior research studies. This research adopts information quality and system quality concepts that are used by DeLone and McLean (1992). DeLone and McLean (1992) validate both dimensions by reviewing 12 articles that use sytem quality and 9 articles that use information quality as demensions of information system success. Information success research studies found the influence of information quality and information system on individuals (Teo & Wong, 1998). Significant influence relationship between information quality and system quality has been found (Seddon & Kiew , 1994 in DeLone & McLean 2003).

Information quality and sytem quality as dimensions that measure information sytem success are validated in many research studies, not only in applications or validations but also in the modification of DeLone and McLean's (1992;2003) IS success model. Wang (2007), Iivari (2005) , and Wang Liao (2007) apply information quality and sytem quality as main components that influence system use and user satisfaction that impact the overall system success in DeLone an McLean's model. All of the research studies show significant relations 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) used sytem quality as a variable that influences user satisfaction. Sabherwal *et al.* (2007) combined DeLone and McLean's model with TAM to measure system success. Then used individual and organizational determinants to do meta-analysis on that model's combination. The meta-analysis showed important role system quality on user satisfaction. Halawi *et al*. (2007 – 2008) modified DeLone and McLean's (2003) success model to measure Knowledge Management Systems (KMS) success. Halawi *et al*. (2007-2008) found a positive significant relation between system quality and user satisfaction.

Base on system quality and information and information quality above, we can see that information quality and system quality play important roles on the overall information system success. The previous paragraphs explain that system quality and information quality will be significantly influenced directly and indirectly through system use or user satisfaction. The condition show that information quality play strong roles on information system success. Based on this argument, this research uses both variables to test academic librarian e-catalogue success.

Ha1: System Quality will have a positive correlation with System Use.
Ha2: System Quality will have a positive correlation with User Satisfaction.
Ha3: Information Quality will have a positive correlation with System Use.
Ha4: Information Quality will have a positive correlation with User Satisfaction.

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 Anxity	(-)	= 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)

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.; Argawal & Prasad , 1999 ; Igbaria *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 future use of computers" (Igbaria et al., 1996). Computer anxiety show negative reactions or effect (Torkzadeh & Angulo, 1992 in Fagan et al. (2003-2004) . Negative reactions have effect on information system use and satisafcation. Many research studies found relationship between computer anxiety and rechnology use especially computer use. Computer anxiety is significant predictor of computer achievement (Marcoulides 1998 ; in McElory et al., 2007) and computer use (Howard & Mendelow , 1991). Other reseachers that found relationship between computer anxiety and computer use are Compeau and Higgis, (1995) ; Igbaria and Iivari, (1995) ; and Igbaria and Parusaman , (1989).

Pyschological research studies use big five – personality trait (Extraversion , Agreeableness , Conscientiousness , Neutroticism and Openness to Experience) to see relationship between personality and satisfaction. The five broad personality dimensions represent only the behavioural dispositional approaches to the understandingof personality (Mischel & Shoda 1995 in Wong *et al.* 2004) . Life satisfaction has been found to be positively correlated with emotion attention , emotional repair and emotional clarity in Hong Kong (Law *et al.* 2004). Anxiety has been found to be negatively correlated with emotional clarity, life satisfaction research found negative relationships between anxieties and emotional clarity.

Computer anxiety not only has a direct relation with system use and user satisfaction but also has an influence on the relation between system use and user satisfaction. Within innovation diffusion research, computer self- efficiacy 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 & Penrewe 2002). Computer anxiety , like computer self-efficacy, influences how individuals perceive and use information technology (Harrison & Rainer ; 1992 in Kang & Lee ; 2006). Based on those findings , we can see that computer anxiety play an important role as a stimulus to respond information and user satisfaction. Kang and Lee (2006) found that computer anxiety had a moderation effect on therelation between system use and user satisfaction.

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

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

System Use
The relation between use and individual impact as system-success measurement dimension has been tested and validated in many research studies. Davis (1989) put forward basic model on technological acceptance that is based on technology use and individual impact. A technology is successful if it can be accepted. Technological acceptance can be indicated by the intention to use and is used for the final effect of the intention. DeLone and McLean's (1992) literature review found 27 research studies used "use" and 38 research studies used "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 have been used as system success indicators by many previous researchers (*e.g.* Alavi and Henderson, 1981, Ginzberg, 2981; and Raymond, 1985). On the other hand, system use and individual impact that are related to system success have been used by King and Rodriguez (1978). Further, validation of DeLone and McLean's (1992) success model has been done by Torkzadeh and Doll (1999). Guimaraes and Igbria (1997) found a positive relationship between system use and individual impact.

Using DeLone and McLean's (2003) success model in Taiwan e-commerce context, Wang (2007) found a positive relation between system use and user satisfaction. Further, Wang and Liao (2007) applied the model in Taiwan e-Government. The result also showed a 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 used DeLone and McLean's (2003) system success model. In this research context, "use" refers to e-catalog use as tools to research literature information. Based on above literature review, this research proposes the hypotheses below:

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

User Satisfaction
User satisfaction is a dimension that is used in many previous research studies to measure information system success. In the system success, user satisfaction usually has a relationship 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 used user satisfaction to measure system success. Torkzadeh and Doll (1999); and Guimaraes and Igbria (1997) validate DeLone and McLean's (1992) success model in further researchers.

Iicari (2005) applied DeLone and McLean's (2003) success model in Finland public sector system. Iivari (2005) found a positive relationship between user satisfaction and individual impact.

The four research studies above showed significant positive relationships between user satisfactions and individual impact. In this research context, user satisfaction refers to user satisfaction of e-catalogue use. Based on the above validations, this research proposes the hypothesis below :

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

Research Methodologies
Samples
Samples of this research are economic and business students who use academic library from Gadjah Mada University, Indonesian Islamic University, Sanatadharma University and Muhammadiyah Yogyakarta University. This research uses convenience-sampling survey method.Sample size is determined by 10 time most complex latent variable (Gefen , et al. 2000) and a priori power analysis. Power analysis is done to avoid type I and type II statistical error (Erdfelder, et al. 1996). In business research, power analysis can use power 0.80 and alpha 0.50 (Hair et al. 1995). In futher explanation Hair et al. (1995) explain that Cohen (1998) categorize effect size as " small ", " medium" . and " large" with value of 0.2 , 0.5 and 0.8 . Based on both concepts above, the minimum samples in this research is 98.

Variable Definitions and Measurements

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 the cognitive component so that it can be measurable apply questionnaire (Koksal & Power , 1990). The computer anxiety instrument is adopted from Fagan *et al*. (2003-3004) with eight items on 7 points Likert Scale.

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

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

Individual Impact

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

System Quality

System quality is the 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 by flexibility, ability to recover error and ease of use. System quality is measured using 1- 7 Likert scale.

Information Quality

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

Research Model

The hypotheses of this research are tested using the Partial-least-square (PLS) model. PLS is suitable for prediction and theoretical building. It needs a relatively small sample with a minimum of ten tomes of the most complex item construct (Gefen *et al.,* 2000). The other advantage of using PLS are first, it estimates a measurement model to ascertain construct validity and reliability of measures. Second, using indicators of latent contructs , it yields estimates of the structural model parameters, which test the strength of hypothesized relaltionships. Finally, it is not restricted by the distribution requirements and sample size limitations of other structural equation modelling tools (Campbell & Fiske , 1959 in Ho *et al.,* 2003). Figure 2 shows the research model. The research model run twice. The first run uses the full research model (include computer anxiety variables) and the second run uses the model without computer anxiety variable
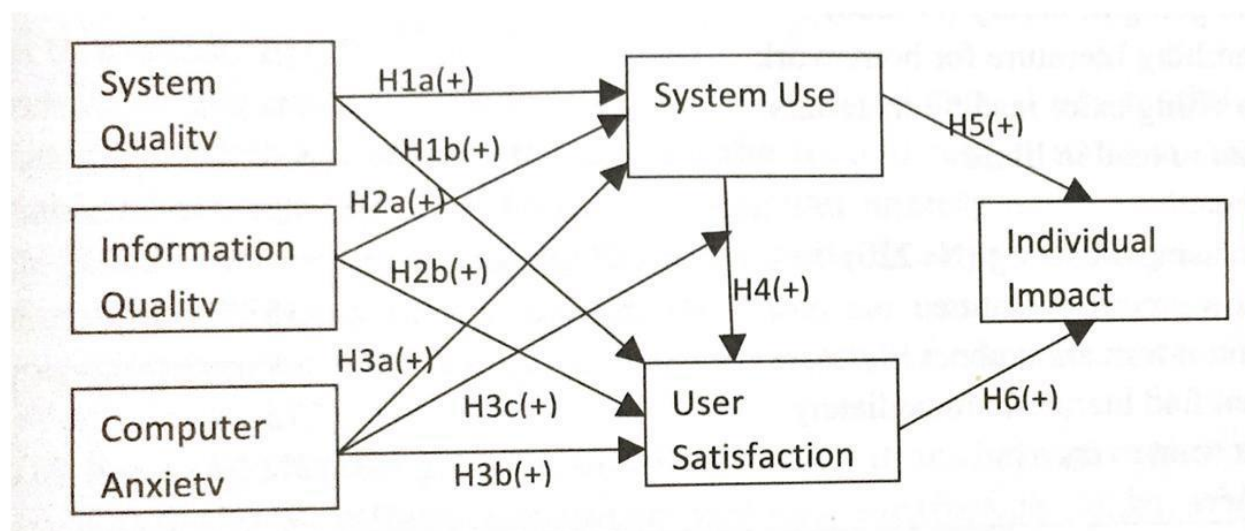
Findings

Sample's Description
The survey used 319 questionnaires distributed directly to respondents, 220 questionnaire are valid and 99 questionnaires are not valid (response rate 55 %). The post hoc power analysis, used alpha 0.05 and " small : effect size (0.2), and a power of 0.950. Table 2 shows the 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%

Validity and Reliability The construct validity and reliability of the instrument are shown

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

Table 3 :
Construct 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

Table 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**

Hypotheses test result
This research split the model in two parts and runs separately. First model use all variables that are used in hypotheses testing and the second model removes comouter anxiety variable from the model (see figure 3). Computer anxiety is the central issue of this search.Removing computer anxiety from the model is aimed to discover the real audience of computer anxiety on the model. Two runs are used to make the analysis through in making conclusions. The hypotheses test results are shown in table 5.

An analysis of the result shows a positive significant correlations between system quality and user satisfaction (H1b) , information quality and user satisfaction (H2b) , sytem use and user satisfaction (H4) , system use and individual impact (H5) , and user satisfaction

and individual impact (H6). Significant negative correlations are only found in correlations between the computer anxiety variable and the system use variable. On the other hand, correlations between computer anxiety and user satisfaction (H3b) and moderation effect weak negative correlations (not significant). Weak positive correlations (not significant) are found on corrections between system quality and system use (H1a) and system quality and sytem 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 the second model was run . In the first runs the correlation between information quality and system use is weak but in the second run the correction is relatively strong (significant in p>0.1).
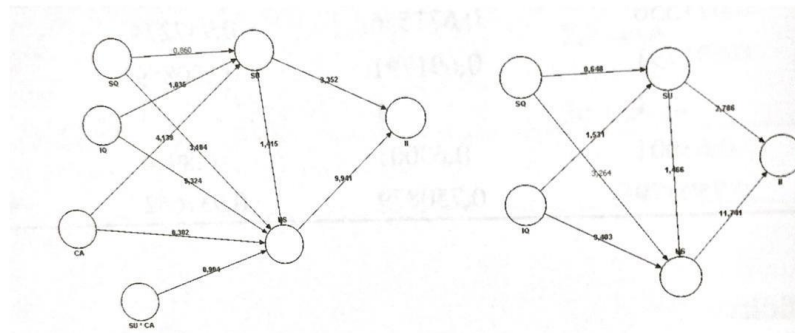

Figure 3 : Hypothesis Test Model

Table 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

Discussions
This research makes an advanced survey to answer unsupported hypotheses that are found in the hypotheses result . The survey uses almost similar respondents used in prior survey. The purpose of the advance survey is allow the librarian to make recommedations to

the library users when they search a literature. This advanced survey results are shown in table 6.

The advanced survey shows that 44% respondents feel that the librarian helps users to be e-catalogue Forms of help are : suggestion to use e-catalogue (32%) and help in use the e-catalogue (44 %) . When the respondents have problems with incomplete information in e-catalogue, 63 % respondents tend to ask the librarians for help. The above data explain that library user can almost always get help from the librarian when they visit the library. In other words, library users have alternative (ask the librarian) to search for literature or use the e-catalogue . These phenomena explain the unsupported moderation effect on the correlation between system use and user satisfaction (H3c) and unsupported negative correlation between computer anxiety and user satisfaction (H3b).

On the other hand , the unsupported negative correlation arose because the respondents have significant computer experience around 6.4 years (see table 2 panel A) and have skilss in computer programs (office 100 % , graphics 34 % , programming 24 % , games 83 % (see table 2 panel B). Both factors will reduce the respondent's computer anxiety so respondent will be satisfied with the system because the 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 the systems quality and system use (H1a) . This finding is different from Wang's (2007) and Wang and Liao's (2007) findings) . Both research studies found significant positive correlation between system quality and sytem use. The difference are because this research uses a system that is used to search literature using respondents that use the system to search already know literature (63 %) and 80 % of the respondents want to find the literature as fast as possible (see table 2 panel B). The willingness to find the exact literature in a fast way shows that the respondents had high level of priority to find literature . The conditions explain that information content of the sytem used to find urgent materials . All the conditions can make people ignore other factors with the result that respondents still use

the system by ignoring system quality. In other words, the user tends to deny use sytem if they have enough time to search manually (system not give urgent information). The conditions also explain the unique phenomena on correlation between information quality and system use (H2b).

Unique phenomena are found in H2a test. The first model which includes computer axiety did not show significant positive correlations between information quality and system use. On the other hand, the second model that excludes computer anxiety variable from the midel show significant positive correlation of $p > 0.1$. Signification level change explain the strong role of computer anxiety in the tested model. In other words, computer anxiety is viable that can influence information system success.

The hypotheses test on H1b , H2b, H4 , H5 and H6 are not producing any single unique phenomenon in all the model's runs (with and without computer anxiety). All the variables supported hypotheses (H1b, H2b , H4 , H5 and H6) agree with previous research studies. In other words, this research strongly supports uses variables and correlations between variables that are used in H1b , H2b , H4 , H5 and H6 in DeLone and McLean's model.

Conclusion and Limitations

This research is aimed to find out the influence do anxiety variables on the information success model. This research modifies DeLone and McLean's (1992) model by including computer anxiety variables and use those variables both directly and indirectly as moderating variables. The main question of this reseach is " Does computer anxiety have effects on system success?"

This research uses academic library e-catalogue to answer the research questions. This research uses 220 valid samples from four universities that have almost similar academic library e- catalogue systems. Before running the hypotheses test , this research did a power analyses to get practical significance. The research model was split into two parts to discover the true role of computer anxiety in the model. Brief hypotheses tests results are shown in Table 7 .

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

Hypothesis				
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 plays an important role in information system success. Computer anxiety will influence other variables if its is needed in the model.

2. High level urgency of material that is found using information will influence system use and user satisfaction. The system user will reject information quality and system quality when they face very important and urgent material. In other words, the user tend to deny use system if they have enough time to search manually (system not give urgent information) .

This research has sime limitations (1). The samples were only taken from four universities in the same city that have homogenous culture, (2). The samples were taken from system that is already implemented. This limitation prevents this research from implementing the whole lif cycle of the system , (3). There are biases on self-reporting survey technique.

Same suggestions are made for futher research. First, the next researcher should consider information urgency level before implementing DeLone and McLean's system success model. Second, the next researcher should consider the rle of computer anxiety in system success.

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