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Cultural Aspects for Technology Acceptance: Asian Perspectives and Research Techniques

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ABSTRACT

This study continues previous research on the Technology Acceptance Model (TAM) (Davis, 1986) conducted in Australia (Evers & Day, 1997) by reporting findings from data collected in the Peoples' Republic of China. This study extends the TAM model by introducing cultural preferences for interface design features. It finds a strong relationship between perceived usefulness and attitude of satisfaction as well as confirming many other relationships between the constructs in the extended TAM model. Secondly, it addresses an important issue in cross-cultural empirical research: the potential impact of administering surveys in respondents' native languages rather than in the researchers' own languages and finds that responses of a single culture (Chinese) differ between indigenous Chinese and ex-patriot Chinese.

Keywords

Technology Acceptance Model (TAM), cultural preferences, research methodology, language of survey instrumentation

INTRODUCTION

The Technology Acceptance Model (TAM) (Davis, 1986; Davis, Bagozzi, & Warshaw, 1989; Davis, 1993;) is one of the most important and well-validated theories in the IS (Information Systems) discipline. Many studies have used TAM to explore technical, task, and contextual aspects of IS (Venkatesh & Davis, 2000; Venkatesh, Morris, Davis, & Davis, 2003). However, few studies have considered the role of cultural aspects in the acceptance of technology.

The current paper examines two major issues of importance in this area. First, it continues previous research conducted in Australia (founded on literature reviews published in the UK and US) by reporting findings from data collected in the Peoples' Republic of China. Second, it addresses an important issue in cross-cultural empirical research: the potential impact of administering surveys in respondents' native languages rather than in the researchers' own languages. We seek to understand important methodological issues in the collection and interpretation of cross-cultural, technologically relevant data. We seek to answer the questions: whether, when, and how to translate and administer instruments, and how to pose questions to a multicultural response pool.

We report the findings from a comparison of Chinese, Indonesian, and Australian data, and a preliminary assessment is made regarding instrumentation and data collection techniques for the conduct of cross-cultural research.

BACKGROUND

The initial purpose of this research stream is to identify culturally biased features of interfaces that individuals use to interact with computerized information systems and to ascertain interface design preferences that are influenced by cultural factors. The specific goals of the current study are to compare Chinese data to those collected previously in Australia (Evers & Day, 1997) and to investigate the effects of language of instrumentation when using questionnaires for cross-cultural research.

Literature supporting the current study comes from a variety of disciplines. Included are:

- Technology acceptance (Davis, 1986; Davis, 1993)

- Cultural implications of technology acceptance (Straub, Keil & Brenner, 1997; Rose & Straub, 1998; Andreou & Boone, 2002; Wang & Tsai, 2002; Bagchi, Hart & Peterson, 2004; Brown, Hoppe, Mugera, Newman, & Stander, 2004; Elbeltagi, McBride, Hardaker, 2005; Karahanna & Evaisto, 2005)
- System design and usability (Hubona and Blanton, 1996; Yeo, 1998)
- Internationalization (Uren, 1997; Carey, 1998)
- Cultural context of interface design (del Galdo and Nielson, 1996; Phillips, Calantone, & Lee, 1994)
- Instrumentation for cross-cultural data collection (Day and Evers, 1999) and
- Cultural anthropology (Hofstede, 1991)

RESEARCH MODEL

This research uses a modified technology acceptance model (TAM) introduced by Davis (1986) and then modified through research by Day (1996) and Evers and Day (1997). The major contribution of this and previous studies in this stream of research is to incorporate and validate cultural aspects into the TAM. The four rightmost boxes in Figure 1 are the original constructs from Davis (1986). The earlier research done by Day and Evers (1997), added the culturally specific design preferences, and the indirect construct of actual system design features.

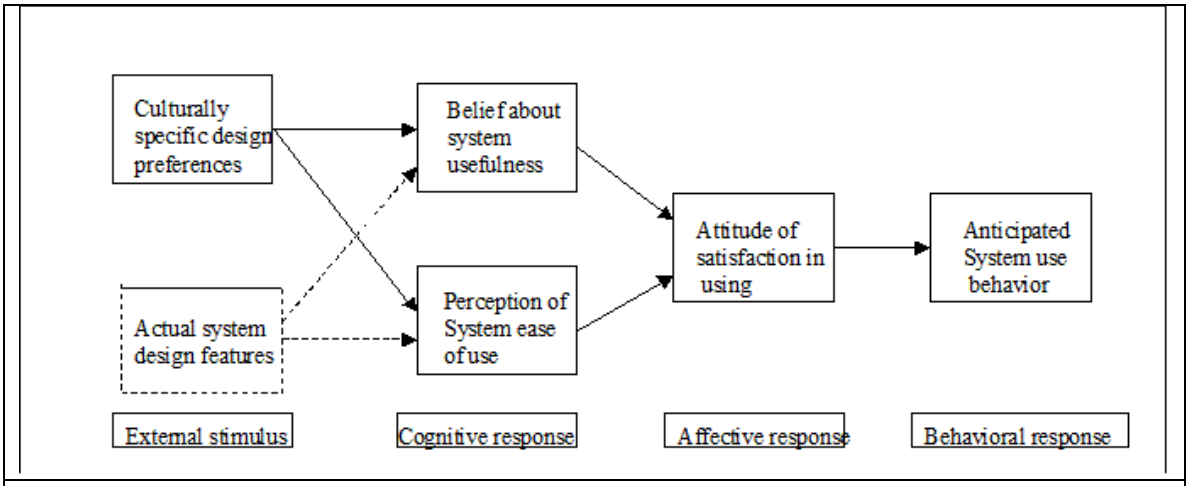

Figure 1. Modified Technology Acceptance Model (after Davis 1986)

Culturally specific design preferences

The first construct in the model represents the system features preferred by the user. Any system has multiple interface design options. Different users prefer different features. Many studies (Venkatesh & Davis, 2000; Venkatesh, Morris, Davis, & Davis, 2003) have determined that preferences vary between individuals. The major goal of this study is to determine whether system preferences vary from culture to culture. For example, do interface options such color-choice, menu design, or icon selection vary from culture to culture?

Beliefs about system usefulness

This construct represents the degree to which an individual believes that using a particular system will enhance his or her job performance (Davis, 1986). Usefulness is an antecedent construct to both attitude and intention to use. A system can be very elegant and aesthetically pleasing but if it is not perceived as useful, an individual probably won't use it. Perceived usefulness is also strongly related to attitude towards a system. There is some evidence that the importance of usefulness or ease of use may vary from culture to culture (Vohringer-Kuhnt, 2004).

According to Zhang, Carey, Tremaine, & Te'eni (2004), usefulness has different meanings in different contexts. Nielsen defined usefulness of a computer system as the issue of whether the system can be used by users to achieve some desired goals (Nielsen 1993). It can be broken down into two categories: utility and usability (Grudin 1992; Nielsen 1993). *Utility* is the question of whether the functionality of the system in principle can do what is needed.

Perceptions about system ease of use

This construct represents "the degree to which an individual believes that using a particular system would be free of mental or physical effort" (Davis, 1989). It is our belief that ease of use may be defined culturally as well as experientially. For example, for people in the Arabic world, a right-to-left flow of information is naturally intuitive. However, people in the English world expect a left-to-right flow of information. Because of the dominance of English-speaking software development in the world, most users, regardless of cultural-orientation, have become accustomed to the English-orientation and might not adapt well to an interface that is oriented right-to-left.

Attitude of satisfaction in using

This construct represents the degree to which a user's perceived personal needs and the need to perform specific tasks satisfactorily are met by a system (Goodhue and Straub, 1991). Satisfaction is a positive affect resulting from the evaluation of the use of the computer system. A model called the expectation-confirmation theory explains how satisfaction is formed (Bhattacherjee, 2001): users have certain expectations; they then confirm (or disconfirm) these expectations and, as a result, form a feeling of satisfaction. Thus, satisfaction necessarily involves some comparison of expectation versus experience. For example, one may have very high expectations of fun before interacting with the system, then interact and enjoy the interaction but not as much as expected, and therefore end up unsatisfied (Te'eni, Carey, & Zhang; 2005).

RESEARCH HYPOTHESES

Part I – Extension of Previous Research

To extend the previous research, we first examine the same five research hypotheses that the earlier study (Evers & Day, 1997) examined by comparing the new data collected in the Peoples' Republic of China with the previous data collected in Australia using Chinese, Indonesian, and Australian students.

1. Users' culturally specific design preferences influence their beliefs about system usefulness. This finding should hold true across all users in the study, but will be more pronounced in the Chinese subjects and most pronounced in the Chinese subjects who live in China and respond to the Chinese language version of the instrument.
2. Users' culturally specific design preferences influence their perceptions about system ease of use. This finding should hold true across all users in the study, but will be less pronounced in the Chinese subjects and least pronounced in the Chinese subjects who live in China and respond to the Chinese language version of the instrument.
3. Users' beliefs about system usefulness influence their attitudes of satisfaction with the use of globally marketed software. This finding should hold true across all users in the study.
4. Users' perceptions about ease of use influence their attitudes of satisfaction in using globally marketed software. This finding should hold true across all users in the study.
5. Attitude of satisfaction in using systems influence anticipated system use behavior with globally marketed software. This finding should hold true across all users in the study.

The earlier study found significant differences between the Australian and Asian subjects and also between the Chinese and Indonesian students on all five dimensions of the model. The previous study also concluded that the acceptance process flows differently for the Chinese than for the Indonesians. To the Chinese subjects, perceived usefulness provides the stronger path to attitudes and use. To the Indonesian subjects, ease of use is more important for predicting attitudes and use. This study hopes to reinforce previous findings and to validate the extended model.

Part II – Instrumentation

Collecting responses from subjects requires careful construction of collection instruments. In the previous study, the questionnaires were written in English only. The subjects in the previous study were students studying in Australia. It was assumed that the Chinese and the Indonesian students would be fluent enough in English to understand the questions and respond accordingly.

One of the authors had an opportunity to visit China and collect data directly from indigenous Chinese students. Few of these students had traveled outside of China. The authors are interested in finding out if differences in preference of culturally specific interface design aspects exist between Chinese students studying abroad (sample 1) and Chinese studying in China (sample 2).

Additionally, the authors are interested in determining if administering the questionnaires in Chinese rather than English results in different responses. To do this, we give the same students both an English version and a Chinese version. If differences are found, one explanation is that the demand effect (subjects trying to give answers that they perceive the researcher wants rather than reflecting their true perceptions and opinions) is stronger when subjects are asked to respond in English rather than their native language. Of course, another explanation is that the respondents may not have adequate mastery of English to fully understand the questions when posed in English.

Two more research hypotheses are added to the previous five.

6. The Chinese students studying in China may have different responses to the English version of the questionnaire from the Chinese students studying in Australia (between subjects). Ex-patriate Chinese will have responses that are more closely aligned with the Australian subjects.
7. Users' responses to the English version of the questionnaire may be different than their responses to the Chinese version even though the questions are designed to be identical (within subjects).

METHODOLOGY

Subjects

The new subjects are Chinese. Two educational settings are selected from which to draw the subject sample. One setting is a technical school that is somewhat comparable to vocational technical school in the US. These students do not have a good command of English and thus only the Chinese version is administered to them. The students do have a good deal of experience in the use of computers, which is an important criterion for extracting useful data for the study.

The other set of students are 4th year students (seniors) studying at Shandong University in Jinan, PRC. Shandong University is the provincial university for Shandong province. These students have to pass an English proficiency exam to be admitted to the university and also receive 3.5 years of university-level English training prior to the study. This set of students receives both the English version and the Chinese version of the instrument. The order of administration is randomly manipulated in order to control for history effect and also fatigue effect. We end up with 210 total responses for the Chinese version and 105 responses for the English version.

Instrumentation

The eight-page, 72-question survey we use in this study is first referenced in papers describing a pilot study of technology acceptance in Australia (Evers & Day, 1997; Evers, 1997). The questionnaire contains questions about user screen design preferences, control, input, output, and help features; task support usefulness, relevance of localization, and respondents' cultural context. The questionnaire also contains questions to determine the extent to which subjects may have been exposed to other cultures and what they expect of technology because of their cultural grounding. Additionally, respondent confidentiality and rights statements required by US law are included.

The English version of the questionnaire is used in previous research in Australia. Two Chinese nationals studying for the MBA in the US with a good command of English translated the English version into Chinese. They worked together to translate the instrument. Once the instrument was translated, a Chinese-American professor back-translated the instrument into English. The research team analyzed the difference between the two English versions and marked these differences. The two translators reworked the instrument and it was checked again by the Chinese professor. When the Chinese professor was satisfied, a pilot study was conducted with 15 Chinese students in the US. Some minor adjustments were made and then the Chinese survey was formatted to look as similar as possible to the English version. Since the Chinese characters take up more space than the English alphabet characters, a smaller font for the Chinese version of the instrument was utilized.

ANALYSIS

Descriptive Statistics

In table 1, the percentages of respondents who preferred the various interface aspects from the previous study and the current study are compared. Those subjects who responded with a 1 (strongly like), 2 (like), or 3 (slightly like) are included. If subjects responded with 4(slightly dislike), 5 (dislike), or 6 (strongly dislike) their responses were not counted. The result from the sample with the Chinese-only version from the current study is in column 1 (sample 2); the English version of the subjects who received both English and Chinese versions in current study is in column 2 (sample 3); the Chinese version for those subjects completing both the English and Chinese version in column 3 (sample 3); the previous Asian sample (English) in column 4; and the Australian sample in column 5.

Table 1. Respondents Preferring Various Aspects of Interfaces

Aspect	Chinese-only Vocational students in China Sample 2 (n=95)	English version University Students in China Sample 3 (n=105)	Chinese version University Students in China Sample 3 (n=105)	Asian (English language) University students in Australia Sample 1 (n=142)	Australian (English language) University students in Australia Sample 1 (n=38)
User Expectations					
Bright colors	95%	89%	87%	72.9%	28.9%
Pull-down menus	89%	95%	92%	54.2%	63.2%
Fixed menus	88%	90%	89%	54.3%	31.4
Text-based interfaces	42%	49%	48%	43.1%	8.3%
GUI	97%	95%	96%	63.8%	78.4%
Input/Output Devices					
Mouse	99%	99%	99%	88.5%	72.2%
Joystick	80%	82%	83%	66.2%	21.1%
Touch screens	71.4%	77%	78%	73.1%	47.1%
Sounds	88%	89%	89%	86.5%	64.9%
User Satisfaction					
Adapted to culture	93%	91%	92%	67.9%	86.8%
Less time to learn	86%	78%	84%	34%	65.8%
Instruct w/details	96%	87%	83%	52.7%	34.2%
Cultural Variables					
Uncertainty avoidance	68%	77%	72%	68.7%	39.5%
Diffuse	77%	85%	83%	76.5%	57.9%
Universal	46%	54%	48%	40.8%	18.4%
Collectivism	86%	77%	75%	40.8%	36.8%
High context	95%	54%	63%	59.7%	100%

Univariate Analysis

Table 2 shows the mean interface design preferences of the Chinese and Indonesian subjects who are part of the first study. These subjects are students at an Australian university who respond to an English version of the questionnaire. Univariate statistical analysis are conducted on each of these interface features to determine whether differences in means are significant.

Many of the interface design preferences are not significantly different between the Chinese and Indonesians. However, Chinese subjects prefer different colors to a greater degree than the Indonesian subjects. The Indonesian subjects prefer pop-up menus, touch screens, sounds and multimedia to a greater degree than do the Chinese subjects.

Table 2. Interface Design Preferences Chinese versus Indonesians

Feature	Chinese Sample 1 (n=66)		F	Indonesian Sample 1 (n = 75)	
	Mean	SD		Mean	SD
Different colors	**3.09**	**1.2**	**5.3**	**3.55**	**1.2**
Text-based	3.06	1.0	NS	2.70	.9
GUI	2.34	.9	NS	2.36	1.1
Windows	2.32	.8	NS	2.37	.8
Pop-up menus	**2.41**	**1.0**	**5.7**	**2.15**	**.8**
Pull-down menus	2.60	.8	NS	2.59	1.0
Fixed menus	2.69	.8	NS	2.33	.9
Mouse	1.74	.8	NS	1.64	.8
Joystick	2.35	1.2	NS	2.22	1.1
Touch screen	**2.13**	**1.1**	**6.9**	**1.88**	**.8**
Sounds	**1.76**	**.8**	**3.6**	**1.52**	**.7**
Multimedia	**1.62**	**.8**	**12.8**	**1.41**	**.5**

Notes for tables 2, 3, 4 & 5: (1) shaded and bold numbers are significant at the .01 level, (2) NS = insignificant, (3) the smaller the mean, the stronger the preference

Table 3 reports the results from univariate analysis between the Chinese students who took the survey in Australia and the Chinese students who took the survey in China. Many feature preferences means were significantly different between these two populations.

Table 3 Chinese students studying in Australia (sample 1) versus Chinese vocational students studying in China

Feature	Chinese Sample 1 (n=66)		F	P	Chinese only Sample 2 (n=95	
	Mean	SD			Mean	SD
Different colors	3.09	1.2	NS		2.20	1.16
Text-based	**3.06**	**1.0**	**4.85**	**.01**	**3.57**	**3.31**
GUI	2.34	.9	NS		2.29	.98
Windows	**2.32**	**.8**	**3.25**	**.05**	**1.7**	**.77**
Pop-up menus	**2.41**	**1.0**	**3.41**	**.05**	**1.89**	**.89**
Pull-down menus	**2.60**	**.8**	**3.28**	**.05**	**1.98**	**.90**
Fixed menus	**2.69**	**.8**	**4.25**	**.01**	**1.49**	**.74**
Mouse	1.74	.8	NS		1.68	.77
Joystick	2.35	1.2	NS		2.48	1.25
Touch screen	**2.13**	**1.1**	**2.92**	**.05**	**2.29**	**1.43**
Sounds	**1.76**	**.8**	**3.31**	**.05**	**2.14**	**1.15**
Multimedia	1.62	.8	NS		2.04	.80

Table 4 reports the results from univariate analysis between the Chinese students who responded to the Chinese only version of the instrument and the Chinese students who took the English version of the instrument. The former subjects were students studying in a vocational, post-secondary technical school. The latter subjects were 4th year students studying business in a provincial university in China. There are few significant differences between these two groups. The university students preferred different colors and multimedia, the vocational students preferred fixed menus.

Table 4. Interface Design Preferences Chinese subjects in sample 2 and 3

Feature	Chinese only Sample 2 (n=95)		F	p	English version Sample 3 (n=105)	
	Mean	SD			Mean	SD
Different colors	**2.20**	**1.16**	**6.9**	**.01**	**1.9**	**.87**
Text-based	3.57	3.31	NS		3.65	3.33
GUI	2.29	.98	NS		2.46	1.0
Windows	1.7	.77	NS		1.83	.82
Pop-up menus	1.89	.89	NS		1.96	.87
Pull-down menus	1.98	.90	NS		2.5	.90
Fixed menus	**1.49**	**.74**	**5.21**	**.02**	**1.67**	**.86**
Mouse	1.68	.77	NS		1.80	.74
Joystick	2.48	1.25	NS		2.85	1.20
Touch screen	2.29	1.43	NS		2.65	1.41
Sounds	2.14	1.15	NS		2.97	1.17
Multimedia	**2.04**	**.80**	**3.65**	**.05**	**1.94**	**.90**

Table 5 reports the univariate results when comparing the preferences within subjects who take both the English and Chinese versions of the instrument (randomly ordered). There are only two features (pop-up menus and sounds) that have significant differences. Please note that although most of the means are not significantly different, the means from the English version are consistently lower signaling that the demand effect may be at work.

Factor analysis

In order to confirm the proposed extension to the TAM model, we must first conduct a factor analysis of the responses to determine the variables that make up the constructs that compose the model (see Figure 1). We combine the vocational student responses to the Chinese version of the instrument with the university student responses to the Chinese version of the instrument. The resultant n is 200.

Culturally-specific design preferences

Factor analysis is performed on all of the design feature preference responses. A factor with 5 components is extracted. The five components are tiled interface, windows interface, touch screen, sounds, and help in voice mode. Cronbach's alpha for this factor is .672.

Table 5 Comparing results from respondents (Chinese university students in China) who took both the English and Chinese versions of the instrument (within subjects)

Feature	Chinese Version Sample 3 (n=105)		F	P	English version Sample 3 (n=105)	
	Mean	SD			Mean	SD
Different colors	1.9	.87	NS		1.77	.78
Text-based	3.65	.8	NS		3.33	.85
GUI	2.46	1.0	NS		2.33	.95
Windows	1.83	.82	NS		1.80	.85
Pop-up menus	**1.96**	**.87**	**4.24**	**.04**	**1.42**	**.78**
Pull-down menus	2.5	.90	NS		2.77	.93
Fixed menus	1.67	.86	NS		1.66	.78
Mouse	1.80	.74	NS		1.77	.68
Joystick	2.85	1.20	NS		2.68	1.16
Touch screen	2.65	1.41	NS		2.68	1.38
Sounds	**2.97**	**1.17**	**5.02**	**.05**	**2.22**	**.88**
Multimedia	1.94	.90	NS		1.88	.92

Ease of use

Ease of use is measured by 10 questions including: How much does a computer satisfy you when it is easy to use? Unfortunately, factor analysis does not successfully extract a meaningful component for this measure. Thus we are confined to using a single measure (the above question) to represent the ease of use construct.

Usefulness

Usefulness is measured by two questions: How much do you feel that using computers will help you be more productive (able to complete more tasks within a limited amount of time)? And How much do you feel that using computers will help you work more effectively (complete tasks correctly, in way that you expect)? Cronbach's Alpha is .791 for this construct.

Attitude of satisfaction

Factor analysis is performed on 8 attitudinal questions and result in a factor with 4 components that we name positive attitude. Cronbach's Alpha is .861 for this measure.

Intention to use

Factor analysis is performed on seven questions that query intention to use and result in a factor with 5 components with a Cronbach's Alpha of .678.

Confirmation of the research model

Multiple Regression is performed on the construct variables to determine the coefficients of the model and the overall strength of the model. The beta weights are as follows:

Cultural preferences = .181 (p = .009)
Usefulness = -.128 (p= .144)

Ease of use = -.097 (p=.167)
Attitude = -.125 (p=.149)

R=.312 R^2 = .097 F = 5.188 p = .001

In the first study, correlations were measured between the constructs in the model and then used to show model strength. Figure 2 shows the correlations for study 1.

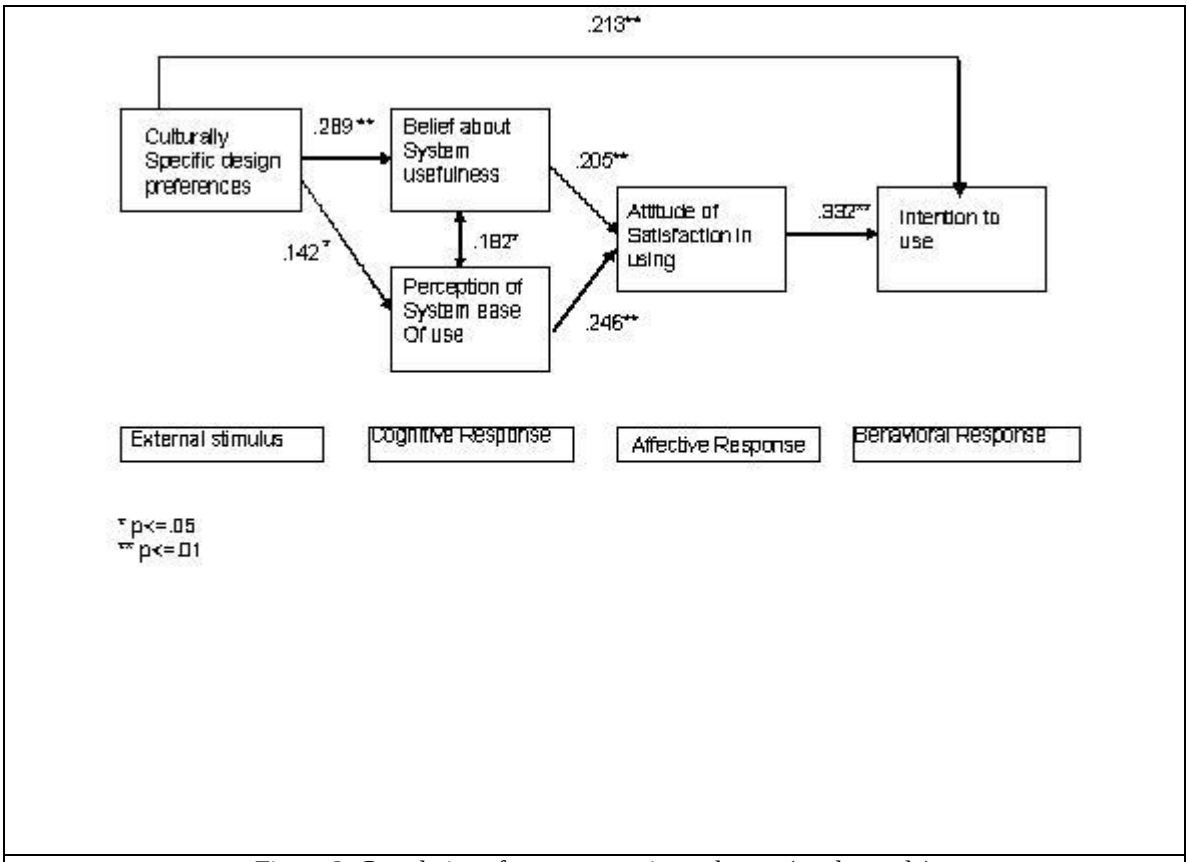

Figure 2. Correlations for constructs in study one (total sample)

The correlations for this study are as follows:

Intention to Use:
Attitude = .206, p = .01, partial Eta squared = .397
Cultural Preferences = .179, p=.05, partial Eta squared = .221
Ease of Use = .114, NS, partial Eta squared = .338
Usefulness = .218, p=.05, partial Eta squared = .483

Attitude:
Ease of Use = .014, NS, partial Eta squared = .178
Usefulness = .603, p = .01, partial Eta squared = .867
Cultural Preferences = .010, NS, partial Eta squared = .218

Cultural Preferences:
Usefulness = .008, NS, partial Eta squared = .113

Usefulness:

Ease of Use = .161, p=.05, partial Eta squared = .075

Figure 3 shows the correlations for the current study.

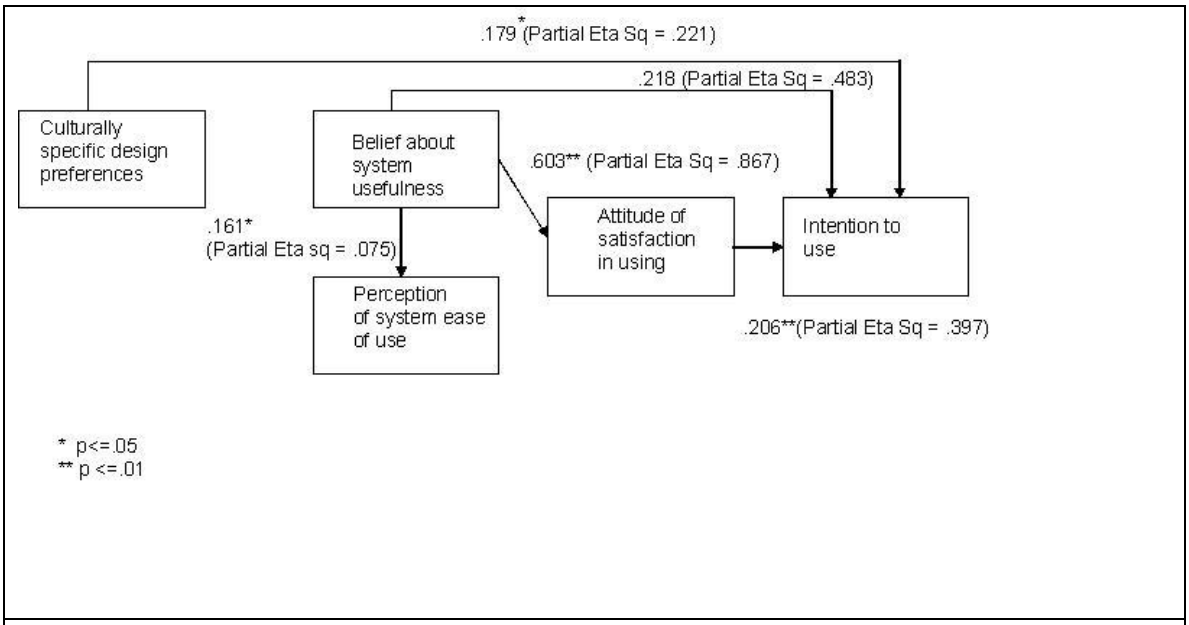

Figure 3. Correlations for the current study

Discussion

This study seeks to extend previous research by Davis (1986, 1993) and Evers and Day (1997) by examining the TAM model in a cultural context. The findings confirm that cultural differences do exist in terms of interface acceptance. Cultural groups have different preferences in design features and also in the technology acceptance process. The previous study by Evers and Day (1997) samples Chinese, Indonesian and Australian students who are studying in Australia by administering a questionnaire in the English language. They find that the Indonesian and Chinese students differ in their interface design feature preferences and also in the acceptance process. Indonesians are more concerned about ease of use than are the Chinese students in study 1. Chinese students are more concerned about usefulness and less concerned about ease of use.

The samples (2 & 3) for this study (2) consist of two distinct sets of Chinese students. The first set (sample 2) consists of 95 vocational students studying computer technology in Jinan, PRC. These students are less likely to have a strong command of the English language and thus are given surveys in the Chinese language. The second set (sample 3) consists of 105 university students studying business at Shandong Provincial University. These students have to pass an English proficiency test in order to gain entry to the university. These subjects are given two versions of the survey; one in English and one in Chinese. The language of the survey is randomly ordered to control for learning and history effects.

Research propositions and findings:

1. Users' culturally specific design preferences influence their beliefs about system usefulness. Although this relationship was found in the previous study (1), the current study does not find a significant correlation between culturally specific design preferences and beliefs about system usefulness. This study does find a significant correlation between culturally specific design preferences and intention to use (p=.05).

2. Users' culturally specific design preferences influence their perceptions about system ease of use. Although this relationship was found in the previous study (1), the current study does not find a significant correlation between culturally specific design preferences and beliefs about ease of system use.

3. Users' beliefs about system usefulness influence their attitudes of satisfaction with the use of globally marketed software. This relationship is confirmed in the current study (p=.01)

4. Users' perceptions about ease of use influence their attitudes of satisfaction in using globally marketed software. This relationship is not confirmed in the current study.

5. Attitude of satisfaction in using systems influence anticipated system use behavior with globally marketed software. This relationship is confirmed in the current study (p=.01)

6. The Chinese students studying in China may have different responses to the English version of the questionnaire from the Chinese students studying in Australia (between subjects). This is confirmed by the current study (see table 3).

7. Users' responses to the English version of the questionnaire may be different than their responses to the Chinese version even though the questions are designed to be identical (within subjects). This is somewhat confirmed by the current study (see table 5). Only 2 of the 12 features show significant differences and then only at the p = .05 level.

CONCLUSION

This empirical study demonstrates several interesting aspects about multicultural samples. Firstly, it finds significant differences between two groups of subjects of the same nationality (Chinese). One group is studying overseas in an Australian university and responds to an English survey in the English language. The other group is studying in China and responds to a Chinese survey in the Chinese language. This finding has implications for multicultural research. Researchers must be careful to control both for location and language of the survey instruments in the sample population. Additionally, the study finds slight differences within subjects who take two versions of the same instrument, one in English and one in Chinese (randomly ordered). It would appear that when mastery of the target language is controlled for, it is likely that researchers will find the same responses to the same questions across two languages. This is, of course, dependent on the quality of the translation and subjects' expertise in the language.

This study also confirms portions of the research model (see Figure 1). It does not however, find the same existence and degree of correlation between constructs as does the original study (1). It is unclear why this is so. Perhaps the inability to find a multi-measure factor to represent "ease of use" has implications for this particular study. Single-item measures are frequently less predictive than are multiple-item measures. Nevertheless, many of the relationships in the model are confirmed and at least one to a stronger level than the first study.

The most striking relationship is that between perceived system usefulness and attitude of satisfaction. This strong relationship was found in the previous study as well. It has implications for companies interested in marketing software to Chinese consumers. A good marketing campaign should emphasize the usefulness aspect of a software package. Additionally, usefulness should be a focus of the product itself. Apparently, Chinese more than Indonesians and Australians, want a product to be useful. Ease of use is less important for Chinese and more important for both Australians and Indonesians.

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