

Designing and Explaining the Trust Model of Students Applying to Virtual Universities

Hassan Abedi Jafari¹, Mohammad Ali sarlak²

Received: 21/12/2005

Accept: 22/5/2007

Abstract

The current research tries to offer a conceptual model in order to create trust among people for choosing virtual universities. To this end, the conceptual model of research has been designed with nine factors. The relationship among factors tested by using statistical methods such as factor analysis and path analysis. In the end, five components were established from among the affecting factors of student trust towards these virtual universities. They are: academic reputation, administrative efficacy, size, economical factor of studying and the suitable environmental conditions for virtual universities activity. However, it was established that the role of each of these components in creating trust towards virtual universities were different from those predicted by the researchers. Also, it was established that student's willingness toward choosing virtual universities is being influenced by the trust factor.

Keywords: Trust, Virtual University, E – Learning, Information and Communication Technology (ICT)

1. Assistant Professor, Department of Management, Tehran University

2. Assistant Professor, Department of Management, Payame Noor University

Introduction

The emergence of information and communication technologies (ICT's) and their use in training of people has led to formation of virtual universities. Most of the countries, with more or less similar goals, have acted to establish such universities. Islamic republic of Iran too, as a developing

country in Asia has taken such steps . The result of this effort, up to present time, has been designing of ten virtual universities in order to satisfy the educational needs of the large number of people requesting to be benefitted from higher education in Iran (Sarlak and Abedi Jafari, 2004). The Iranian virtual universities includes:

-
- | | |
|--|--|
| • Tehran virtual university | <u>http://cel.ut.ac.ir</u> |
| • Isfahan virtual university | <u>http://vu.ui.ac.ir</u> |
| • Elm va sanat virtual university | <u>http://www.elearning-iust.com</u> |
| • Shiraz virtual university | <u>http://www.shirazu.ac.ir</u> |
| • Sharif virtual university | <u>http://vu.sharif.edu</u> |
| • Iranian virtual university | <u>http://iranu.com</u> |
| • Azad islami virtual university | <u>http://www.azad.ac.ir/VU/vu.htm</u> |
| • Oloome hadis virtual faculty | <u>http://vu.hadith.ac.ir</u> |
| • Peyame noor virtual university | <u>http://www.aictc.com/pn/</u> |
| • Iran internet based university | <u>http://www.net2university.com</u> |
-

Research Problem

At present, Iranian virtual universities are operating beside the Non- virtual universities. The problem these virtual universities confront is the low recognition level of people applying here and consequently low level of their trust to these universities.

Research Goals

The current research tries to offer a conceptual model in order to create trust among people, for choosing these virtual universities.

Research Questions

The research questions are as followe:

- What are the affecting factors on students trust towards virtual universities?
- Is there a relationship between student's trust towards virtual universities and their willingness to choose these types of universities?
- Can we show this relationship based on a conceptual model?

Research Hypothesis

H1: There is a meaningful relationship between people's trust to Virtual Universities and academic reputation of Virtual Universities.

H2: There is a meaningful relationship between people's trust to Virtual Universities

and administrative efficacy of Virtual Universities.

H3: There is a meaningful relationship between people's trust to Virtual Universities and the size of Virtual Universities.

H4: There is a meaningful relationship between people's trust to Virtual Universities and Virtual Universities being cost-effective.

H5: There is a meaningful relationship between people's trust to Virtual Universities and suitable environmental conditions for Virtual University activity.

H6: There is a meaningful relationship between the academic reputation of Virtual Universities and administrative efficacy of Virtual Universities.

H7: There is a meaningful relationship between academic reputation of Virtual Universities and the size of Virtual Universities.

H8: There is a meaningful relationship between academic reputation of Virtual Universities and Virtual Universities being cost-effective.

H9: There is a meaningful relationship between academic reputation of Virtual Universities and suitable environmental conditions for Virtual University activity.

H10: There is a meaningful relationship between administrative efficacy of Virtual Universities and the size of Virtual Universities.

H11: There is a meaningful relationship between administrative efficacy of Virtual Universities and Virtual Universities being cost effective.

H12: There is a meaningful relationship between administrative efficacy of Virtual Universities and Suitable environmental conditions for Virtual University activity.

H13: There is a meaningful relationship between the size of Virtual Universities and Virtual Universities being cost-effective.

H14: There is a meaningful relationship between size of Virtual Universities and Suitable environmental conditions for Virtual University activity.

H15: There is a meaningful relationship between Virtual Universities being cost-effective and Suitable environmental conditions for Virtual University activity.

H16: There is a meaningful relationship between a person's trust towards Virtual Universities and perceiving a lower level of risk in studying in Virtual Universities.

H17: There is a meaningful relationship between a person's trust towards Virtual Universities and his attitude towards studying in Virtual Universities.

H18: There is a meaningful relationship between perceiving a lower level of risk in studying in Virtual Universities and his attitude towards studying in Virtual Universities.

H19: There is a meaningful relationship between a person's attitude towards studying in Virtual Universities and his willingness to choose Virtual Universities for study.

H20: There is a meaningful relationship between perceiving a lower level of risk in studying in Virtual Universities and his willingness to choose Virtual University for study.

H21: There is a meaningful relationship between a person's trust towards Virtual University and his willingness to choose Virtual Universities for study (Major hypothesis).

Research Backgrounds

In research process we find the following recourses:

- Fifty three resources were found about Trust and virtual universities in Persian texts.
- More than 500 resources, we found about Trust and virtual universities in Latin texts.
- No research was found under the title “trust to virtual universities”.
- The research done by Sirkka L. Jarvenpaa and Noam Tractinsky and Michael Vitale in 2001 year under title: **Consumer Trust in an internet store** was found more related to the present research subject.

Literature Review

In this research, literature review includes 2 sections:

- 1) trust
- 2) virtual universities

1) Literature Review on Trust

1.1) Trust Etymology

Trust is a Middle English word, probably of Scandinavian origin; akin to Old Norse *traust*; akin to Old English *trEowe*. Meaning: faithful (Merriam Webster dictionary).

1.2) Trust Definitions

Generally, there is not a single accepted definition of trust between researchers (Creed and Miles, 1996). Trust has been defined by researchers in many different ways, which often reflect the paradigms of the particular academic discipline of the researchers (Grabner- Krauter & Kaluscha, 2003).

- **Personality psychologists** traditionally have viewed trust as a belief, expectancy, or feeling that is deeply rooted in the personality and has its origins in the individual's early psychological development.
- **Social psychologists** define trust as an expectation about the behavior of others in transactions, focusing on the contextual factors that serve either to enhance or inhibit the development and maintenance of trust.
- **Economists and sociologists** have been interested in how institutions and incentives are created to reduce the anxiety and uncertainty associated with transactions.
- **Within business schools**, there are different approaches to study the trust across

domains such as finance, marketing and management, partly drawing on trust constructs developed in other disciplines.

- **Stephen P. Robbins** (2001) define trust as: A positive expectation that another will not behave - through words, actions, or decisions - opportunistically.

1.3) Trust Dimensions

New evidence shows that trust consists of five dimensions: integrity, competence, consistency, Loyalty and openness (Robbins, 2001).

Integrity includes honesty & truthfulness.

Competence, includes technical, interpersonal knowledge & skills

Consistency includes predictability, & good judgment (congruence between words & deeds).

Loyalty includes willingness to protect & save face for another person.

Openness, include telling the full truth and not just part of it.

1.4) Trust Bases

There are three bases for trust (Robbins, 2001):

- **Deterrence based trust:** based on fear and force (most fragile) .
- **Knowledge based trust:** based on predictability over time (most organizational relationships).
- **Identification based trust:** based on emotional connections and mutual understanding of wants and needs (highest level of trust).

1.5) Trust Components or Basic Model of Trust

The trust includes three components: trustor, trustee and context (Powers , 2001).

1.6) Trust Types

There are three types of trust: personal trust, system trust and institutional trust (Nooteboom & Six , 2003).

Personal trust: Based on experiences individuals make with each other in the course of frequent interaction over a longer period of time.

System trust: Trust which an individual has in the functioning and in the reliability of impersonal social structures.

Institutional trust: Trust between individuals vis - a -vis existing impersonal social rules.

1.7) Trust Subject

One can trust to material objects, empirical regularities, laws of nature, people, authorities, organizations, institutions and higher powers (Nooteboom & Six , 2003).

1.8) Theories Underlying Trust

Rational Choice Theory: This theory based on the idea that all action is fundamentally 'rational' in character and that people calculate the likely costs and benefits of any action before deciding what to do. This approach to theory is known as rational choice theory, and its application to social interaction takes the form of exchange theory.

Exchange Theory: Exchange theory derives from economics' rational choice theory and the study of relationships and "exchanges". It argues that individuals evaluate alternative courses of action so that they get best value at lowest cost from any transaction completed. According to exchange theory, individuals form associations on the basis of trust, and try to avoid exchange relationships that are likely to bring more pain than pleasure (Jarvenpaa et al., 2000).

Balance Theory: Balance theory suggests that people tend to develop positive attitudes

towards those with whom they have some prior association (Jarvenpaa et al., 2000).

Reasoned Action and Planned Behavior

Theories: As shown in Figure 1, the theories of reasoned action (Fishbein & Ajzen, 1975) and planned behavior (Ajzen, 1985) assert that behavior is influenced by behavioral intention, and that intention is determined by attitudes. Attitudes mediate between beliefs and intention, although beliefs can also have a direct effect on intention.

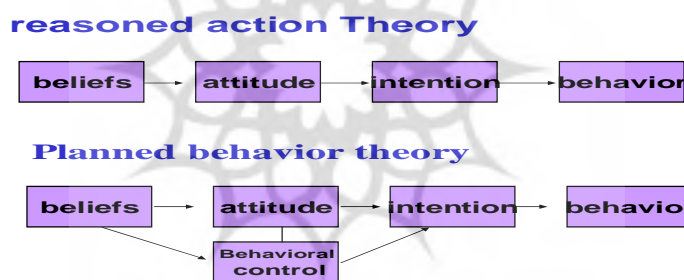


Figure 1 Reasoned action and planned behavior theories

The theory of planned behavior states that in addition to person's efforts for acting in a certain way , it states that a set of uncontrolled internal and external factors too, can have effects on a person's behaviors . For example, a person's perception on the risk is one of the controlling factors of behavior that can be effective whether that behavior takes place or not.

1) Literature Review on Virtual Universities

2.1) Definition of Virtual University

From the time of emergence of virtual university, various definitions have been offered on this phenomenon. Here we refer few of them:

“**Virtual University**” is a learning environment based on network that has been designed for the transfer of content and

expansion of university education (Harasim, 1997) "

" **Virtual university**" is a university without walls and uses information and communication technologies in order to transfer educational materials to students. (Lindquist, 2002) "

"**Virtual university**" is a university based on internet. This university lacks physical structures and uses synchronous and asynchronous technologies for transferring of contents and offering educational services to students (Sarlak and Abedi Jafferi, 2003).

2.2) Main Characteristics of a Virtual University

The main characteristics of a virtual university are as follow (Barjis, 2003):

- The university is completely based on ICT facilities with constant access to the Internet.
- The university provides selective and flexible study programs anywhere and at any time at the range of its coverage (city, state, country or continent).
- Students, staff and faculty are IT competent...on the desktop, in the classroom and lecture hall, and in the simulation "center."
- State-of-the-art hardware and software are at hand .
- Institutional IT infrastructure (classroom, lecture hall, campus) is state-of-the art.

- Academic programs are IT-based, "as appropriate" .

- University is a "learning organization"... shared vision...shared situational awareness...everyone contributes...is flat, seamless, tailorable and virtual.

- Students are taught and practiced in the art and science of "thinking in the information age".

2.3) Virtual University Mission

The mission of a virtual university (Barjis, 2003) has been evolving:

- from an Industrial Age University to an Information Age University
- from bricks-based university to electronic components-based university
- from walls surrounded university to wires surrounded university.
- from human professors to digital Professors
- from hard books to electronic books

2.4) Characteristics of Virtual Universities

The main characteristics of virtual universities are shown in Figure 2.

Designing Research Conceptual Model

The conceptual model of research is a tool that determines research variables and their relationships. The conceptual model of this research is shown in Figure 3.

Designing and Explaining the Trust Model of Students ...

characteristics	From	To
Goal	For profit	Open access to education for all
Size	Niche market	Mega universities
Partnerships	None	Cross sector, regional, transactional
Organizational model	Centralized	Distributed network of autonomous centers
Services offered	Individual courses or modules	Full continuing professional development programs
Accreditation	Digital diploma mills	High academic value qualifications
Quality	Lower than traditional education	Higher than traditional education
Pedagogy	Traditional	Goal based scenario, problem resolution based
Socialization	No or little social interaction	High social interaction among learners and staff
Research	No research	World class research
Technologies	Online text books and video conferencing	Groupware, knowledge management systems, virtual reality.
Workplace integration	Delivery of "bite size" modules	Using naturally occurring learning opportunities at work

Source: The Newsletter of the PROMETEUS Network

Figure 2 Characteristics of virtual universities

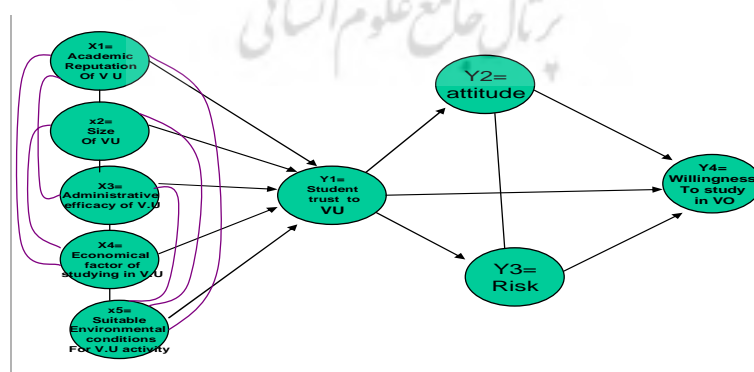


Figure 3 Research conceptual model

This conceptual model has been derived from research questions, hypothesis, literature review and implementation of Delphi Method. As such, this model is based on 2 following

research models.

1) The Basic Model of Trust

The basic model of trust is shown in Figure 4.

The basic model of trust

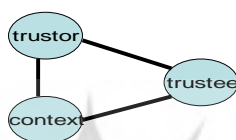


Figure 4 The basic model of trust

According to this model, the trust process includes three components: trustor, trustee and trust context, which this context trust occur(Powers ,2001).

2- The Consumer Trust Model in an Internet Store

The Consumer Trust model in an Internet Store (Jarvenpaa et al.,2000) shown in Figure 5.

The Consumer Trust model in an Internet Store (jarvenpaa and others,2001)

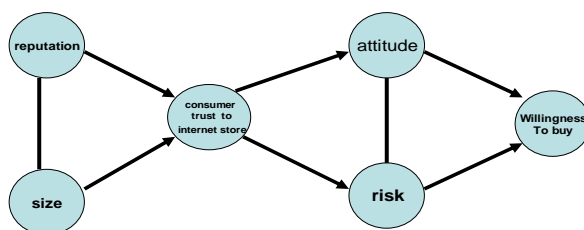


Figure 5 The Consumer Trust model in an Internet Store

Designing and Explaining the Trust Model of Students ...

The focus of this model is the antecedents and consequences of consumer trust in an Internet store. The model hypothesizes that consumers' trust in an Internet store affects their willingness to patronize the store. The model is consistent with exchange theory and balance theory, as well as the theories of reasoned action and planned behavior.

As mentioned before, the conceptual model of research derived by combining two aforementioned models.

According to the basic model of trust, the trust process include 3 components of trustor, trustee and context. In model of consumer trust to an internet store, 2 components are seen: 1) internet store as trustee with characteristics such as reputation and size. 2) consumer person as trustor. In the second model, we can see occurrence of lack of trust. By removing this deficiency, the conceptual model have been designed .

In present conceptual model 5 factors as antecedents of trust and 3 factors as consequences of trust are used and 2 factors added to characteristics of virtual universities and factor of suitable environmental conditions for V.U. activity are employed as contextual factor. The three added factors to this model derived based on literature review and getting idea from scholars by used Delphi method. . In this conceptual model X_1 to X_5 variables are independent variables and y_1 to y_4 variables are dependent variables.

Research Methodology

As **Hussey** and **Hussey** (1997) described methodology as general approach to research which includes qualitative and quantitative approach, in this research too, we employed a synthetic approach for acquiring necessary information and doing research.

The present research methodology is shown in

Figure 6.

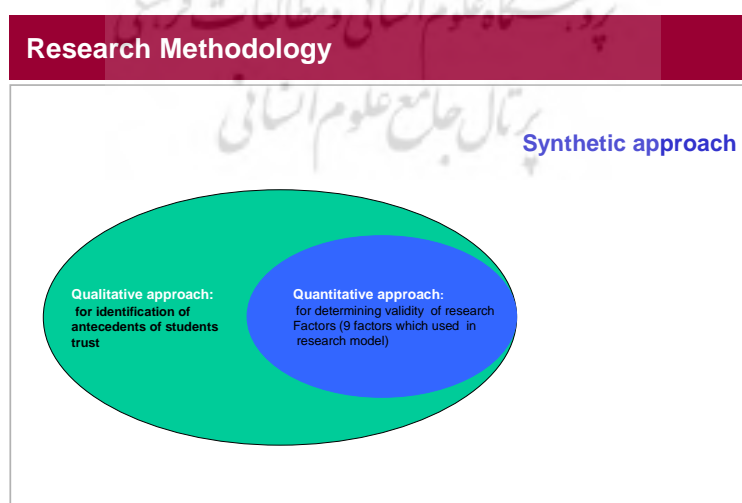


Figure 6 Research methodology

As shown in Figure 6 , we used a qualitative approach for identification of students trust antecedents and a quantitative approach for determining validity of research factors (9 factors which used in research model) and testing research hypothesis.

Statistical community of research is the fresh undergraduate students of Virtual Universities in the first semester of 2004-2005.

It must be noted that there are only 2 virtual universities i.e. Elm va Sanat Virtual University and Shiraz Virtual University to start their systematic activity out of ten 10 virtual universities.

Level of current analysis is concentrated on individual. Subject of trust [person's trust to organization] is the main center of current analysis and research (Mirzaei , 1992). In this research the unit of analysis is Virtual Universities. According to published statistics, the size of the community of current research is

about 1293 students (1000 students in Elm Va Sanat Virtual University and 293 students in Shiraz Virtual University).

The research sample of 400 students was determined using statistical formula (Azar, 2001). The sampling method in this research has been classified randomly. By employing this method the sample size (400 students) divided into 2 categories. Then 308students from Elm Va Sanat Virtual University and 92 students from Shiraz Virtual University were randomly selected.

In pre-test, whose goal is the final evaluation of measuring tool , about 50 questionnaires were distributed among the potential respondents. From this number, 10 incomplete questionnaire were reject by list wise method, and the rest 40 questionnaires (about10% of total sample) became basis of reliability and validity test, which is shown in Figures 7 and 8 .

Factor	N of Cases	N of Items	Alpha	Reliability
Academic reputation of Virtual University (X1)	40	3 indexes	0.8834	high
Size of Virtual University (X2)	40	3 indexes	0.9249	high
Administrative efficacy of V.U (X3)	40	12 indexes	0.9499	high
Economical factor of studying in V.U (X4)	40	3 indexes	0.9094	high
Suitable Environmental conditions For V.U activity (X5)	40	6 indexes	0.8911	high
Student trust to V.U. (Y1)	40	7 indexes	0.8644	high
Attitude to study in V.U. (Y2)	40	4 indexes	0.9134	high
Risk (Y3)	40	2 indexes	0.9121	high
Willingness to study in V.U. (Y4)	40	3 indexes	0.9004	high
Questionnaire	40	43 indexes	0.9287	high

Figure 7 Reliability Analysis-Scale (Alpha)

		ESULT
KMO	0.771	GOOD VALIDITY
BARTLETT (K SQUARE)	4159.215	
DEGREE OF FREEDOME	128	
SIGNIFICANT LEVEL	0.0005	

Figure 8 Validity of research questionnaire (measured by K-M-O AND BARTLETT test)

The reliability index is alpha and in order to increase alpha in introductory test, unstable choices were deleted. The acquired alpha for the whole scale is about 92 percent which has been above 70 percent and is indicative of scale's stability.

In order to answer whether questionnaire has the necessary validity in addition to implementation of expert's point of views, factor analysis and K-M-O test have been done. Since size of K-M-O of entire research questionnaire is equal to .771 and significant level derived from bartlett test is 0.0005 and is smaller than evaluation level (0.05), thus sampling sufficiency and beneficiary of factor analysis were proved and

concluded that measurement tool has the necessary reliability and validity.

In the next stage, in order to understand the underlying components variables of research conceptual model, factor analysis was used. After confirmation of components, normality of confirmed components was tested. In Figure 9 shows, the underlying indexes of 9 factors of conceptual model .

After determining that distribution of components are normal, the derived data from factor analysis was stored to be use in path analysis method, which is indicated in Figures 10 And 11 .

factor	Number of index	K-M-O Results	K-M-O Test	Normality Situation of factors distribution by use K-S test
1) Academic reputation of virtual university	3 indexes	0.579	confirmed	normal
2) Size of virtual university	3 indexes	0.512	confirmed	normal
3) Administrative efficacy of V.U	12 indexes	0.629	confirmed	normal
4) Economical factor of studying in V.U	3 indexes	0.637	confirmed	normal
5) Suitable Environmental conditions For V.U activity	6 indexes	0.839	confirmed	normal
6) Student trust to VU	7 indexes	0.660	confirmed	normal
7) attitude	4 indexes	0.753	confirmed	normal
8) risk	2 indexes	0.510	confirmed	normal
9) Willingness To study in VO	3 indexes	0.724	confirmed	normal

Figure 9 The underlying indexes of 9 factors of conceptual model

Final path method

Paths t amounts

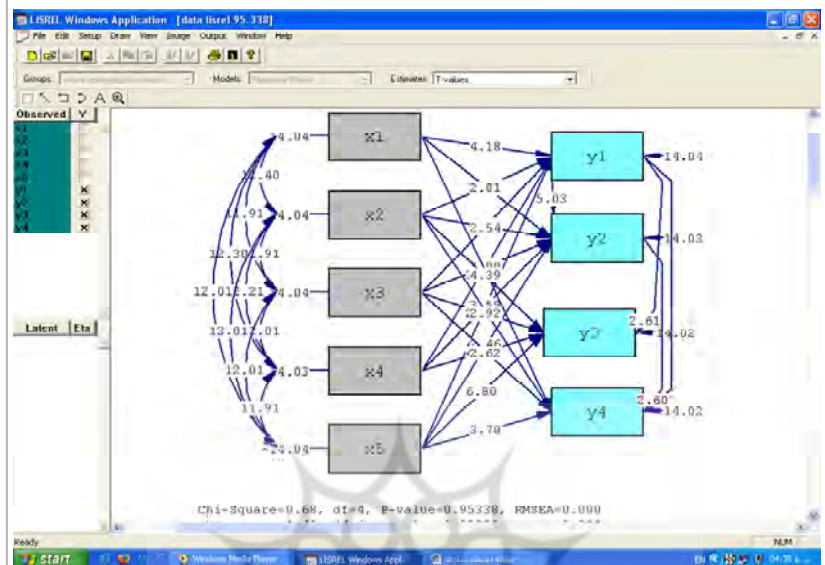


Figure 10 Paths t amounts

Final path method

Path coefficients

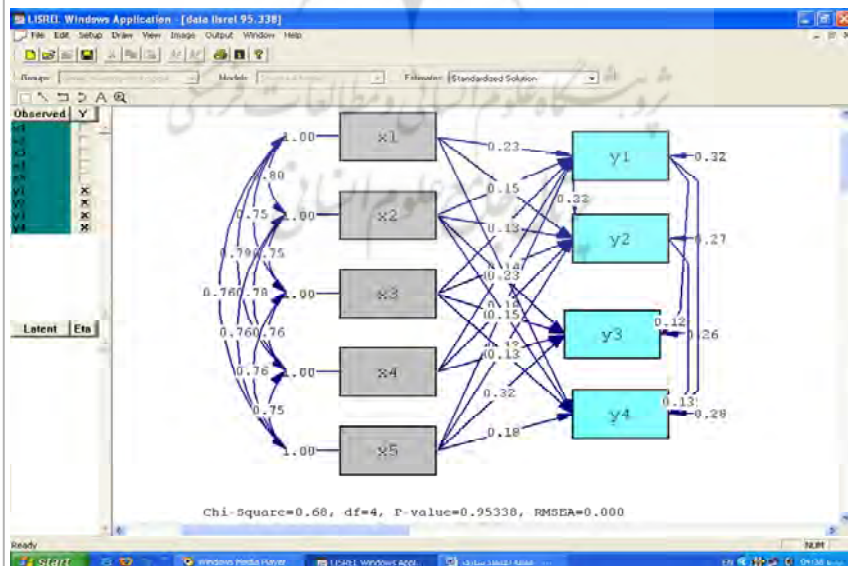


Figure 11 Path coefficients

Designing and Explaining the Trust Model of Students ...

The model evaluating indexes shown in Figure 12 .

The above indexes indicate model good fitness. In this section the result of research hypothesis test that derived from path diagrams have been shown in Figure 13 .

GFI = 1
RMR = 0.0015
CFI = 1
NFI = 1
NNFI = 1.14
RMSEA = 0.000

Figure 12 Model evaluating indexes

hypothesis	Observed t	Path coefficient	Significant level	Testing hypothesis result
H1	4.19	0.23	SIG≤0.01	CONFIRMED
H2	2.55	0.14	SIG≤0.01	CONFIRMED
H3	3.11	0.16	SIG≤0.01	CONFIRMED
H4	2.85	0.15	SIG≤0.01	CONFIRMED
H5	4.53	0.23	SIG≤0.01	CONFIRMED
H6	12.40	0.80	SIG≤0.01	CONFIRMED
H7	11.91	0.75	SIG≤0.01	CONFIRMED
H8	12.3	0.79	SIG≤0.01	CONFIRMED
H9	12.01	0.76	SIG≤0.01	CONFIRMED
H10	11.91	0.75	SIG≤0.01	CONFIRMED
H11	12.21	0.76	SIG≤0.01	CONFIRMED

Figure 13 Results of testing hypothesis by path analysis method

hypothesis	Observed t	Path coefficient	Significant level	Testing hypothesis result
H12	12.01	0.76	SIG≤0.01	CONFIRMED
H13	12.01	0.76	SIG≤0.01	CONFIRMED
H14	12.01	0.76	SIG≤0.01	CONFIRMED
H15	11.91	0.75	SIG≤0.01	CONFIRMED
H16	2.55	0.12	SIG≤0.01	CONFIRMED
H17	5.04	0.24	SIG≤0.01	CONFIRMED
H18	0.46-	0.02-	SIG≥0.01	UNCONFIRMED
H19	2.62	0.13	SIG≤0.01	CONFIRMED
H20	0.56	0.03	SIG≥0.01	UNCONFIRMED
H21	2.41	0.13	SIG≤0.01	CONFIRMED

Figure 13 Results of testing hypothesis by path analysis method

As seen, except hypothesis 18th and 20th whose t is less than 2, the amount of t of the rest of the hypothesis are more than 2 and it means that its meaningful level is less than 0.01. Its concluded that H1 hypothesis of all except 18th and 20th hypothesis are confirmed.

Extraction of structural equations:

In order to determine the level of effects on Internal variables (dependent variables: y_1, y_2, y_3, y_4) from the reset of research variables, structural equations have been designed:

$Y_1 = 0.23X_1 + 0.14X_2 + 0.16X_3 + 0.15X_4 + 0.23X_5$	Errorvar=0.32	$R^2 = 0.68$
$Y_2 = 0.24Y_1 - 0.024Y_3 + 0.15X_1 + 0.13X_2 + 0.15X_3 + 0.19X_4 + 0.13X_5$	Errorvar=0.27	$R^2 = 0.73$
$Y_3 = 0.12Y_1 + 0.0014X_1 + 0.17X_2 + 0.12X_3 + 0.23X_4 + 0.32X_5$	Errorvar=0.26	$R^2 = 0.74$
$Y_4 = 0.12Y_1 + 0.13Y_2 + 0.030Y_3 + 0.24X_1 + 0.15X_2 + 0.13X_3 - 0.027X_4$	Errorvar=0.28	$R^2 = 0.72$

The obtained explanation coefficients for the mentioned variables is indicative that about 68 percent of total y_1 variable changes by five variables of X_5, X_4, X_3, X_2, X_1 about 73 percent of total y_2 variable changes by seven variables of $y_3, y_1, X_5, X_4, X_3, X_2, X_1$, about 74 percent of total y_3 variable changes by six variables of $y_1, X_5, X_4, X_3, X_2, X_1$ and about 72 percent of total y_4 variable changes by eight variables of $y_3, y_2, y_1, X_5, X_4, X_3, X_2, X_1$ have been explained.

In other words, about 32 percent of y_1 variable changes, about 27 percent of y_2 variable changes, about 26 percent of y_3

variable changes and about 28 percent of y_4 variable changes have been explained by the variables outside the model.

Discussion and Conclusion

Discussion About Factors Affecting Applying Students' Trust to Virtual Universities (y1 Factor):

The theoretical expectation was that the academic reputation of virtual universities (X1 factor) has a bigger role in creating trust in applying students' compare to other factors of the model. The results of present research

confirms this expectation. However, what was not expected was the fact that role of suitable environmental conditions (such as :mass media attitudes toward VU, families attitudes to V.U., and sufficient IT infrastructures in country) for activity of Virtual Universities (X5 factor) in creating trust in applying students was at the same level as that of academic reputation of virtual universities. Perhaps the reason for the importance of suitable environmental conditions for activity of virtual universities is because if mass media and families have a positive attitudes towards virtual universities, then students' application due to getting their effects from the mentioned organs, would have a positive attitudes and higher trust towards these universities.

Discussion About Factors Affecting Applying Students' Attitudes Toward Study in Virtual Universities (y2 Factor):

According to the theories discussed in this research, the theoretical expectation was that applying students attitudes towards education in virtual universities is effected by two factors: "applying students trust" and perceiving a lower risk of education in VU (y1 and y3 factor). Results showed on the contrary to trust factor, which has the most effect on students attitudes, perceiving a lower risk of education in virtual universities doesn't result necessarily to a more

positive attitude in applying students toward studying in these institutions.

As determined, there is a relationship between applying students attitudes and five research independent variables: academic reputation, administrative efficacy, size of virtual universities, education being cost effective in V. U. and suitable environmental conditions for virtual university activity., results show that these factors effect persons attitude towards education in V.U..

Discussion About Factors Affecting Applying Students' Perceived Risk to Virtual Universities (y3 Factor):

According to theories and the derived conceptual model from theory, the expectation was that the perceived risk factor (y3 factor) be only effected by applying students trust factor (y1 factor), however, the results show that this expectation in not true and this component is effected by 5 components of academic reputation, administrative efficacy, size, education being cost effective and suitable environmental conditions.

Evaluations show that two factors of education being cost effective (x4) and academic reputation of virtual universities (x1) have respectively the highest and the least role in perceiving a lower risk of education in virtual universities from applicant's point of view.

Discussion About Factors Affecting Applying Students' Willingness Choose Virtual Universities for (y4 Factor):

The theoretical expectation was that person's willingness to choose virtual universities (y4) is only effected by two factors of attitude and perceived risk.

Results while confirm relationship between person's willingness to choose virtual universities (y4 factor) with two mentioned factors, but reject this exclusive relationship and made clear that person's willingness to choose y4 factor, in addition to two mentioned factors, is effected by 4 other factors: academic reputation, administrative efficacy, size and trust .

Evaluations show that among the 6 effecting factors on persons willingness to choose virtual universities, the academic reputation factors have the most effect and perceiving a lower level of risk for education in virtual universities has the least effect for applications point of view.

Recommendations

The results of this study provide support for the conceptual model of research and for the hypotheses regarding the directional linkages among the model variables. The model appears to be a reasonable, starting point for developing a theory of applying students trust in virtual universities. It is suggested that the following

points be taken into consideration for future researches and Iran's virtual universities.

1 – With due attention to the fact that acquired explained coefficient for 4 research dependent variables: " applying students trust towards Virtual Universities " , " persons attitude towards education in Virtual Universities " , " perceiving a lower risk of education in virtual universities " and " persons willingness to choose Virtual Universities for education are respectively 0.74., 0.73, 0.63, 0.72 , thus its suggested that future researches evaluate the affecting factors on these 4 components that were not explained by current research model .

2 – In relation to the role of two component "academic reputation" and "suitable environmental conditions for virtual universities activity in creating persons trust in entering universities " , country's virtual universities are suggested to pay more attention to these two components and help for their promotion.

3 – In this research, only the effecting factors on person's trust towards education in virtual universities got attention , therefore its suggested to future researches that effecting factors on Instructors, trust, virtual university employees trust to this university and also mass media and people in general level of trust towards virtual universities be evaluated .

4- The current results suggest that the presence of a non virtual structure might have

an effect on applying students trust in the virtual universities.

References

- [1] Ajzen, I. (1985), From intentions to actions: A theory of planned behavior, in J. Kuhl and J. Beckmann (eds), *Action Control: From Cognition to Behavior* (pp.11-39). Springer Verlag, New York, New York.
- [2] Ajzen, I. (1991), *The Theory of Planned Behavior, Organizational Behavior and Human Decision Processes*, 50, 179-211.
- [3] Ajzen, I. and M. Fishbein (1980), *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ:Prentice-Hall,Inc.
- [4] Anderson, Mary, & Schlosser, Charles (1994), *Distance Education. Review of the Literature*. E0005 Largomacino Hall, Iowa State University, Ames Iowa50011: Research Institute for Studies in Education, College of Education.
- [5] Barjis, Joseph (2003), *An Overview of Virtual University Studies*, Idea Group Publishing, USA.
- [6] Bates, (Tony) A.W. (1995), *Technology, Open Learning and Distance Education*. New York: Rutledge.
- [7] Blau, P. M. (1964), *Exchange and Power in Social Life*. New York: John Wiley.
- [8] Browning, Gary K., Abigail Halcli, and Frank Webster (2000). *Understanding Contemporary Society: Theories of the Present*. London: Sage.
- [9] Coleman, J. (1973), *The Mathematic of Collective Action*. London: Heinemann
- [10] Cook, K. S., and R. M. Emerson (1978), 'Power, Equity and Commitment in Exchange Networks'. *American Sociological Review*, 43: 721-739.
- [11] Coughlin,Chrissy (2002), Social Exchange Theory Application, <http://oak.cats.ohiou.edu/>.
- [12] Creed WD, Miles RE (1996), Trust in organizations: a conceptual framework linking organizational forms, managerial philosophies, and the opportunity costs of controls. See Kramer & Tyler 1996, pp. 16-38.
- [13] Dede, Chris (1996), "The Evolution of Distance Education: Emerging Technologies and Distributed Learning". *The American Journal of Distance Education*, 2.
- [14] Dolence, Michael G., & Norris, Donald M. (1995), *Transforming Higher Education. A Vision for Learning in the 21st Century*. Ann Arbor, MI 48105 USA: Society of College and University Planning.
- [15] Franke, Ulrich J. (2001), *Managing Virtual Web Organizations in the 21st Century* :. ... John Wiley & Sons, Inc. (US).
- [16] Gatien, Gary M. (2000), Trust, privacy and the digital university(<http://ts.mivu.org/>)
- [17] Ghazi, Tabatabaei, Seyed Mahmoud (1995), *Structural Models of Covariance*

- with Lisrel Models in Social Sciences*, Tabriz University, Humanities and Social Sciences Faculty Publications, NO.2.
- [18] Ghazi, Tabatabaei, Seyed Mahmoud (1998), *Lisrel Methods in Social Sciences Humanities and Social Sciences Faculty Publications*.
- [19] Grabner-Kräuter, Sonja and Kaluscha, Ewald A. (2003), "Empirical research in online trust: a review and critical assessment", *International Journal of Human – Computer Studies*, 58 .
- [20] Hall, H. (2001), Social Exchange for Knowledge Exchange. Paper presented at Managing knowledge: conversations and critiques, University of Leicester Management Centre, 10-11 April 2001.
- [21] Harasim, Linda et. al, (1997), *Learning Networks: A Field Guide To Teaching and Learning On-Line*. Cambridge and London: The MIT Press.
- [22] Heider, F. (1958), *The Psychology of Interpersonal Relation*. John Wiley & Sons.
- [23] Homans, G. 1961. *Social Behaviour: Its Elementary Forms*. London: Routledge and Kegan Paul.
- [24] Hussey, Jill, and Roger Hussey (1997). *Business Research*. London: MacMillan; Iacono, Suzanne, and Rob Kling. (2001), Computerization movements: The rise of Internet and distant forms of work. In *Information technology and organizational transformation: History, Rhetoric, and practice*, edited by JoAnne Yates and John Van Maanen. London: Sage. 93-135.
- [25] International Conference On Technology and Education [ICTE], Inc. (Comp.) (1996); Technology Changing The Pedagogical Culture. in "The Thirteenth International Conference On Technology and Education Proceedings", Volume I. Technology and Education: Catalyst for Educational Change. Grand Prairie March 17-20, New Orleans, Louisiana.
- [26] Jarvenpaa, Sirkka L., Noam Tractinsky and Michael Vitale, (2000), Consumer Trust in an Internet Store. *Information Technology and Management*, 1(1-2):45-71.
- [27] Layton, Tom: Description of a CyberSchool Class. <<http://CyberSchool.4j.lane.edu/About/CSCClass/CSCClass.html>>(18. April 1997).
- [28] Lewicki RJ, Bunker BB. (1995), Trust in relationships: a model of trust development and decline. In *Conflict, Cooperation, and Justice*, ed. BB Bunker, JZ Rubin. San Francisco: Jossey-Bass.
- [29] Massy, William F., & Zemsky, Robert (1995), Using Information Technology to Enhance Academic Productivity. Washington: Educomreg., Interuniversity Communications Council, Inc. <<http://www.educom.edu/program/nlii/keydocs/massy.html>>(31. March 1997)

- [30] Mirzaei, Ahrangani, Hassan (1992), Applied Research, Tehran, *Management Knowledge* semi-annual No. 17.
- [31] Molm, L. D. (2001), Theories of social exchange and exchange networks. In G. Ritzer & B. Smart (eds.), *Handbook of Social Theory* (pp. 260-272). London: Sage.
- [32] Moore, M., & Kearsley, G. (1996), *Distance Education: A Systems View*. New York: Wadsworth Publishing Company.
- [33] Nootboom B. and Frederique Six, (2003), *The Trust Process in Organizations*, Cheltenham, UK. Northampton, MA, USA: Edward elgar.
- [34] Powers, Jennifer goodall (2001), "the formation of interorganizational relationships and the development of trust" ,PH.d dissertation, USA, state university of new york .Procedural and Distributive Justice: The Role of Trust." Pp. 390–413 in Trust in
- [35] Robbins, Stephen P. (2001), *"Organizational Behavior"*, New Jersey: prentice-hall,inc.
- [36] Rotter, Julian B., (1967), "A New Scale for the Measurement of Interpersonal Trust," *Journal of Personality*, 35, 651-665.
- [37] Rotter, Julian B., (1971), "Generalized Expectancies for Interpersonal Trust," *American Psychologist*, 443-452.
- [38] Sarlak, M and Abedi Jafari, H. (2004), Virtualization of Universities in Iran, IRMA 2004 International conference proceedings, USA, Idea Group publishing. (www.idea-group.com).
- [39] *The Newsletter of PROMETEUS NETWORK*. (January 2002), Virtual universities , NO 14. (www.prometeus.org/news/PROMETEUS_Newsletter14.pdf)
- [40] Williamson O. (1993), Calculativeness, trust, and economic organization. *J Law Econ.* 34:453-502.
- [41] Zucker LG. 1(986), Production of trust: institutional sources of economic structure 1840-1920. *Res. Organ. Behav.* 8:53-111.

طراحی و تبیین مدل اعتماد افراد متقاضی تحصیل به دانشگاههای مجازی

حسن عابدی جعفری^۱، محمد علی سرلک^۲

تاریخ دریافت: ۱۳۸۴/۹/۳۰

تاریخ پذیرش: ۱۳۸۶/۳/۱

انتخابها و تصمیمات مختلفی که افراد اتخاذ می‌کنند متأثر از عاملی به نام اعتماد است. این تحقیق با هدف شناسایی عوامل مؤثر بر اعتماد افراد به دانشگاههای مجازی و مشخص کردن وجود رابطه یا فقدان رابطه بین اعتماد افراد به دانشگاههای مجازی و تمایل آنها به انتخاب این دانشگاهها شکل گرفت. در این راستا مدل مفهومی تحقیق به کمک روش دلفی با ۹ مؤلفه طراحی شد و سعی شد به کمک تحلیل عاملی و روش تحلیل مسیر، روابط بین متغیرها مشخص شود. در پایان مشخص شد، ۵ مؤلفه شهرت علمی دانشگاه مجازی، کارآمدی اداری دانشگاه مجازی، اندازه دانشگاه مجازی، اقتصادی بودن تحصیل در دانشگاه مجازی و شرایط محیطی مساعد برای فعالیت دانشگاه مجازی از جمله عوامل مؤثر بر اعتماد افراد به این دانشگاهها هستند، با این وجود معلوم شد که میزان نقش هر کدام از این مؤلفه‌ها در ایجاد اعتماد نسبت به دانشگاههای مجازی با موارد پیش بینی شده از سوی محققان تفاوتی دارد. همچنین مشخص شد تمایل افراد به انتخاب دانشگاههای مجازی متأثر از عامل اعتماد است.

واژگان کلیدی: اعتماد، دانشگاه مجازی، تمایل به انتخاب، انتخاب

۱. استادیار و عضو هیأت علمی دانشکده مدیریت، گروه مدیریت دولتی، دانشگاه تهران

۲. استادیار، گروه مدیریت دولتی، دانشگاه پیام نور