



Shu-Te University
College of Informatics
Graduate School of Information Management

Master

A Study on Evaluation of User Intention for Career
Development Information System in Vinhphuc High
Schools, Vietnam

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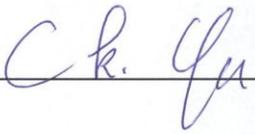
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Department of Information Management, Shu-Te University

A Study on Evaluation of User Intention for Career Development
Information System in Vinhphuc High Schools, Vietnam

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Adviser : Dr. Chen-Kuo Yu

Abstract

This research presents the result of an empirical study that investigates user intention using career-oriented development system in the context of information-seeking activity, the relative information system with demand for career-employment has an important role for labor development and management in Vietnam.

The intention of user for Career Development Information System (CDIS) in the advantages of information technology (IT) and management of information system (MIS) are among the most powerful sources bearing on the economy development. This study adopts the definition of user's perceive and intention as the psychological state of the importance and personal relevance that users involve to a given system. Seven hypotheses were proposed, and five were supported by the data from a laboratory experiment. In both a short-tested factors demand framework and a production function framework of development variables related to Delone and McLean IS Success Model and Technology Acceptant Model (TAM), we find evidence for complimentarily. Career Development system intention to use is complementary to schools and organizations which include broader job responsibilities for line workforce, more specific-managing firms in career-employment development.

Keywords: Career-oriented, career-employment, career development, TAM, IS Success Model, Partial Least Squares.

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Tran Dung Long

Shu-Te University

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Chapter 1 Introduction

In the modern workplace of labor and employment, it is imperative that Information Technology (IT) works both effectively and reliably. Career-Oriented, Labor and Employment Information System play a vital role in the implementation and management of information and analysis within schools, training institutions, business, enterprises, and governmental management organizations of labor. One of the key important of those systems is Career Development Information System (CDIS). It plans, coordinates, and directs research on the information-related activities of career and employment development firms. This study proposes that organizations can accept an information system to enhance high-school students' career development and some critical factors identified are impact on system user's intention.

1.1. Research Background

According to Schein, E. H (1975), the career-orientated Development is significant because it influences professional choices, effects on a decision to move from one career to another, forms what is being looked for in life, determines the individual's vision of the future, influences the collection of specific occupations and work settings, and affects employments' reactions to their work experiences. An information system of occupational orientation is enable formulated an organization to find a match between the institutional, organizational and the individual needs and to reframe jobs accordingly. It also serves as a useful employment information system bases for individuals contemplating job change, and for training organizations seeking to help personals plan their occupations.

The career development information system (CDIS) aims to provide analyses of the employment and labor market in its economic context. CDIS is an important tool to monitor the demand and supply of the labor force and employment, investigate excess supply (e.g. in the form of unemployment and underemployment), and excess demand (e.g. in the form of unfilled vacancies)



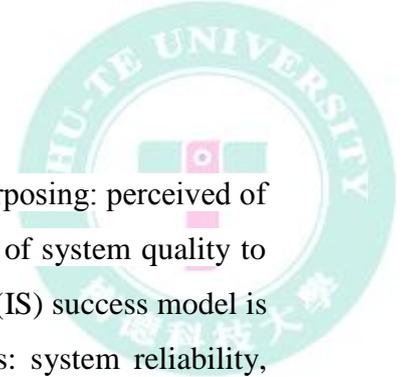
CDIS enables policymakers to develop policies which help people to find and secure a decent career. A CDIS term consists of producers of analysis (present and future employment, labor market analysts, statisticians, etc.), but also includes institutional arrangements to feed information and analysis into policy processes, and receive feedback on the focus of the analysis. Such feedback is essential, as possibilities for analytical work are endless, even though such work will often start from an agreed set of key indicators of the labor market (Evy.M, 2007).

1.2. Research Motive

In Vietnam, when at the ended of 5-year development the period 2006-2010, stepped to next decade with purposing a strong development of the global and regional economies, globalization and integration have been creating advantages but also immense challenges for Vietnam. With the economic is booming up, career development, employment, and labor demand for business and industrial productions will increase strongly, particularly the demand for high skilled labor, or labor demand in both urban and rural where many manufacturing businesses locate (Dinh, 2005). A perspective way that organizations in Vietnam may meet above demand is to support pre-employees (trainees are trained to be employment) to develop their careers and increase their intention to join career system, and CDIS can supported this operation. However, the quality of an information system will impact on user's intention. Will the quality of CDIS also impact on user's intention? This is an interesting question.

1.3. Research purposes

Accordingly, the purpose of this study was to determine factors that influence perceived indicators to career –oriented development system in high schools at Vinh Phuc province. And intend to use a supporting system building up for career development and employment information that can be launched in labor market information system. The result can be indicated as specifically exam for school administration and managerial would lead to improved opportunities for jobs orientation and employment information, some highlight factors influencing decision of user



intention can be given by the author's interested in his study are purposing: perceived of system reliability, perceived of information quality, and perceived of system quality to examine user intention to CDIS. Therefore, an information system (IS) success model is applied for the research framework to find some external factors: system reliability, system quality, information quality, gender, age that will effect on internal factors from original model (TAM and IS Success). TAM will support researcher to clarify extension variables and hypotheses that are built up the Questionnaire for surveying ideas from users, who can give analytical information to complete the research paper.

1.4. Research Questions

Thus, with the strong interest study in a career and employment development information system type, the researcher was definitely convinced of a need to use an IS model to study user intention to use Information System of Career Development for job-oriented in some Vinhphuc High Schools in Vietnam. The researcher has already focused on investigating the user adoption in information system and the critical factors affecting user attitude to this system. The topic named "*A Study on Evaluation of User Intention for Career development Information System in Vinhphuc High Schools, Vietnam*". The main objective of the author's research then became:

Research to focus on resolving the questions as two sub-objectives follows:

- (1) To examine how users intention to use a CDIS application version.
- (2) To investigate which variables affect from the users' attitude to system to users' intention using CDIS.

1.5. Research Assumptions

Regarding to research purpose and questions above, the author assumed to test degree of influencing the intention to use a career development system with an IS theory model the Technology Acceptance Model (TAM) by Davis in 1998, the TAM specifies a pathway of technology acceptance, from external variables to beliefs, attitudes, behavioral and intention system usage. We examines its assumptions that the perceived ease of use and usefulness constructs fully mediate the impacting of external



variables (system reliability, service quality, information quality, system quality) on behavioral intention usage.

1.6 Research Structure

In the thesis, Chapter 1 gives an overall context on which the research problem is identified. Chapter 2 presents the layout of the literature written work. Chapter 3 presents the methods has used to do technical side for research. Chapter 4 implies analysis of data obtained from surveys and results. Chapter 5 provides the findings, discussion, implication, and limitation.



Chapter 2 Literature Review

In this chapter, some background knowledge and related previous work of this research are going to be reviewed, which include (1) Career-Oriented supporting and development in Viet Nam, and (2) the Theory of Reasoned Action, Theory of Planned Behavior, the Technology Acceptance Model TAM with details in the original model (TAM), and the IS success model and some potential external factors which might have significant influence on the intention of the use of a career development software. In the mean time, the research questions or further hypotheses are formulated, proposed and discussed.

2.1. Career-Oriented supporting and development in Vietnam

In Viet Nam at the end of the period 2006-2010, strong development of the global and regional economies, globalization and integration have been creating advantages but also immense challenges for Vietnam. It is forecasted that our GDP growth rates will still maintain and even exceed those in 2001-2005 period. Up to 2010, there will be 500,000 enterprises and millions of private business households and trade villages in operation. With the economic boom, career orientation and employment demand for business and manufacture will increase strongly, particularly the demand for high skilled labor, or labor demand in urban and big cities where many manufacturing businesses locate. Governmental authority also expected that in the coming time, the demand for career development and labor market information system will rapidly increase which lead to the requirements of different information channels both in terms of quantity and quality.

In order to meet the management requirement, the politic objectives, the macro socio-economic management objectives of the State management authorities, the labor-employment management requirements of the Ministries as well as labor market information demand of the employees, employers, job-seekers, training providers, it is necessary to collect and disseminate the information on the constant changes of labor supply, demand and prices. Moreover, in the context that Vietnam is a member of the



World Trade Organization, gradually participating in the global economy, there is a high need for the establishment labor employment information database being stored, updated and disseminated timely at all levels to ensure the labor market information collection aiming at serving for State management and international integration objectives. (Decision No. 305, 2005; Decision No. 12, 2006; Decision No. 678, 2007).

2.2. Factors affecting Career Development Information System

Previous studies have attempted to correctly define the factors that determine the acceptance of information system or system applications, and many studies have identified a number of factors which can influence potentially on users' intention of using IS (Bass, 1969; Davis et al, 1989; Taylor & Todd, 1995; Taylor, 1998; Jacobson, 1998; Straub & Brenner, 1997; Pelgrum, 2001) such as perceived information system applications (including perceived usefulness, perceived ease of use, and perceived of technological enjoyment) and so on. Until now, core research frames were constructed and employed, in addition to TAM, to define technology acceptance. These information system models were named Diffusion of Innovations (Rogers, 1983), Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), Theory of Planned Behavior (Ajzen, 1985), and Delone & McLearn (1992) with Information Systems (IS) success... etc.

2.2.1. Theory of Reasoned Action (TRA)

Many research achievements in MIS can help IS researchers identify the basis for the resistance toward the behavior, and then design effective ways to overcome it. One approach might be just to study the psychology, and other disciplines have studied attitude, attitude change, and satisfaction. A richer study of behavior, behavioral intention, and other behavior determinants, however, would provide a more complete assessment of managements' position toward the behavior intention. The theory of reasoned action (TRA) examines attitudinal and normative influences on behavior, which might explain the reasons for managements' reluctance toward the behavior intention. Many business terms, organizations, and institutions are beginning to recognize the importance of ICT/IT's strategy



integration in process of researching, developing, Development, working, reproducing, and managing (Grover.V., 1998), they often do not provide a supportive context for individuals to introduce or be innovative with IT/ICT applying in organization. Ajzen and Fishbein (1975) developed TRA for proposes one's intention to perform or not to perform an action (behavioral intention) is the immediate precursor to the actual behavior. The TRA model (Figure 1) introduced two factors that affect behavioral intention: *attitude toward* the behavior and *subjective norms*. Attitude involves judgment whether the behavior is good or bad and whether the actor is in favor of or against performing it. Subjective norm is the perception of how one ought to behave. From the information systems perspective one relevant element of TRA is its assertion that any other factor that influences behavior for example systems design variables, user characteristics, task characteristics, political influences and organizational structure do so only indirectly by influencing attitude toward behavior, subjective norm or their relative weights (Davis et al., 1989).

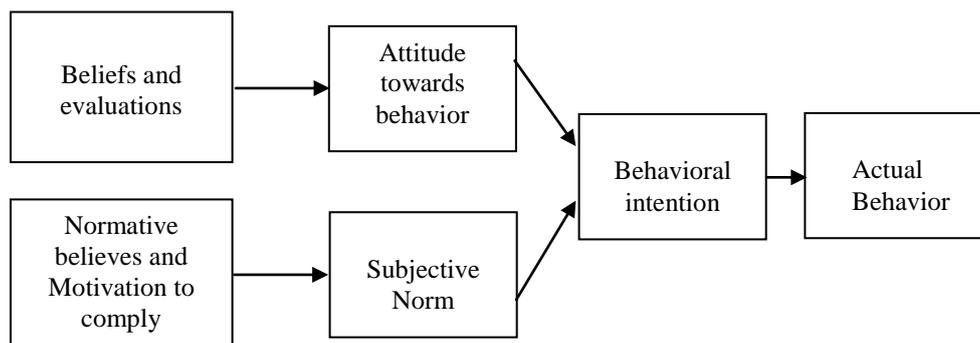


Figure 1. Theory of Reasoned Action from Davis, Bagozzi & Warshaw (1989)

This above model can be summarized by an equation:

$$\text{Behavioral Intention (BI)} \approx \text{Attitude} + \text{Subjective norms}$$



2.2.2. Theory of Planned Behavior (TPB)

The TPB was proposed as an extension to the TRA as mentioned earlier, by Ajzen in 1991 (Figure 2), the context in this behavior was constructed. When applied to the acceptance of technology systems, services or attitude toward using the system, the model contains five concepts. As in TRA, it includes behavioral attitudes, subjective norms, intention to use and actual use. However, this theory transfers behavioral control to as a perceived construct. Perceived behavioral control covers both the intention to use and the actual usage. Actual usage is in turn a weighted function of intention to use and perceived behavioral control. Under this arrangement control aspects of the observation is introduced into the model. In line with the TRA and TPB, Eining & Christensen (1991) suggested that these contribute to intentions, which in turn lead to behavior. Empirical results showed that all the variables except socio-legal attitude were significant in explaining the variation in technology applications' behavior.

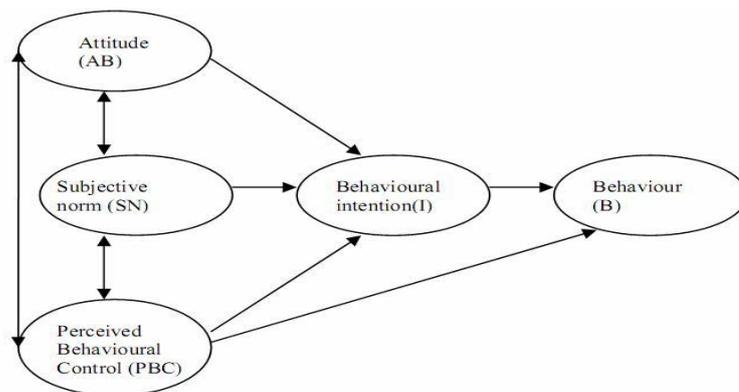


Figure 2. Theory of Planned Behavior (Ajzen, 1991)

The theory postulates that these three direct factors (AB, SN, and PBC) influence the individual's intention to perform a given behavior (I), and intention together with perceived behavioral control, in turn; influence the individual's actual behavior (B) (Ajzen, 1986; Ajzen & Fishbein, 1980). These relationships are represented in the following equations:

$$B \approx I + BC; \quad I \approx AB + SN + PBC$$



The study used existing literature in order to identify antecedents of attitude, subjective norms and perception of control. Their results show that factors that determine attitude are perceived utility, perceived ease of use and compatibility. As for subjective norms, it seemed that the influence of peers and superiors had the greatest impact (Taylor and Todd., 1995).

2.2.3. DeLone and McLean IS Success Model

The perception of delivering high quality of IS services and the reliability associated with delivering such services are debatable. However it can be logically argued that the quality of IS services may actually reduced cost associated with low software/system selection, poorly armed end-user developed applications, increased maintenance of applications, lack of training for user computing, lack of education to enhance computer literacy skills, and poor selection of hardware, IS effectiveness can be measured from different perspectives. As a result, several IS success measures has been adopted by researchers. Providing a comprehensive review of the past literature, DeLone and McLean (DeLone and McLean, 2003) propose an IS success model to guide research. Key IS effectiveness variables in their model included: system quality, information quality, service quality, system user, user satisfaction, individual impact of IS, and organizational impact of IS. Background of IS quality levels is a strong forming task in DeLone and McLean (Watson and Kavan, 1998). Recent evidence supports the notion that IS characteristics of quality do influence user satisfaction, a commonly used assessment of IS effectiveness. Given the importance of including system reliable, service quality, system quality and system success has been recognized by many researchers as key ingredients in developing a competitive advantage and an appropriate attend for IS effectiveness in partial model of the one proposed by Pitt et al (1995). New scales and measures, along with continued research into organizational effectiveness and use satisfactions are needed (DeLone and McLean, 2003).

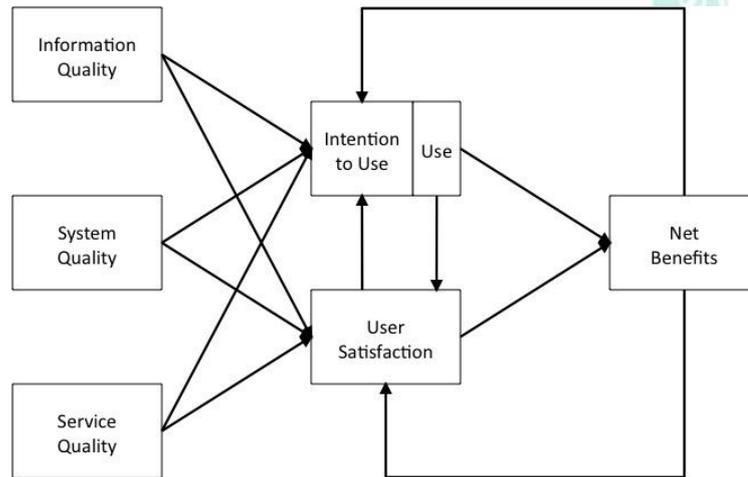


Figure 3. DeLone and McLean IS Success Model

Source: DeLone and McLean (2002; 2003)

2.2.4. Technology Acceptance Model (TAM)

As mention earlier TRA and TPB, the technology acceptance model (TAM) is adopted to be the most influential model among those models above. TAM is the theoretical model that attempts to explain the relationship between user attitudes, perceptions, beliefs, and eventual system use. TAM was proposed by Davis in 1986 in his doctoral study. Since then, it had been tested and extended by many researchers. Davis (1989) and Davis, Bagozzi and Warshaw (1989) proposed TAM to address why users accept or do not accept IT in their field of work. TAM is an adaptation of TRA developed by Fishbein and Ajzen (1975) to explain and predict the behaviors of people in a specific case.

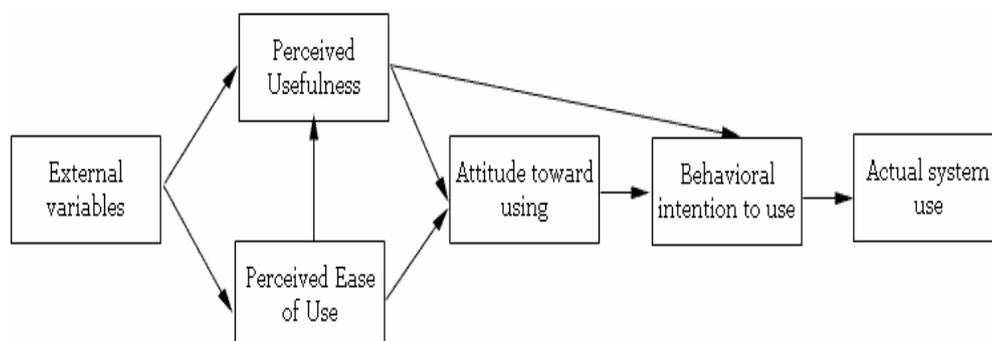


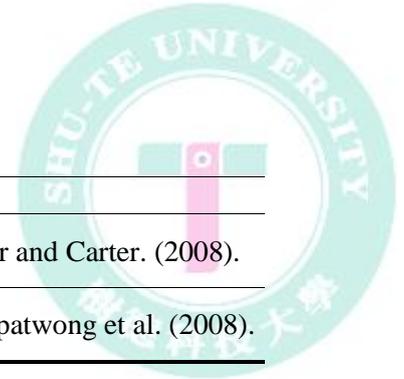
Figure 4. Technology Acceptance Model from Davis, Bagozzi & Warshaw (1989)



The goal of TAM is to predict information system acceptance and diagnose design problems before users have experience with a system. Relying on TAM, user acceptance of any technology is predicted by two factors: perceived usefulness and perceived ease of use. In order to exam the degree of Information intention to use, the author has used Technology Acceptance Model (TAM). This theory model was presented by Davis in 1989 and is present above in Figure 4. Tam was rooted in the theory of reason action (TRA) as previous mention. TRA proposes that beliefs influence attitudes, which in turn lead to intentions, and then generate behaviors. TAM assumes that beliefs about usefulness and ease of use are always the primary determinants of IT/IS adoption in organizations. According to TAM, these two determinants serve as the basis for attitudes toward using a particular system, which in turn determines the intention to use, and then generate the actual usage behavior. Perceived usefulness is defined as the extent to which a person believes that using a system would enhance his or her job performance. Perceived ease of use refers to the extent to which a person believes that using a system would be free of psychological effort.

Table 1. Literature related to intention to use technology.

Factors identify IT intention to use in organizations	Literature Development
Perceived benefits, management readiness, sensitivity to cost, external pressure, and social influence	Tung and Rieck. (2005).
Perceived usefulness, ease of use, perceived risk, trust, compatibility, external influences, impersonal influence, self-efficacy, and facilitating conditions	Hung et al. (2006).
Social–demographic factors, psychological factors, availability of internet services, knowledge of availability of internet services, preference to digital channels, ability and experience to use digital managerial direct.	Van Dijk et al. (2008).
Perceived usefulness, personal experiences, risk perception, and trust	Horst et al. (2007).
User’s characteristics (perceived risk, perceived control, internet), website design (perceived usefulness and perceived ease of use), service quality, and satisfaction	Kumar et al. (2007).
Relative advantage, image, compatibility, and ease of use.	Cater and Belanger. (2005)
Perceived usefulness, perceived ease of use, trust, and	Al-adawi et al. (2005).



perceived risk.	
Disposition to trust, trust of internet, trust of the government, and perceived risk.	Belanger and Carter. (2008).
Perceived usefulness, perceived ease of use, computer self-efficacy.	Wangpipatwong et al. (2008).

Davis (1989) used Fishbein and Ajzen’s method to measure attitude towards using (ATU) and behavioral intention to use (BIU) are common to TRA and TAM. He had chosen not to keep the subject norms (SN) because of a bit effect on BIU. Depend on TAM; perceived usefulness (PU) is proposed to have a direct effect on attitude towards behavior intention using and BIU. On the other hand, perceived ease of use (PEU) influences both PU and attitude towards behavior intention using. Furthermore, the model theorizes that the effects of external variables on intention are mediated by PEU and PU. Accordingly, attitude towards behavior shapes BIU and behavioral intention (BI) influences actual system use (AU). Moreover, as Venkatesh et al., 2003 suggested that four key determinants namely as performance expectancy, effort expectancy, social influence, and facilitating conditions which are also effected by gender, age, experience, and so on.

Originating literature and previous study in above discussions, this study proposes the following prediction regarding the influence of demographic variables: In Vinh Phuc high schools, the teachers and training management staffs who are considered traditionally to be “computer-skilled worker” or “professional end-user ” – males, young, managers or official staffs have higher academic degree, have more teaching and working periods per week, have longer working years, and have longer ownership computers – are more likely to use IT than those who do not match these descriptions.

2.3. Factors Effect Intention to Use of Career Development System

2.3.1. Perceived of System Reliability

In the industrial field, information systems, software or network systems usually are complex systems of numerous components. In order to guarantee the *reliability* of such systems against deterioration or natural risk and hazards to user,



it is essential to have an efficient and relevant system for estimating the failure probability relative to specified system operation sections. Furthermore, for the purpose of developing emergency or recovery plans, it is often of interest to determine the updated reliability of the system or its components for given purpose factors or factors that have actually occurred. In the discussions of system reliability, it is often of interest to compute to make a system or an application for user, the conditional probability of a system or sub tools event, given that another system or sub tools event is known or presumed to have occurred. This is known as system reliability/system trust for updating from its original system. Such conditional probabilities are useful in identifying critical components or subsystems within a system, or for post-event planning and decision-making (Song J, Der Kiureghian A., 2003; 2003b; 2005; 2008; Barlow R, Proschan F., 1975; Jaumard B, Hansen P, Poggi de Aragona M., 1991; Page's A, Gondran M., 1986; Ditlevsen O, Madsen HO., 1996).

According to Leger JB, Iung B, Beca AFD, Pinoteau J. (1999) and Levitin G. (2002) discussed the system reliabilities have been increasingly applied and distributed in many safety or critical systems, such as the financial and banking systems, military systems, economics and politics administrative systems, governmental management systems, enterprise systems and so on. Therefore, system reliability is very important to those types of systems because failures may cause much loss in monetary term or lives. On the other hand, Kumar et al. (1986) emphasized the system reliability of a information system management, a software and/or a program in the technological system is also important to a range of qualities and services from system contribution. The distributed system reliability is defined as the probability of successful execution of a program running on multiple processing elements and it needs to retrieve data files from other processing elements. Under the system reliability view point, there was enable that a subsystem or subprograms must influence on other systems, generalizing the system reliability dynamics as Boyd MA (1991) and Dugan JB,



Doyle SA (1996) defined such common of relationships are load sharing, standby redundancy, inter-references, on demand, dependent, cascade and common failures... etc. They also considered the system reliability, availability, or other utilities can vary on a failure or a cause of components/ sub tools could be maintained or repaired (e.g. maintaining policies, system reliability growth model, and fault coverage).

2.3.2. Perceived of Service Quality

Today's IS management are less concerned with customers' initial acceptance of IT and more worried about customer defection. Even given these orientations, some IS researches offer little insight into the factors can count whether an user will or will not use IS service or quality of service for daily using technology in business. Since then the electronic services (e-service) have been growing rapidly over the past few years, ICT/IT/IS activities have become an issue of great concern. Many schools, institutions, organizations and business sectors tried to assess and measure the quality of service delivered to create customer's utilization with e-services. Reichheld and Schefer's research (2000) showed that e-customers, e-schools, e-students visiting population has increasingly considered using IT/information systems for services and research. In the quality of services, customer satisfactions and students loyalty in the community on application services have been long concerned as an importance issue. Many studies have pointed out the more effective functions to increase users believable and delighted for a system service or a software is very originating from good service quality (Oliver, 1999; Parasuraman & Grewal, 2000; Chang, 2006; Yang, 2008). The significant progress has been made in the development of IS services and e-customer systems. A variety of public services are now delivered freely, with many benefits for citizens, schools, and businesses. Ge Dongxue (2005) and Han Xiaojing (2007) suggested in their papers that if it not being able to find the needed service/information, difficult use of system services, the need for better help regarding the technology service provided on the system, the language



understandability for instance are some of frequently reported usability problems. These together with issues as like back office efficiency and system reliability create the need of a quality perspective in the development and provision of technical services or service quality of a software or system services. In addition, Gareis, K., 2004; Cap Gemini Ernst & Young's., 2003 found that a quality model which allows the specification of quality of services' dimensions and the relations between them will have significant impact on the improvement of a system services and on the increase of clients' satisfaction.

Therefore, the delivery of system services or a technological system in a front office should be met to the preference requirement, needs and expectations of each user/business sector individually. Moreover, Anbazhagan & Nagarajan (2002) emphasized the availability dimension (whether the system is ready at once to user) follow, together with reliability (the cost of the system is capable of maintaining service quality) and security (confidentiality, non reputation, encrypting). For the moment anyway, the ICT/IT/IS management service is largely a one way for communication item that very related to perceived using system service by business organizations or schools... etc (Anbazhagan & Nagarajan 2002; Jansen & Ines 2004).

2.3.3. Perceived of Information Quality

According to Ferratt et al. (2006), identifying what information system should be included in career-oriented, labor-employment implementation was one of the most important factors that were highly associated with the success of an IS implementation projects. This factor should be matched with the schools', or company's essential business functions. Wang and Seidmann (1995) and Riggins et al. (1994) have defined that information system in organization exchanges provide efficient information sharing, improved co-organization, and the least risk. Garicano and Kaplan (2001) addressed that from peer-to-peer business operations the relationship success depended on the ability of technological system to reduce transaction costs, including both transforming costs and motivation costs.



Organizations to businesses or (B2B) exchanges minimized coordination costs by providing high information quality that enables partners to transfer activities affectively. Lower transactions costs make labor and employment markets more attractive than hierarchies (Malone 1987, Malone et al. 1987) and enable changes in labor using agencies size (Gurbaxani and Whang 1991). Other information system for organizations benefits include reduced system troubles, reduced inventory costs, and higher exchange information, services, and system quality (Malone et al. 1987, Bakos and Brynjolfsson 1993).

2.3.4. Perceived of System Quality

As far as Eric, Wang and Jesssica, a system can provide reliable and useful information and be maintained or operated without error will determine its further use and benefits. Without such a characteristic, an IS system may lose users' trust, resulting in less usage of and greater resistance to the system (Eric T.G. Wang and Jessica H.F. Chena., 2006). This research examines the effect of career-oriented and employment information system quality to attitude toward use of user. The elaborated models of this category point on the system characteristics. They deal with the probability that a service is available, with the degree it is capable of serving a request, whether it maintains the correctness of interaction, with the execution time, the degree it is capable of maintaining the service quality, the security of the system etc. It seems that the performance dimension related with the response and provision time is considered the most important one, since all the models of the category refer to it among the dimensions they propose for ensuring high quality of service. The availability dimension; whether the system is ready for immediate use follow, together with reliability the degree the system is capable of maintaining service quality and security confidentiality, non reputation, encrypting (Anbazhagan, M. and A. Nagarajan., 2002; Cardoso, J., Sheth, A., Miller, J., Arnold, J., Kochut, K. 2002; Sumra R. and D. Arulazi., 2003).



Chapter 3 Research Methodology

This chapter presents the methodological approaches used in this study to explore the user intention of IS applications in career Development, labor and employment environment. The empirical nature of the research is focused on a particular part which is users' intention of using career developing information system (CDIS) in a provincial high school, a case study information system applications support required careful consideration of the appropriateness of different sampling procedures, data collection and quantitative data analysis. The following sections provide hypotheses with an explanation and justification of the research design, the research methodology chosen, the instruments for data collection and finally the data analysis of the hypotheses. This section seeks to predict how users in an educational organization will react to apply CDIS from 10th to 12th classes of students for their career-oriented in future jobs after high school. This will be done through the following research steps.

3.1. Research Model

Research model is that a CDIS usage is determined by the beliefs that a user holds about the PU and PEU of the system.

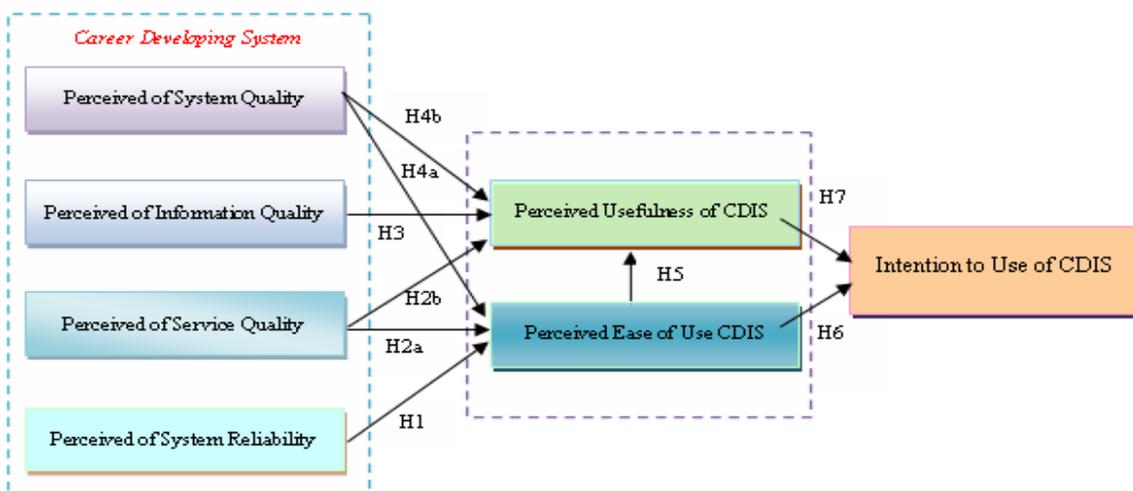


Figure 5. Research Model

3.2. Hypotheses



Knowledge, experience of IT/ICT in general and the awareness of information systems at Vietnam's enterprises and educations are not strong. Training schools and institutions primarily trained users and scientists but not yet have a clear view of technology applications and information systems in researches, trainings, and enterprises. In this study the author focus the external perceived affections on original perceived factors of TAM (PU and PEU) to develop inside owned factors that will be affected for the case study to make hypotheses surveying in his workplace.

3.3. Measurement of Variables

H1: Perceived of System Reliability will positively impact Perceived Ease of Use CDIS

H2a: Perceived of Service Quality will positively impact Perceived Ease of Use CDIS

H2b: Perceived of Service Quality will positively impact Perceived Usefulness of CDIS

H3: Perceived of Information Quality will positively impact Perceived Usefulness of CDIS

H4a: Perceived of System Quality will positively impact Perceived Ease of Use CDIS

H4b: Perceived of System Quality will positively impact Perceived Usefulness of CDIS

H5: Perceived Ease of Use will positively impact Perceived Usefulness of CDIS

H6: Perceived Ease of Use will positively impact Intention to Use of CDIS

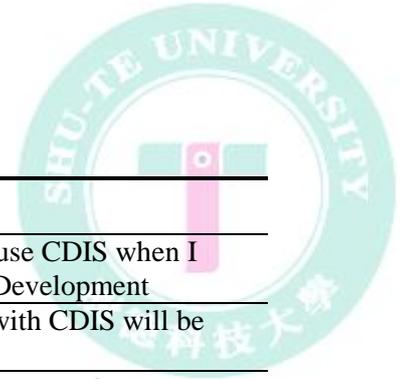
H7: Perceived Usefulness will positively impact Intention to Use of CDIS

Table 2. The Measurement of Variables

Construct	Items	Measures
Perceived of System Reliability (PSR) Source: Green et al. (2005), Amoako-Gyampah and Salam (2004), Calisir and Calisir (2004), Lu et al. (2005)	PSR1	I think that who use system have more prestige than those who not yet do
	PSR2	I believe that this system would act in my best interest
	PSR3	The software performs its role of providing the data exchange very well
	PSR4	The CDIS is believable in its dealings with my searching information
Perceived	PSeQ1	I am satisfied with the searching for personal information in CDIS application



Construct	Items	Measures
of Service Quality (PSeQ) Source: Srinivasan (1985), Calisir and Calisir (2004), Green et al. (2005), Amoako-Gyampah and Salam. (2004), Calisir and Calisir. (2004), Lu et al. (2005)	PSeQ2	I am satisfied with the quality of employment information generated from CDIS everyday
	PSeQ3	I am satisfied with the functions of searching tools for personal management information on CDIS application
	PSeQ4	CDIS application provides compatible with for different system: PC; LAN; Intranet.
Perceived of Information Quality (PIQ) Source: Srinivasan (1985), Calisir and Calisir. (2004), Green et al. (2005), Amoako-Gyampah and Salam. (2004), Calisir and Calisir (2004), Lu et al. (2005)	PIQ1	I think that the organization of information integrate into CDIS is important
	PIQ2	I think that the availability, valuables, and facility is need for a software
	PIQ3	I think that the software should be updated and uploaded timely when new information is inputting in the information system
	PIQ4	CDIS has provided good training software for different students
Perceived of System Quality (PSyQ) Source: Green et al. (2005), Amoako-Gyampah and Salam.(2004), Calisir and Calisir (2004), Lu et al. (2005)	PSyQ1	My interaction with CDIS is easy for me to understand
	PSyQ2	Learning to use CDIS can be easy for me
	PSyQ3	I think the connection time from internet to software database is quickly and safety
	PSyQ4	I think the interface in CDIS is favourite vision and friendly with user
Perceived Ease of Use (PEU) Source: Lu et al. (2005), Ngai et al. (2007), Amoako-Gyampah and Salam. (2004), Calisir and Calisir. (2004), Hubona and Burton-Jones (2003), Liawa and Huang (2003), Riemenschneider et al. (2003), Davis (1989)	PEU1	Using CDIS improves the quality of my searching information for jobs
	PEU2	I like the idea of building up CDIS application for career support professionally
	PEU3	I think that to use CDIS is a nation while and socialize the information era
	PEU4	I think that to use career information for students is highly benefit for social economy
Perceived Usefulness (PU) Source: Lu et al. (2005), Ngai et al. (2007), Amoako-Gyampah and Salam (2004), Calisir and Calisir (2004), Hubona and Burton-Jones (2003), Liawa and Huang (2003), Riemenschneider et al. (2003), Davis (1989)	PU1	I feel comfortable using any tool in CDIS on computer.
	PU2	I can easily use tasks for finding career information on CDIS
	PU3	I feel believable when using and comparing for job-oriented in this application
	PU4	I can find it CDIS is one of important tool for preparing to choose a future job
Intention to use (IU)	IU1	It is necessary to use a career information system in schools and business sectors



Construct	Items	Measures
Source: Davis et al. (1989), Amoako-Gyampah and Salam. (2004), Riemenschneider et al. (2003), Venkatesh and Davis. (2000)	IU2	I think that others intent to use CDIS when I access to computer to find Development
	IU3	I think that my interaction with CDIS will be possible in future career
	IU4	I think that the information system for career make job-oriented more effective and effectiveness
	IU5	I think that I will tell my friends to use this software for their career

3.4. Participants

Organization structure of collecting information is divided into levels as below:

- a) Responses are teachers, school staffs and managers

Table 3. Participants from Offices

No	School	Total	Female	Profession			Age			IT/ICT
				Teacher	Managers	Other	25	26-45	over 45	
1	Vinhphuc High school	25	17	21	2	2	9	16	0	2
2	Tamduong High school	26	15	23	3			24	2	1
3	Vinhphuc Technical High school	22	13	19	3		3	12	7	1
Total		73	45	63	8	2	12	52	9	4

- b) Responses are students



Table 4. Participants are Students

No	School	Total	Female	Age		Major			
				Under 19	19-25	Business	IT	Technician	Other
1	Vinhphuc High school	42	24	41	1	10			30
2	Tamduong High school	39	21	39		12	1		26
3	Vinhphuc Technical High school	38	21	37	1			40	
Total		119	66	117	2	22	1	40	56

Annually, the career-oriented supporters have not given jobs information and consultation to about millions high school student in Vietnam and 12 thousands among them in Vinh Phuc province. There was obviously, the career Development information systems must be developed for the need of labor market in Vietnam.

3.5. Data Collection

The survey instrument was designed based on the conceptual users' intention model proposed for this research. Each variable had at least three questions for reliability purposes. Most questions in the survey were primarily adapted from the relevant previous research related to IS model or acceptance model. All items were measured on a five-point Likert scale from "Strongly agree to Strongly disagree".

In order to measure each of the variables included in model developed for our study, we carried out a review of the literature that allowed researcher to identify items for each of the constructs. We finally included 29 items in the survey which were organized into seven categories. Six different categories as well: Perceived of system reliability (PSR), perceived of service quality (POSQ), perceived of information quality (PIQ), perceived of system quality (PSQ), perceived easy of use (PEU), perceived usefulness (PU) intention to use CDIS (ATU).

3.6. Research Method



To test the hypotheses of this study, software SPSS 17.0 package and Visual PLS is used for analyzing instrument. The statistical analysis methods adopted are as follows:

3.6.1. Descriptive Statistics

Use SPSS for the detail description of the respondents' personal data, such as gender, age, nationality, Internet surfing experience, and so on will be analyzed. Every construct of the data will be analyzed in percentage, frequency distribution in order to know the sample distribution.

3.6.2. Partial Least Squares (PLS)

PLS and techniques were used to find out the answers for all research questions. Partial Least Squares (PLS), has been applied to test hypotheses. The basic PLS design (Wold, 1975, 1980, 1982) allows the defining of models where relationships are found among unobservable theoretical constructs (Chin, 1998; Falk and Miller, 1992).

Initially, The PLS technique allows us to attain measures about the internal consistency, convergent validity and discriminate validity of the research model (Wixon and Watson, 2001; Barclay, Higgins and Thompson, 1995). A combination of convergent validity and discriminate validity was used for measurement model assessment.

After validation of the measurement model was completed, the structural model with latent variables was used to assess the TAM model in the relationship with testing the relevant hypotheses. Constructs defined in PLS models have relationships with a group of observable variables, which facilitate the testing of theoretical constructs.

Finally, hierarchical multiple regression tests were employed to explore the influence of external variables on the dependent variables (intention and use of ICT). PLS is a components-based Structural Equation Modeling (SEM) technique that has the ability to model latent constructs under conditions of non-normality and small to medium sample data sets (Chin, 1998). PLS copes well with common



research issues such as missing values and the presence of multi-co-linearity (Chin, 1998; Gefen, Straub,& Boudreau, 2000). PLS was developed in the late 1970's by Wold (1975). The PLS method is designed to maximize prediction rather than fit.

There are many statistical software built relying on PLS technique, and Visual PLS is one of such ones. It is a Graphic-User-Interface program for Latent Variables Path Analysis with Partial Least Squares Version 1.8. It is developed by Dr. Jen-Ruei Fu, an Association Professor of National Kaohsiung University of Applied Sciences (Taiwan), the PLS method of structural equation modeling With latent variable.

3.6.3. Measurement Model

The measurement model consists of the relationships between the observed variables and the latent constructs which they measure. The characteristics of this model demonstrate the construct validity of the research instruments, i.e. the extent to which the performing of a construct actually measures what it Indicates to measure.

Two important dimensions of construct validity are (a) convergent validity, including reliability, and (b) discriminant validity.

3.6.4. Convergent validity

Convergent validity is the degree to which multiple attempts to measure the same concept is in agreement.

The notion is that two or more measures of the same thing should correlate highly if they are valid measures of the concept.

A number of criteria are used to assess convergent validity. When the conditions set by these criteria are met, it can be deduced that the items in question are converging on the same latent constructs. The criteria listed in Table 5 were used to assess convergent validity in VisualPLS.

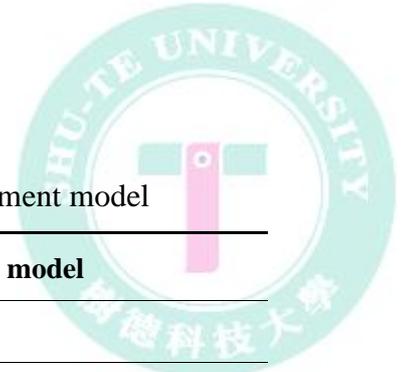


Table 5. Measures of convergent validity of the measurement model

Evaluation criteria	Validity of the measurement model
Item loadings	> 0.70 (Hulland, 1999)
Internal composite reliability (ICR)	> 0.70 (Hair, Anderson, Tatham, & Black, 1998)
Average variance extracted (AVE)	> 0.50 (Hair, Anderson, Tatham, & Black, 1998)
Cronbach alpha coefficient	> 0.70 (Nunnally, 1978)
t-values on outer loadings	> 1.96 (Gefen & Straub, 2005)

The first criterion was an assessment of the outer model loadings of the indicators. The outer model loadings were tested against a pre-determined condition that each indicator must show an outer loading greater than 0.7 (Gefen & Straub, 2005). The second criterion was based on an assessment of the ICR, which tests the internal consistency of the measurement model ICR values of greater than 0.7 were expected in this analysis.

The third criterion used was the AVE. The AVE, proposed by Fornell and Larcker (1981), is used as a measure of the shared or common variance in a latent variable. In different terms, AVE is a measure of the error-free variance of a set of items (Fornell & Larcker, 1981).

The fourth criteria was Cronbach's alpha, which is a commonly used measure of the inter-correlation among items in a group indicating the extent to which the group can be seen as measuring a single latent variable. Values range between 0 and 1.0, with higher values indicating higher reliability of the measure.

Cronbach has been included in the analysis only for comparison. In PLS, ICR is used instead of Cronbach's alpha.

The fifth criterion was the assessment of t-values outer loadings. Convergent validity is shown when each of the measurement items loads with a significant t-value on its latent construct (Hair, Anderson, Tatham, & Black., 1998). Typically,



the p-value of the t-value should be significant at least at the 0.05 level, this equates to a t-value of at least 1.96 (Gefen & Straub, 2005).

3.6.5. Discriminate validity

Discriminate validity is the degree to which measures of different concepts are distinct. The thought is that if two or more concepts are unique, then valid measures of each should not correlate too highly. In PLS, discriminant validity is tested by comparing AVE and inter-construct correlation. To assess discriminant validity, the following two procedures were used, as proposed by (Hayes, R., Pisano, G., Upton, D. and Wheelwright S., 2005).

- A comparison of item cross loadings to construct correlations; and
- An examination of the ratio of the square root of the AVE of each construct to the correlations of this construct with all the other constructs.

In the first procedure, the indicators must load more strongly on their corresponding construct than on any other constructs in the model. In the second procedure, the PLS standard is that each latent variable correlation should be lower than the square root of the AVEs of the two variables correlated (Hayes, R., Pisano, G., Upton, D. and Wheelwright S., 2005). If these conditions are met then the measurement model meets the requirements of discriminant validity.



Chapter 4 Analysis and Results

The purposes of research data analysis in this chapter are to test and present the results of (1) the descriptive analysis associated with demographic data, (2) test Measurement Model, (3) test Structural Model Evaluation, (4) and at the end of chapter 4 the author will have discussions about the result of thesis.

4.1. Sample Description

In the first stage of the analysis, the demographic details of respondents (age, gender, position and specialty) were tested. This was done with an aim to eliminate demographic influence on the constructs in question.

Table 6. Characteristics of Sample Demographics

Measure	Item	Frequency	Percentage (%)
Gender	Male	81	42.2
	Female	111	57.8
Age	Under 26	131	68.2
	From 26 to 45	52	27.1
	Over 45	9	4.7
Position	Student	119	62.0
	Teacher/staff	63	33.0
	Manager	8	4.0
	Others	2	1.0
Majors of the University / College	Business	22	11.0
	Information Technology /ICT	5	3.0
	Engineer	12	6.0
	Others	153	80.0

The survey yielded 211 responses, among them, 192 were complete and valid. The personal characteristics of sample are detailed in Table 6 and they indicate that the sample is representative of people in the field of information system for career and employment development in Vietnam.



There is 57.8 % of female and 42.2 % of male. This appropriate with statistics of Living Standards Survey of households in 2006 General Department of Vietnam Statistics (released 2008) with the rate of female participation in science and technology now accounts for 35%, women with university degree is 31%, The rate of female students in colleges and universities, studied computer up 32.4%. In Information communication technology field, male are still predominant (accounts for 67.5% in the research), but special in Vietnam, the rate of female who interested in career and employment Development is developing rapidly these years and count for this research.

Moreover, the percentage of the respondents for age between under 26, 26-45, over 45, are 68.2 %, 27.1 %, 4.7 %, respectively, so most of the respondents in this study are at young age. The rate age of respondents from 19 to 25 is 68.2 %, they are young people who are best interested in career-employment development term. The rate roughly equal with people whose age is under 30. With constitute over 100 responds in the research shows the workforce in employment development at high schools of Vinh Phuc have stability in order to ensure successful CDIS implementation in Vietnam in the near future. This is very positive CDIS level for Vietnam workforce as well as governance and vocational schools. The optimistic signal enable them invest bigger project for Career Development and change of success is very high because they are ensured by strong labor market demanding.

In the survey, 33% of them are staffs and management who apply CDIS, 62% are students/employee, 4% are manager and only 1% responses are others from provincial level. Total of people of high position are 73 (38.02)%, this is high rate in survey participants. These mean implementing success CDIS development in Vietnam attracted many intention of youngers, who play a role of employment in enterprises and organizations. According to Paul Osterman (1984) information system development for career and employment management are large and complex integrated MIS packages for labor markets management, it integrates most of process in labor force management. In order to operate it completely, this require user must have full aware of technology,



labor-employment management, IS management, business administration such as human resource, accountancy, finance... etc.

4.2. Measurement Model

Figure 6 shows the measurement model that was used for the calculations. Based on the criteria discussed in chapter 3, the tests of the measurement model were carried out as follows:

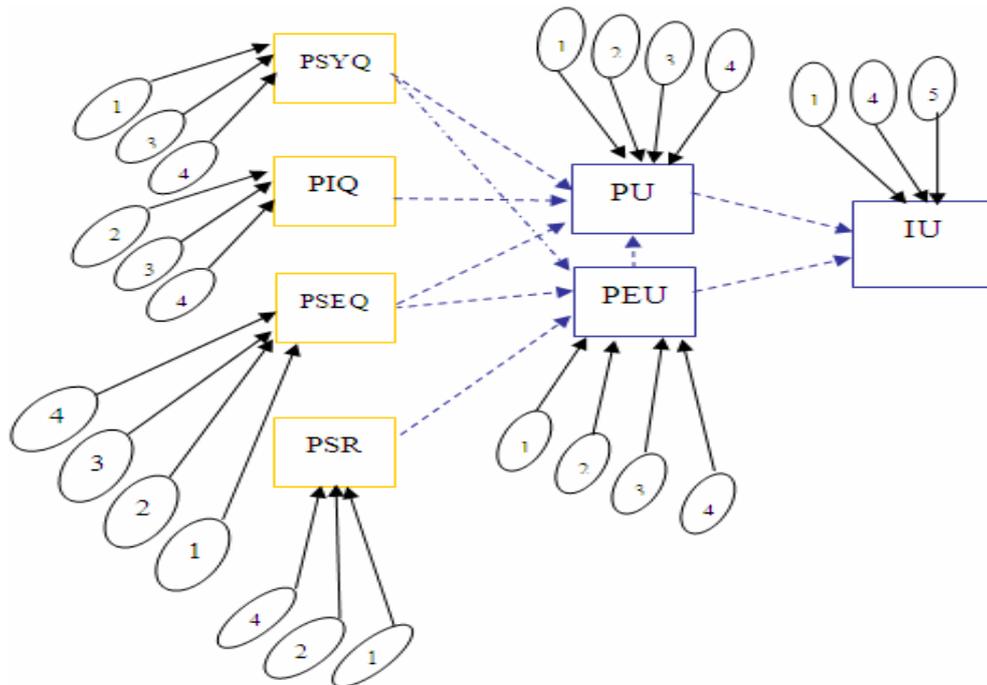


Figure 6. Measurement Model Testing

4.2.1. Convergent Validity

As described in section 3.6, convergent validity would be assessed in the five following ways.

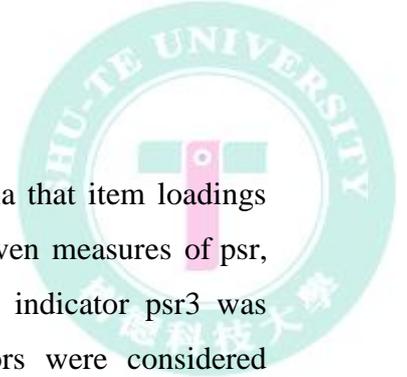
This first criterion was an assessment of outer model loadings of the indicators. Table 7 shows the output results obtained for the loadings in relation to the latent variables.



Table 7 Initial values of item loadings

Construct	Indicator	Loading
PSR	PSR1	0.78160
	PSR2	0.76500
	PSR4	0.79610
PSeQ	PSeQ1	0.75820
	PSeQ2	0.71990
	PSeQ3	0.70460
	PSeQ4	0.72620
PIQ	PIQ2	0.80290
	PIQ3	0.72080
	PIQ4	0.71580
	PSyQ1	0.77150
PSyQ	PSyQ3	0.74270
	PSyQ4	0.75180
	PEU1	0.71640
PEU	PEU2	0.72230
	PEU3	0.75570
	PEU4	0.78190
	PU	PU1
PU2		0.70550
PU3		0.77520
PU4		0.71510
IU	IU1	0.76680
	IU4	0.79400
	IU5	0.80420

From the above table, the results of the outer model loadings of the indicators for each latent variable are stated according to section 3.6 the factor loadings for the total set of items used in this study are summarized in Table 7 as Hulland (1999), Sharma (1987), and Carmines and Zeller (1979) suggested that that an item is significant if its factor loading is greater than 0.7 to ensure construct validity. Therefore:



Perceived of system reliability (psr): Based on the criteria that item loadings greater than 0.70 are generally considered acceptable, all seven measures of psr, exception the indicator psr3 was below 0.7. Therefore, the indicator psr3 was dropped from the final model and all the other indicators were considered acceptable to measure the construct.

Perceived of service quality (pseq): Analysis of perceived ease of use (peu) and perceived usefulness (pu) shows that item pseq 1, pseq 2, pseq 3, pseq 4, have loadings greater than 0.70. Therefore, all the indicators were considered acceptable to measure the construct.

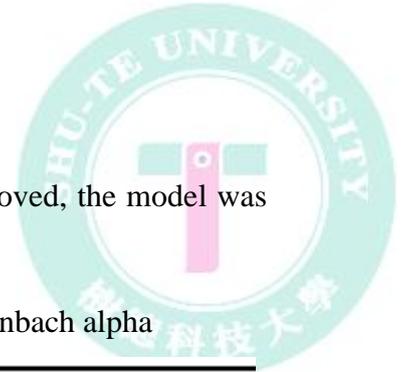
Perceived of information quality (piq): Analysis of perceived usefulness shows that item piq2, piq3, piq4 have loadings greater than 0.70. The indicator piq1 was below 0.7. Therefore, the indicator piq1 was dropped from the final model and all the other indicators were considered acceptable to measure the construct.

Perceived of system quality (psyq): All item loadings of system quality were above 0.70, exception the indicator (psyq2) was below 0.7 according to Hulland (1999) defined adherence to this criterion required the modification of only a scale (perceived of system quality). So the indicator (psyq2) was dropped from the final model and all the other indicators were considered acceptable to measure the construct.

Perceived ease of use (peu): All of four item loadings of perceived ease to use were above 0.70. So, all the indicators were considered acceptable to measure the construct.

Perceived usefulness of system (pu): All of four item loadings of perceived usefulness of system were above 0.70. So, all the indicators were considered acceptable to measure the construct.

Intention to use system (iu): All two of four items loadings of intention to use system were above 0.70 exception the indicator (iu2), (iu3) were below 0.70 (Hulland, 1999) this criterion required the modification of two scales, invalid items. So the indicators (iu2), (iu3) were dropped from the final model. So, all the indicators were considered acceptable to measure the construct.



All the items that did not load satisfactorily had been removed, the model was rerun (Table 8).

Table 8. Values of Composite Reliability, AVE, and Cronbach alpha

Construct	Composite Reliability	AVE	Cronbach Alpha
PSR	0.824278	0.609987	0.680477
PSeQ	0.817967	0.529231	0.704328
PIQ	0.791221	0.558862	0.606811
PSyQ	0.799463	0.570669	0.624058
PEU	0.832478	0.554350	0.732602
PU	0.827527	0.545729	0.721000
IU	0.831320	0.621707	0.695822

Table 8 shows the values obtained from the final run. The results obtained provide evidence of the first criterion for convergent validity (all outer loadings were above the recommended value of 0.7. This demonstrates that the items in the questions are related to the construct they are intended to measure and are therefore accepted as showing evidence of convergence on the construct they are measuring.

This criterion for convergent validity was based on an assessment of the ICR, which tests the internal consistency of the measurement model.

The results, as presented in Table 8 the second column, indicate that all values of ICR exceeded the accepted level of 0.7 therefore demonstrating the internal consistency of the measurement model as Fornell and Larcker, 1981 implied that interpreted like a cronbach's alpha for internal consistency reliability estimate, a composite reliability of .70 or greater is considered acceptable.

The third criterion assessed was the AVE, as Barclay, Higgins and, Thompson (1995) defined the average variance extracted (AVE) measures the variance captured by the indicators relative to measurement error, and it should be greater than 0.5 to justify using a construct. So that can be seen from the Table 8, all



values of AVE were greater than 0.5 therefore show evidence of common variance in the constructs.

As Cronbach (1987) has urged, “further investigation of statistical power in studies of interaction and invention of more sensitive research strategies are much to be desired.” Using simulated data, we were able to provide an initial sense as to the efficiency and effectiveness of this approach. In general, assuming the true average loading is 0.70. The above table 8 last column shows the values of all Cronbach's alpha. As evident from this table, all of the values of Cronbach showed a value above the threshold point of 0.7. It means that the building the five and two subs equal 7 averaging constructs from the 24 of 29 original items is acceptable - in other words, the items in each group could be seen as measuring the same construct.

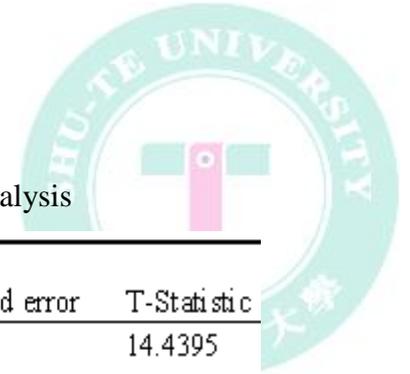


Table 9. Outer loadings derived from bootstrap analysis

Construct	Intems	Entire Sample estimate	Mean of Subsamples	Standard error	T-Statistic
PSR	PSR1	0.7816	0.7802	0.0541	14.4395
	PSR2	0.7650	0.7569	0.0599	12.7794
	PSR4	0.7961	0.7941	0.0538	14.7936
PSeQ	PSeQ1	0.7582	0.7658	0.0403	18.8043
	PSeQ2	0.7199	0.7116	0.0573	12.5590
	PSeQ3	0.7046	0.7043	0.0510	13.8236
	PSeQ4	0.7262	0.7368	0.0438	16.5962
PIQ	PIQ2	0.8029	0.8013	0.0298	26.9117
	PIQ3	0.7208	0.7188	0.0466	15.4516
	PIQ4	0.7158	0.7183	0.0475	15.0850
PSyQ	PSyQ1	0.7715	0.7700	0.0326	23.6312
	PSyQ3	0.7427	0.7369	0.0424	17.5272
	PSyQ4	0.7518	0.7499	0.0352	21.3866
PEU	PEU1	0.7164	0.7152	0.0447	16.0400
	PEU2	0.7223	0.7287	0.0310	23.2837
	PEU3	0.7557	0.7594	0.0360	20.9990
	PEU4	0.7819	0.7799	0.0340	23.0237
PU	PU1	0.7569	0.7607	0.0380	19.8992
	PU2	0.7055	0.6972	0.0452	15.5937
	PU3	0.7752	0.7821	0.0365	21.2429
	PU4	0.7151	0.7225	0.0455	15.7100
IU	IU1	0.7668	0.7676	0.0399	19.2033
	IU4	0.7940	0.7964	0.0278	28.5498
	IU5	0.8042	0.8062	0.0282	28.5218

Following Gefen and Straub (2005) convergent validity of the variables is evaluated by examining the t-values of the outer model loadings. A t-value greater than 1.96 indicates that the particular indicator is explained by the linear regression of its variable and its measurement error. Discriminate validity is the degree to which any single construct is different from the other constructs in the model. In Visual PLS, the t-values were obtained using the bootstrap method. Table 9 shows that the t-values for the outer model loadings are all above 1.96 and therefore significant. In summary, the analysis of the five criteria showed that the



constructs demonstrated evidence of convergent validity thereby indicating that the items in each group were converging on the same latent construct. This section completes the assessment of the first category of construct validity.

4.2.2. Discriminant Validity.

As Compeau, Higgins and Huff, 1999 discussed the discriminant validity of the measures (the degree to which items differentiate among constructs or measure distinct concepts) was assessed by examining the correlations between the measures of potentially overlapping constructs. Items should load more strongly on their own constructs in the model, and the average variance shared between each construct and its measures should be greater than the variance shared between the construct and other constructs (Barclay, Thompson and Higgins, 1995; Compeau, Higgins and Huff, 1999). And a discussion in Section 3.6 chapter 3, two procedures was used to assess discriminant validity. The first procedure for testing discriminant validity was to assess the indicator loadings on their corresponding construct.

A look at the cross loadings of the final run in Table 10 shows that the loadings (Bold) are larger than the other values in the same rows. This shows that the loadings are higher than the cross loadings. All the item loadings in the final run met the requirements of the first procedure in the assessment of discriminant validity, according to Fornell and Larcker (1981) measure of discriminant validity, which is Bold values are supposed to be greater than those in corresponding rows and columns.

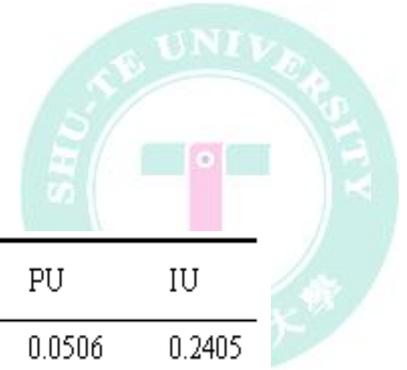


Table 10. Cross loadings

Scale Items	PSR	PSeQ	PIQ	PSyQ	PEU	PU	IU
PSR1	0.7816	0.1479	0.1947	0.1693	0.2759	0.0506	0.2405
PSR2	0.7650	0.1237	0.2543	0.2151	0.2611	0.1658	0.2385
PSR4	0.7961	0.1784	0.2162	0.1853	0.2572	0.1627	0.2420
PSeQ1	0.1662	0.7582	0.3692	0.3790	0.4395	0.3067	0.3298
PSeQ2	0.1336	0.7199	0.3149	0.3939	0.3073	0.3091	0.3683
PSeQ3	0.0494	0.7046	0.2380	0.3564	0.2419	0.2934	0.2588
PSeQ4	0.1958	0.7262	0.3054	0.3256	0.3659	0.1881	0.2900
PIQ2	0.2305	0.2445	0.8029	0.3674	0.4208	0.4510	0.4358
PIQ3	0.1580	0.4321	0.7208	0.3128	0.3994	0.4111	0.4681
PIQ4	0.2540	0.2907	0.7158	0.3414	0.3385	0.3443	0.3306
PSyQ1	0.2264	0.3529	0.2808	0.7715	0.3932	0.4930	0.4271
PSyQ3	0.2008	0.3749	0.3992	0.7427	0.3405	0.4724	0.4347
PSyQ4	0.1202	0.4095	0.3570	0.7518	0.3493	0.4731	0.4124
PEU1	0.2902	0.3421	0.4538	0.3610	0.7165	0.3969	0.5231
PEU2	0.2416	0.3076	0.3837	0.3196	0.7223	0.2979	0.4188
PEU3	0.1637	0.3260	0.3079	0.3722	0.7557	0.2680	0.4634
PEU4	0.2990	0.4291	0.3900	0.3690	0.7819	0.3392	0.5165
PU1	0.1249	0.2770	0.4514	0.5596	0.3344	0.7570	0.4746
PU2	0.1278	0.3607	0.4205	0.4447	0.3316	0.7055	0.4241
PU3	0.1291	0.2827	0.3759	0.4871	0.3549	0.7752	0.4074
PU4	0.0809	0.1786	0.3341	0.3425	0.2747	0.7151	0.2911
IU1	0.2288	0.3754	0.4180	0.3772	0.5269	0.3868	0.7668
IU4	0.2927	0.3504	0.4906	0.4857	0.5101	0.4724	0.7940
IU5	0.2048	0.2955	0.4038	0.4641	0.5019	0.4466	0.8042

As Fornell and Larcker, 1981; Barclay et al., 1995; and Chin, 1998 defined Square root of the (AVE) by a construct from its indicators should be at least .707; AVE > 0.5 means that 50% or more variance of the indicators is accounted for each of the construct's AVE should be larger than the construct's correlation with other constructs (Fornell and Larcker, 1981). The second procedure assessed AVE and the associated correlations. Table 11 shows that the square root of the AVE for perceived of service quality (0.727) is larger than the correlation of perceived of



system reliability of technology (0.192) and perceived service quality (0.529). Similarly, for the construct of other items, the square root of the AVE is compared than its correlations with other items in the column to last item. So the results of both procedures in the final run therefore show evidence of discriminant validity.

Table 11. Correlation of Constructs and Other Statistics

	AVE	$\sqrt{\text{AVE}}$	PSR	PSeQ	PIQ	PSyQ	PEU	PU	IU
PSR	0.609987	0.781017	1.000						
PSeQ	0.529231	0.727483	0.192	1.000					
PIQ	0.558862	0.747571	0.283	0.429	1.000				
PSyQ	0.570669	0.755426	0.243	0.501	0.455	1.000			
PEU	0.554350	0.744547	0.339	0.476	0.520	0.479	1.000		
PU	0.545729	0.738735	0.160	0.380	0.543	0.635	0.442	1.000	
IU	0.621707	0.788484	0.308	0.432	0.556	0.562	0.650	0.553	1.000

In conclusion, the statistical results indicated that the test of the measurement model including convergent and discriminant validity measures was satisfactory.

4.3. Structural model evaluation

Table 12. Evaluation and influences of direct factors

Hypothesis	Path coefficients	Mean of Subsamples	Standard error	T-Statistic
	B			
H1 PSR => PEU	0.2150	0.2267	0.0569	3.7756
H2a PSeQ => PEU	0.2950	0.3058	0.0588	5.0148
H2b PSeQ => PU	-0.0190	-0.0537	0.0423	-0.4493
H3 PIQ => PU	0.2990	0.3081	0.0724	4.1278
H4a PSyQ => PEU	0.2790	0.2790	0.0672	4.1496
H4b PSyQ => PU	0.4760	0.4885	0.0626	7.6009
H5 PEU => PU	0.0680	0.0766	0.0550	1.2359
H6 PEU => IU	0.5050	0.5169	0.0552	9.1531
H7 PU => IU	0.3300	0.3341	0.0577	5.7228



After validation of the measurement model was completed, the structural model was assessed.

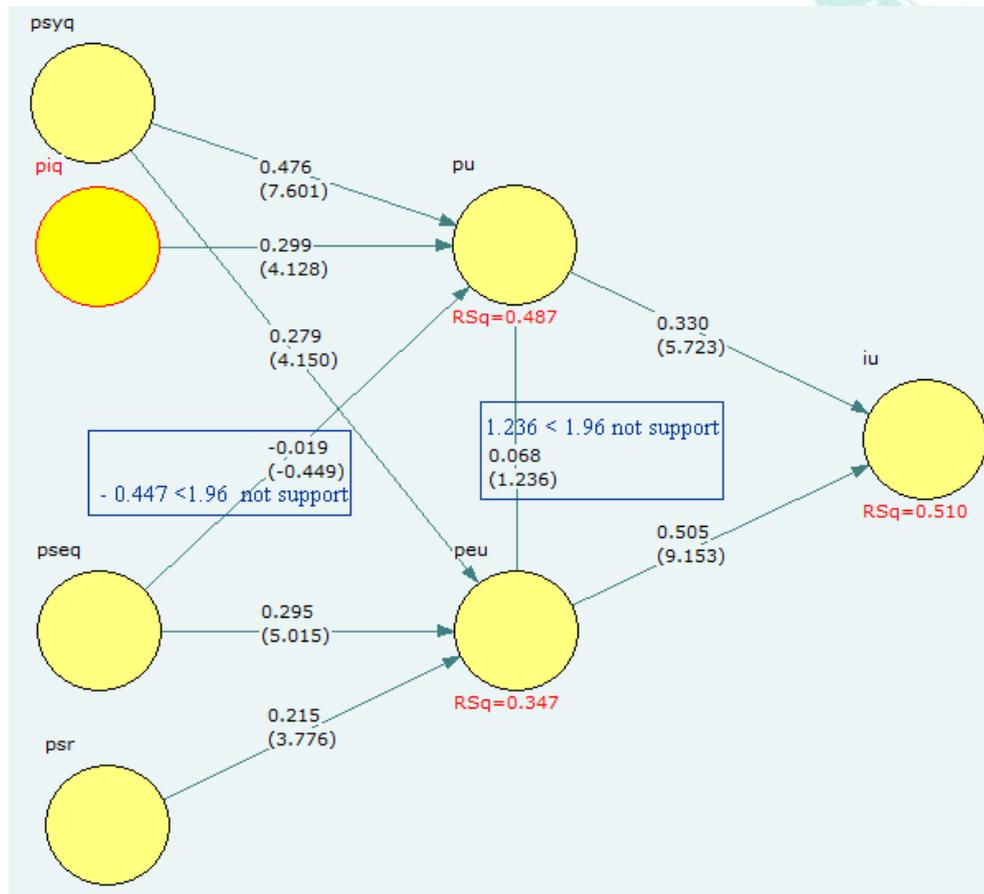


Figure 7. Model Showing Hypotheses to Be Tested

4.3.1. Variance Explained

As described in Section 3.6 and (Fornell and Larcker, 1981) addressed that structural model in PLS is assessed by examining the path coefficients (standardized betas). T-statistics are also calculated to assess the significance of these path coefficients. In addition, R^2 is used as an indicator of the overall predictive strength of the model. Therefore, the ability to explain variance in the constructs of interest was one of the criteria for evaluating the model. From the structural model in Figure 7, it can be seen that the R^2 values showed acceptable results, some event very strong. We can see that percent number of the variance in intention to use (iu) is explained by perceived ease of use (peu) and perceived usefulness (pu). Also can be



seen the result of variance in (peu) and (pu) is explained by system reliability, service quality, information quality, and system quality.

4.3.2. Assessment of path coefficients

Following Chin (1998) defined for the structural model, path coefficients are interpreted as regression coefficients with the t-statistic calculated using bootstrapping, a nonparametric technique for estimating the precision of the PLS estimates. To determine how well the model fits the hypothesized relationship PLS calculates an R^2 for each dependent construct in the model. R^2 represents the proportion of variance in the endogenous constructs which can be explained by the antecedents (Fomell and Larcker, 1981; Chin, 1998). Table 12 in the second column shows the results of the calculations for significance of path coefficients. The significance of the path coefficients were determined using t-statistics calculated using the bootstrap technique. From hypotheses H1 to H7 were tested by assessing the significance of the path coefficients, B for paths between the respective latent variables in structural model specified for the seven latent variables in model research (refer to Figure 5). The values of the path coefficients B indicate the strength of relationships between latent variables. The results of the hypotheses tests are presented in Table 12. As can be seen from this table all of the paths were significant at the $p < 0.05$ level.

4.3.3. Hypotheses Results

As can be seen from the T-values in Table 12, all significant values were found. The results of the PLS structural model tests for each of the hypothesis are stated below.

- Findings related to Hypothesis 1. The Perceived of System Reliability has a positive effect on Perceived Ease of using CDIS. System Reliability demonstrated a significant positive influence on Perceived Ease of use ($B = 0.2150$, $t\text{-value} = 3.7756$). Therefore, this hypothesis was *supported*.
- Findings related to Hypothesis 2a. Perceived of Service Quality has a positive effect on Perceived Ease using CDIS. The Service Quality demonstrated a significant positive influence on Perceived Ease using ($B = 0.2950$, $t\text{-value} = 5.0148$). Therefore, this hypothesis was *supported*.



- Findings related to Hypothesis 2b. Perceived of Service Quality has a positive effect on Perceived Usefulness of CDIS. Service Quality demonstrated a significant positive influence on Perceived Usefulness ($B = -0.0190$, $t\text{-value} = -0.4493$). Therefore, this hypothesis was *ejected*.

- Findings related to Hypothesis 3. Perceived of Information Quality has a positive effect on Perceived Usefulness of CDIS. Information Quality demonstrated a significant positive influence on Perceived Usefulness ($B = 0.2990$, $t\text{-value} = 4.1278$). Therefore, this hypothesis was *supported*.

- Findings related to Hypothesis 4a. Perceived of System Quality has a positive effect on Perceived Ease of Use CDIS. System Quality demonstrated a significant positive influence on Perceived Ease of Use ($B = 0.2790$, $t\text{-value} = 4.1496$). Therefore, this hypothesis was *supported*.

- Findings related to Hypothesis 4b. Perceived of System Quality has a positive effect on Perceived Usefulness of CDIS. System Quality demonstrated a significant positive influence on Perceived Usefulness ($B = 0.4760$, $t\text{-value} = 7.6009$). Therefore, this hypothesis was *supported*.

- Findings related to Hypothesis 5. Perceived Ease of Use has a positive effect on Perceived Usefulness of CDIS. Perceived Ease demonstrated a significant negative influence on Perceived Usefulness ($B = 0.0680$, $t\text{-value} = 1.2359$). Therefore, this hypothesis was *ejected*.

- Findings related to Hypothesis 6. Perceived Ease of Use has a positive effect on Intention to Use of CDIS. Perceived Ease demonstrated a significant positive influence on Intention to Use ($B = 0.5050$, $t\text{-value} = 9.1531$). Therefore, this hypothesis was *supported*.

- Findings related to Hypothesis 7. Perceived Usefulness has a positive effect on Intention to Use of CDIS. Perceived Usefulness demonstrated a significant positive influence on Intention to Use ($B = 0.3300$, $t\text{-value} = 5.7228$). Therefore, this hypothesis was *supported*.



Chapter 5 Conclusions

5.1. Finding and Contribution

With the aim of identify the main factors in the implementation of Career Development Information System (CDIS) success in Vietnam. And the research typed namely “*Study on Evaluation User Intention for Career development Information System in Vinhphuc High Schools, Vietnam*”.

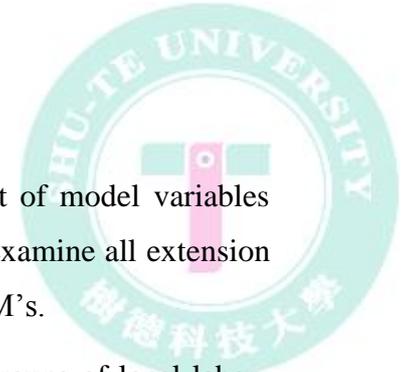
With the aim, research is use A Revised IS Success Model and TAM to identify what factors affect CDIS success in Vietnam, and the factors include from ‘system quality’, ‘information quality’, ‘service quality’, and ‘system reliability’ to perceived ease and usefulness of use a system and those influence the ‘intention to use’.

The optimistic signal enable them to widely using a Career Development system in Vietnam and the finding that perceived of system quality and service quality are key factors in determining the success of perceived ease and perceived usefulness of a system to intention to use for ending user computing (EUC) activities in organizations as Gururajin and Dieter (2004) addressed in their research previously.

In conclusion, the current study provides evidence that the factors (system quality, service quality and perceived ease of using CDIS) can be used to predict strongly intention to use, and that can be explained by intention to use adequately. The subject is a reference for institutions, organizations, business sectors and researchers on the benefit of using career development system in Vietnam for employment managerial and taking a role of the internal and external global labor market system.

5.2. Limitation

This study has several limitations. With a limited any sample size. Therefore, the results may not be generalized-able to most of schools or organizations in Vietnam. Second, the survey was sent to many groups that are not fulfillment or available to read and stick in the samples, except from the departments and staffs of the schools, where some users consider this survey as unsolicited.



In this paper, the use of questionnaires for the measurement of model variables may have introduced common-method variance. We also did not examine all extension elements applying in IS Success Model and addition factors of TAM's.

For the Career system success, the data were sent to many groups of local labor-employment offices, but the people who responded are very busy. Therefore, they did not have enough time to answer most of questionnaire, so the samples were sent to other offices to collect the result. It took much time.

The paucity researches about career development and employment management in Vietnam that could be used as a baseline for reference are very small.

A Final limitation of this study is the lack of definitive guidelines on the issue of power and affect size as related to Visual PLS or PLS method. Although best practice guidelines recommend that power and effect sizes be calculated as part of a PLS analysis (e.g. Gefen et al. 2000; Chin, 2010), scant practical guidelines are available in the PLS context to guide researchers in this area.

5.3. Future

According to the limitations of this study, there are many opportunities for further research. The research with a large sample size should be conducted. A large size of sample will allow the more accuracy of the research results and perhaps more variety. Future researches should strive to empirically investigate these issues in order to better clarify the roles of factors in the research model.

In addition, the suggestions for further research in the area of career-oriented and employment system regarding the higher education context, should concentrate more on moderators including gender, age, education, academic position, experience, universities of management, and human resources management.



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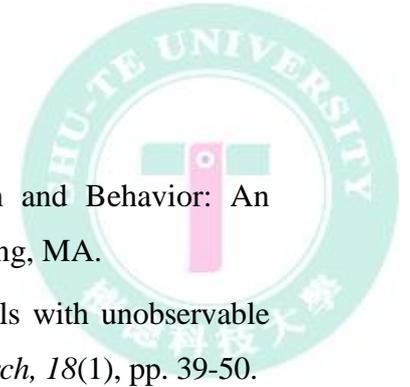
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Legal basis

Decision No. 305/2005/QĐ-TTg dated 24/11/2005 by the Prime Minister on the promulgation of the national indicators system which regulates that General Statistics Office and Ministry of Labour, Invalids and Social Affairs is responsible for collecting and gathering all the national labour-employment statistics indicators on quarterly, bi-annual and annual basis.

Decision No. 12/2006/QĐ-BLĐTB&XH dated 25/12/2006 by the Ministry of Labour, Invalids and Social Affairs on the promulgation of the statistics indicator system in the fields of labour, revolutionary credited people and social affairs, in which the labour-employment indicators and unemployment indicators will be collected and published quarterly, bi-annual and annual basis.



Decree No. 16/2004/NĐ-CP dated 07/02/2005 by the Government on the promulgation of the investment and construction regulations.

Decree No. 43/2006/NĐ-CP dated 25/04/2006 stipulating the autonomy and self-responsibility for duties execution, organizational structure, personnel and finance of public non-productive units.

Decision No. 678/QĐ-LĐTBXH dated 21/5/2007 by the Minister of Labour, Invalids and Social Affairs on the investment and construction of the national labour and employment database.



Appendix 1 English Questionnaire

University Shute - Taiwan
University of Education – VNU, Vietnam



A Study on Evaluation of User Intention for Career Development Information System in Vinhphuc High Schools, Vietnam

Dear Colleagues,

I am Tran Dung Long, a 2nd-year graduate student Management Information System (MIS) at the University of Education - VNU and the University Shute - Taiwan. I am now doing research type "*A Study on Evaluation of User Intention for Career Development Information System in Vinhphuc High Schools, Vietnam*"

For further information, please feel free to contact me via my email address: trandunglong@gmail.com

Thank you very much for your attention and help!

Best regards,

Student:

Tran Dung Long

2nd- year graduate student,

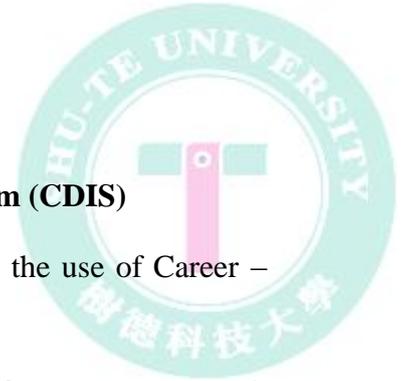
Graduate Department of
Information Management, Shu-Te
University, Taiwan and University of
Education, VNU

Advisers:

Chen-Kuo Yu Ph.D

Ton Quang Cuong Ph.D

Professor, Graduate Department of
Management, Shu-Te University, TW
and University of Education, VNU

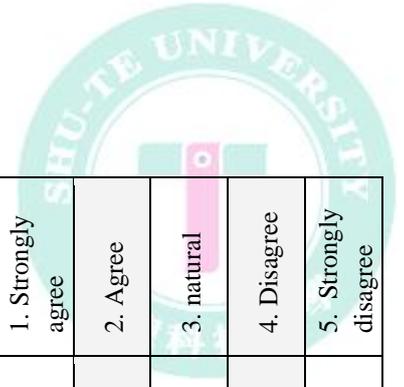


PART II: ABOUT Career Development Information System (CDIS)

This section includes items concerning your intention toward the use of Career – Oriented Development System for users using an usefull system.

Please *circle* the numbers corresponding with your degree of agreement to each item with the denoted scale: “1” = Strongly agree; “2”= Agree; “3”= Neutral; “4”= Disagree; “5”= Strongly disagree;

<i>Perceived of System Reliability (psr)</i>	1. Strongly agree	2. Agree	3. natural	4. Disagree	5. Strongly disagree
1: I think that who use system have more prestige than those who not yet do					
2: I believe that this system would act in my best interest					
3: The software performs its role of providing the data exchange very well					
4: The CDIS is truthful in its dealings with my searching information					
<i>Perceived of Service Quality (pseq)</i>					
5: I am satisfied with the searching for personal information in CDIS application					
6: I am satisfied with the quality of employment information generated from CDIS everyday					
7: I am satisfied with the functions of searching tools for personal management information on CDIS application					
8: CDIS application provides compatible with for different system: PC; LAN; Intranet.					
<i>Perceived of Information Quality (piq)</i>					
9: Local government support is interested in OBLs					
10: Local government support understands the importance of OBLs					
11: Local government support for the OBLs					
12: Local government support is likely to consider the OBLs as an important strategy					



<i>Perceived of System Quality (psyq)</i>	1. Strongly agree	2. Agree	3. natural	4. Disagree	5. Strongly disagree
13: The interaction with CDIS is easy for me to understand					
14: Learning to use CDIS can be easy for me					
15: I think the connection time from internet to software database is quickly and safety					
16: I think the interface in CDIS is favorite vision and friendly with user					
<i>Perceived Ease of Use (peu)</i>					
17: Using CDIS improves the quality of my searching information for jobs					
18: I like the idea of building up CDIS application for career support professionally					
19: I think that to use CDIS is a nation while and socialize the information era					
20: I think that the using CDIS can help users to find useful and relevant information					
<i>Perceived Usefulness (pu)</i>					
21: I feel comfortable using any tool in CDIS on computer					
22: I can easily use tasks for finding career information on CDIS					
23: I feel believable when using and comparing for job-oriented in this application					
24: I can find it CDIS is one of important tool for preparing to choose a future job					
<i>Intention to use (iu)</i>					
25: It is necessary to use a career information system in schools and business sectors					
26: I think that others intent to use CDIS when I access to computer to find Development					
27: I think that my interaction with CDIS will be possible in future career					
28: I think that the information system for career make job-oriented more effective and effectiveness					
29: I think that I will tell my friends to use this software for their career					



PART II: GENERAL INFORMATION

This section covers personal information. Please tick (X) in the corresponding squares.

- 1. Gender: Female Male

- 2. Age: under 19 From 19 to 25 From 26 to 45 Over 45

- 3. Profession Students/employee Teacher Manager Other ____

- 4. Undergraduate Major
 Business/Economics IT/ICT Engineer Other ____

- 5. Using CDIS level per week
 one time twice – 3 times Always

- 6. How to know using of CDIS
 on training friends Other ____

PART III: COMMENTS & SUGGESTIONS

This section is administered for your comments on current research of users intention of CDIS application as well as your any suggestions to its improvement. Moreover, please feel free let me know your thoughts and ideas concerning your intentions for using CDIS and how you are willing to accept career-orientation system beyond the above mentioned items.

.....
.....
.....

Thank you very much for your help!



Appendix 2 Using PLS to Assess Common Methods Variance

Podsakoff et al. (2003) outline a statistical approach for assessing common methods variance described as “controlling for the effects of a single unmeasured latent method factor” (p. 23). While this method is generally applied to covariance-based SEM approaches (such as LISREL and AMOS), Liang et al. (2007) and Vance et al. (2008) have adapted this technique for PLS implementation. First, we converted each reflective indicator into a single-indicator construct. Second, we linked the original constructs to the new single-indicator constructs. Third, we linked a common methods variance factor to all single-indicator constructs. Essentially, all major reflective constructs and the common methods factor became second-order constructs. Finally, a PLS bootstrap was executed with 192 re-samples.

We examined the coefficients of the two incoming paths for each single-indicator construct, one from its substantive construct and one from the common methods factor. The results for this analysis are shown in Table 7 chapter IV. As per Liang et al. (p. 87), *“The square values of the method factor loadings were interpreted as the percentage of indicator variance caused by methods, whereas the square loadings of substantive constructs were interpreted as the percent of indicator variance caused by substantive constructs. If the method factor loadings are in-significant and the indicator’s substantive variances are substantially greater than their method variances, we can conclude that common method bias is unlikely to be a serious concern”*. The average of the substantively explained variances shown in Table 8 was significant, whereas all substantive factors loading were highly significant. Thus, we contend that the method is unlikely to be a serious concern for this study.

PLS Using

Partial least squares is an appropriate method of data analysis for testing comprehensive research models associated with SEM. SEM analysis typically follows a two-step process of 1) initial specification of the research model and 2) testing the



model. In this section, we describe how PLS can be used in the two step SEM analysis, as well as issues and guidelines specific to PLS in these areas.

Initial specification of the research model

The first step in an SEM analysis is the initial specification of the model. In this step, the presumed relations among the latent variables are defined, and the hypotheses are expressed in the form of a structural equation model. Note that this step is not specific to PLS, but applies also to covariance-based SEM.

1. Construct specification

Construct misspecification refers to the problem of modeling a construct as reflective when in fact it is formative. Statistically, this misspecification can lead to bias in the parameter estimates for both the measurement model and the structural model (Jarvis et al., 2003; Mac Kenzie et al., 2005), as well as impact the statistical significance of the parameter estimates (Petter et al., 2007). Theoretically, the misspecification of a construct can alter the interpretation of the structural model (Mac Callum and Browne, 1993).

The decision to specify a construct as formative or reflective occurs as the researcher is developing the research model and creating the measurement instrument. Construct specification should occur well before the assessment of the model with a particular SEM technique. A review of the IS literature found a 30% level of construct misspecification (Petter et al., 2007), which is similar to the 29% level identified in a review of the marketing literature (Jarvis et al., 2003). In the management accounting literature, Bisbe et al. (2007) emphasizes the need for sound conceptual specification of constructs prior to fitting them in a model. By following the guidelines of Jarvis et al. (2003) for proper construct specification, PLS can be used to model formative measures.

When considering PLS versus covariance-based SEM, one consideration is that PLS allows explicit specification of a construct as either formative or reflective and does not have additional requirements of model identification. Covariance-based SEM techniques estimate the model based on sets of simultaneous linear equations. The



simultaneous linear equations represent the researcher's hypotheses about how the observed covariance and correlation among the observed variables are produced. In order to solve the sets of linear equations, there must be sufficient information (either known values or constraints) to estimate the values for the desired number of parameters (Bollen, 1989). For a model to be identified, it must be theoretically possible to derive estimates for each parameter (Kline, 2005). If the set of linear equations is not identified, then the correct parameter estimates cannot be derived, no matter the size of the sample.

By definition, reflective constructs require at least three measurement items for identification, and formative constructs are under-identified if not placed in a larger research model (Bollen and Lennox, 1991; Mac Callum and Browne, 1993). A researcher interested in using formative measures for a dependent variable would not meet the criteria for identification in a covariance-based model unless the researcher includes either a) two downstream reflective constructs or b) two reflective measures in addition to the formative measures (i.e., a multiple indicators multiple causes (MIMIC) model (Hauser and Goldberger, 1971; Jöreskog and Goldberger, 1975)). Researchers interested in covariance-based SEM must take this constraint into consideration before gathering data to ensure that the model is identified and can be analyzed.

The above identification problem, however, does not apply when using component-based SEM. With the PLS estimation algorithm consisting of a series of iterative (not simultaneous) ordinary least squares regression, the estimates of the model parameters are made deterministically and in blocks, thereby avoiding the identification problem (Chin, 1998). Or in the words of Jöreskog and Wold (1982, p. 269): “Thanks to the explicit, albeit approximate estimation of the latent variables, no identification problem arises in the PLS approach.”

2. Measure development

Based on the specification of the constructs as either formative or reflective, the appropriate guidelines should be followed for developing measures for the constructs.



For reflective constructs, Churchill (1979) provides the definitive guidelines for developing reflective scales (items). For constructs modeled as formative, Diamantopoulos and Winklhofer (2001) provide guidelines for formative indicators as an alternative to reflective scales.

Testing the research model

Once the research model has been specified and scales developed to measure the constructs, PLS can be used as the underlying statistical technique for testing both the measurement model and the structural model.

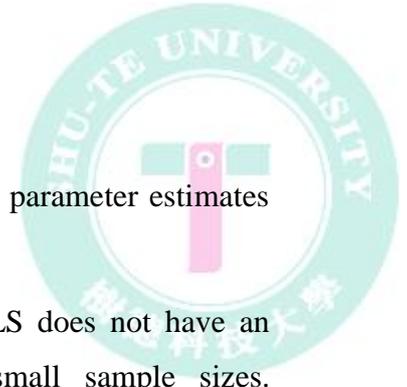
1. PLS software

Two versions of beta PLS software are commonly used in the academic literature. PLS-Graph is available from Wynne Chin of the University of Houston, while Smart PLS is available from Ringle et al. (2005). Both provide a graphical interface for specifying and testing the research model.

2. Sample size

PLS is frequently viewed as a statistical technique appropriate for analyzing small sample sizes. However, there has been a debate on the ability of PLS to have sufficient power to detect relationships when sample sizes are smaller (Goodhue et al., 2006). As described earlier, the underlying PLS algorithm is based on linear regression. In the PLS algorithm, the overall model is segmented into components, with the PLS estimation process consisting of simple and multiple regressions within each component. Therefore the general rules that apply in determining the sample size for regression analysis also would apply to PLS.

In contrast to PLS, covariance-based SEM is a large-sample technique, where any sample size less than 100 may lead to untenable results (Kline, 2005). For covariance-based SEM studies, Breckler (1990) found an average sample size of 198 for studies published in personality and social psychology journals. Because the PLS algorithm is based on linear regression, the sample size requirements are not as large as those of



covariance-based SEM. As in linear regression, the quality of the parameter estimates improves as the sample size increases.

In a simulation study, Goodhue et al. (2006) found that PLS does not have an advantage in terms of detecting statistical significance at small sample sizes. Furthermore, they found the “10 times” rule can lead to unacceptably low levels of statistical power. Marcoulides and Saunders (2006, p. viii) urge researchers to use caution when making claims about PLS: *Please make sure that your sample size is large enough to support your conclusions and do not allow perceived fancy modeling techniques to overwhelm common sense. The PLS rule of thumb might work well in some instances, but in others it might fail miserably. PLS is not a silver bullet to be used with samples of any size!*

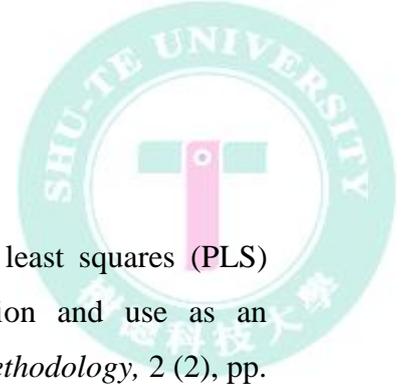
To determine the appropriate sample size, researchers should not rely on these heuristics, but should calculate the power based on the sample size and effect size. PLS does not have special properties to detect weaker structural relationships at smaller sample sizes (Goodhue et al., 2006).

General selection for PLS references

Author (s)	Topic	Target Audience	Comments
Jöreskog and Wold (1982)	“The ML and PLS Techniques for Modeling with Latent Variables”	Statistics-oriented approach	Early work describing PLS
Wold (1985)	“Systems Analysis by Partial Least Squares”	Statistics-oriented approach	Early work describing PLS
Falk and Miller (1992)	A Primer for Soft Modeling	Social science application	General description of PLS; examples of applying PLS to the social sciences
Barclay et al. (1995)	“The Partial Least Squares (PLS) Approach to Causal Modeling: Personal Computer Adoption and Use as an Illustration”	General applications to business researchers	Application of PLS to a business discipline
Chin (1998)	“The Partial Least	General applications	“Classic” review of PLS



	Squares Approach for Structural Equation Modeling”	to business research	
Chin and Newsted (1999)	“Structural Equation Modeling Analysis with Small Samples Using Partial Least Squares”	General applications to business research	“Classic” review of PLS
Gefen et al. (2000)	“Structural Equation Modeling and Regression: Guidelines for Research and Practice”	General business researchers/MIS researchers	Comparison of covariance-based SEM, component-based SEM, and regression
Haenlein and Kaplan (2004)	“A Beginners Guide to Partial Least Squares Analysis”	General audience	General description of PLS
Tenenhaus et al. (2005)	“PLS Path Modeling”	Statistics-oriented approach	Theory-oriented, mathematical approach to understanding PLS
Marcoulides and Saunders (2006)	“PLS: A Silver Bullet?”	General business and MIS researchers	Power issues with small sample sizes
Marcoulides et al. (2009)	“A Critical Look at Partial Least Squares Modeling”	General business researchers	Sample size and non-normality issues
Vinzi et al. (2010)	Handbook of Partial Least Squares	General business researchers	Comprehensive guide to PLS



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