Exploratory study of the impact of Information and Communication Technology (ICT)-based
features in conference center selection/recommendation by meeting planners

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(ABSTRACT)

This study examined the perceived importance of availability of ICT-based features and

technical support on meeting planners' recommendation/selection of a conference center. In

addition, this study attempted to explain relationships between meeting planners' beliefs

(perceived usefulness and perceived ease of use) toward ICT-based features and other factors:

personal innovativeness of ICT (PIICT); perceived importance of the availability of technical

support; self efficacy; and result demonstrability.

A conceptually integrated and expanded model of the Technology Acceptance Model

(TAM) developed by Davis (1986, 1989) was used as a theoretical frame. The subjects of the

study were meeting planners who used the selected two conference centers for their meetings or

were considering them for their future meetings. A total of 167 usable responses were gathered

and the proposed model was empirically examined using the data collected.

The results of the model test revealed that the expanded TAM with the integration of key factors

provided a systematic view of the meeting planners' beliefs in selection/recommendation of a

conference center with ICT-based features. In addition, factor analysis of the fifteen ICT-based

features revealed three underlying dimensions based on meeting planners' perceived importance

of the availability of each feature for a conference center selection: 1) high-speed wireless

Internet; 2) network backbone; and 3) ICT-based service outlet. Specifically, high-speed

wireless Internet was the most important ICT-based determinant of a conference center selection/recommendation to all types of meeting planners.

Due to the exploratory nature of this study, the results provided limited facets of the impact of ICT-based feature and technical support on meeting facility selection/recommendation. Nevertheless, this study is the first research effort of its kind to investigate what type of ICT-based feature and technical support impact conference center selection/recommendation by different types of meeting planners the most. The results revealed that corporate meeting planners consider wireless Internet and a fast network more important in selection than other types of meeting planners do. The availability of ICT-based features was less important to association meeting planners when they make a conference center selection. This study also identified that there is a serious lack of knowledge in terms related to network backbones across all types of meeting planners. Technical support, especially on-site technical support, was perceived as very important to all types of meeting planners.

This study also identified that meeting planners with high PIICT possess stronger confidence in using and visualizing the advantages of ICT-based features. Thus conference centers should make efforts to measure meeting planners' PIICT and use the score effectively for their marketing of ICT-based features. The study also identified result demonstrability—the visualizing of positive outcomes of using ICT-based features—as very important to meeting planners. PIICT and result demonstrability were positively related to perceived ease of use and perceived usefulness which were identified as key antecedents of actual acceptance/usage of technology in previous studies. The results of the current study present an important step toward providing practical as well as theoretical implications for future technology impact studies in the context of meeting facility selection.

DEDICATIONS

I would like to dedicate this work to my whole family. This outcome was only possible with their

support, patience and sacrifice. Thank you for all your love and support during my study in

U.S.A.

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Chapter 1

INTRODUCTION

1.1 Introduction

Meetings, conventions, exhibitions, and the incentive travel industry produced US

$122.31 billion in total direct spending in 2004 (Convention Industry Council, 2005). The

Hospitality Sales and Marketing Association International (HSMAI) Foundation and Connolly,

Carroll, and Steinbrink (2007) revealed that the group meetings market had grown to US $164.1

billion in 2006. Given the economic impact of meetings and their positive effects on destinations,

the growing market competition has driven the meeting industry to provide all requirements and

to differentiate a convention destination/facility from its competitors (Crouch & Louviere,

2004b). Technology is considered the greatest change that will influence the meeting industry

(MPI, 2002) and will be the most important competitive weapon for any hospitality company to

be successful (Connolly & Olsen, 2000). Technology is also considered one of the most

important service factors among meeting attendance as well as to meeting planners, who expect

meeting facilities to provide efficient technical and communicational services (Lee & Park,

2002).

This dissertation explores the impact of technology, specifically Information and

Communication Technology (ICT) -based features, at meeting facilities by investigating critical

factors which could impact their selection or recommendation by meeting planners. There has

been growth recently in the research dealing with a variety of aspects of the technology

acceptance model in IT areas; however, studies dealing with meeting facility and meeting

planners are very limited, and overall meeting technology research remains far behind other

meeting industry practices. This study attempts to provide a better understanding of the factors that impact meeting planners' acceptances, beliefs and attitudes toward ICT-based features and service in the meeting facility selection context.

1.2 Statement of the Problem

The "where to host a meeting" question focuses on two primary categories: one is a meeting destination, addressing a city's capacity as a meeting host; the other is a meeting facility (Go & Zang, 1997). Most research has focused on selection of a destination for associations' annual conventions (Chen, 2006; Comas & Mocardo, 2005; Crouch & Louviere, 2004a; Crouch & Richie, 1998; Fortin & Richie, 1977; Go & Zang, 1997; Kim, Kim, & Leong, 2005; Oppermann, 1996a; Renaghan & Kay, 1987) and its focus has been limited to physical size as the main attribute in selecting a meeting facility (Breiter & Milman, 2006). Meeting site selection is not made by only one individual in associations' site selection as there are other factors that influence that process (Clark, Price, & Murrmann, 1996; Meetings and Conventions, 2006). The best way for meeting facilities to determine which feature to invest in and market should be based on intimate knowledge of the factors that its clients value most in their choice decision (Hinkin & Tracey, 1998; Crouch & Louviere, 2004b). While there is a need for research to investigate site selection from an organizational buyer-behavior perspective (Crouch & Louviere, 2004b; Fawzy & Samra, 2008), in practice, meeting planners' final recommendations highly influence a facility selection authority, often formed with a group of people in an organization.

The majority of meeting professionals believe that the most significant change in the meeting industry is in technology (ASAE, 2001). Both meeting planners and conference

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attendees expect more technology to be installed in meeting venues (Lee & Park, 2002; Weber & Ledkin, 2004) and technology is appearing as one criterion for choosing a meeting facility in recent studies (Baloglu & Love, 2001; Comas & Moscardo, 2005; Weber & Ladkin, 2004). Thus, many meeting facilities, from major convention centers to small conference venues, have improved their technological infrastructure and features. Due to the high cost of installing and updating new ICT-based features, such improvements should be based on accurate market needs assessments to meet the demands of their customers. Some investment decisions and development projects seem to be based on overly optimistic forecasts or simply "jumping-on-the technology-band wagons," not to be left behind by their competitors. Because technology infrastructure development requires a massive investment, it should be based on research with empirical evidence of the effects of such developments (Lee & Lee, 2006). Webber and Ladkin (2004) added that meeting venues installing new technologies often do not provide efficient technical support to their customers, the meeting planners. For example, only 41 percent of the conference centers in the U.S. have a dedicated Information Technology (IT) manager to help and provide services to their clients (IACC, 2004).

Despite the importance of understanding the impact of the availability of technology-based features on selection/recommendation of a meeting facility, there is very limited research on the impact of the ICT-based features on facility selection by its target market and the major direct buyer, meeting planners. Furthermore, no study has systematically tested what other factors—personal innovativeness in ICT, self-efficacy, result demonstrability, etc.—influence meeting planners' beliefs toward ICT-based features and service as a determinant of meeting facility selection/recommendation.

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1.3 Research Questions

This study aims to evaluate meeting planners' perceived importance of ICT-based features and service in meeting facility selection and to identify what factors influence meeting planners' beliefs (perceived usefulness and perceived ease of use) and confidence in adopting ICT-based features. The purpose of this study is three-fold: 1) to measure the magnitude of importance of each ICT feature and service on a recommendation/selection of a facility; 2) to test relationships among meeting planners' beliefs toward ICT-based features and service in the context of a conference center selection/recommendation; and 3) to investigate influences of the types of meeting planners in the relationships between meeting planners' perceived importance of the availability of technical support, confidence, and beliefs toward ICT-based features and service. This research will achieve these purposes by answering the following four research questions.

1. What types of ICT-based features are perceived as important in meeting planners' selection/recommendation of a meeting facility, specifically a conference center?

2. How does the perceived importance of availability of technical support influence meeting planners' confidence in using/accepting the ICT-based features at conference centers?

3. Do relationships exist among meeting planners' beliefs toward ICT-based features, including: perceived ease of use; perceived usefulness and other factors; personal innovativeness of ICT (PIICT); result demonstrability; and self-efficacy in recommendation/selection of a conference center?

4. Does the type of meeting planner influence the relationships of PIICT, self-efficacy, and perceived ease of using ICT-based features in the context of recommendation/selection of a conference center?

1.4 Theoretical Model and Background

Figure 1.1 presents the proposed research model explaining relationships among key concepts reviewed through a literature search. The proposed model examines the research questions which test the relationships between the concepts discussed in the preceding sections.

1.4.1 Technology Acceptance Theory: Technology Acceptance Model (TAM)

Understanding why people accept or reject technology has been one of the most critical issues in many industries to provide better service and overcome challenges (Swanson, 1988). One of the most widely recognized research efforts on factors determining the adoption of technology-based service is the technology acceptance model (TAM) developed by Davis (1986, 1989). Davis developed TAM based on Ajzen and Fishbein's (1980) applied theory about reasoned action (TRA) to explain how beliefs influence attitudes, which leads to intentions and, therefore, behaviors. Substantial theoretical and empirical studies have found that TAM belief-attitude-intention-behavior relationships predict user acceptance of information technology (IT). Davis (1989) further asserted that perceived usefulness and ease of use represent the beliefs that lead to acceptance of IT systems. TAM has become well established as robust and powerful, and especially parsimonious, which is an important element in the development of theory (Straub et al., 1997; Venkatesh & Davis, 2000; Thomson et al., 2006). TAM is the base theory for this research on meeting planners' beliefs and their influence on acceptance of ICT-based features at conference centers.

1.4.2 Self-Efficacy

The concept of self-efficacy was first presented by Bandura (1986) in human agency studies. Self-efficacy is defined as people's beliefs about their capabilities to produce performances that influence events affecting their lives and confidence in using systems and achieving desired results (Bandura, 1986, 1995). It is also defined as one's ability to carry out a behavior (Armitage & Conner, 1999). Bandura argued that self-perceptions of efficacy influence thought patterns, actions, and emotional arousal. He also stated that people with a strong sense of self-efficacy approach difficult tasks as challenges to be mastered, rather than as personal threats to be avoided. In other words, the greater one's self-efficacy, the more likely it is that one will actually carry out an intended behavior of interest**.** Self-efficacy is concerned with internal control factors that come from within the individual (such as ability and motivation) (Terry, 1993; Terry & O'Leary, 1995). Their study has identified that self-efficacy positively influences perceived ease of use.

Ajzen (1988) developed the theory of planned behaviors (TPB) that has explained behavior intention by different factors: attitude to behavior; subjective norm; and perceived behavioral control. However, Manstead et al. (2000) argued that self-efficacy predicts behavior better than intentions and is more closely related to intentions than attitudes, subjective norms, or perceived control (Manstead et al., 2000; Armitage & Conner, 1999). Terry and her colleagues (Terry, 1993; Terry & O'Leary, 1995; White et al., 1994) also found that self-efficacy was predictive of intentions.

Figure 1.1 Proposed Research Model
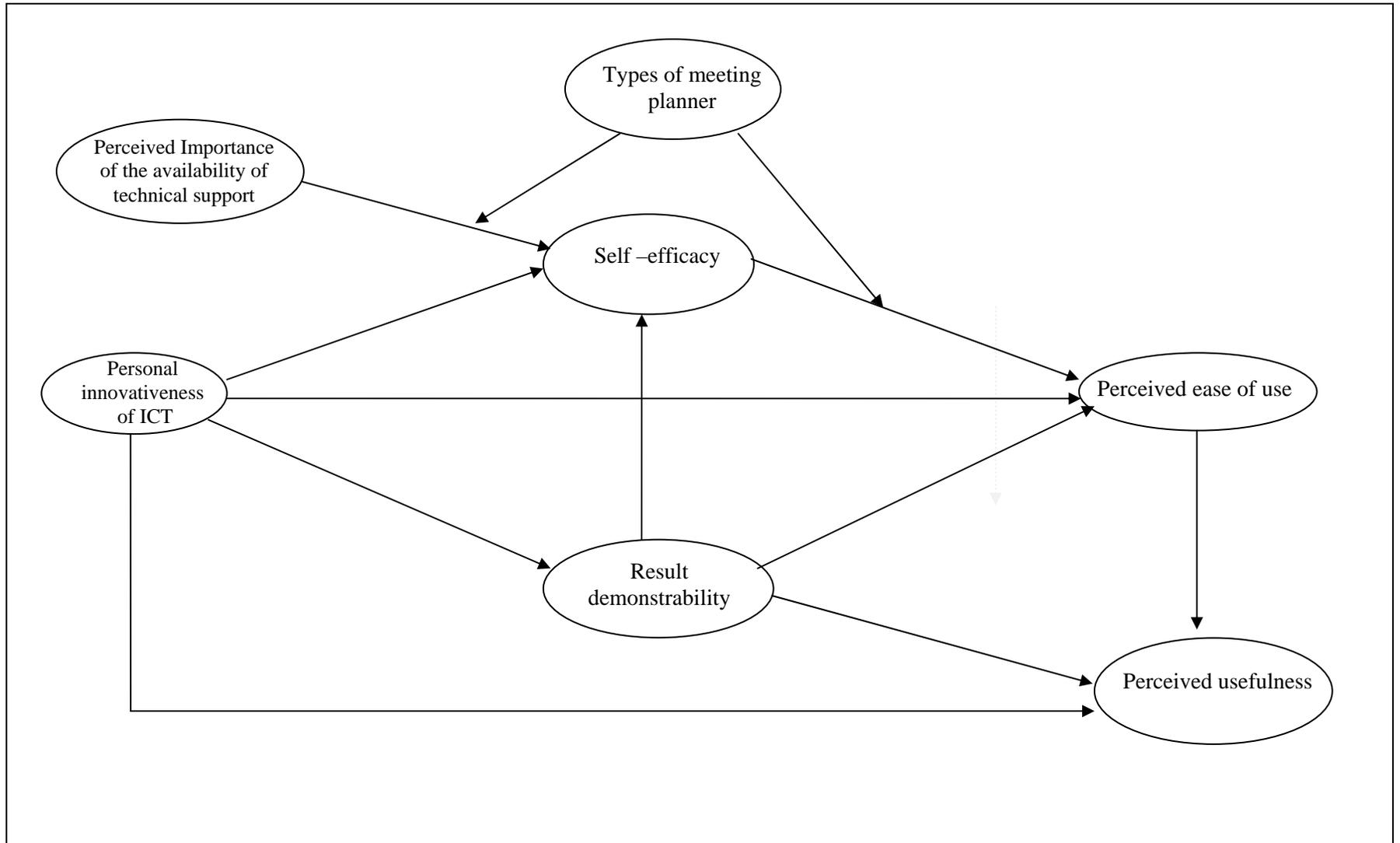
1.5 Boundaries of the Study

Clearly defined boundaries can validate the results of a study and they are necessary to enhance the validity and reliability of a study (Bacharach, 1989). First, this study tests ICT-based features that are provided by conference centers. The results of this study may not be extended to other types of meeting facilities such as convention centers or convention hotels. Second, selection of a meeting facilities addressed in this study is confined to the association, corporate, and government meeting sectors. Fortin, Ritchie, and Arsenault (1976) found that corporations and associations have significant differences in their motivations and processes for selecting a host convention site. However, there is no such published study for the government meeting sector. For this reason, the proposed model will be used and tested for these three meeting markets.

Third, the results of this study are limited to the meeting planners who hosted or plan to host their meetings at a conference center in North America. A number of studies (Chen, 2006) focused on cross-cultural research support that meeting planners' perceptions toward the determinants of site selection differ according to their culture or environments. Yi, Jackson, Park & Probst (2006) also supported that cultural and technological differences exist in different countries in the context of technology. Therefore, the proposed model might not be valid for international markets that operate within different cultures and technological infrastructures.

1.6 Definitions of Key Constructs

The definitions of the major constructs in this study are explained as follows:

1.6.1 Information and Communication Technology (ICT) -based Features and Technical Support

The Internet is exploited as a mechanism for information distribution and gathering. One of its applications, e-mail, has become an effective tool for meeting and conference organizers in marketing (Davison, Alford, & Seaton, 2002). Information and Communication Technology (ICT) has been adopted to operate businesses more effectively, efficiently, and faster by adding communication onto an existing term, IT (Davison et al., 2002). Therefore, the author defines ICT-based features at meeting facilities as computing and communications equipment and features that variously support a range of activities in meeting management.

However, there is no published list of standard ICT-based features in the context of the meeting technology and conference center industry. Thus, the author has conducted a content analysis of meeting facility marketing materials over a seven year period, including *OMFG* (Official Meeting Facility Guide) and *GAVEL* (semi-annual meeting facility guide published by Meetings and Conventions) to develop the list. The new list is finalized by adding several ICT-based features offered by members of the International Association of Conference Centers (IACC, 2007b).

1.6.2 Personal Innovativeness of Information and Communication Technology (PIICT)

The definition of PIICT is the willingness of an individual to try any new ICT and it is adopted from the term Personal Innovativeness of Information Technology (PIIT) by modifying IT to ICT for this study. PIIT was first defined and tested by Agarwal and Prasad (1997) as the

willingness of an individual to try any new IT and it is important to determine the outcomes of user acceptance of technology.

1.6.3 Result Demonstrability

Rogers (1995) defined result demonstrability as the extent to which the tangible results of using an innovation can be observable and communicable. Matthing, Kristensson, Gustafsson, and Parasuraman (2006) argued that most customers would find it difficult to envision jargon used to describe new technology and relate new technologies with applications. Users can understand the advantages of using a new technology and its implication for their job when tangible results of the technology are directly apparent (Yi et al., 2006).

1.6.4 Self-efficacy

Self-efficacy is defined as people's beliefs about their capabilities to produce performances that influence events affecting their lives (Bandura, 1986).

1.6.5 Perceived Usefulness

Davis (1986, 1989) defined perceived usefulness as the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context.

1.6.6 Perceived Ease of Use

Perceived ease of use is defined as the degree to which the prospective user expects the target system (technology) to be free from effort (Davis, 1986, 1989).

1.7 Organization of the Study

Chapter I presents an overview of the study, which includes the statement of the problem, objective of the study, research questions, and boundaries of the study, theoretical background to be used in the study, the definitions of major constructs, and the organization of the study. Chapter II presents the summary of literature related to technology acceptance, meeting site selection, and the organizational buying center. In addition, the review of related literature in conference center industry and meeting planners' profiles are provided and integrated in a way that supports the hypotheses of this study.

Chapter II

REVIEW OF THE LITERATURE

2.1 Introduction

This chapter provides an overview of the Technology Acceptance Model (TAM) developed by Davis (1986, 1989) and other extended, integrated theoretical models of technology acceptance. This chapter also presents previous findings from studies of buying decisions in the meeting/hospitality/tourism industries. In addition, meeting site/facility selection, advances of technologies in the meeting industry, and characteristics of meeting planners are provided. Lastly, the proposed research model and hypotheses are also presented in this chapter.

2.2 Theories of Technology Acceptance

Substantial theoretical progress and empirical support have accumulated and been produced over the past years in explaining and predicting user acceptance of information technology. In the following sections the key concepts and theories concerning technology acceptance will be discussed.

2.2.1 Technology Acceptance Model (TAM) and Comparisons to Other Theories

The Technology Acceptance Model (TAM), one of the most widely recognized research efforts on factors determining the acceptance of technology was developed by Davis (1986) and is conceived to explain and predict an individual's acceptance of information technology (IT). TAM was derived from the Theory of Reasoned Action (TRA) model (Ajzen & Fishbein, 1980). TRA is based on the assumption that human beings are rational and make systematic use of information available to them before they decide to engage, or not to engage, in a given behavior;

it is designed to predict and understand what causes people to behave in particular ways (Ajzen & Fishbein, 1980).

Two other constructs in TAM are (1) attitude towards use and (2) behavioral intentions, which originated from TRA. Attitude towards use is the user's evaluation of the desirability of employing a particular information systems application. Behavioral intention to use is a measure of the likelihood a person will employ the application and it leads to actual system use (Ajzen & Fishbein, 1980). . Davis (1989) further asserted that perceived usefulness and ease of use represent the beliefs that lead to such acceptance. Perceived usefulness is the degree to which a person believes a particular information system would enhance his or her job performance. Perceived ease of use is the degree to which a person believes that using a particular system would be effortless (Davis, 1986). User's beliefs—perceived usefulness and perceived ease of use—determine their attitudes toward using the system. Behavioral intention to use is determined by these attitudes toward using the system.

TAM studies have been made in various technology fields: electronic and voice mail (Adams et al., 1992), transactional web sites (Aladwani, 2002), groupware (Plouffe, Vandenbosch & Hulland, 2000), electronic payment systems (Plouffe et al., 2001), Internet (Vanucci & Kertestte, 2001; Breiter & Gregory, 2004), and marketing decision-making support systems (MDSS) (Wöber & Gretzel, 2000). Figure 2.1 presents the basic conceptual model of TAM by Davis (1986, 1989).

Figure 2.1 Diagram of TAM
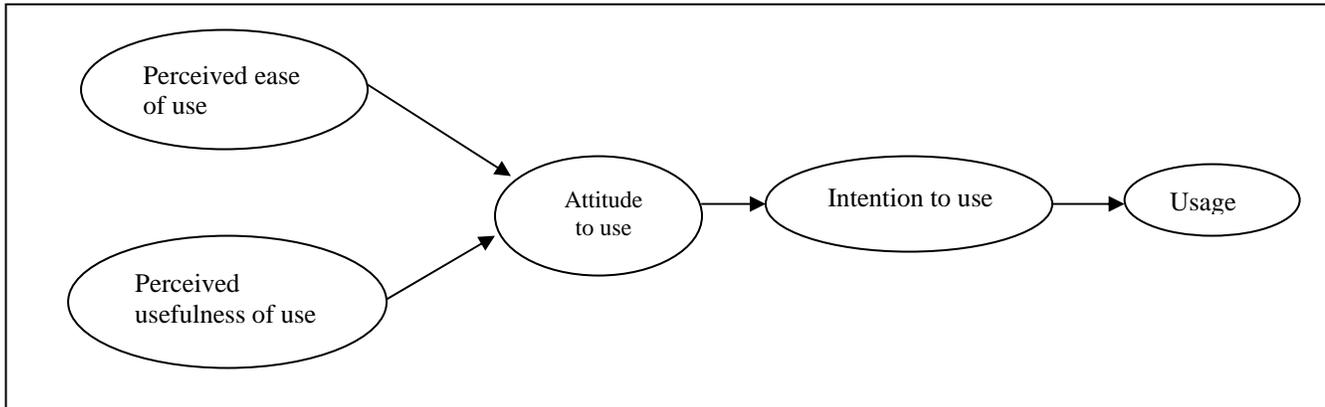
Both TAM and TRA models were found to predict intentions and usage satisfactorily. However, TAM has become well established as a robust, powerful, and parsimonious model for predicting user acceptance (Venkatesh & Davis, 2000). TAM attitudinal determinants outperformed TRAs with a much larger set of measures (Igbaria et al., 1997). Davis (1989) and Davis, Bagozzi, and Warshaw (1989) used regression analysis to determine the relationships in TAM. Hendrickson and Collins (1996) tested alternative structural models of the TAM instrument and provided support for a full causal model. Substantial theoretical and empirical research has proved that the TAM is a significant parsimonious model for extensive study and allows for exploration of the influences on adoption and usage decisions in extensive levels (Venkatesh & Davis, 2000). As the relationship between perceived usefulness and actual usage has been empirically examined, a better understanding of these determinants resulted in more efficient efforts to increase user acceptance and actual use of technology.

Other widely used theoretical paradigms in understanding user acceptance of technology include the innovation diffusion theory (IDT) (Rogers, 1995) and theory of planned behavior (TPB) (Ajzen, 1985). IDT views innovation diffusion as a particular type of communication

process in which the message about a new idea is passed from one member to another in a social

system (see Figure 2.2). This theory has been used to study various innovations ranging from

medicine, engineering, and airline reservation information systems (Sonnenwald, Maglaughlin &

Whitton, 2001).

Figure 2.2 Innovation of Diffusion Theory Model
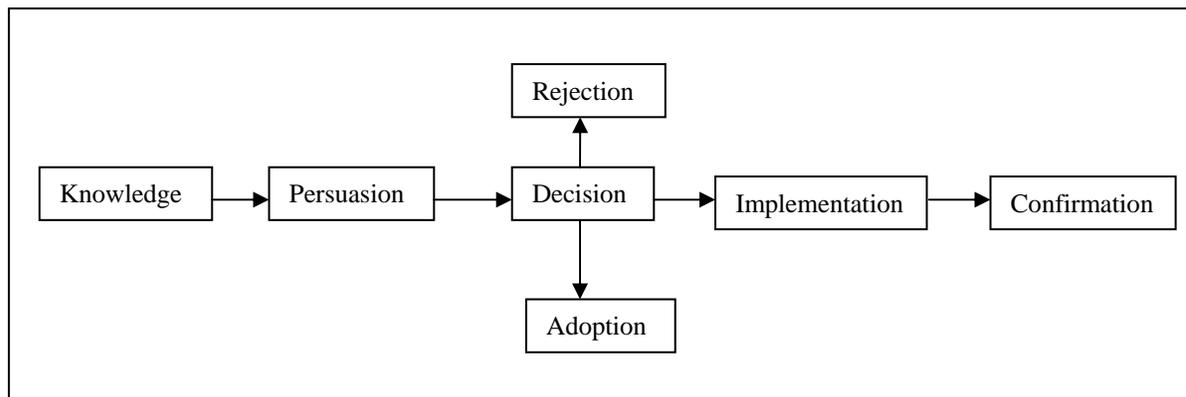
Source: Rogers (1995)

Yi et al. (2006) argued that TAM and IDT have similarity and compared them by

matching categories (Table 2.1). If technology can be thought of as a specific innovation, both

IDT and TAM share the view that the perceived positive attitude that is a direct determinant of

intention of behavior in interest is determined by internal knowledge and external support and

training. They reported that TAM and IDT partially reconfirm each other's findings.

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Table 2.1 Matching Concept of TAM and IDT

TAM	IDT
IT	Innovation
Perceived usefulness	Relative advantage
Perceived ease of use	Complexity (opposite concept)

Moore (1999) adopted and expanded the original set of innovation characteristics proposed by IDT and refined the construct to be applied to the information system (IS) context. Relative advantage, complexity, result demonstrability, and image were confirmed as important concepts in explaining user intention to use a technology. Agarwal and Prasad (1997) examined the effects of individuals' perceptions about the characteristics of the target technology on future use intention. They found that only two innovation characteristics—relative advantages and results demonstrability—were relevant for future use intention. Rogers (1995) defined result demonstrability as the extent to which the tangible results of using an innovation can be observable and communicable. Yi et al. (2006) reported that user perception of result demonstrability was a significant determinant of both perceived usefulness and perceived ease of use.

Theory of planned behavior (TPB) is a general model applied in many diverse domains (Ajzen, 1991). TPB indicates that behavioral intention is a function of attitude, subjective norm, and perceived behavioral control (Figure 2.3). The subjective norm is defined as the perception that a person thinks he or she should perform the behavior that is considered important by other people who are important to them (Ajzen, 1985; Ajzen, 1991; Yi et al., 2006). Perceived behavioral control is the perception of internal and external resource constraints on performing

the behavior. This theory has been widely applied to a diverse set of technologies in the IS

context (Leonard, 2004; Taylor & Todd, 1995a).

Figure 2.3 Model of the Theory of Planned Behavior (TPB)
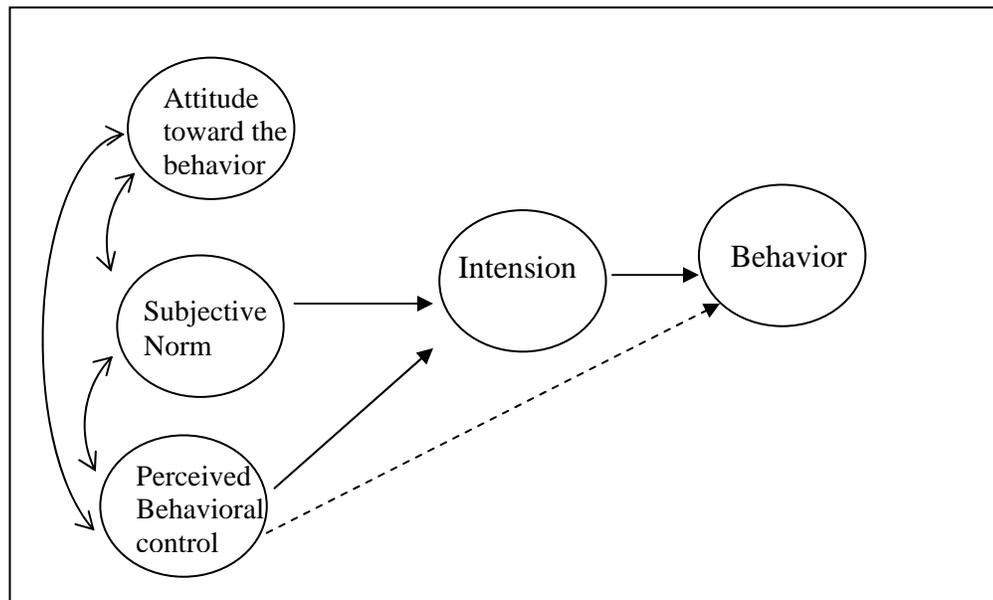
2.2.2 Extended Models of TAM: TAM2 and Others

Researchers argued that a more holistic assessment of technology adoption is necessary,

to avoid a narrower understanding of the acceptance and not recognizing the other factors

involved (Agarwal & Karahanna, 2000; Plouffe et al., 2001). Legris et al. (2003) concluded that

TAM was a useful model, but included human and social change process variables such as

subjective norm. Subjective norm is defined as an individual's perception of whether people

important to the individual think a behavior should or should not be performed (Fishbein &

Ajzen, 1975). They asserted that the subjective norm has an impact on behavioral intention along

with the attitude towards the action in theory of reasoned action (TRA). In the original TAM by

Davis (1989), the subjective norm was not included due to its unclear relationship. External

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variables that affected intention to use in previous TAM research are social influence or social presence (Straub et al., 1995; Venkatesh & Davis, 2000). Venkatesh and Davis (2000) hypothesized that subjective norm influenced both perceived usefulness and intention in TAM2. Schepers and Wetzels (2007) argued that people often choose to perform an action when one or more important referents say they should, though they do not like or believe in it. As humans often interpret information from important others as evidence about reality, the subjective norm also influences technology acceptance through perceived usefulness, and the internalization effect. However, it is very important to note that subjective norm has significant influence on perceived usefulness and intention only when the usage is mandatory, while its influence is insignificant when use of technology is optional (Vekatesh & Davis, 2000).

TAM2 dropped "attitude" from TAM because it was found to only partially mediate the effects of perceived usefulness and perceived ease of use on behavioral intention. TAM2 also included "experience" by using longitudinal data; however, this definition of experience was limited to previous usage of the same specific information system. The TAM2 has been applied and tested in several other investigations and was strongly supported by longitudinal data collected from four different systems in four organizations (Saade, Bahli, & Vekatesh, 2005; Venkatesh & Davis, 2000).

Prior research on technology acceptance and information system implementation demonstrated that various external variables influenced technology acceptance. Examples of external variables included in previous TAM research that affected ease of use and perceived usefulness are computer self-efficacy (Fenech, 1998), computer self-efficacy and computer experience (Igbaria & Iivari, 1995), intrinsic involvement and prior use (Jackson, Chow, & Leitch, 1997), and perceived utilities and perceived ease of adoption (Phillips, Calantone, & Lee,

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1994). Plouffe et al. (2001) summarized three popular extensions of TAM based on prior

research (Figure 2.4).

Figure 2.4 TAM and Three Popular Extensions
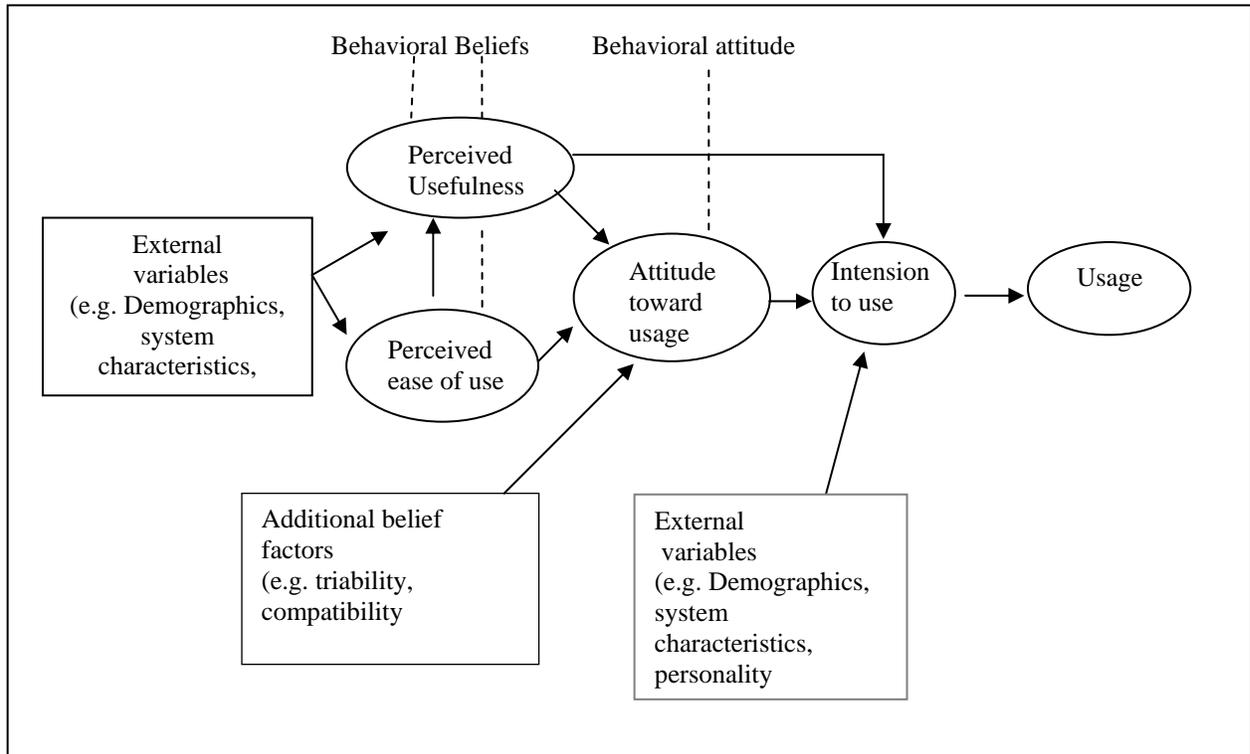
The decomposed theory of planned behavior (Taylor & Todd, 1995b) integrated TAM

and TPB to identify additional components of belief structures that provide more explanation of

the antecedents to attitude, subjective norm, and perceived behavioral control (Figure 2.5).

Another integrated model is called the United Theory of Acceptance and Use of Technology

(UTAUT) and is consistent with TAM, TRA, and other derivations (Venkatesh et al., 2003). The

model proposes that the target behavior of interest is driven by behavioral intention, intention is

determined by attitude toward use and usefulness, and usefulness is a function of ease of use.

Usefulness and ease of use are both assessments of the consequences of using a system to

accomplish some task (Thomson et al., 2006).

Figure 2.5 Decomposed Theory of Planned Behaviors
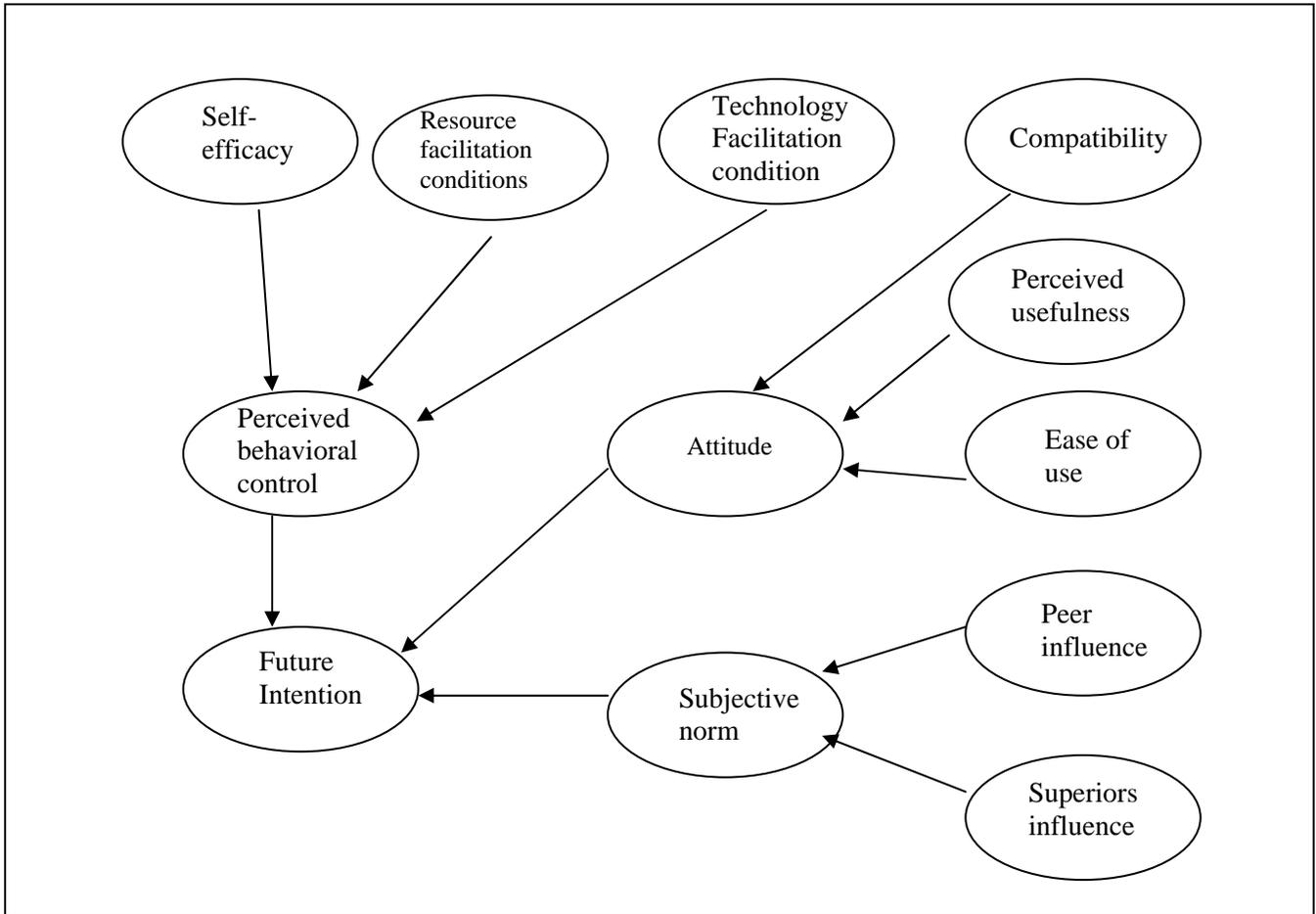
Other researchers built integrated models focusing on the constructs of technology and resources facilitating conditions (Mathieson, Peacock, & Chin, 2001), and some research applied models simultaneously integrating several theories to study professionals in the context of the health-care industry (Chau & Hu, 2001; Yi et al., 2006).

2.2.3 Technology Studies in the Meeting Industry

In past decades, an increasing number of studies on technology, mainly on the Internet, have been published and focused mainly on the use of the Internet in marketing and information

searches in the meeting industry (Cheung & Law, 2002; Davison et al., 2002; Digance, 2002; Fein 1983; Jones & Brewer, 2001; Marie et al., 2000; Mistilis & Dwyer, 1999; West & Upchurch, 2001; Yuan et al., 2003). As seen in Table 2.2, almost half of the technology studies are conceptual-qualitative studies and the empirical studies are non theory-based studies simply using descriptive statistics (frequency, mean, and standard deviation). Even though conceptual studies using qualitative methods can contribute to the advancement of knowledge and theory if they are effectively designed and analyzed (Baloglu & Assante, 1999), there are concerns pertaining to reliability and external validity in qualitative studies. As Bacharach (1989) stated, significant dedication to the body of knowledge can be built based on a sound theory.

Table 2.2 Non Theory-Based Technology Studies in the Meeting Industry

Author(s)	Title	Nature of research
Yuan, Gretzel, & Fesenmaier (2003)	Internet technology use by American Convention and Visitors Bureaus	Empirical
Cheung & Law (2002)	Virtual MICE promotion: A comparison of the official Web sites in Hong Kong and Singapore	Empirical
West & Upchurch (2001)	Conference participants' acceptance of the Internet as an information and registration tool	Empirical
Davison, Alford, & Seaton (2002)	The use of information and communication technology by European meetings, incentives, conferences, and exhibitions (MICE) sectors	Empirical
Jones & Brewer (2001)	The future of the meeting, incentive, convention, and exhibition (MICE) industry buyer-seller relationship: High tech or high touch?	Conceptual
Marie, Kasavana, & Knutson (2000)	Smart card: Meet smart meeting planner	Conceptual
Mistilis & Dwyer (1999)	Information technology and service standard in MICE tourism	Conceptual
Wolf & Boger (2001).	Investigating rate integrity in convention cities: Comparing central reservation and Internet rates.	Empirical
Digance (2002)	Use of the World Wide Web in marketing Australian dedicated-convention centers	Conceptual
Fein (1983)	Teleconferencing and its effects on business travel	Conceptual

Table 2.3 Review of Theory-based Studies on Technology Acceptance in the Meeting Industry: Key Variables.

Authors	Subject	Technology	Theory		Independent Variables			Dependent Variable
Vanucci & Kertestte (2001)	Meeting planners	Internet	TPB	Attitude	Subjective norm	Perceived behavioral control		Intention to use
Breiter & Gregory (2004)	Trade show managers	Internet	IDT	Time	Amount of money	Material possessions		X

Quantitative research in the meeting industry may also be more rigorously conducted based on theories, identifying generalized patterns, and thus can make more accurate predictions (Lee & Back, 2005). A few theory-based studies on the ICT in the meeting industry can be found to date (see Table 2.3). In a study of meeting planners' use of the Internet to plan group meetings, Vanucci and Kerstetter (2001) found that the theory of planned behavior is effective to predict the intention of using the Internet and concluded that planners' attitude, belief about norms, and perceived behavioral control were found to be significantly related to their intention. They adopted Hoffman and Novak's (1996) modified TPB, which was expanded by including thirteen categories in the original three dimensions. Perceived behavioral control is believed to have the strongest influence on intention to use and this dimension includes ease of use, ease of access, price, knowledge, skill, and past experience (Hoffmann & Novak, 1996). Frew (2000) presented perspective and direction of ICT research in the travel and tourism domain. Those results gained from studies in the tourism and travel research can be applied to this study, but only to a certain extent, because the meeting facility selection involves a special buying system—the multi-person involved buying center.

2.2.4 Self-efficac

The concept of self-efficacy was first proposed by Bandura (1977) in the study of human agency. Self-efficacy is defined as peoples' beliefs about their capabilities to produce performances that influence events affecting their lives and confidence in using a system in achieving desired goals (Bandura, 1986, 1995; Marakas, Yi, & Johnson, 1998). It is also defined as one's ability to carry out a behavior (Armitage and Conner, 1999). Taylor and Todd (1995a) reported self-efficacy as a determinant of perceived behavioral control that is defined as an

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individual's belief about the presence or absence of required sources and opportunities necessary to perform certain behaviors (Ajzen & Madden 1986). However, there is a reasonably consistent body of evidence suggesting that self efficacy is more important as a predictor of behavioral intentions than are measures of other control-related constructs (Baundra, 1985; Terry, 1993; Terry & O'Leary, 1995; White et al., 1994; Manstead & Van Eekelen, 1998). Baundura (1977) argued that self-percepts of efficacy influence thought patterns, actions, and emotional arousal. A causal test revealed that the higher the level of self-efficacy, the higher the performance accomplishments and the lower the emotional arousal. He also stated that people with a strong sense of self-efficacy approach difficult tasks as challenges to be mastered, rather than as personal threats to be avoided. In other words, the greater one's self-efficacy, the more likely it is that one will actually carry out an intended behavior. Self-efficacy predicts behavior better than intentions (Armitage & Conner, 1999).

Agarwal, Sambamurthy, and Stair (2000) theorized that self-perceptions of efficacy in the task domain of computing were strongly influenced by the extent to which individuals believe they were personally innovative with respect to IT (PIIT). The authors also proposed a broad framework and examined the simultaneous effects of those influences on perceptions of usefulness and ease of use and found out that self-efficacy positively influences only ease of use in the context of IT. It is consistent with the findings by Manstead and Van Eekelen (1998). They argued that perceptions of how easy or difficult it is to achieve the target behavior is the definition of ease of use highly related to self-efficacy.

2.3 Convention Site Selection vs. Facility Selection

Comas and Moscardo (2005) argued that a critical question for businesses involved in destination marketing and the provision of services for conferences and meetings is how organizations decide where to hold their conferences and meetings. The "where" question poses two primary concerns: (1) a convention site's environment addressing a city's capacity to host the meeting, and (2) the meeting facilities where most of meeting functions are held (Go & Zang, 1997). The term "site" has been interchangeably used with several other terms in studies of the determinants of selection. They are: convention site, meeting destination, meeting site, associations' site, convention destination, and convention location (see Table 2.4).

Table 2.4 Terms Used in Titles in Site Selection Studies

Authors	Terms Used In Title	Determinant of Selection
Fortin et al .(1976)	Convention site	Hotel service, air access, hotel rooms, conference rooms, price levels, hospitality, restaurant facilities, personal safety, local interest, geographic location, hotel info/assistance, local availability, tourism features, transport facilities, previous experiences
ASAE (1987)	Meeting location	Quality of service, meeting room facilities, overall affordability, sleeping room facilities, location image, dining/entertainment, air transportation, exhibit facilities, highway accessibility, only one, recreational facilities, climate
Bonn et al. (1994)	Site	Numbers of meetings planned in the same site, facilities, services, and recreational factor
Oppermann (1994)	Convention location	
Oppermann (1996a)	Convention destination	Empirical
Oppermann (1996b)	Convention cities	N/A
Clark & McCleary (1995)	Associations' Site	N/A
Clark et al. (1996)	Association Convention Site	Power in committee
Crouch & Richie (1998) Crouch & Louviere (2004a)	Convention site	Accessibility, local support, extra-conference activities, accommodation facilities, meeting facilities, information, site environment, other criteria
Chacko & Fenich (2000)	Convention destination	N/A
Baloglu & Love (2001)	Convention cities	N/A

Association-sponsored events accounted for two-thirds of the direct spending in the meeting industry. The income from an association's annual convention comprise one-third of non-membership revenue (excluding association membership fee income) of an association (ASAE, 2003). Due to the importance and impact of associations' convention, understanding an association's site decision-making process becomes very important to destinations and meeting facilities that want to promote themselves best. Consequently, a number of studies on determinants of convention site selection (Crouch & Richie, 1998) and the decision-making process (Bonn & Boyd, 1992; Oppermann, 1996a, 1996b; Fawzy & Samra, 2008) were conducted. As Crouch and Richie (1998) summarized, sixty four previous studies on convention site selection involved many determinants, and a destination is selected as a sum of its perception by the associations as being interesting, exotic, safe, accessible, and accepting of all types of delegates (Jago & Deery, 2003). Crouch and Louvier (2004a) argued that, although characteristics of a meeting facility including physical site attributes are particularly important, a broad range of other factors should be offered for a host site of annual conventions to be attractive.

Although destination selection criteria have been intensively studied, the majority of studies lack conceptual and empirical support (Baloglu & Love, 2001). It should also be noted that a majority of studies in site selection focused exclusively on the North American market and associations' annual conventions. In addition, most studies were undertaken in large cities and with international associations (Jago & Deery, 2003; Oppermann & Chon, 1997).

There were some attempts to find differences in selection factors between associations of various sizes, diverse backgrounds, or over different scopes (i.e. regional, state, national, and international) (Opperman, 1996a). Choi and Boger, Jr. (2002) found that site selection factors

for U.S. state associations varied by association size, age, and budget. Comas and Mocardo (2005) argued that a meeting venue is a very important attribute regarding the decision of a host destination and the most important attribute particularly for those conferences based around business functions. While most studies of convention site selection did not specify which type of meeting facilities were considered, some researchers focused on the determinants of specific types of meeting facilities. Table 2.5 presents the list of studies that identify meeting planners' facility selection determinants for different types of meeting facilities. Most studies listed two major areas: physical features and food and beverage. The former includes size, layout, lighting and temperature control, and the latter includes quality of food and beverage. Not surprisingly, the cost of a meeting facility is one major factor, same as in many other business buying decisions (Jago & Deery, 2003).

Table 2.5 Meeting Facility/Venue Selection Determinants.

Authors	Type of Facility	Type of Meeting	Determinant of Selection
Renaghan & Kay (1987)	Hotel	Convention	Main meeting-room size, soundproofing of meeting room, location of breakout rooms, complexity of audio-visual (AV) equipment, climate and lighting control, price, high-quality food and food service, and staff incompetence (most frequent challenge).
Hu & Hiemstra (1996)	Hotel		Physical of hotel facility
Crouch & Richie (1998); Crouch & Louviere (2004a)	Meeting facility	Convention	Capacity, layout, cost, ambience, security, service, availability
Weber (2001)	Hotel	Convention	Royalty to chains; higher and more consistent standard of service levels, hospitality, restaurant facilities, personal safety, inter natures of hotel
Comas & Mosccardo (2005)	Venue/Meeting facility	Regional meetings	Capacity, layout, service quality, facilities for accommodation, technology, flexibility
Chen (2006)	Meting facility	Convention	Space, variety of meeting properties, suitability of convention facilities, and quality of food and beverage

Attendees' expectations of a large convention center are overall cleanliness, a well-maintained facility, helpfulness of guest services personnel, directional signage within the convention center, availability of high-quality lodging near the convention center, sufficient restrooms throughout the facility, and ability to get a cell phone signal (Breiter & Milman, 2006). The meeting attendees expect quality of service, physical appeal, availability of facilities, and standard food and beverage from a resort conference hotel (Lawrence & McaCabe, 2001).

2.4 Technology as a New Emerging Determinant of Facility Selection

Most of the earlier studies did not include technology as a determinant of site selection (Crouch & Richie, 1998; Hu & Hiemstra, 1996; Renaghan & Kay, 1987). Only basic audio and video equipment were listed as selection attributes of a meeting facility (Crouch & Louviere, 2004a; Jago & Deery, 2003). The *Official Meeting Planners Facility Guide* (OMFG), a semi-annual publication of meeting facilities' specifications in the U.S. and Canada, included the following categories of specifications: number of sleeping rooms; number of meeting rooms; capacity of the largest room; total exhibit space (sq. ft.); location/ transportation; accommodations; dining/entertainment; services/facilities/shops; recreational/amusement facilities; rates; size of meeting rooms; meeting facilities; and audio visual equipment and services. However, it is not known whether this is due to their insignificance in selection or lack of available information and knowledge of technology.

Recent studies started including technology as a determinant of meeting facility selection (Baloglu & Love, 2001; Jago & Derry, 2003). Internet and personal telecommunication equipment, the two main functions of ICT-based applications, have gained more attention and importance in the meeting industry from both attendees and planners. The *OMFG* added a new

category in 2003: "Information Technology equipment and services," which was separated from the previously existing traditional category, "Audio/visual equipment and services."

Comas and Moscardo (2005) argued that technology is a key determinant of facility selection, particularly for those conferences which are based on business functions. Jago and Deery (2003) argued that there is a rapid growth in the need for Internet access for both attendees and planners. They want to be linked to their businesses, family, and friends while they are away from the office and home. Bartlett (2007) reported that wireless fidelity (Wi-Fi) was perceived as a necessity for attendees, and their technological service expectation was demanding. While this additional feature may increase the price paid for the meeting facility, all meeting planners agreed that lower budget venues without the service invariably presented too many problems and should be avoided (ASAE, 2005). Meeting planners increasingly demand value for their budget spending on a facility and want to offer their attendees the best possible features, including technology (Bartlett, 2007). However, there is little research on how much and what specific type of technology impacts the meeting planners' selection of a meeting facility.

2.5 ICT in the Tourism, Hospitality, and Conference Center Industry

The increasing intensity of competition has led organizations to search for more efficient and effective ways of managing their businesses. Zeithaml, Parasuramann, and Berry (1991) reported that technology is a tool to improve service and a means of adding value to the user/customer. A combination of computer, telecommunications, and Internet technology, which comprises ICT, is now being widely used for a variety of service delivery purposes (Walker & Johnson, 2006). Many organizations in the tourism and hospitality industry, such as Marriott, Hilton, Southwest Airlines, and online travel distributors, have turned to ICT to improve various

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areas of their business, including marketing, employee training, and sales. Investments in ICT have substantially increased over the last decade.

Connolly et al. (2007) argued that IT adoption in the groups and meetings area are behind other travel industry sectors, but this is expected to be change. They listed hosting of competitive activities, new market entrants, advances in technology, and technology standards within the industry as the driving factors for such transformation. Davison et al. (2002) predicted that progress in ICT would continue to evolve at a rapid pace, offering considerable potential and actual benefits to suppliers, buyers, and intermediaries. They presented the use of ICT by the Meetings, Incentives, Conferences, and Exhibitions (MICE) industry. However, their study focused exclusively on the European market and was limited to several applications of ICT (Internet, Web site, and teleconferencing), using simple descriptive (frequency) analysis. A number of conference centers have installed satellite-linked video conferencing equipment for the purpose of presenting keynote speakers who are unable to attend in person (Davison et al., 2002). However, their study focused exclusively on the European market, mainly the United Kingdom; hence it has limited application to the U.S market.

Much of the research into Internet usage in the hospitality and tourism industry has been from the perspective of hospitality and tourism marketing aspects (Gregory, Kline, & Breiter, 2005). The level of Internet usage for marketing of meetings varies considerably between corporate and association meeting sectors. While only 19% of corporate meeting planners market their events through the Internet, nearly 60 % of association planners do (Meetings & Conventions, 2006). With associations' members spread across the country, more use of the Internet for marketing in the association sector is expected (Davison et al., 2002). Contrary to the use of Internet for marketing, easy use of the web was of increasing importance to corporate

meeting planners (58%) when choosing a meeting facility. Only 36% (for conventions) and 30% (for other than conventions) of association meeting planners indicated it is important (Meetings & Conventions, 2006). Having meeting rooms with multiple high-speed phone lines and computer outlets was very important for 52% of the respondents in this study, while 30% (for conventions) and 25% (for other than conventions) of association planners considered it important when choosing a meeting facility. Most notable the percentage of meeting planners who stated the availabilities of those technologies as important in facility selection are consistently up from the results of a 2004 report on both corporate and association meeting planners.

Gregory and Breiter (2001) studied a different segment—trade show managers and their use of technology—and reported that they relied on the Internet and increased their usage of the web in trade show management. Hotels have installed video conferencing technology to enhance their overall product by observing the potential of the technology. Siguaw, Enz, and Namasivayam (2000) examined the utilization of information technology-based applications in all hotel sectors that include convention centers, conference centers, and convention hotels. Their study identified a list of technology features adopted by U.S. hotels and categorized them into the following three groups based on their main usage priorities:

- Employee productivity: voice mail, interactive television guides, and management e-mail systems.

- Revenue enhancement: teleconferencing services, cell phone rentals, ATMs, and Internet reservations.

- Guest services: in-room Internet access, in-room fax machines, and in-room modems.

The findings suggest that the U.S. lodging industry has employed more technologies that improve employee productivity and enhance revenue. The hotel sector, lodging type, size/complexity of the property, and independent versus chain affiliation also influenced the number and type of technologies adopted. This finding is consistent with Kelner et al. (1999) who suggested the differences in focus of these strategic priorities were found in technological adoptions across types of properties. Among convention hotels, casino properties, and conference centers, convention hotels utilize most technologies in all three categories followed by casino properties and conference center (Siguaw et al., 2000).

Casanova et al. (2005) presented that challenges in using a technology can be caused by interpersonal and structural constraints. In terms of structural constraints, organizations may not be able to provide the resources that planners need to utilize technologies (Casanova et al., 2005). Attwel (1992) and Buharis (1997) found that small- and medium-sized organizations are often limited in terms of in-house technology expertise which influences the use of information technology.

However, there are few studies on acceptance and usage of other types of technologies and their influence on meeting planners' facility selection. Most of the earlier facility selection studies did not include technology services, specifically ICT-based features, in their lists of selection criteria, but it is not known whether that was due to its insignificance or lack of information.

2.6 The Conference Center Industry

As this study focused on the determinants of conference center selection related to ICT-based features, it is important to understand the nature of conference centers. While there is some

confusion and interchangeable use of the terms "conference center" and "convention center," they are different entities (Eisenstodt, 1999). Based on literature reviews, Table 2.6 presents definitions of each term developed by scholars and meeting industry professionals. The most distinct differences between them are that (1) a convention center is required to have a designated large exhibition space along with a meeting space; (2) many conference centers are located in suburban areas with resort-like settings, while convention centers are located in downtown areas with public transportation access; and (3) most convention centers are under a city's authority, which makes them public infrastructure (Fenich, 2000), while conference centers are owned by an individual or corporation.

The International Association of Conference Centers' (IACC) has over 200 North American sites as members, ranging from upscale resort conference centers, university conference facilities, to day centers without accommodations.

PKF Consulting and the IACC forecasted growth for North American conference centers through 2003 and into 2004 in their 2004 report (PKT Consulting & IACC, 2004). Apparently, meeting planners in high-demand regions experience relative lack of conference centers and less flexibility on meeting dates; overall demand has continued to grow and booking lead times continued to be shortened to as short as 30 days. Repeat customers, followed by referrals and personal sales calls, were ranked as the most productive sources for qualified leads.

Table 2.6 Definition of Convention and Conference

Author	Conference center	Convention center
Lane & Dupre, 1997 Eisenstodt, 1999	Close proximity to a city or to a resort area Facility designed especially to accommodate meeting and conference business	N/A
Chon & Sparrowe, 2000	Typically located in suburban areas and designed to provide a setting with free of distraction	N/A
Goldblatt & Nelson, 2001	N/A	A facility for events and expositions, without sleeping room. (p.47)
Convention Industry Council, 2004	A facility that provides a dedicated environment for events, especially small events. May be certified by the International Association of Conference Centers (IACC)	Facility that combines an exhibition space with a substantial number of smaller event spaces. The purpose of these buildings is to host trade shows, public shows, conventions, large food functions and other functions related to the convention industry. They may be purpose built or converted and municipally or privately owned.
International Association of Conference Centers, 2007	Universal criteria requires all certified properties to include a professional staff, a business center, and rules covering acoustics, lighting, furnishings and equipment, extending to ergonomic chairs, non-glare tables, hard writing surfaces and tractable wall surfaces. A minimum of 60 percent of event space must be dedicated purely to meetings.	N/A

The four major types of conference centers are: executive; hotel; resort; and university conference centers (IACC, 2004). An executive conference center is compared to full-service hotels when comparing a resort conference center to a resort hotel. Although structurally different, they are all certified by IACC and adhere to its standards. Its member properties must offer the complete meeting package (CMP), which includes three meals and lodging (except for day centers), meeting space, conference services, continuous refreshment breaks, 24-hour meeting room access, and basic A/V equipment (IACC, 2007b). Therefore, it is important to analyze total revenue on a per-occupied-room basis (RevPOR), as opposed to just room revenue (RevPAR) which is conventionally the primary measure at traditional transient hotels. In 2007, the average RevPOR for the conference centers in the PFK/IACC survey was $354.27, a 3.1% increase over the RevPOR achieved in 2006. Resort conference centers achieved the highest RevPOR in 2007 at $432.87. For reference purposes, all the resort hotels in PKF's *Trends in the Hotel Industry* averaged a RevPOR of $413.32 in 2007 (PKF Consulting & IACC, 2007). The executive conference centers led all conference center types with an average annual occupancy of 73.7%.

Conference business comprises the largest demand segment for conference centers. In 2007, conferences accounted for 70.2% of all occupancy room nights, followed by leisure travelers (13.7%), individual business travelers (12.5%), and other transient guests (3.6%). Business organizations comprise the largest source of demand for conference centers (54.4 % of rooms occupied), followed by academic institutions (12.7%), and trade associations (8.4%). Table 2.7 presents the sources of demand for conference centers in North America.

Table 2.7 Demands by Type of Organizations for North American Conference Centers

Demand Source	Percentage of Meetings
Business Organizations	54.4%
Academic Institutions	12.7%
Trade Associations	8.4%
Professional Organizations	3.2%
Government Organizations	2.5%
In-house	16.6%
Other	2.2%
Total	100.0%

Source: PKF Consulting/IACC 2004

Business meetings generally have two purposes: training; and management development. The training meetings require a meeting space that offers a highly productive environment, which is found in a conference center. "Training/continuing education" is the number one demand (51.9%), followed by "management planning" (25.6%), and "professional/technical meetings" (9.2%). These three types of meetings comprise total 86.7% of all types of meetings that were held in 2007 at IACC certified conference centers in North America (Arnold, 2008).

The local market continues to be the greatest source of meetings for executive, resort, and college/university conference centers. Only business meetings being held at conference centers among all types of meetings tend to be national in scope. In general, proximity (distance to a meeting facility) and quality and size of accommodations are considered as two of the most important meeting facility selection criteria. However, due to the nature of conference center

business, local market and one-day programs are less important variables in conference center selection. The trends of upgrading properties' features continues, with major hospitality industry brands such as Starwood, Hilton, and Wyndham joining the dedicated conference center market, while the core of the conference center industry remains in the small- to midsize-meetings market.

Conference centers list and market various types of ICT-based features on their Web sites and marketing materials. Those features include both wireless and wired Internet throughout the facility, cyber cafes with Wi-Fi Internet access, advanced videoconferencing, virtual conferencing (Webcasting and Web conferences), radio frequency identification (RFID), and on-site IT teams to fulfill customers' needs (Ball, 2006). Davison et al. (2002) added online registration, search engines for venues and suppliers, and online requests for proposals (RFP), and reported that those features specifically help to reduce lead time in the planning stage of meeting management. To meet the various demands of customers, many conference centers are offering unbundled CMP or day meeting packages (DMP) since some items/services are not included or vice versa (*Meeting News,* 2005). For example, the National Conference Center in Lansdowne, Virginia offers "a la carte" technology equipment/services as well as the basic A/V equipment included in the CMP. Those services include broadband Internet access, Local Area Network (LAN), equipment rental, audio/video conferencing, and technical support ("The National Conference Center," 2007). Based on a literature review from *OMFG*, some examples of additional conference technology at conference centers are walk-up Internet stations (Babson Executive Conference Center) and multi-media enhanced sessions via the Web or burning a DVD (Charles F. Knight Executive Conference Center).

Contrary to the type of ICT-based features and services, the technology standard of the conference center industry is not reflecting recent trends in ICT features and the demands of customers and conference centers have large variability (Eisenstodt, 1999). According to the universal technology criteria for ICAA accredited members, technological requirements are simply flip charts, microphones, and image and video display equipment in the main meeting room, with technicians available for immediate response. The PKF/IACC report (2004) listed making return on investments in technology and providing technological support to increasingly sophisticated customers as anticipated challenges for conference centers. According to the study by IACC (2004), only 41% of the conference centers surveyed have a dedicated IT manager. At other conference centers, the controller or general manager frequently has the primary responsibility of information technology/systems support, even though he/she is not a specialist in IT operation. Tony Pastor of McKinsey & Company quoted by Carey (2008) has emphasized the importance of a technician on site to help the older generations to use various technologies, which would add options to what a planner could use in their meetings. However, there is no study investigating the impact of various technology features on meeting planners' conference center selection.

2.7 Meeting Site/Facility Selection Process

Associations' meeting site selection is made through the organizational buying by committees or groups of people who represent different departments and have different interests and motivations (Ronbinson et al., 1967). Such a group of individuals is called a buying center, and its members typically represent different departments/positions, different interests and motivation (Clark & McCleary, 1995; Robinson et al., 1967; Webster, 1984; Webster & Wind, 1972), and politics (Crouch & Louviere, 2004a.). Consequently, a purchase decision in an

organization involves considerable complexity (Clark & McCleary,1995; Webster, 1978). The organizational buying process also consists of multi-decision stages and decision-making units (buying centers), changes in structure and make-up in each stage (Doyle et al., 1979). Some researchers found that buying center involvement was dynamic (Ghingold & Wilson, 1998), with individuals participating in some sub-decisions but not others, and authority often shifting from one buying activity to the next. In general, earlier stages of the buying process (i.e. need recognition, description, and specification of the purchase) tend to have wider involvement than later stages (vendor qualification and contact, vendor proposals, and analysis) (Lynn, 1987). Knowledge of how buying centers form and how these variables affect the purchase decision is therefore of great importance to meeting facility marketers (Thomas, 1984).

Although most business buying decisions are dynamic in nature, theorists and researchers have endeavored to effectively capture the multi-person involved multi-phase buying process (Robinson et al., 1967; Webster & Wind, 1972). Previous investigations of the organizational buying process progressed in two main streams of research. First, researchers have specifically attempted to profile buying centers, describe and measure interpersonal communications, and identify the organizational and environmental factors that affect buying center behavior and buying decisions in general (Johnston & Bonoma, 1981; Spekman & Stern, 1979). Consequently, the make-up, structure, functioning, and outputs of the buying centers have received substantial attention in the business marketing literature (Ghingold & Wilson, 1998). Effective business marketing relies on identifying key buying center members, determining their concerns and needs, and then creating solutions for individual buying center members that meet their needs, fulfill buying requirements, and minimize perceived risk.

Clark et al. (1996) identified that all buying centers in association meeting decisions belong to one of three types based on its decision pattern: (1) executive board choose location, (2) meeting planner or executive choose location, or (3) site-selection or program committee choose location. Each buying center makes a final selection with different groups of members in an organization. No dominant pattern was found in the buying center make-up.

The second stream of buying center studies pertains to the buying authority, the locus of power and decision making authority, and changes in influence and control over different buying activities over time. Differences in buying center size and composition were repeatedly observed in various stages of the buying process to determine their effect on decision making (Jackson et al., 1984; Lynn, 1987; McQuiston, 1989; Silk & Kalwani, 1982). The studies in this stream provide important insights into the effects of internal and external factors in determining the locus of authority within the buying center (Jackson et al., 1984; Johnston & Bonoma, 1981; Webster, 1984). The magnitude of influence on the buying decision also varies based on situational variables: positions or department, type of product being purchased, the stage of the decision process, the decision type, and organizational structure.

Thomas (1984) defined "expert power" as being based on the receiver's perception that source has some special knowledge or expertise and tends to be part of the informal (internal) processes within the organization. He also added that it is an expertise primarily informal in nature and relevant to organizational buying processes. The expert power is selected because technical knowledge, special skills, or experience can mediate interpersonal relationships in the buying/selection process (Clark et al, 1997; Thomas, 1984). Considerable informal expertise is provided as a basis for influencing other participants in the purchase decision process. Kohli (1989) analyzed the determinants of influence in organizational buying using a contingency

approach and suggested that expert power is the most important influence determinant. Its effectiveness varies with buying center size, viscidity, and time pressure.

Clark and McCleary (1996) reported that risk can be a powerful situational influence on members of the buying center, especially when they are purchasing services that have high intangible components. Perceived risk comprised of two dimensions and the magnitude of it is related to those two dimensions: uncertainty about the outcome of the decision and the importance of the decision (Bettmann, 1973; Kohli, 1989). The uncertainty is a psychological state that results primarily from a lack of adequate information or knowledge (Kohli, 1989). Uncertainty may prevail for two reasons. First, buyers may experience uncertainty because of a lack of relevant experience with the product category (von Hippel, 1986). Second, uncertainty may exist because of particular market conditions that impose demands on a buyer's information processing capacity (Achrol & Stern, 1988). High-technology markets represent considerable uncertainty for buyers because their past experience is frequently inapplicable to the buying decision at hand for future selections. Von Hippel (1990) argued that high-technology markets tend to be competence destroying.

Purchase importance is defined as the "impact of a purchase on organizational profitability and productivity" (McQuiston, 1989). Because a purchased product may not perform as expected, there is an uncertainty that may carry possible consequences, both good and bad. He reported that the more important the purchase decision, the more perceived risk. The selection, an often equal term of purchase in the meeting facility selection of a site and meeting facility is one of the most important purchases to an association due to its contribution to non-due revenue.

However, these studies do not explain directly the underlying behavioral reasons for the variation in influence of a position as many studies were limited to providing only a static view of the buying situation (Wind, 1967). These simplifications or shortcuts were probably used because the capturing process effect is exceptionally difficult for both researchers and respondents. In addition, general conclusions regarding the dynamic nature of buying center structures and their implications for business marketing practice remain unclear in the absence of comprehensive research.

2.8 Meeting Planners: Expert Power as a Member of the Buying Center

Webster and Wind (1972) defined the roles of people in a buying center as buyers, deciders, gatekeepers, and influencers. Clark et al. (1996) reported that a meeting planner performs the roles of buyer and gatekeeper; one powerful role of a meeting planner is that of gatekeeper by having professional preference on certain sites from past experiences, reference groups, or personal preference. The meeting planners may influence the flow and quality of information to the benefit or detriment of any particular selection. Personal knowledge can be a powerful tool when it comes to one member of the buying center exerting influence over the group's site selection decision (Clark et al., 1997). In small associations, the planning of such events may be done by an executive director or administrative staff, while specialized meeting planners utilize them in larger associations. Other members in organizations' site/facility selection group conformed to the meeting planner's choice or recommendation because they believe it lead to the best decision for the organization's meeting. Meeting planners often determine the consideration set of convention sites as well as the selection of a final site because of their expert and information power (Clark, Evans, & Knutson, 1997; Baloglu & Love, 2004).

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Crouch and Louviere (2004a) argued that associations' site selection should be investigated from an organizational buyer-behavior perspective. However, most meeting site selection studies have focused on association meeting planners as they are actively involved in the site selection process and influence the selection of a meeting facility as well as a meeting destination (Clark et al., 1997; Evans & Lord, 1997; Clark et al., 1996).

Very limited studies have focused on other types of meeting planners' roles and perceived expert power in the site/facility selection process. Bonn and Boyd's (1992) study found that corporate meeting planners have different perceptions in terms of facilities and services, recreational attractiveness, and entertainment of destinations, and suggested that understanding the differences would help the destinations to identify their strengths and weaknesses to better target U.S. corporate meeting planners.

2.9 Types of Meeting Planners and Their Technology Readiness

Beaulieu and Love (2004) listed four types of meeting planners: association planners; corporate planners; medical planners; and independent planners. Association meeting planners are usually full-time, paid employees of professional, trade, industrial, scientific, and other types of associations (Rutherford, 1990) and are responsible for planning the meetings, conventions, and expositions for their organization (Montgomery, 1995). A corporate meeting planner is defined as one who works in a corporation (such as Microsoft or General Motors) (Beaulieu and Love, 2004; Toh et al., 2005). A government meeting planner is defined as one who plans various levels of government meetings: federal; state; and local while working as a government employee. An independent meeting planner is often referred to as a third-party meeting planner and defined as one who contracts services on an individual basis and is responsible for a wide

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variety of meetings (Beaulieu & Love, 2004; Toh et al., 2005). Toh et al. (2005) conducted an exploratory study of independent meeting planners' roles, compensation, and potential conflicts with corporation and association meeting planners. The *2006 Meeting Market Report*, published biannually by Meetings and Conventions, reported 136.5 million attended meetings that year (79.7 million at corporate meetings, 37.9 million at association meetings, and 18.9 millions at conventions). According to the *2003 State of the Industry Report*, published by Successful Meetings, the proportion of each type of meeting planners are: corporate planners (34%); association meeting planners (27%); independent meeting planners (13%); and others, including government planners (26%).

The rapid growth of technology-based products and services and the increased demand for those features by attendees ask for a thorough assessment of meeting planners' technology readiness technology (Davison et al., 2002). They argued that one major factor limiting is the extent to which meeting planners have the skills and equipment required to give them access to information and communication technology. Many studies of meeting planners, mainly on association planners, show that they acknowledged a need to use technology, along with its positive qualities and benefits. However, these feelings do not translate to actual use of technology by meeting planners. Vanucci and Kerstetter (2001) argued that, although technology is a vital part of meeting planners' daily lives, they have not followed the pace of other hospitality professionals and still rely on traditional technology (e.g. fax, modem, and text e-mail). Vanucci and Kerstetter (2001) identified that association meeting planners in particular have larger gaps to fill in their technological knowledge than corporate meeting planners.

Casanova et al. (2005) studied the relationships of meeting planners' profiles with attitudes towards technology and actual usage. They reported that higher education is closely

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related to a positive attitude toward technology; however, the study was limited to examining

only the Internet and personal computers as tools of communication channels or administrative

tasks. Clark et al. (1996) argued that meeting planners can have expertise by gaining experience

through identifying the hardware and software needs of their organization. It is important to

measure whether meeting planners are sufficiently ICT-oriented to be able to benefit from such

technology applications (Davison et al., 2002). Webster and Wind (1972) explained that

technological constraints can be overcome through training and support by organization or

colleagues and emphasized the importance of individual training or technical support to

encourage comfort with new technology.

Compared to the extensive research on association meeting planners, corporate and

government meeting planners have received very little attention in academic studies. Varying

levels of ICT literacy of meeting planners leave their level of expertise regarding ICT in facility

selection uncertain. While most studies agree that a meeting planner has expertise in site/facility

selection, there is no evidence that the meeting planner has the same level of expertise and

influence on the selection or recommendation of ICT-based features/services, which includes

high-tech items at conference centers.

2.10 Personal Innovativeness

Personality makes a difference in the adoption process of IT. Dabholkar (1996) found

that consumers varied in terms of their beliefs/feelings about the various options and those

beliefs/feelings were positively correlated with intended use; this finding is consistent with TAM

by Davis (1996). Extensive studies focusing on the perceptions, emotions and usage of new

technology demonstrated that people harbor both favorable and unfavorable views about

technology-based products (Mick & Fournier, 1998). Based on qualitative research, they

identified eight technology paradoxes: control/chaos; freedom/enslavement; new/obsolete;

competence/incompetence; efficiency/inefficiency; fulfills/creates needs; assimilation/ isolation;

and engaging/disengaging. These positive and negative feelings referred to as "paradoxes"

coexist within an individual and therefore must be considered in order to understand more

completely how and why people adopt new technology (Mick and Fournier, 1998).

Parasuraman (2000) proposed technology readiness (TR) which specifically addresses

and incorporates the underlying paradoxical attitudes that individuals experience when exposed

to new technology. The TR construct refers to peoples' propensity to embrace and use new

technologies for accomplishing goals in home life and at work. He operationalized TR with

Technology Readiness Index (TRI) and tested 36 statements, grouped into two enabler

dimensions (optimism and innovative) and two inhibitor dimensions (discomfort and insecurity).

Parasuramann argued that the TRI can be used to provide insights pertaining to which

technology-based features and type is likely to be the most appropriate type of support to assist

consumers who are experiencing problems with technology-based systems. Table 2.8

summarizes the underlying dimensions of TRI and their implications for the measurement of

meeting planners' attitude toward technology.

Table 2.8 Underlying Nature of Technology Readiness

Direction	Dimension	Description
Enabler Dimensions	Optimism	A positive view of technology. Belief in increased control, flexibility, and efficiency in life due to technology. Tendency to believe that one will generally experience good versus bad outcomes in life.
	Innovativeness	A tendency to be the first using a new technology.
Inhibitor Dimensions	Discomfort.	Having a need for control and a sense of being overwhelmed.
	Insecurity	Distrusting technology for security and privacy reasons.

Walczuh et al. (2006) examined the relationship of personality and technology acceptance by combining TR and TAM into one model. The study supported that the informants' optimism has the strongest impact on perceived ease of use and perceived usefulness. Those who have strong positivism seem to use IT most frequently and positively, and are less likely to focus on its negative aspects.

Recent innovation studies showed that another variable derived from innovation diffusion theory (IDT)—personal innovativeness of IT (PIIT), the willingness of an individual to try out any new IT—plays a significant role in determining the user's acceptance of technology (Walczuh et al., 2006). The items employed to measure PIIT are fundamentally a subset of TR; specifically, the enablers of TR are conceptually similar to PIIT. PIIT encapsulates the degree to

which a user feels confident in using or including technology-based services while TR is not an indicator of a person's competence in using technology (Walczch et al., 2006).

2.11 Proposed Research Model

The technology acceptance model (TAM) offers a theoretical basis for examining the factors contributing to the intention to act on the acceptance of technology (Davis, 1986, 1989). While TAM was much simpler and parsimonious, researchers argued that a more holistic assessment of technology adoption is necessary in order to improve the understanding of the phenomenon of technology acceptance (Agarwal & Karahanna, 2000; Plouffe et al., 2001). Davis (1989) and Venkatesch and Davis (2000) argued that in-depth research should be done to model the determinants of perceived ease of use and perceived usefulness. In this study, the author adopted and extended the TAM (Davis, 1989) by integrating key factors from IDT (Rogers, 1995) and Bandura's (1986) self-efficacy.

The purpose of this study is to model the determinants of perceived ease of use and perceived usefulness in the context of selection of a conference center with ICT-based features. Thus, the perceived self-confidence and beliefs (self-efficacy, perceived usefulness, and perceived ease of use) of ICT-based features on a meeting facility selection will be examined. Result demonstrability and personal innovativeness in IT were previously studied as external factors that affect usage through perceived usefulness and perceived ease of use (Rogers, 1995; Yi et al., 2006) and they are included in the proposed model. This study also investigates interrelations among other internal and external constructs identified through the literature review. The theoretical framework that integrated TAM and buying center concepts from literature reviews appears in Figure 2.6. Due to the restriction of difficulty in testing all identified

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constructs with available resources, the author has presented the proposed research model in Figure 2.7. The author also described the rationale in more detail for the hypothesized relationships in the following section.

Self-efficacy is influenced by personal innovativeness in ICT (PIICT), result demonstrability, and perceived importance of the availability of technical support. The model will test the influence of self-efficacy on perceived usefulness and perceived ease of use. Perceived usefulness is hypothesized to be influenced by perceived ease of use, self-efficacy, and PIICT, while perceived ease of use is hypothesized to be influenced by perceived importance of the availability of technical support, self-efficacy, and PIICT. The type of meeting planner is expected to have influence on the relationships between perceived importance of the availability of technical support and self-efficacy as well as self-efficacy on perceived ease of use.

Figure 2.6 Integrated Theoretical Framework

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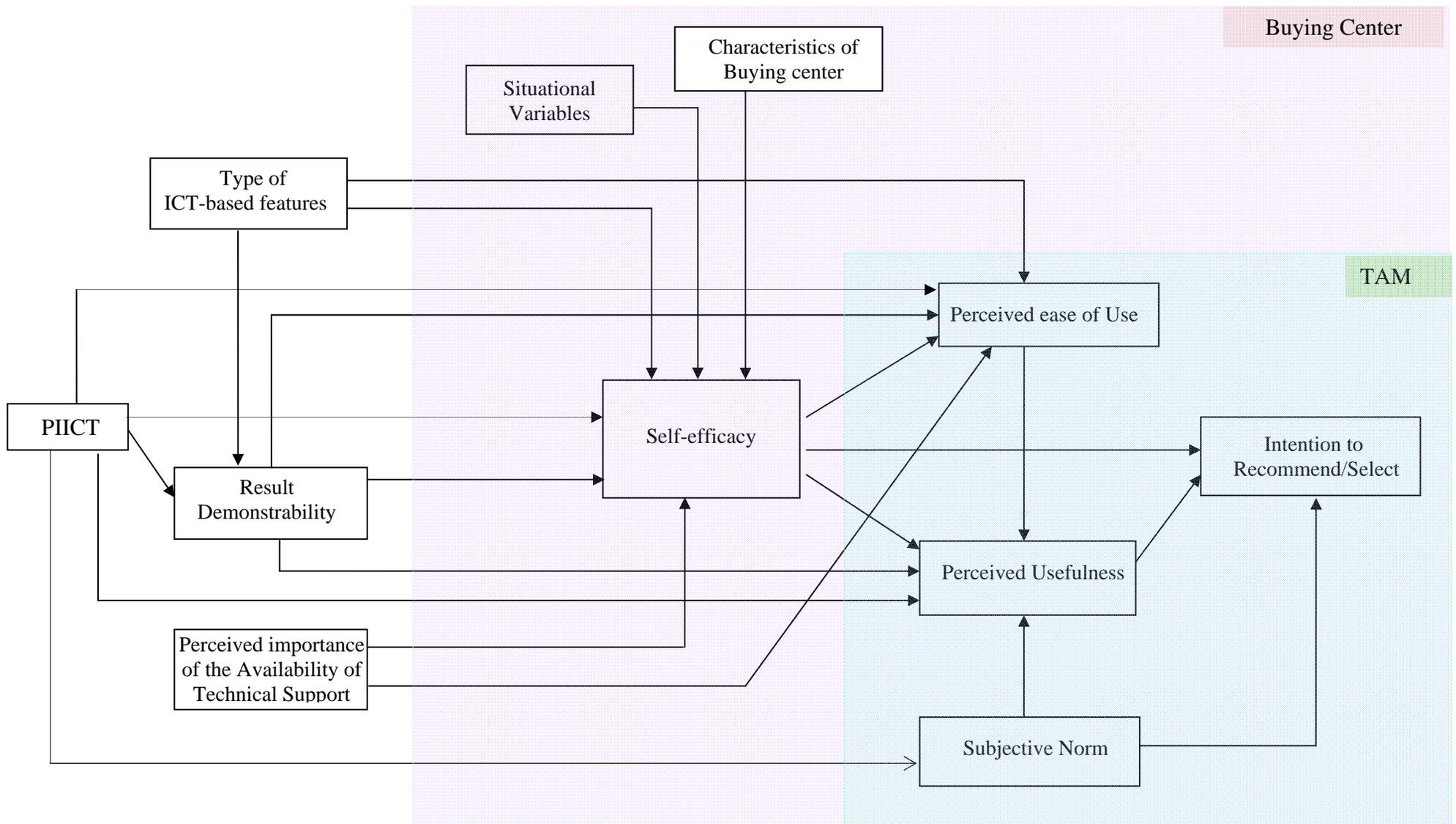
Figure 2.7 Proposed Research Model
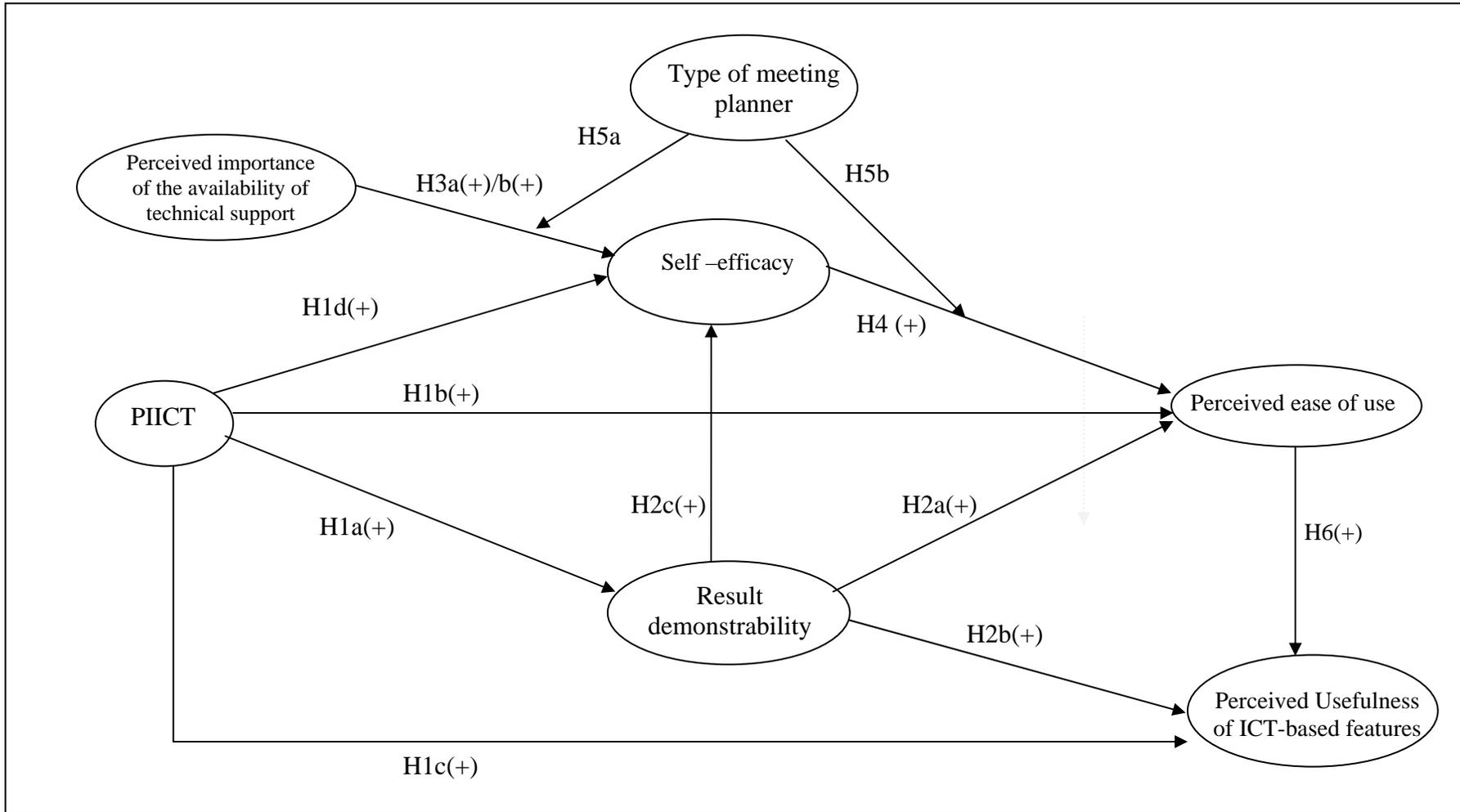
2.12 Constructs and Hypotheses

The definitions of the constructs and hypotheses in this study are explained as follows:

2.12.1 Personal Innovativeness in ICT (PIICT)

PIICT is defined as the willingness of an individual to try any new ICT and it takes an important role in determining the outcomes of user acceptance of technology (Agarwal & Prasad, 1997). Innovators and early adopters find it easier to imagine, understand, and appreciate the benefits of an innovation in its early stage of diffusion (Moore, 1999). Thus, the innovators should feel more confident about the intangible results of using the innovative technology and in communicating these results to others. Yi et al. (2006) indicated there is positive relationship between PIIT and result demonstrability. So the author hypothesizes that:

H1a: A meeting planner's Personal Innovativeness in ICT (PIICT) is positively correlated with result demonstrability.

Earlier adopters are more technically competent than others and are respected by their colleagues or by members of buying centers for their knowledge of innovation. With the given technical competencies, the earlier adopters feel fewer barriers to the complexity of new technology, suggesting influence on the perception of ease of use.

Arguing that individuals' beliefs about IT use is influenced by the individual, institutional, and social contexts in which individuals interact with IT, the authors proposed a broad framework and examined the simultaneous effects of those influences on perceptions of usefulness and ease of use (Terry, 1993; Terry & O'Leary, 1995). Results suggest that personal innovativeness positively influences usefulness and ease of use beliefs, while Agarwal et al. (2000) theorized that self-perceptions of efficacy in the task domain of computing were strongly

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influenced by the extent to which individuals believe they were personally innovative with respect to IT.

Lewis, Agarwal, and Sambamnrthy (2003) also argued that PIIT is a significant determinant of perceived ease of use. The early adopters and innovators have the ability to envision the potential benefits and advantages associated with the innovation. PIIT is conceptualized as direct determinants of perceived usefulness and perceived ease of use. Therefore, the following hypotheses have been proposed for this study:

    H1b: A meeting planners' Personal Innovativeness in ICT (PIICT) has a positive relationship with higher perceived ease of use of ICT-based features at a conference center.

    H1c: A meeting planner's Personal Innovativeness in ICT (PIICT) has a positive relationship with perceived usefulness of an ICT-based feature at a conference center.

The effect of PIIT on self-perceived expert power on the purchase of IT-based services is unknown. However, Agarwal et al. (2000) theorized that self-perceptions of efficacy in the task were strongly influenced by the extent to which individuals believe they were personally innovative with respect to IT. So the early adopters were more confident about the application and the tangible result of using it and communicated the result with others. The self-perception of efficacy/confidence closely confirms the self-perceived expertise/confidence; therefore, the following hypothesis is proposed:

    H1d: A meeting planner's Personal Innovativeness in ICT (PIICT) will have a positive effect on self-efficacy.

2.12.2 Result Demonstrability

Agarwal and Prasad (1997) examined the effects of individuals' perceptions about the characteristics of target technology on intention of future use and found that relative advantage and results demonstrability are highly related to the intention of future use. Rapid technological change makes it difficult for buyers to evaluate acquired information in terms of the significance of new product offerings (Sutton et al., 1986). Most customers find it difficult to envision new technologies and jargons used to describe them and match those with applications without assistance. For example, availability of a private virtual network (PVN) at a meeting facility can allow a meeting planner to provide access to meeting attendees' headquarter database and share the information in their presentations from a remote meeting facility.

Result demonstrability is defined as the extent to which the tangible results of using an innovation can be observable and communicable (Rogers, 1995). As the relative advantage is highly related to the perceived usefulness in the proposed model (Yi et al., 2006), only the result demonstrability is added to the proposed model. Yi et al. (2006) argued that potential users of technology-based features or services can better understand the advantages of using a new technology and its implication for their job when tangible results of the technology are directly apparent. They also claimed that the result demonstrability positively influences the perceived ease of use. Therefore, the following hypotheses are proposed for this study:

H2a: A meeting planner's result demonstrability will have a positive effect on the perceived ease of use of specific ICT-based feature(s).

H2b: A meeting planner's result demonstrability will have a positive effect on the perceived usefulness of specific ICT-based feature(s).

Yi et al. (2006) reported that the extent to which a user was able to envision the result of using an innovation partially reflects confidence in using the system and achieving desired results. This is also consistent with the view of the attribution theory, which proves that people are more likely to make internal attributions when the projected outcome of usage is positive (Heider, 1958). Therefore, the following hypothesis is proposed for this study:

H2c: A meeting planner's result demonstrability will have a positive effect on self-efficacy in the use of specific ICT-based feature(s).

2.12.3 Perceived Importance of the Availability of Technical Support

Montealegre (1999) argued that adoption of new or unfamiliar technology requires different managerial, technical, and financial resources than those needed to adopt already developed technology. In general, IT department staffs in an organization serve to analyze options to determine technical feasibility and make recommendations. Technical support on meeting management technologies to meeting planners is usually provided through (1) in-house technical support offered by an IT department or experienced peer, or (2) on-site technical support offered by a meeting facility. Because some type of meeting planners, such as association meeting planners, are considerably behind in terms of technology usage and knowledge (Casanova et al., 2005), technical support becomes more important to them. Some meeting planners may not feel that they have the necessary skills to utilize a specific technology, but such constrains or perceived lack of behavioral control, which is compatible with concept of perceived self-efficacy (Bandura, 1977, 1982, 1986), can be overcome through support and training offered by experienced peers or technicians (Matthing et al., 2006). Furthermore, to those who use new or unfamiliar technology with lack of confidence, the importance of technical support and training is expected to be high to gain knowledge of and confidence in using such

technology-based feature. Therefore, the author hypothesizes that perceived importance of the

availability of technical support has a negative relationship with the self-efficacy:

H3a: The perceived importance of availability of in-house technical support is negatively

associated with self-efficacy

H3b: The perceived importance of availability of on-site technical support is negatively

associated with self-efficacy

2.12.4 Self-efficacy

Self-efficacy was first defined as people's belief about their capabilities to produce

performances that influence events affecting their lives (Bandura, 1995) and one's ability to

achieve the behavioral outcome (Manstead & Van Eekelen, 1998). Personal capacity (capability)

and self-efficacy have been employed to reflect the extent to which prospective users believe

they are sufficiently able or equipped to engage and use technology-enabled service successfully.

In other words, self-efficacy related directly to perceptions of ability to execute a behavior

needed to produce a given outcome (Manstead & Van Eekelen, 1998). This approach is quite

similar to the definition of perceived behavioral control, in that it refers to people's perceptions

of the ease or difficulty of performing the behavior of interest (Ajzen, 1991; Davis et al., 1998;

Walker & Johnson, 2006; Walker et al., 2002). The present view of perceived behavioral control

is also compatible with Bandura's (1977, 1982, 1986) concept of perceived self-efficacy. It is

concerned with a judgment of how well one can execute courses of action required to deal with

prospective situations. Ajzen (1991) argued that much knowledge of perceived behavioral

control comes from Bandura and his associates' research proving peoples' behavior is strongly

influenced by their confidence in their ability to perform. Ajzen used the term "perceived

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behavioral control" in his TPB model; however, he also stated that "perceived self-efficacy belief"

can replace it. Clearly, there is great degree of overlap among self-efficacy and perceived

behavioral control as both concepts are concerned with control: the perceived ease or difficulty

of performing a behavior, and the belief that one is capable of performing a behavior. Both actual

self-confidence and the belief of self-confidence are implied with a willingness to use and a

preparedness to engage with technology-enabled services (Hill et al., 1987; Hoffman & Novak,

1996).

Bandura (1977) notes that the less efficacious people judge themselves to be, the more

difficult the tasks appear to them. In the present research, self-efficacy loaded highly on

perceptions of how easy or difficult it was to achieve the target behavior, which is the definition

of perceived ease of use. It is consistent with prior research that found that perceived self-

efficacy is a significant determinant of perceived ease of use (Venkatesh & Davis, 1996).

Therefore, it is reasonable to expect the construct "self-efficacy" is a strong determinant of

perceived ease of use. Therefore, the author hypothesizes the following statement:

H4:   Self-efficacy will have a significant positive relationship with perceived ease of use.

2.12.5 Type of Meeting Planner

While many studies of meeting planners, mainly on association planners, show that they

acknowledged the positive qualities, benefits, and needs to adopt technology, these feelings are

not often implemented to actual use of technology. Vanucci and Kerstetter (2001) argued that,

although technology is a vital part of their daily lives, meeting planners have not followed the

pace of other hospitality industries that use the revolution of technology and still rely on many

traditional technologies (e.g. fax, modem, and text e-mail). One major factor limiting as well as

determining the adoption of technology is the extent to which the users have the skills and equipment required to give them access to the technology (Davison et al., 2002). They reported that association meeting planners have an especially larger gaps to fill in their technological knowledge than those of corporate meeting planners. *Meeting Market Report* (2005) identified that the level of Internet usage for marketing of meetings varies considerably between corporate and association meeting sectors. The type of meeting planner is defined as the category of meeting planners based on the organization that meeting planners conduct meetings for and three types of meeting planners: association meeting planner; corporate meeting planner; and government meeting planner were selected for the hypothesis test.

To test the influence of the type of meeting planner (association, corporate, and government) on the relationships between perceived importance of availability of technical support, self efficacy, and perceived ease of use, the following hypotheses were proposed:

H5a: The type of meeting planner will influence the effect of perceived importance of availability of technical support on self-efficacy.

H5b: The type of meeting planner will influence the effect of self-efficacy on perceived ease of using ICT-based features.

2.12.6 Perceived Usefulness and Perceived Ease of Use

TAM theorized that behavioral intention to use a new system would be determined by perceived usefulness and perceived ease of use (Davis et al., 1989). Davis (1986) defined perceived usefulness as the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context.

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Perceived ease of use is the degree to which the prospective user expects the target system to be free of effort. Behavioral intention is a measure of the strength of one's intention to perform a specified behavior (Davis et al., 1989; Fishbein & Ajzen, 1975). Both TRA and TAM reported that usage behavior is predictable from a measure of behavioral intention, and any other factors may influence user behavior indirectly by influencing intention (Davis et al., 1989). Some studies with individual professionals reported that no significant relationship existed between perceived ease of use and behavioral intention to use (Chau & Hu, 2001; Yi et al., 2006). Therefore, the following hypothesis was proposed for this study:

H6: Perceived ease of use will have a positive effect on the perceived usefulness of use.

Chapter III

METHODOLOGY

3.1 Introduction

This chapter refines the framework of the research study and is followed by a methodology and measurement of the variables in detail. The author describes the development of measurement items, scales for the constructs in the suggested research model. In this chapter, the research design and the data analysis procedures used to achieve the research objectives are discussed. Also, the survey method used in this study is explained, along with the data analysis procedures.

3.2 Research Design

This study used a theoretical model to examine the perceived importance of ICT-based features and services and factors influencing meeting planners' beliefs and attitudes toward ICT-based features and services in their conference center selection/recommendation. Table 3.1 comprises a list of the research questions and the hypotheses developed in an effort to answer the research questions. The administered questionnaire via mail was chosen as a research method for data collection as it has been widely used and justified in information technology literature since surveys via the Internet can result in direct bias (Pinsonneault & Kraemer, 1993). Zikmund (2003) defined the mail survey as a self-administered questionnaire sent through the mail to respondents and listed the advantages of mail surveys: geographic flexibility, relatively inexpensive cost, standardized questions, absence of an interviewer, and highly structured and standardized questions. As still not all meeting planners in the meeting industry can access the Internet nor

possess the same level of technology usage, it was determined that the Internet survey was not

the appropriate medium for this study.

Table 3.1 Research Questions and Hypotheses

Research Question	Research Hypotheses
1. What types of ICT-based features are perceived as important in the selection/recommendation of a conference center by meeting planners?	N/A
2. How does the perceived importance of the availability of technical support influence meeting planners' confidence in the use/acceptance of ICT-based features at a conference center?	H3a: The perceived importance of availability of in-house technical support is negatively associated with self-efficacy. H3b: The perceived importance of availability of on-site technical support is negatively associated with self-efficacy.
3. Does a relationship exist among attitude toward technology (PIICT), result demonstrability, self-efficacy, ease of use, and perceived usefulness of ICT-based features in the recommendation/selection of a conference center?	H1a: Personal Innovativeness in ICT (PIICT) of a meeting planner is positively correlated with result demonstrability. H1b: Personal Innovativeness in ICT (PIICT) of a meeting planner has a positive relationship with perceived ease of use of ICT-based features at a conference center. H1c: Personal Innovativeness in IT (PIICT) of a meeting planner has a positive relationship with perceived usefulness of an ICT-based feature at a conference center.

Table 3.1 Research Questions and Hypotheses (Continued)

Research Question		Research Hypotheses
3. Does a relationship exist among attitude toward technology (PIICT), result demonstrability, self-efficacy, ease of use, and perceived usefulness of ICT-based features in the recommendation/selection of a conference center?	H1d:	A meeting planner's Personal innovativeness (PIICT) will have a positive effect on self-efficacy.
	H2a:	A meeting planner's result demonstrability will have a positive effect on the perceived ease of use of specific ICT-based features.
	H2b:	A meeting planner's result demonstrability will have a positive effect on the perceived usefulness of specific ICT-based features.
	H2c:	A meeting planners' result demonstrability will have a positive effect on self-efficacy in the use of specific ICT-based feature(s).
	H4:	Self-efficacy will have a positive relationship with perceived ease of use.
	H6:	Perceived ease of use will have a positive effect on perceived usefulness.
4. Does the type of meeting planner influence the relationships of perceived importance of the availability of technical support, self-efficacy, and perceived ease of use of ICT-based features in recommendation/selection of a conference center?	H5a:	The type of meeting planner will influence the effect of perceived importance of the availability of technical support on self-efficacy.
	H5b:	The type of meeting planner will influence the effect of self-efficacy on perceived ease of use of ICT-based features.

This study used survey instruments adopted from Davis et al. (1989) and Yi et al. (2006). The instruments are widely regarded and have received considerable attention by researchers (Adams et al., 1992; Hendrickson & Collins, 1996; Igbaria et al., 1995; Mathieson et al., 2001; Segars & Grover, 1993; Straub et al., 1995; Subramanian, 1994).

3.3 Population and Sample

A target population is defined as a complete group of the specific population elements relevant to a research project (Zikmund, 2000). The target population of this study was the meeting planners who used or planned to use a conference center for their meetings. A sample frame, often called a working population, is defined as the list of elements from which a sample may be drawn. The sample frame, which was the same as the research sample in this study, was obtained from the meeting planner client lists of the following three conference centers: the National Conference Center, Hotel Roanoke and Conference Center, and the Inn at Virginia Tech and Skelton Conference Center. The samples consisted of the meeting planners and those who possessed equal positions from the given set of conference centers.

This study used a judgment (purposive) sampling technique and the data collected through this technique are convenience samples. The purposive sampling is a non-probability sampling technique in which an experienced individual selects the sample based on his or her judgment about some appropriate characteristics required of the sample to serve a specific purpose. The major reason that this research used those meeting planners as subjects was because the clients of the selected conference centers comprise a relatively homogeneous group in terms of their travel related characteristics, such as travel distance (proximity), lodging requirements, and type of meetings. Specifically, it is critical for subjects to be exposed to

similar availability of ICT-based features. Another reason for using these subjects was to reduce the risk of the researcher not being able to control the experience of conference center selection/recommendation. By using the probability sampling methods, such as simple random sampling or systematic sampling in studies of an experimental nature, the researcher may lower the reliability and validity of the study. For instance, subjects selected through random sampling from the often used sample frame (such as the list of Meeting Professional International meeting planner members) might include many samples that have not experienced the selection/recommendation of a conference center with ICT-based features. Consequently, they may not provide a meaningful response pertaining to the importance of ICT-based feature(s) at a conference center. While the result of the study from convenience and purposive sampling methods cannot project beyond the specific sample, convenience samples are best used for exploratory research when additional research will subsequently be conducted with a probability sample (Zikmund, 2000).

The unit of this study was an individual meeting planner. The determination of sample size is a critical part of this research. When a sample size is much smaller than the minimum requirement, the results of the study may not be sufficient to be used in generalizing the findings and therefore limit the reliability of the study. If the size is too large, it has the tendency of making even non-significant outcomes statistically significant (Hayduck, 1987). According to Hoyle (1995), the minimum requirement of a sample size for the regression analysis is not fixed but a general, large sample size will increase the reliability of results. For factor analysis, five per each item or ten per each item is considered as a minimum required sample size conservatively (Hair, Black, Babin, Anderson, & Tatham, 2006).

3.4 Instrument and Measures of Constructs

Measures for the variables were either adapted from prior literature or developed specifically for this study. The measurement items, tested in past research, have demonstrated acceptable levels of reliability and validity and were modified for this study. Most items used in this study were tested in the empirical work conducted by Yi et al. (2006). Since they found these measures were similar to others supporting the same constructs, the author has confidence that the measures selected for this study are reasonable measures of the constructs in fact.

Although most individual items used in this study were employed in previously published studies, the measurement items for two new variables: perceived importance of the availability of technical support and importance of ICT-based features at conference centers were developed especially for this study. The measuring items of each variable were explained in Table 3.2. The variables were defined and the measurement items used in the questionnaire were discussed in the preceding sections.

Table 3.2 Instrument and Its Measurement Development

Variable	Items	Scale	Sources for measurement
*Importance of ICT-based features at conference centers	15 items	7-point Likert Scale (1=strongly disagree, 7=strongly agree)	OMFG (2000, 2001, 2003, 2004, 2006); IACC (2007b); GAVEL (2001,2005,2006, 2007)
Personal Innovativeness of ICT (PIICT)	4 items	7-point Likert Scale (1=strongly disagree, 7=strongly agree)	Agarwal & Prasad (1997); Yi et al. (2006)
Result demonstrability	3 items	7-point Likert Scale (1=strongly disagree, 7=strongly agree)	Yi et al.(2006); Agarwal & Prasad (1997); Venkatesh &Davis (2000)
*Perceived Importance of the availability of technical support	2 items	7-point Likert Scale (1=strongly disagree, 7=strongly agree)	IACC (2004, 2007a); M&C (2006)
Type of meeting planners	3 item	Categorical scale (association meeting planner, corporate meeting planner, government planner)	Casanova et al. (2005); *Meeting Market Report* (2006)
Self-efficacy	2 items	7-point Likert Scale (1=strongly disagree, 7=strongly agree)	Bandura (1982,1986); Armitage & Conner (1999); Manstead et al. (1998)
Perceived ease of use	5 items	7-point Likert Scale (1=strongly disagree, 7=strongly agree)	Davis (1986); Venkatesh & Davis (2000)
Perceived usefulness	5 items	7-point Likert Scale (1=strongly disagree, 7=strongly agree)	Davis (1986); Venkatesh & Davis (2000)

* New variables developed for this research

3.4.1 Personal Innovativeness of ICT (PIICT)

Personal innovativeness of information technology was first defined as the willingness of an individual to try out any new IT, and is seen as having an important role in determining the outcomes of user acceptance of technology (Agarwal & Prasad, 1997). It describes the extent to which an individual has an innate propensity toward adopting a new IT. This study modified IT to ICT to make them specifically relevant to ICT-based features and defined it as perceived innovativeness of ICT (PIICT). The four items were adapted from Agarwal and Prasad (1997), with appropriate modifications. Respondents were asked to indicate the extent of agreement or disagreement with the four statements concerning PIICT on a 7-point Likert-type scale ranging from (1) strongly disagree to (7) strongly agree. The following are the items used to measure the current construct:

1. I attempt to experiment with any new information and communication technology I hear about.

2. Among my peers, I am usually the first to try out new information and communication technology.

3. In general, I am hesitant to try out new information and communication technology based features/services.

4. I like to experiment with new information and communication technology.

3.4.2 Result Demonstrability

Result demonstrability is defined as the extent to which the tangible results of using an innovation can be observable and communicable (Rogers, 1995). The following three items were

adopted from Yi et al. (2006), with appropriate modifications to make them specifically relevant to ICT-based features. Respondents were asked to indicate the extent of agreement or disagreement with the three statements concerning result demonstrability on a 7-point Likert-type scale ranging from (1) strongly disagree to (7) strongly agree. The following are the items used to measure the current construct:

1. I have no difficulty telling others about the results of using ICT for meeting functions at conference centers.

2. The results of using ICT for meeting functions at conference centers are apparent to me.

3. I have difficulty telling others about the results of using a specific ICT at a meeting function.

3.4.3 Importance of Information and Communication Technology (ICT)-Based Features at Conference Centers

There is no established list of standard ICT-based features/service items for conference centers to measure the importance of them. Therefore, the author developed the measurement items of this construct through content analysis of meeting facility guides (OMFG & GAVEL) in North America. Based on the content analysis, the top 15 ranked ICT-based features were identified. Respondents were asked to indicate the extent of agreement or disagreement with the following statements concerning the importance of ICT-based features on their selection/recommendation of a conference center. The 7-point Likert-type scale was used ranging from (1) strongly disagree to (7) strongly agree. The operational definition of each item was not provided since this study also aims to measure meeting planners' level of knowledge of

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the ICT-based items, which is often used in the form of technology jargon in many meeting facility guides and marketing materials. Therefore, the questionnaire included an answer option of "no knowledge" in each statement. The following are the items measuring the current construct:

1. "High speed Internet" is an important attribute when I recommend/select a conference center to the buying center.

2. "Network" is an important attribute when I recommend/select a conference center to the buying center.

3. "Wireless network" is an important attribute when I recommend/select a conference center to the buying center.

4. "Fiber optic" is an important attribute when I recommend/select a conference center to the buying center.

5. "Videoconferencing system" is an important attribute when I recommend/select a conference center to the buying center.

6. "Ethernet" is an important attribute when I recommend/select a conference center to the buying center.

7. "ISDN" is an important attribute when I recommend/select a conference center to the buying center.

8. "Local area network (LAN)" is an important attribute when I recommend/select a conference center to the buying center.

9. "Satellite uplink and downlink" are important attributes when I recommend/select a conference center to the buying center.

10. "T1 line" is an important attribute when I recommend/select a conference center to the buying center.

11. "Virtual Private Network (VPN)" is an important attribute when I recommend/select a conference center to the buying center.

12. "Category 5 copper line" is an important attribute when I recommend/select a conference center to the buying center.

13. "Web broadcasting capability" is an important attribute when I recommend/select a conference center to the buying center.

14. "Computer lab" is an important attribute when I recommend/select a conference center to the buying center.

15. "E-mail station (kiosk)" is an important attribute when I recommend/select a conference center to the buying center.

3.4.4 Perceived Importance of the Availability of Technical Support

Technical support is the service provided by technicians to solve technology related problems or to consult for adoption of technology. It can be provided through (a) in-house technical support (e.g. IT department) or (b) on-site technical support offered by a meeting facility (IACC, 2004, 2007a; M&C, 2006). Respondents were asked to indicate the extent of agreement or disagreement with four statements concerning perceived importance of the availability of technical support on a 7-point Likert-type scale ranging from (1) strongly disagree to (7) strongly agree. The following are the items used to measure this construct:

1. Availability of in-house technical support (e.g. IT department) is important when I recommend/select a conference center with ICT-based features.

2. Availability of on-site technical support (at a conference center) is important when I recommend/select a conference center with ICT-based features.

3.4.5 Self-Efficacy

Self-efficacy is defined as people's beliefs about their capabilities to produce performances that influence events affecting their lives (Bandura, 1995). The following items were adapted from the measuring items of self-efficacy, with appropriate modifications to make them specifically relevant to ICT-based features. Respondents were asked to indicate the extent of agreement or disagreement with two statements concerning self-efficacy on a 7-point Likert-type scale ranging from (1) strongly disagree to (7) strongly agree. The following are the items used to measure the current construct:

1. I am certain that I can apply ICT based-features at a conference center for my next meeting.

2. There is a lot that I can do to be sure of applying ICT based-features at a conference center for my next meeting.

3.4.6 Perceived Usefulness

Davis (1986) defined perceived usefulness as the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context. The five items were adapted from Davis et al. (1989), with appropriate modifications to make them specifically relevant to ICT-based features. Respondents were asked to indicate the extent of agreement or disagreement with the five statements

concerning perceived usefulness on a 7-point Likert-type scale ranging from (1) strongly

disagree to (7) strongly agree. The following are the items used to measure the current construct.

1. Using the ICT-based features enables me to accomplish tasks more quickly.

2. Using the ICT-based features improves my job performance.

3. Using the ICT-based features increases my productivity.

4. Using the ICT-based features enhances my effectiveness on the job.

5. Overall, I find the ICT-based features useful in my job.

3.4.7 Perceived Ease of Use

Perceived ease of use is the degree to which the prospective user expects the target

system to be free of effort (Davis, 1986). The five items were adapted from Davis et al. (1989),

with appropriate modifications to make them specifically relevant to ICT-based features.

Respondents were asked to indicate the extent of agreement or disagreement with the five

statements concerning perceived ease of use on a 7-point Likert-type scale ranging from (1)

strongly disagree to (7) strongly agree. The following are the items used to measure the current

construct:

1. Learning to operate the ICT-based features at conference centers for a meeting
   function is easy for me.

2. I find it easy to get the ICT-based features at conference centers to do what I want
   them to do.

3. Usage of the ICT-based features at conference centers is clear and understandable.

4. It is easy for me to remember how to perform tasks using the ICT-based features at
   conference centers.

5. Overall, I find the ICT-based features at conference centers easy to use.

3.4.8 Demographic Information

In addition to the scales discussed above, gender, year of birth, education, type of organization, job title, and years in the meeting industry were asked to gather the demographic information.

3.5 Reliability and Validity of Measures

Reliability focuses on the extent to which measurements are consistent (Nunally & Durham, 1975). High component of true score and low component of random error also indicate reliability of measurement items (Carmine & Zeller, 1979). Internal consistency reliability measures correlations with its item-to-total variance. Cronbach's alpha is often used as an estimation of the reliability of a multi-item measure. When its value is higher than 0.60, it is considered to have reliability in exploratory research (Nunnally & Durham, 1975).

Although reliability is a necessary condition of the construct, the construct itself must also be valid (Zikmund, 2000). Construct validity ensures that the instruments used are accurately measuring the intended construct in a study (Churchill, 1979). If the measure behaves in a pattern of inter-correlation with a variety of other variables, there is evidence for construct validity as entirely adequate to define the quality to be measured. Construct validity is often achieved by verifying convergent validity and discriminant validity (Zikmund, 2000). Convergent validity is the degree to which multiple attempts to measure the same concepts are in agreement. Convergent validity is established by the correlation of different methods of measuring the similar construct. When it is highly correlated with different measures of similar

constructs, the measure of a theoretical concept has convergent validity. Discriminant validity is the degree to which measures of different concepts are distinct. If two or more constructs are unique, then measuring items of each should not highly correlate. Therefore, the primary criterion for suggesting discriminant validity is that each item must load more highly on its associated construct than on any other (Davis & Cosenza, 1993; Straub et al., 1997). Factor analysis is the most often used method to examine construct validity (Kerlinger, 1986; Davis et al., 1989; Straub et al., 1997).

3.6 Pre-Test

The first draft of the questionnaire was circulated to the members of Meeting Professionals International (MPI) student/faculty committee members who have experience and knowledge of meeting facility selection/recommendation, for feedback regarding wording, format, content, and comprehension of the questionnaire items. Minor changes were made based on their suggestions. The pre-test allowed the refinement of the measures, resulting in the final set to be used in the study. Based on the feedback received, the questionnaire was further modified for its final format for pilot study. The resulting survey was pilot tested using meeting planner members from a Potomac Chapter of MPI to identify internal consistency.

3.7 Data Collection

The final draft of the questionnaire was mailed to the selected meeting planners which were asked to complete the survey instrument with respect to their organization's current and future conference center selection. Before conducting the survey, the researcher had obtained

the official approval from the VT Institutional Review Board for conducting a study involving human subjects. The final questionnaire was mailed out in June 2008.

3.8 Data Analysis/Testing Procedures

All analyses were conducted by the Statistical Package for the Social Sciences (SPSS) software. The following data analysis and hypotheses tests were performed. As factor analysis provides empirical basis for assessing the structure of variables and the potential for creating these composite measures or selecting a subset of representative variables for further analysis, factor analysis was performed. Factor analysis is also often used for data reduction and summarization with variables created by new research (Hair et al., 2006). When factor analysis is used in new research, it also can determine structure and create new composite scores from the original values. Thus defining the set of variables to be examined is critical as the researcher implicitly specifies the potential dimensions that can be identified through the character or nature of the variables submitted to factor analysis (Hair et al., 2006). Exploratory and R factor analysis were performed to search for underlying structures among the defined set of 15 ICT-based features at conference centers based on its importance on selection/recommendation of a conference center.

The hypothesized relationships were tested using the regression analysis among constructs. A number of researchers have implemented the regression analysis in technology acceptance studies (Davis et al., 1989; Moon & Kim, 2001; Straub et al., 1997; Szjana, 1994) and this study used the same technique to maintain consistency with earlier studies. Regression analysis is by far the most widely used and versatile dependence technique (Hair et. al., 2006). A frequency distribution was performed for the demographic characteristics of respondents. Descriptive statistics (means and standard deviations) were used for all scales. The Cronbach's

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alpha coefficient was used to test the internal consistency of items and principal component

factor analysis with Varimax rotation was conducted to assess the validity of the constructs. The

Independent sample t-tests were utilized to address non-response bias.

3.9 Summary

In this chapter, the research constructs were defined along with measurement items of

each construct. The research hypotheses were developed and explained. In addition, research

design, sampling and sample size, data collection methods, and statistical analysis methods were

discussed.

CHAPTER IV

ANALYSIS AND RESULTS

4.1 Introduction

This chapter introduces the results of respondent demographics, the data analysis, as well as the tests of the research hypotheses.

4.2 Data Collected

A total of 1,463 individuals were selected from the client lists of three conference centers. Questionnaires were mailed out with a cover letter that explained the nature of the study with a pre-paid return envelope. After four weeks of mailing out surveys, a reminder post card was sent out to encourage response. A second mailing of the questionnaire was sent out eight weeks later to ask for further participation in the study. The overall response rate was 13.1% (191 responses). Seven responses were eliminated before data coding because they were partially completed. A filter question, "Are you responsible for selection or recommendation of a meeting facility for your organization's meeting?" was used to screen out respondents who were not qualified for this study. As the purpose of this study is to understand the behaviors of meeting planners or people who have an equivalent responsibility to select/recommend a meeting facility to their organization, 18 returned surveys that selected "no" to the filter question were dropped. After eliminating the unusable responses, a total of 167 responses were coded for data analysis. Ideal sample size for factor analysis is more than 100 or the minimum is to have at least five times as many observations per each variable. As there were fifteen variables to be analyzed, the collected 167 respondents have exceeded the minimum sample size of 150, required by the conservative ten to one ratio.

4.3 Profiles of Respondents

The characteristics of the subjects' demographics were summarized and described in Table 4.1.

Table 4.1 Profiles of Respondents

Characteristics	N	Percent (%)
Gender (n = 167)		
Male	32	19.2
Female	135	80.8
Education (n = 167)		
High school	9	5.4
Associate degree	10	6.0
2 year college	13	7.8
4 year college	95	56.9
Master	37	22.2
Doctor	3	1.8
Years in the industry (n = 165)		
Less than 2 years	9	5.5
2-5 years	31	18.8
6-9 years	33	20.0
10-15 years	42	25.5
More than 15 years	50	30.3
Age (n=152)		
20~29	24	15.8
30-39	46	30.3
40-49	46	30.3
50-59	34	22.4
60 and over	2	1.3
Type of meeting planner (n=167)		
Association	70	41.9
Corporate	54	32.3
Government	30	18.0
Other	13	7.8
Job Title (n = 167)		
Vice P. of Meetings	7	4.2
Director of Meetings	35	21.0
Manager of Meetings	50	29.9
Coordinator of Meetings	27	16.2
Other	48	28.7

As shown in Table 4.1, the respondents were heavily female centered as it is in the profile of meeting planners in the meeting industry. Approximately 80.8% of the subjects were female whereas about 19.2% of the respondents were male. The level of education shows the majority of the subjects (80.9%) stated that they had a 4-year college eductation or higher. Almost 55.2% of respondents had a job title of meeting manager or higher rank and 76% of them had more than 6 years of experience in the meeting industry. Respondents were asked to provide the year of their birth to obtain accurate age information. Ages ranged from 24 to 68 years old. On average, respondents were 42 years old. Respondents were well-balanced in terms of their age, with respect to the age distribution of the subjects: between 30 and 49 years old (30.3%); between 40 and 49 years old (30.3%); and 50 and 59 (22.4%). The average profile of the respondent was a 42 year old female with a 4 years college education. In addition, all respondents were responsible for meeting facility selection/recommendation (Table 4.1).

4.4 Analysis of Importance of ICT-based feature on conference center selection/recommendation

The statement, "the given ICT-based feature is an important determinant when I recommend or select a conference center," was developed to test if there was any significant difference in the perceived importance on conference center selection/recommendation among the fifteen ICT-based features. The subjects were asked to select the number that most closely describes their opinion. (1= strongly disagree, 2= moderately disagree, 3= somewhat disagree, 4 = neutral, 5= somewhat agree, 6= moderately agree, 7= strongly agree). Table 4.2 presents perceived importance of ICT-based features on conference center selection/recommendation by the order of mean. "High-speed Internet" lead the group with the highest mean (5.87), followed by "wireless" (5.41), "e-mail station" (4.53), "T1 line" (4.40), and "network" (4.28).

Table 4.2 Mean of importance of ICT-based features by order

Rank	Items	Mean	S.D.
1	High-speed Internet	5.87	1.68
2	Wireless	5.41	1.63
3	E-mail station (kiosk)	4.53	2.15
4	T1 Line	4.40	2.12
5	Network	4.28	1.79
6	Local Area Network (LAN)	3.79	1.91
7	Ethernet	3.77	1.88
8	Virtual Private Network (VPN)	3.65	1.98
9	Fiber optic	3.57	1.72
10	Integrated Services Digital Network (ISDN)	3.57	1.82
11	Computer lab	3.46	2.06
12	Videoconferencing	3.26	1.82
13	Web broadcasting	3.21	1.93
14	Satellite uplink and downlink	2.79	1.59
15	Category 5 copper cable	2.77	1.68

The respondents could select "no knowledge" as an answer for each item asking the level of agreement with the statement of perceived importance of each given ICT-based feature. This has two purposes. First, it avoids respondents making a choice without a clear understanding of the given item, which is often the main source of random choice error (Zigmund, 2002). Second, it is to directly measure the respondents' level of knowledge of the technology terms used in the questionnaire, which were identified from meeting facility guides and marketing materials. It is not surprising that no one selected "no knowledge" of the term "high speed Internet" and only one for "wireless" with the popular usage of high-speed wireless Internet in today's daily business and personal life. However, 56 out of the total 167 respondents indicated "no

knowledge" for the term "category 5 copper cable" followed by "ISDN" (29), "Fiber optic" (24),

"VPN" (23), "satellite uplink/downlink" (21), "Ethernet" (21), and "LAN" (21). It is notable that

the terms that are technology jargon and related to a network backbone (see appendix 2) are

usually behind-the-wall technology infrastructure and meeting planners have shown that they

have very little knowledge in such terms (see Table 4.3).

Table 4.3 Frequency of "No Knowledge" by Order

Rank	Items	Frequency	Percent
1	Category 5 copper cable	56	35.5%
2	ISDN	29	17.4%
3	Fiber optic	24	14.4%
4	VPN	23	13.8%
5	Satellite uplink and downlink	21	12.6%
6	Ethernet	21	12.6%
7	LAN	18	10.8%
8	T1 Line	17	10.2%
9	Network	12	7.2%
10	Web broadcasting	8	4.8%
11	Videoconferencing	6	3.6%
12	Computer lab	6	3.6%
13	E-mail station (kiosk)	3	1.8%
14	Wireless	1	0.6%
15	High-speed Internet	0	0.0%

One of main purposes of this study was to test whether there is any difference in the perceived importance of ICT-based features on a conference center selection/recommendation among the various types of meeting planners. Table 4.4 presents the means of each item by the type of meeting planners. As shown in Table 4.4, corporate meeting planners had the highest mean on 7 items: "high speed internet," "network," "wireless," "Fiber optic," "LAN," "Web broadcasting," and "computer lab." Government planners show the highest mean in following items: "videoconferencing," "Ethernet," "ISDN," "satellite uplink/downlink," "T1 line," "VPN," and "category 5 copper cable." Government meeting planners had the highest mean on 6 items while association meeting planners had only 2 items with the highest mean among the three type of meeting planners.

Table 4.4 Mean of each ICT-based item by type of meeting planner

Items	Type of meeting planners		
	Association, n=70 (standard deviation)	Corporate, n=54	Government, n=30
High speed internet	5.54 (1.86)	6.11 (1.34)	5.867 (1.87)
Network	4.05 (1.82)	4.65 (1.79)	4.30 (1.90)
Wireless	5.28 (1.71)	5.98 (1.80)	4.87 (2.01)
Fiber Optic	3.02 (1.52)	4.04 (1.81)	3.81 (1.71)
Videoconferencing	2.94 (1.66)	3.40 (1.81)	3.57 (1.96)
Ethernet	3.25 (1.60)	3.92 (1.95)	4.48 (2.14)
ISDN	3.40 (1.70)	3.66 (1.96)	3.74 (2.05)
LAN	3.76 (1.82)	3.90 (2.03)	3.76 (2.07)
Satellite uplink/downlink	2.75 (1.54)	2.63 (1.51)	3.16 (1.95)
T1 line	4.29 (2.20)	4.45 (4.63)	4.63 (2.32)
VPN	3.60 (1.97)	3.71(1.95)	3.88 (2.35)
Category 5 copper cable	2.56 (1.36)	2.78 (1.93)	2.95 (1.96)
Web broadcasting	3.27 (1.93)	3.24 (1.95)	2.89 (1.87)
Computer lab	3.26 (1.96)	3.75 (2.02)	3.66 (2.44)
E-mail station	4.86 (2.00)	4.28 (2.18)	4.07 (2.36)

A one-way ANOVA test was conducted to test whether the mean difference among the meeting planners was statistically significant. An important first step in ANOVA is establishing the validity of assumptions. One assumption of ANOVA is that the variances of the groups are equivalent. The variance in the government meeting planners group was much larger than both association and corporate meeting planners (see Figure 4.1). It was expected to be due to the much smaller sample number of government meeting planners groups than association and

corporate meeting planners (30 vs. 74, 50). Another way of testing the equal variance is by the

Levene's test. When the significant level is higher than 0.05, the Levene statistic cannot reject

the null hypothesis that the group variances are equal (Hair et al., 2006). Equal variance

assumption was met for all ICT-based features but high-speed internet, wireless, and category 5

copper cable (Table 4.5). ANOVA is very robust to the violation of equal variance when the

groups are of equal or near equal size. However, as the three groups were not of equal size, the

rejection of the null hypothesis on high-speed internet, wireless, and category 5 copper cable was

not a serious violation of the assumption

Figure 4.1 Diagram of Variance of Each Group

Error Bars: 95% CI

Error Bars: +/- 2 SE
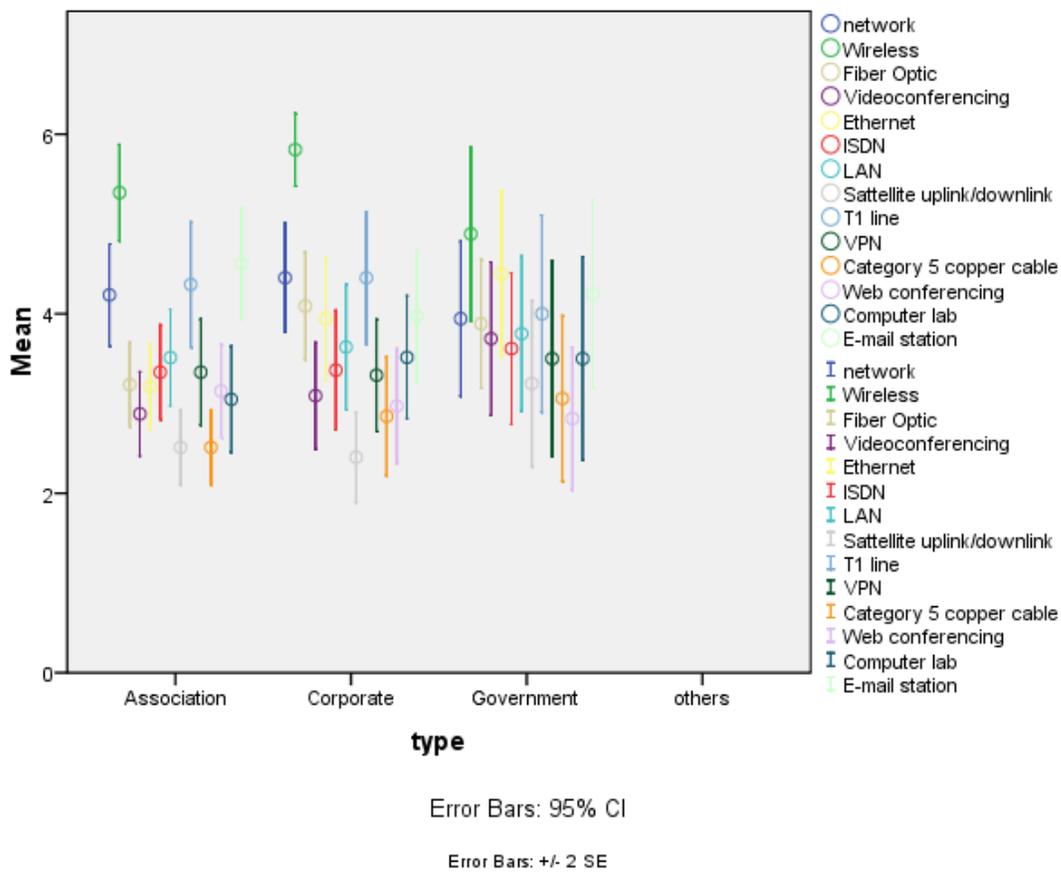
Table 4.5 Test of Homogeneity of Variances

Item	Levene Statistic	df1	df2	Sig.
High speed internet	3.501	2	151	.033
network	.058	2	141	.944
Wireless	7.489	2	150	.001
Fiber Optic	.530	2	129	.590
Videoconferencing	1.392	2	145	.252
Ethernet	2.223	2	131	.112
ISDN	1.332	2	124	.268
LAN	.610	2	135	.545
Satellite uplink/downlink	2.259	2	132	.108
T1 line	.473	2	135	.624
VPN	.919	2	130	.402
Category 5 copper cable	4.148	2	98	.019
Web broadcasting	.151	2	143	.860
Computer lab	2.949	2	145	.056
E-mail station	2.360	2	149	.098

As presented in Table 4.6, the mean difference among the three types of planners in "wireless," "fiber optic," and "Ethernet" are statistically significant at the level of 0.05.

Table 4.6 Results of One-way ANOVA

Item		Sum of Squares	df	Mean Square	F	Sig.
High speed internet	Between Groups	9.984	2	4.992	1.728	.181
	Within Groups	436.171	151	2.889		
	Total	446.156	153			
network	Between Groups	10.677	2	5.339	1.608	.204
	Within Groups	468.260	141	3.321		
	Total	478.938	143			
Wireless	Between Groups	27.562	2	13.781	5.408	.005
	Within Groups	382.216	150	2.548		
	Total	409.778	152			
Fiber Optic	Between Groups	29.756	2	14.878	5.376	.006
	Within Groups	356.972	129	2.767		
	Total	386.727	131			
Videoconferencing	Between Groups	10.546	2	5.273	1.671	.192
	Within Groups	457.643	145	3.156		
	Total	468.189	147			
Ethernet	Between Groups	29.222	2	14.611	4.320	.015
	Within Groups	443.106	131	3.382		
	Total	472.328	133			
ISDN	Between Groups	2.600	2	1.300	.374	.689
	Within Groups	430.707	124	3.473		
	Total	433.307	126			
LAN	Between Groups	.613	2	.306	.081	.922
	Within Groups	510.489	135	3.781		
	Total	511.101	137			
Satellite uplink/downlink	Between Groups	4.865	2	2.433	.938	.394
	Within Groups	342.468	132	2.594		
	Total	347.333	134			

Table 4.6 Results of One-way ANOVA (Continued.)

Item		Sum of Squares	df	Mean Square	F	Sig.
T1 line	Between Groups	2.166	2	1.083	.232	.794
	Within Groups	631.110	135	4.675		
	Total	633.275	137			
VPN	Between Groups	1.336	2	.668	.162	.851
	Within Groups	537.025	130	4.131		
	Total	538.361	132			
Category 5 copper cable	Between Groups	2.345	2	1.172	.404	.669
	Within Groups	284.329	98	2.901		
	Total	286.673	100			
Web broadcasting	Between Groups	2.988	2	1.494	.404	.669
	Within Groups	529.019	143	3.699		
	Total	532.007	145			
Computer lab	Between Groups	7.989	2	3.994	.921	.401
	Within Groups	628.984	145	4.338		
	Total	636.973	147			
E-mail station	Between Groups	16.764	2	8.382	1.839	.163
	Within Groups	679.229	149	4.559		
	Total	695.993	151			

However, ANOVA only tests that means are not equal. In an effort to further identify which type of meeting planners differ from another, a post hoc test was conducted. Because the homogeneity of variances of high-speed internet, wireless, and category 5 copper cable were violated, the researcher undertook a Games Howell post hoc test instead of a Tukey's HSD test to see which type of meeting planners differs from another (Hair et al., 2006).

Table 4.7 Results of Games Howell post hoc test

Dependent Variable	(I) type	(J) type	Mean Difference (I-J)	Std. Error	Sig.
Wireless	Association	Corporate	-.70612*	.25603	.018
		Government	.40870	.42091	.599
	Corporate	Association	.70612*	.25603	.018
		Government	1.11481*	.39802	.021
	Government	Association	-.40870	.42091	.599
		Corporate	-1.11481*	.39802	.021
Fiber Optic	Association	Corporate	-1.02531*	.33009	.007
		Government	-.79757	.38469	.107
	Corporate	Association	1.02531*	.33009	.007
		Government	.22774	.42155	.852
	Government	Association	.79757	.38469	.107
		Corporate	-.22774	.42155	.852
Ethernet	Association	Corporate	-.66576	.34467	.135
		Government	-1.22576*	.47618	.037
	Corporate	Association	.66576	.34467	.135
		Government	-.56000	.50943	.520
	Government	Association	1.22576*	.47618	.037
		Corporate	.56000	.50943	.520
	Government	Association	.41424	.43858	.616
		Corporate	.53255	.44378	.460

*. The mean difference is significant at the 0.05 level.

As shown in Table 4.7, corporate meeting planners had the highest mean in "wireless" and "Fiber optic" among the three types of meeting planners. The corporate meeting planners consider wireless more important as a determinant of conference center selection/recommendation than association meeting planners and government planners at the significant level of 0.018 and 0.021. However, there was no significant mean difference of

wireless between the association meeting planners and the government meeting planners. There

was also significant mean difference of "fiber optic" between the corporate meeting planners and

the association meeting planners at the significance level of 0.029. This finding indicated that the

corporate meeting planners considered the fiber optic more important as a determinant of site

selection/recommendation than association meeting planners. However, neither the mean

difference between corporate meeting planners and government planners nor between association

meeting planners and government planners was statistically significant. Government meeting

planners had a higher mean in "Ethernet" than association meeting planners at the significant

level of 0.037. However, there was no significant mean difference between association meeting

planners and corporate planners nor between corporate planners and government planners.

Overall, the corporate meeting planners put more importance on wireless network and fiber optic,

which allow fast Internet connection, than the association meeting planners and government

planners did. The association planners put the least importance on the identified ICT-based

features—wireless, Fiber-optic, and Ethernet—among the three types of meeting planners.

Mean scores of the perceived importance of the availability of on-site and in-house

technical support is presented in Table 4.8. The result indicated that all types of meeting planners

considered both forms of technical support were important for their conference center

selection/recommendation with a mean of 5.46 (on-site technical support) and 4.48 (in-house

technical support). A one-way ANOVA test was conducted to test if the mean difference is

statistically significant among the three types of meeting planners. The result showed that there

was no significant difference in the perceived importance of availability of technical support

among the three types of meeting planners.

Table 4.8 Mean of Importance of ICT-based service

Items	Mean	Std. Deviation
On-site technical staff/support	5.46	1.608
In-house technical staff/support	4.48	1.876

A paired-samples T-test was conducted to see whether the mean difference between the perceived importance of on-site and in-house technical support for conference center selection/recommendation is significant. The result showed that meeting planners consider technical support from a conference center as more important than in-house technical support when they make a selection/recommendation of a conference center (5.46 vs. 4.48). Table 4.9 summarizes the results of the paired-samples T-test.

Table 4.9 Result of Paired-samples T-test on Perceived Importance of Availability of Technical Support

		Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pair 1	q3_8 - q3_9	.988	1.821	.143	6.903	161	.000

4.4 Descriptive Statistics

Descriptive statistics (means and standard deviations) for PIICT, self-efficacy, result demonstrability, perceived importance of the availability of technical support, perceived usefulness, and perceived ease of use are discussed in this section.

4.4.1 Personal Innovativeness of ICT (PIICT)

PIICT is defined as the willingness of an individual to try out any new ICT and it describes the extent to which an individual has an innate propensity toward adopting a new ICT.

The four items were adapted from Agarwal and Prasad (1997), with appropriate modifications to make them specifically relevant to ICT-based features. Table 4.10 presents the means and standard deviations of items measuring PIICT. Among four items, the highest mean is 4.31 for "I attempt to experiment with any new information and communication technology I hear about." The lowest mean is 3.18 for "In general, I am hesitant to try out new information and communication technology based features/ services." It is important to note that this item is reversed measurement which means that the lower the mean, the higher PIICT.

Table 4.10 Descriptive Statistics of PIICT

Items	Mean	Std. Deviation
I attempt to experiment with any new information and communication technology I hear about.	4.26	1.72
Among my peers, I am usually the first to try out new information and communication technology.	3.49	1.65
In general, I am hesitant to try out new information and communication technology -based features/ services.	3.18	1.58
I like to experiment with new information and communication technology	4.23	1.64

Note. 1 = Strongly Disagree to 7 = Strongly Agree

4.4.2 Result Demonstrability

Result demonstrability is defined as the extent to which the tangible results of using an innovation can be observable and communicable (Rogers, 1995). The three items were adopted from Yi et al. (2006), with appropriate modifications to make them specifically relevant to ICT-

based features. Table 4.11 depicts the means and standard deviations of items measuring result demonstrability. The means for result demonstrability ranged from 4.41 to 4.68.

Table 4.11 Descriptive Statistics of Result Demonstrability

Items	Mean	Std. Deviation
I have no difficulty telling others about the results of using the ICT-abase feature(s) for meeting function at conference centers.	4.68	1.83
I believe I can communicate to others the consequences of using the ICT-abase feature(s) for meeting function at conference centers.	4.41	1.80
The results of using the ICT-abase feature(s) for meeting function at conference centers are apparent to me.	4.66	1.78

Note. 1 = Strongly Disagree to 7 = Strongly Agree

4.4.3 Perceived Importance of the Availability of Technical Support

Technical support is the service provided by technicians to solve problems or to consult for adoption of technology. It can be provided through (a) in-house technical support (e.g. IT department) or (b) on-site technical support offered by conference centers (*2003 State of the Industry*). Table 4.12 depicts the means and standard deviations of items measuring perceived importance of the availability of technical support. The means of items for perceived importance of the availability of technical support ranged from 4.50 to 5.50. It was notable that mean score of the importance of on-site technical availability was almost 1 point higher than that of in-house technical support and the difference was statistically significant as tested earlier in this chapter.

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Table 4.12 Descriptive Statistics of Perceived Importance of the Availability of Technical Support

Items	Mean	Std. Deviation
Availability of on-site technical support (at a conference center) is important when I recommend a conference center with ICT-based features.	5.50	1.62
Availability of in-house technical support (e.g. IT department) is important when I recommend a conference center with ICT-based features	4.50	1.87

Note. 1 = Strongly Disagree to 7 = Strongly Agree

4.4.4 Self-efficacy

Self-efficacy is defined as people's belief about their capabilities to produce performances that influence events affecting their lives (Bandura, 1995). The following items were adapted from the items measuring self-efficacy, with appropriate modifications to make them specifically relevant to ICT-based features. Table 4.13 depicts the means and standard deviations of items measuring self-efficacy. The means for self-efficacy ranged from 4.61 to 4.87.

Table 4.13 Descriptive Statistics of Self-efficacy

Items	Mean	Std. Deviation
I am confident that I am able to apply ICT based-features at a conference center for my next meeting.	4.87	1.67
There is a lot that I can do to be sure of applying ICT based-features at a conference center for my next meeting.	4.61	1.65

Note. 1 = Strongly Disagree to 7 = Strongly Agree

4.4.5 Perceived Usefulness

Perceived usefulness of ICT-based features is defined as the strength of a user's belief that using ICT-based features at a conference center would enhance his or her work performance

in this study. The six items were adapted from Davis et al. (1989), with appropriate

modifications to make them specifically relevant to ICT-based features. Respondents were asked

to indicate the extent of agreement or disagreement with the six statements concerning ICT-

based feature on a 7-point Likert-type scale ranging from (1) strongly disagree to (7) strongly

agree. Following are the items used to measure the current construct. Table 4.14 depicts the

means and standard deviations of items measuring perceived usefulness. The means for

perceived usefulness ranged from 5.07 to 5.31. All five items' measuring perceived usefulness

mean are higher than 5, which show that the respondents somewhat or moderately agree on the

perceived usefulness of ICT-based features at a conference center.

Table 4.14 Descriptive Statistics of Perceived Usefulness

Items	Mean	Std. Deviation
Using the ICT-based features enables me to accomplish tasks more quickly.	5.07	1.83
Using the ICT-based features improves my job performance.	5.18	1.82
Using the ICT-based features increases my productivity.	5.25	1.77
Using the ICT-based features enhances my effectiveness on the job.	5.25	1.74
Overall, I find the ICT-based features useful in my job.	5.31	1.76

Note. 1 = Strongly Disagree to 7 = Strongly Agree

4.4.6 Perceived Ease of Use

Perceived ease of use is the degree to which the prospective user expects the target

system to be free of effort (Davis, 1986). The six items were adapted from Davis et al. (1989),

with appropriate modifications to make them specifically relevant to ICT-based features.

Respondents were asked to indicate the extent of agreement or disagreement with the six

statements concerning ICT-based features on a 5-point Likert-type scale ranging from (1)

strongly disagree to (5) strongly agree. Table 4.15 depicts the means and standard deviations of items measuring Perceived ease of use**.** The means for perceived ease of use ranged from 4.26 to 4.53. All five items' means measuring the perceived ease of use were lower than 4.53 contrary to the perceived usefulness of ICT-based features at a conference center. In other word, the respondents neither disagree nor agree on items measuring perceived ease of using ICT-based-features at conference centers.

Table 4.15 Descriptive Statistics of Perceived Ease of Use

Items	Mean	Std. Deviation
Learning to operate the ICT-based features at conference centers for a meeting function is easy for me.	4.51	1.76
I find it easy to get the ICT-based features at conference centers to do what I want them to do.	4.46	1.58
Usage of the ICT-based features at conference centers is clear and understandable.	4.19	1.52
It is easy for me to remember how to perform tasks using the ICT-based features at conference centers.	4.43	1.50
Overall, I find the ICT-based features at conference centers easy to use.	4.37	1.51

Note. 1 = Strongly Disagree to 7 = Strongly Agree

4.5 Reliability and Validity Estimates

The definitions of all scales were proposed based on the review of theory and previous research to ensure content validity. In addition, items were adapted from the prior Technology Acceptance Model (TAM) research. The results of reliability and validity that deal with the discriminant and construct validity are demonstrated in this section.

4.5.1 Reliability Estimates of Study

Reliability was assessed using the Cronbach's alpha coefficient. The use of coefficient alpha is to test the internal consistency of items relating to a single trait within a questionnaire (Nunally, 1978). Therefore, the test was performed on the scale items within different dimensions which were designed to measure a single common trait.

Table 4.16 summarizes the reliability estimates obtained in this study for all scales. An acceptable coefficient is regarded as 0.70 (Nunnally & Durham, 1975), although it may decrease to 0.60 for basic research. Of the seven dimensions of the questionnaire which were tested for internal consistency, the coefficient alpha was higher than 0.85 above the acceptable level on all dimensions.

Table 4.16 Results of Scale Reliability

Scale Reliability Scales	Alpha Value	Alpha Value after
Importance of ICT-based features (15 items)	0.92	0.92
PIICT (4 items)	0.50	0.87 (with 3 items)
Self-efficacy (2 items)	0.87	0.87
Result demonstrability (3 items)	0.93	0.93
Perceived importance of the availability of technical support (2 items)	0.67	0.67
Perceived usefulness (5 items)	0.98	0.98
Perceived ease of use (5 items)	0.95	0.95

In the initial test of internal consistency reliability, one construct, PIICT was found to be unreliable with Cronbach's alpha coefficient at 0.50. One of the 4 items measuring PIICT was reverse-scored on the survey instrument, suggesting that the direction of the wording may have caused the problem. Dropping that item resulted in Cronbach's alpha values of 0.87 for PIICT,

respectively. Cronbach's alpha values for all but perceived importance of the availability of technical support surpassed the 0.70 criteria recommended for applied research. The one exception was the perceived importance of availability of technical support item, whose loading was 0.67. Given that some basic studies use a 0.60 threshold instead of the 0.70 criteria, it was retained (Table 4.16).

4.5.2 Validity Estimates of Study

The appropriateness of factor analysis was determined by the Kaiser-Meyer-Olkin (KMO = 0.934) measure of sampling adequacy. High values (close to 1.0) generally indicate that a factor analysis is useful with the given data. Bartlett's test of sphericity (3726.1, significance level= 0.000) tested the hypothesis that the correlation matrix is an identity matrix, which would indicate that variables are unrelated and therefore unsuitable for structure detection. Both results indicated the suitability of data for structure detection.

Extraction communalities are estimates of the variance in each variable accounted for by the components. All variables that have communalities more than .50 are acceptable, which indicates that the extracted components represent the variables well. Table 4.17 presents the results of the extracted components. They explained nearly 85% of the variability in the original 20 variables, so the complexity of the data set was considerably reduced by using these components, with only a 15% loss of information.

Table 4.17 Result of Extracted Components

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	4.73	23.63	25.63
2	4.28	21,37	45.01
3	3.90	19.52	64.52
4	2.65	13.25	77.78
5	1.38	6.91	84.69

Extraction Method: Principal Component analysis.

The validity of the constructs measures were assessed using principal components analysis with Varimax rotation. The use of principal factor analysis was to investigate the distinctions among PIICT, self-efficacy, result demonstrability, perceived importance of the availability of technical support, perceived usefulness, and perceived ease of use. For adequate construct validity, the decision rule was that each item shows a loading of greater than 0.45 on one underlying dimension. Also, components with an eigenvalue greater than 1.00 were saved for factor inclusion. As shown in Table 4.18, five factors were extracted after seven rotations. The first rotated factor was most highly correlated with self-efficacy and result demonstrability. The second factor was highly correlated with perceived usefulness. The third factor was most highly correlated with perceived ease of use. The fourth factor was most highly correlated with PIICT. The fifth factor was most highly correlated with the perceived importance of availability of technical support. Four factors—perceived usefulness, perceived ease of use, PIICT, and perceived importance of availability of technical support—showed no cross-construct loadings above 0.45, indicating good discriminant validity (Straub et al., 1997; Szajna, 1996).

It is notable that the first factor included two constructs. Given that the items for self-efficacy and result demonstrability were validated before in other studies and the construct

reliability was high, the deduction of the two constructs into one component was assumed due to order bias, which is caused by the influence of earlier questions in a questionnaire or by an answer's position in a set of answers (Zikmund, 2003). In the questionnaire, the items asking those constructs (2 items, 3 items) were positioned one after another, which should be corrected by randomizing of items for future study. However, given that the items for self-efficacy and result demonstrability were validated before and the construct reliability was high, those variables were retained and the model was tested.

Table 4.18 Factor Structure Matrix of Loadings and Cross-loadings

Variables	Item	Component				
		1	2	3	4	5
Self- efficacy	Item 1	.336	.329	.709	.102	.107
	Item 2	.370	.188	.752	.103	.074
Result demonstrability	Item 1	.277	.265	.800	.164	.118
	Item 2	.369	.284	.742	.248	.061
	Item 3	.395	.279	.729	.151	.180
Perceived usefulness	Item 1	.734	.189	.482	.154	.183
	Item 2	.850	.281	.327	.162	.084
	Item 3	.864	.221	.344	.147	.083
	Item 4	.879	.208	.337	.153	.060
	Item 5	.846	.189	.380	.185	.101
	Item 6	.301	.653	.233	.355	.086
Perceived ease of use	Item 1	.223	.864	.229	.160	.077
	Item 2	.144	.887	.252	.199	.042
	Item 3	.214	.840	.239	.258	.143
	Item 4	.203	.866	.246	.197	.128
PIICT	Item 1	.179	.253	.117	.810	.174
	Item 2	.074	.217	.146	.875	.007
	Item 3	.200	.232	.166	.809	.029
Importance of tech support	Item 1	.531	.262	.076	.084	.581
	Item 2	.077	.104	.198	.100	.912

4.6 Non-response Bias Testing

In order to address possible non-response bias, the responses of the earlier respondents were compared with the later responses because late respondents are similar to non-respondents (Armstrong & Overton, 1977). Considering the fact that later responses were collected with a two months' time gap, this method was even more effective to test non-response bias. Ninety-four usable responses were returned from the initial mailing. The number of usable responses received from the second mailing was 72.

Tthe responses of the two groups were compared for a non-response test by utilizing the independent sample t-tests. The Levene statistic tests showed the values of the statistics for all 15 ICT-based features items except Web broadcasting (0.91), were greater than 0.10 and can assume that the groups have equal variances. The results of the independent sample t-test also showed that there was no difference between the two groups for all of the scales used in this study. Since the significance value of the independent sample T-test for all 15 items, except computer lab (0.04), were higher than 0.05, it can be concluded that the mean difference between early respondents and later respondents was due to chance alone.

The Levene statistic test showed the values of the statistics for all 20 items measuring 7 constructs were greater than 0.10 and can assume that the groups had equal variances. Since the significance value of the independent sample T-test for all items, except one item for "Result demonstrability" (0.05), were higher than 0.05, it can be concluded that the mean difference between early respondents and later respondents was due to chance alone (Table 4.19).

Table 4.19 Results of Non-Response Bias by Independent Sample T-tests Scales

Construct	Item	Early Respondents	Late Respondents	t-value	Sig.
Importance of ICT-based features	Internet	5.87	5.78	0.36	0.72
	Network	4.34	4.20	0.46	0.65
	Wireless	5.42	5.39	0.10	0.92
	Fiber optic	3.64	3.48	0.56	0.57
	videoconferencing	3.48	2.99	1.71	0.89
	Ethernet	3.72	3.78	-0.17	0.86
	ISDN	3.63	3.48	0.46	0.65
	LAN	3.98	3.57	1.30	0.20
	Satellite up/down link	2.92	2.62	1.12	0.27
	T1 line	4.39	4.42	-0.78	0.94
	VPN	3.72	3.57	-0.25	0.67
	Category 5 copper cable	2.73	2.80	0.76	0.81
	Web broadcasting	3.38	2.99	1.29	0.20
	Computer lab	3.76	3.07	2.12	0.04
	E-mail station	4.60	4.45	0.42	0.68
PIICT	Item1	4.21	4.31	-0.37	0.71
	Item 2	3.45	3.56	-0.42	0.67
	Item 3	4.14	4.34	-0.79	0.43
Self-efficacy	Item 1	5.05	4.62	1.66	0.10
	Item 2	4.83	4.32	1.99	0.05
Result demonstrability	Item1	4.78	4.56	0.77	0.44
	Item 2	4.49	4.31	0.67	0.51
	Item 3	4.78	4.50	0.99	0.32
Perceived importance of the availability of technical support	Item 1	5.43	5.60	-0.68	0.50
	Item 2	4.67	4.27	1.35	0.18
Perceived ease of use	Item1	4.52	4.49	0.13	0.90
	Item 2	4.44	4.50	-0.26	0.80
	Item 3	4.21	4.17	0.18	0.86
	Item 4	4.48	4.38	0.44	0.66
	Item 5	4.46	4.26	0.82	0.42
Perceived usefulness	Item1	5.07	5.06	0.67	0.95
	Item 2	5.28	5.06	0.76	0.44
	Item 3	5.36	5.10	0.96	0.34
	Item 4	5.35	5.12	0.84	0.40
	Item 5	5.45	5.12	0.38	0.24

4.7 Factor analysis of perceived importance of fifteen ICT-based features at conference centers

Factor Analysis attempts to identify underlying variables that explain the pattern of correlations within a set of observed variables. This procedure is often used to reduce the number of variables in a data set but can also be used to explore the latent structure of the variables in data. As mentioned in an earlier chapter, the fifteen variables measuring the perceived importance of ICT-based features were created by new research using content analysis of meeting facility marketing and sales materials. The author can reduce the size of the data file from fifteen variables to smaller number of components by using factor analysis with a principal components extraction. Note that the interpretation of further analyses is dependent upon the relationships defined in the rotated component matrix.

The appropriateness of factor analysis was determined by the Kaiser-Meyer-Olkin (KMO = 0.875) measure of sampling adequacy and the Bartlett's test of sphericity (p < 0.000). The result of the two tests indicated the suitability of the data for structure detection. Extraction communalities are estimates of the variance in each variable accounted for by the factors in the factor solution. Small values indicate variables that do not fit well with the factor solution, and should possibly be dropped from the analysis. The extraction communalities for this solution were all acceptable. Only three factors in the initial solution have eigenvalues greater than 1. The rotation maintains the cumulative percentage of variation explained by the extracted components, but that variation is spread more evenly over the components. Together, they account for 67% of the variability in the original variables. The rotated factor model made some adjustments to factors 1, 2, and 3.The scree plot also confirmed the choice of these three components.

As presented in Table 4.20, three factors were extracted after ten rotations. The first rotated factor was most highly correlated with fiber optic, Ethernet, satellite uplink/downlink,

ISDN, LAN, and videoconferencing. However, these variables were particularly correlated with

the third factor. The second rotated factor was most highly correlated with high speed Internet

and wireless. These variables were not particularly correlated with the other two factors. The

third rotated factor was most highly correlated with computer lab, E-mail station, and Web

broadcasting. Computer lab and E-mail station were not particularly correlated with the other

factors. Thus, there were three major groupings of ICT-based features, as defined by the ICT-

based features that are most highly correlated with three factors: 1) network back bone (ISDN,

Ethernet, LAN, network, fiber optic, VPN); 2) High speed wireless Internet; and 3) ICT service

outlet (e-mail kiosk, Web broadcasting and computer lab).

Table 4.20 Rotated Component Matrix

ICT-based features	Component		
	1	2	3
High speed internet	.096	.882	.039
network	.524	.615	.073
Wireless	.208	.814	.169
Fiber Optic	.710	.388	.122
Videoconferencing	.706	.200	.168
Ethernet	.802	.369	.042
ISDN	.615	.453	.318
LAN	.623	.303	.239
Satellite uplink/downlink	.694	-.025	.392
T1 line	.245	.573	.389
VPN	.507	.218	.535
Category 5 copper cable	.642	-.035	.494
Web broadcasting	.496	.002	.640
Computer lab	.256	.113	.784
E-mail station	.000	.297	.780

There were still several ICT-based features (network, ISDN, VPN, category 5 copper cable, Web broadcasting) that had correlations greater than 0.45 with multiple factors. Network and ISDN bridged the "network backbone" and "high speed wireless Internet" groups. VPN, category 5 copper cable, and Web broadcasting were moderately correlated with the second and third factors, thus it bridged the "network backbone" and "ICT service outlet" groups. As a fast network is essential to the effective exchange of video and audio for two-end or multiple locations virtual meetings, the cross-loading between the first factor "network backbone" and the second factor "high-speed wireless Internet" can be explained. Consistently, computer lab, e-mail station, and Web-conferencing are ICT-based service outlets that perform best on the platform of a fast network backbone and it explains the cross-loading of the first factor-network backbone and third factor "ICT-based service outlets."

4.8 Hypotheses Testing

The principal purpose of this study was to examine the relationship between six constructs: PIICT, self-efficacy, result demonstrability, perceived importance of availability of technical support, perceived usefulness, and perceived ease of use. A summated scale is a composite value for a set of variables calculated by such simple procedures as taking the average of the variables in the scale (Hair et al. 2006). The summated scale for PIICT, self-efficacy, result demonstrability, perceived importance of the availability of technical support, perceived usefulness, and perceived ease of use was created by computing an average score of all items measuring one construct. These single variables representing each construct were used in the testing of hypotheses.

Linear regression was used to model the value of a dependent scale variable based on its linear relationship to one or more predictors. The linear regression model assumes the following: 1) The error term has a normal distribution with a mean of zero; 2) The variance of the error term is constant across cases and independent of the variables in the model. An error term with non-constant variance is said to be heteroscedastic; and 3) The value of the error term for a given case is independent of the values of the variables in the model and of the values of the error term for other cases. Independent observation was tested by the Durbin-Watson coefficient and its value should be between 1.5 and 2.5 for independent observations.

The assumption test for hypothesis 1a is presented below. The Durbin Watson for the independent variable was 1.99. The histogram showed normal distribution (Figure 4.3) and the P-P plotted residuals follow the 45-degree line (Figure 4.4). The residuals had constant variance from the visual inspection of the plot of residuals showed homoscedasticity (Figure 4.2 and Figure 4.5). These results suggested that assumptions were not violated.

Figure 4.2 Scatterplot of PIICT by Result Demonstrability
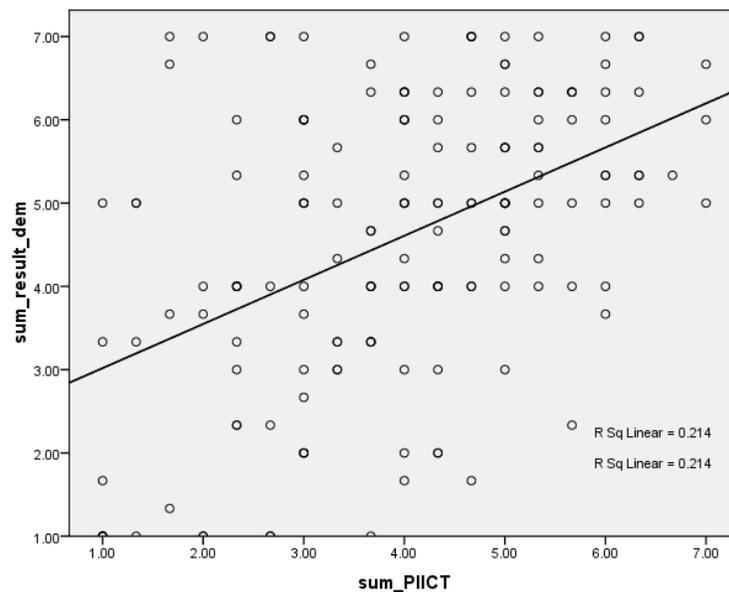
Figure 4.3 Histogram of Dependent Variable: Result Demonstrability

Dependent Variable: sum_result_dem

Mean =1.36E-16
Std. Dev. =0.997
N =163

Figure 4.4 Normal P-P Plot

Dependent Variable: sum_result_dem
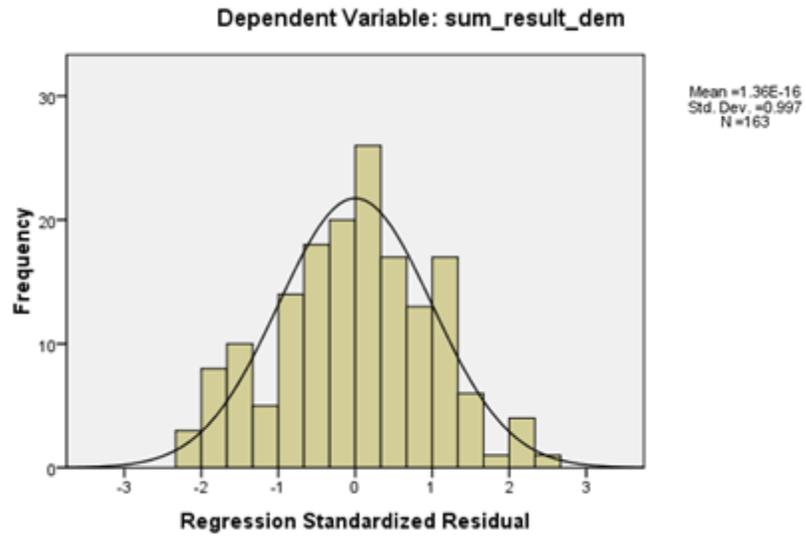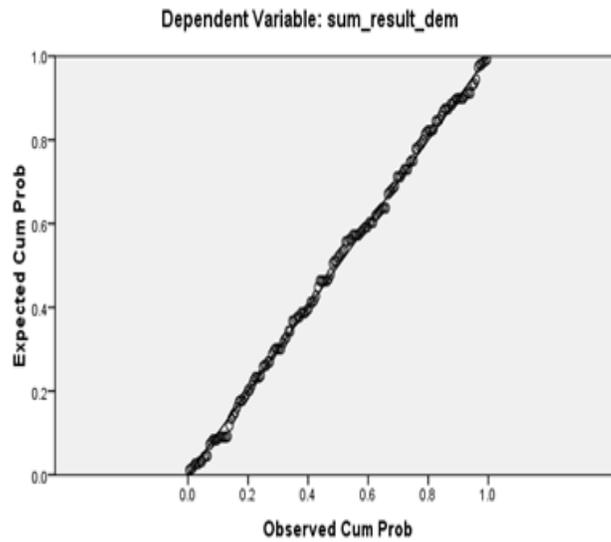
Figure 4.5 Plot of Residuals by PIICT
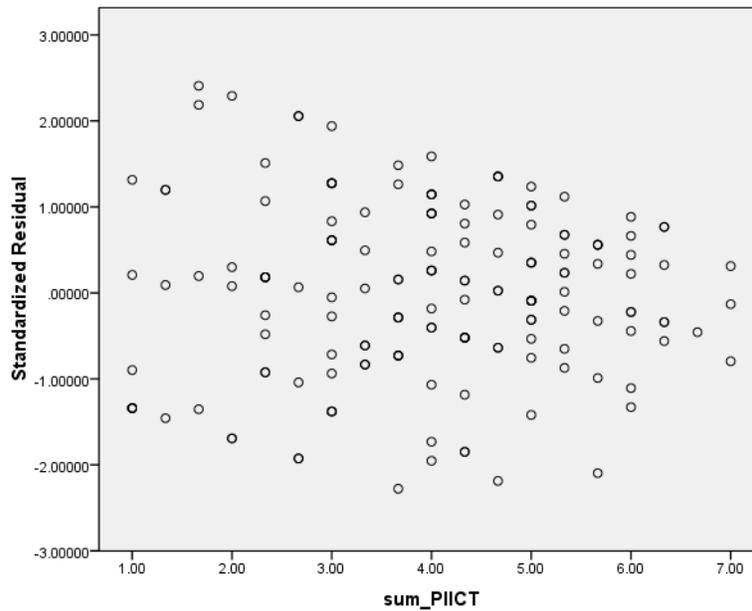
Those assumptions were tested to see the appropriateness of data for the linear regression of all hypotheses tests and indicated no violation for all regression analysis.

H1a: Personal Innovativeness in ICT (PIICT) of a meeting planner is positively correlated with result demonstrability

The ANOVA table tested the acceptability of the model from a statistical perspective.(see Table 4.21). PIICT explained 20.6% of the variation in result demonstrability, $F (1, 161) = 43.89$, $p < .01$. There was a positive correlation (R = .454) between PIICT and result demonstrability ($p < .01$). While the ANOVA table is a useful test of the model's ability to explain any variation in the dependent variable, it does not directly address the strength of that relationship. The model summary table reported the strength of the relationship between PIICT of a meeting planner and result demonstrability. PIICT significantly predicted result demonstrability, b = .45, P < .01 (see Table 4.22). The result of regression analysis supported Hypothesis 1a. This result is similar to

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that of Agarwal & Prasad (1997) and Yi et. al. (2006) that the PIIT of a customer has a positive

relationship with result demonstrability of the given technology.

Table 4.21 Summary of H1a Test

Model	R	R Square	F	Sig.	Standardized Coefficients	t	Sig.	Durbin-Watson
	.454[a]	.206	43.887	.000				1.990
(Constant)								
PIICT					.454	6.635	.000	

H1b: Personal Innovativeness in ICT (PIICT) of a meeting planner has a positive relationship

    with perceived ease of use of ICT-based features at a conference center.

PIICT explained 31.7% of the variation in perceived ease of use, F (1, 161) = 74.59, p

< .01. There is a positive correlation (R = .563) between PIICT and perceived ease of use (p

< .01). The model summary table presents the PIICT significantly predicted perceived ease of

use, b = .45, P < .01 (see Table 4.22). The result of regression analysis supported Hypothesis 1b.

This result is similar to that of Agarwal & Prasad (1997) and Yi et. al. (2006) that the PIIT of a

customer has a positive relationship with perceived ease of use of the given technology.

Table 4.22 Summary of H1b Test

Model	R	R Square	F	Sig.	Standardized Coefficients	t	Sig.	Durbin-Watson
1	.563	.317	74.592	.000				2.062
(Constant)								
PIICT					.563	8.637	.000	

H1c: Personal Innovativeness in IT (PIICT) of a meeting planner has a positive relationship with

    perceived usefulness of an ICT-based feature at a conference center.

    PIICT explained 18.0% of the variation in perceived usefulness, $F(1, 161) = 35.354$, p

$< .01$. There is a positive correlation (R = .424) between PIICT and perceived usefulness (p

$< .01$). The model summary table presents the PIICT significantly predicted perceived

usefulness, b = .424, $p < .01$ (see Table 4.23). The result of regression analysis supported

Hypothesis 1c. This result is similar to that of Agarwal & Prasad (1997) and Yi et. al. (2006) that

the PIIT of a customer has a positive relationship with perceived usefulness of the given

technology.

Table 4.23 Summary of H1c Test

Model	R	R Square	F	Sig.	Standardized Coefficients	t	Sig.	Durbin-Watson
1	.424	.180	35.354	.000				2.062
(Constant)								
PIICT					.424	5.946	.000	

H1d: A meeting planner's Personal innovativeness in ICT (PIICT) will have a positive effect on

the self-efficacy

PIICT explained 18.0% of the variation in self-efficacy, $F (1, 161) = 25.564, p < .01$, which means that the variation explained by the model is not due to chance. There is a positive correlation (R = .375) between PIICT and self-efficacy ($p < .01$). The model summary table presents the PIICT significantly predicted self-efficacy, b = .375, $p < .01$ (see Table 4.24). The result of regression analysis supported Hypothesis 1c. This result is similar to that of Agarwal & Prasad (1997) and Yi et. al. (2006) that the PIIT of a customer has a positive relationship with self-efficacy of the given technology.

Table 4.24 Summary of H1d Test

Model	R	R Square	F	Sig.	Standardized Coefficients	t	Sig.	Durbin-Watson
1	.375	.141	26.564	.000				1.952
(Constant)								
PIICT					.375	5.154	.000	

H2a: A meeting planner's result demonstrability will have a positive effect on the perceived ease of use specific ICT-based features.

Result demonstrability explained 39.2% of the variation in perceived ease of use, $F (1, 162) = 106.156, p < .01$, which means that the variation explained by the model is not due to chance. There is a positive correlation (R = .629) between result demonstrability and perceived

ease of use ($p < .01$). The model summary table presents the result demonstrability significantly predicted perceived ease of use, b = .629, $p < .01$ (see Table 4.25). The result of regression analysis supported Hypothesis 2a. This result is similar to that of Agarwal and Prasad (1997), Venkatesh and Davis (2000) and Yi et. al. (2006) that result demonstrability of a customer has a positive relationship with perceived ease of use of the given technology.

Table 4.25 Summary of H2a Test

Model	R	R Square	F	Sig.	Standardized Coefficients	t	Sig.	Durbin-Watson
1	.629	.396	106.156	.000				2.305
(Constant)								
result demonstrability					.629	10.303	.000	

H2b: A meeting planner's result demonstrability will have a positive effect on the perceived usefulness of specific ICT-based features.

Result demonstrability explained 56.2% of the variation in perceived usefulness, F (1, 162) = 208.28, $p < .01$, which means that the variation explained by the model is not due to chance. There is a positive correlation (R = .750) between result demonstrability and perceived usefulness ($p < .01$). The model summary table presents the result demonstrability significantly predicted perceived usefulness, b = .750, $p < .01$ (see Table 4.26). The result of regression analysis supported Hypothesis 2a. This result is similar to that of Agarwal and Prasad (1997), Venkatesh and Davis (2000) and Yi et. al. (2006) that result demonstrability of a customer has a positive relationship with perceived usefulness of the given technology.

Table 4.26 Summary of H2b Test

Model	R	R Square	F	Sig.	Standardized Coefficients	t	Sig.	Durbin-Watson
1	.750	.562	208.282	.000				1.970
(Constant)								
result demonstrability					.750	14.432	.000	

H2c: A meeting planners' result demonstrability will have a positive effect on the self-efficacy in the use of specific ICT-based feature(s).

Result demonstrability explained 63.3% of the variation in self-efficacy, F (1, 162) = 279.18, $p < .01$, which means that the variation explained by the model is not due to chance. There is a positive correlation (R = .795) between result demonstrability and self-efficacy ($p < .01$). The model summary table presents the result demonstrability significantly predicted self-efficacy, b = .750, $p < .01$ (see Table 4.27). The result of regression analysis supported Hypothesis 2a. This result is similar to that of Agarwal and Prasad (1997), Venkatesh and Davis (2000) and Yi et. al. (2006) that result demonstrability of a customer has a positive relationship with self-efficacy of the given technology.

Table 4.27 Summary of H2c Test

Model	R	R Square	F	Sig.	Standardized Coefficients	t	Sig.	Durbin-Watson
1	.795	.633	279.18	.000				1.651
(Constant)								
result demonstrability					.795	16.709	.000	

H3a: The perceived importance of availability of technical support by an organization is

negatively associated with self- efficacy

Perceived importance of availability of technical support by an organization explained only 8.4% of the variation in self-efficacy, $F (1, 162) = 14.805$, $p < .01$; however it still showed that the variation explained by the model was not due to chance. There was a positive correlation (R = .289), not a negative relation as expected, between the perceived importance of availability of in-house technical support and self-efficacy ($p < .01$). The model summary table presents the perceived importance of availability of technical support by an organization predicted self-efficacy, b = .289, $p < .01$ (see Table 4.28). The result of regression analysis did not support hypothesis 3a.

Table 4.28 Summary of H3a Test

Model	R	R Square	F	Sig.	Standardized Coefficients	t	sig.	Durbin-Watson
1	.289	.084	14.805	.000				1.733
(Constant)								
Importance of technical suppor:in-house					.289	3.848	.000	

H3b: The perceived importance of availability of on-site technical support is negatively

associated with the self- efficacy

Perceived importance of the availability of technical support by a conference center

explained 19.6% of the variation in self-efficacy, $F(1, 162) = 39.407$, $p < .01$, which means that

the variation explained by the model is not due to chance. There was a positive correlation (R

= .442), not a negative relation as expected, between perceived importance of the availability of

technical support by a conference center and self-efficacy ($p < .01$). The model summary table

presents the perceived importance of availability of technical support by a conference center

predicted self-efficacy, b = .442, $p < .01$ (see Table 4.29). The result of regression analysis did

not support hypothesis 3b.

Table 4.29 Summary of H3b Test

Model	R	R Square	F	sig.	Standardized Coefficients	t	sig.	Durbin-Watson
1	.442	.196	39.407	.000				1.848
(Constant)								
Importance of availability of on-site technical support					.442	6.278	.000	

H4: Self-efficacy will have a positive relationship with perceived ease of use.

Self-efficacy explained 32.2% of the variation in self-efficacy, $F(1, 162) = 77.102$, $p < .01$,

which means that the variation explained by the model is not due to chance. There is a positive

correlation (R = .568) between self-efficacy and perceived ease of use ($p < .01$). The model

summary table presents self-efficacy predicted perceived ease of use, b = .568, $p < .01$ (see Table 4.31). The result of regression analysis supported hypothesis 4.

Table 4.30 Summary of H4 Test

Model	R	R Square	F	sig.	Standardized Coefficients	t	sig.	Durbin-Watson
1	.568	.322	77.102	.000				2.124
(Constant)								
Perceived importance of availability of on – site technical support					.568	8.781	.000	

H5a: The type of meeting planner will influence the relation of perceived importance of availability of technical support on self-efficacy.

Regression analysis requires metric variables must be used as independent variables. So the author used dichotomous variables also known as dummy variables, which act as replacement variables. Any non-metric variable with k categories can be represented as k-1 dummy variables. Indicator coding is what is often used, and the category is represented by either 0 or 1. In this hypothesis test, the three-category non-metric variable, "type of meeting planner" is represented by two dummy variables. The government meeting planners group was defined as a reference category with both dummy variables equaling zero. The government meeting planners who were not coded was the category to which all other categories were compared.

In the study of regression analysis with dummy variables, the regression equation is Y= a+b_1 Importance of tech support + b_2D1 +b_3D2. This model describes three parallel regression

planes, which can differ in their intercepts. According to the result of regression analysis (see

Table 4.33), the estimated overall was,

Y= 2.421 + 0.44 importance of tech support -0.192D1 +0.182D2

Association planner (D1=1, D2=0)

Y = 2.29 + 0.444importance of tech support

Corporate planner (D1=0, D2=1)

 Y= 2.603 + 0.444importance of tech support

Government planner (D1=D, 2=0)

Y=2.421 +0.444importance of tech support

However, the coefficient for association meeting planners and corporate meeting

planners were not statistically significant, $p > .01$ (.952 and .580) (See Table 4.31). Thus the null

hypothesis—the coefficient of association meeting planners and corporate meeting planners—is

not different from zero and cannot be rejected. Therefore, the results identified that hypothesis

"Type of meeting planner will influence the relationship of perceived importance of availability

of technical support on self-efficacy" was not supported.

Table 4.31 Summary of H5a Test

Model	R	R Square	F	sig.	Standardized Coefficients	t	sig.	Durbin-Watson
1	.423	.181	10.824	.000				1.833
(Constant)								
Perceived importance of availability of technical support					.423	8.781	.000	
Association planner					-.006	-.060	.952	
Corporate planner					.056	.555	.580	

The author further tested the hypothesis with the type of meeting planners as a moderator variable. Moderator is defined as a variable that affects the direction and/or strength of relationship between a predictor and criterion variable. When predictor and criterion are continuous variables and moderator is dichotomous, regression is used separately to test predictor on criterion for each level of moderator (Cohen & Cohen, 1983). Then the result is tested for differences between the regression coefficients by using unstandardized regression coefficients, which are not affected by differences in variance of the predictor and difference in measurement error in the criterion.

Table 4.32 Summary of Regression Comparison by Type of Meeting Planners

Key statistics	Type of meeting planner		
	Association	Corporate	Government
coefficient	0.60*	0.27	0.25
R Square	0.34	0.07	0.05

*p < .01

As presented in Table 4.33, the regression coefficients for the corporate and government meeting planners in the relationship of perceived importance of the availability of technical support on self-efficacy were not significant (p=.051, p=-246). It means that the regression coefficient for corporate and government meeting planners was not different from zero. There is no regression relationship between the predictor, perceived importance of the availability of technical support and the criterion, self-efficacy.

However, the regression coefficient (0.60) of association meeting planners was significant. In addition, the regression model practically explained no variance of self-efficacy by

perceived importance of the availability of technical support (R Square = 0.07, 0.05) for the corporate and government meeting planners group while 34% of the variance was explained in association meeting planners group. The result shows that there is difference in the strength of the relationship of perceived importance of the availability of technical support and self-efficacy and amount of variance explained among types of meeting planners. Thus it can be concluded that the moderator variable—"type of meeting planner"—affected the strength of the relationship between the predictor, perceived importance of the availability of technical support, and the criterion, self-efficacy. As the earlier test of hypothesis with regression with two dummy variables for each type of meeting planner did not support the hypothesis 5a, the moderating effect of the type of meeting planner on the strength of relation between perceived importance of the availability of technical support and self efficacy needs to be further discussed. Baron and Kenny (1986) discussed the moderator might act as a threshold variable and there would be no effect on the causal variable when the moderator is low or at a certain categorical level, but rather at a certain value or category of the moderator the effect emerges. In this case, the moderator is a categorical variable with 3 categories and the point of the threshold is when the type of meeting planner is an association meeting planner.

H5b: The type of meeting planner will influence the relation of self-efficacy on perceived ease of use of ICT-based features.

In this hypothesis test, the three-category non-metric variable "type of meeting planner" was represented by two dummy variables. The government meeting planners group was defined as a reference category with both dummy variables equaling zero. The government meeting planners who were not coded was the category to which all other categories were compared. In

the study of regression analysis with dummy variables, the regression equation is $Y = a + b_1$ self-efficacy $+ b_2 D1 + b_3 D2$. This model describes three parallel regression planes, which can differ in their intercepts. Based on the result of the regression analysis, the estimated overall was,

$Y = 2.51 + 0.42$ self-efficacy $-0.48 D1 + 0.36 D2$

Association planner (D1=1, D2=0)

$Y = 2.03 + 0.42$ self-efficacy

Corporate planner (D1=0, D2=1)

$Y = 2.87 + 0.42$ self-efficacy

Government planner (D1=0, D2=0)

$Y = 2.51 + 0.42$ self-efficacy

However, the coefficients for association meeting planners and corporate meeting planners were not statistically significant, $p > .01$ (.077 and .798) (See Table 4.33). Thus the null hypothesis, the coefficient of association meeting planners and corporate meeting planners, was not different from zero, could not be rejected, and there was no influence of the type of meeting planner on the relationship of self-efficacy to perceived ease of using ICT-based features. Therefore, the results identified that hypothesis "The type of meeting planners will influence the relation of self-efficacy on perceived ease of use of ICT-based features" was not supported

Table 4.33 Summary of H5b Test

Model	R	R Square	F	sig.	Standardized Coefficients	t	sig.	Durbin-Watson
1	.461	.212	10.824	.000				2.082
(Constant)								
Self efficacy					.552	8.169	.000	
Association planner					-.161	-1.781	.077	
Corporate planner					-.023	-.257	.798	

Moderation effect technique was used to test the hypothesis further as used for the test of H5a. There was no significant difference in the coefficient of the three groups in the regression model of self-efficacy on perceived ease of use of ICT-based features. The regression coefficients, strength of relationship between self-efficacy on perceived ease of use, were all significant and ranged between 0.43 and 0.63. As presented in Table 4.34, there was no significant difference in the strength of the relationship of self-efficacy on perceived ease of use of ICT-based features while there was a difference in the amount of variance explained among the types of meeting planners. Thus the hypothesis "The type of meeting planners will influence the relation of self-efficacy on perceived ease of use of ICT-based features" was not supported according to the two separate tests.

Table 4.34 Summary of Regression Comparison by Type of meeting planners

	Types of Meeting planner		
	Association	Corporate	Government
coefficient	0.43*	0.57*	0.63*
R Square	0.25	0.27	0.58

*p < .001

There was no significant difference in coefficient of three groups in the regression model of self-efficacy on perceived ease of use of ICT-based features. The regression coefficients, the strength of relationship between self-efficacy on perceived ease of use, were all significant and ranged between 0.43 and 0.63. As presented in Table 4.35, there was no significant difference in the strength of the relationship of self-efficacy on perceived ease of use of ICT-based features while there was difference in the amount of variance explained among types of meeting planners. Thus the hypothesis "Type of meeting planners will influence the relation of self-efficacy on perceived ease of use of ICT-based features" is not supported according to two separate tests.

H6: Perceived ease of use will have a positive effect on the perceived usefulness of ICT-based features.

The ANOVA tests the acceptability of the model from a statistical perspective. Perceived ease of use explained 31.9% of the variation in perceived usefulness of ICT-based features, F (1, 162) = 75.763, $p < .01$, which means that the variation explained by the model is not due to chance. There is a positive correlation (R = .564) between the perceived ease of use and perceived usefulness of ICT-based features ($p < .01$). The model summary table presented perceived ease of use predicted perceived usefulness of ICT-based features, b = .568, $p < .01$ (see Table 4.35). This is consistent with the results reported by previous research (Agarwal and Karahanna (2000), Agarwal and Prasad (1997), Venkatesh and Davis (1996), Venkatesh and Davis (2000), and Venkatesh (2000) that perceived ease of use of the system is positively related to perceive usefulness of the system. The result of regression analysis supported hypothesis 6.

Table 4.35 Summary of H6 Test

Model	R	R Square	F	sig.	Standardized Coefficients	t	sig.	Durbin-Watson
1	.564	.319	75.736	.000				2.063
(Constant)								
Perceived ease of use					.564	8.703	.000	

The results of regression analysis were illustrated in Figure 4.5. The result indicated that all

hypothesized relationships but H3a, 3b, and H5a, within the proposed model were supported,

p< .01.

Figure 4.6 Regression Analysis of Research Model
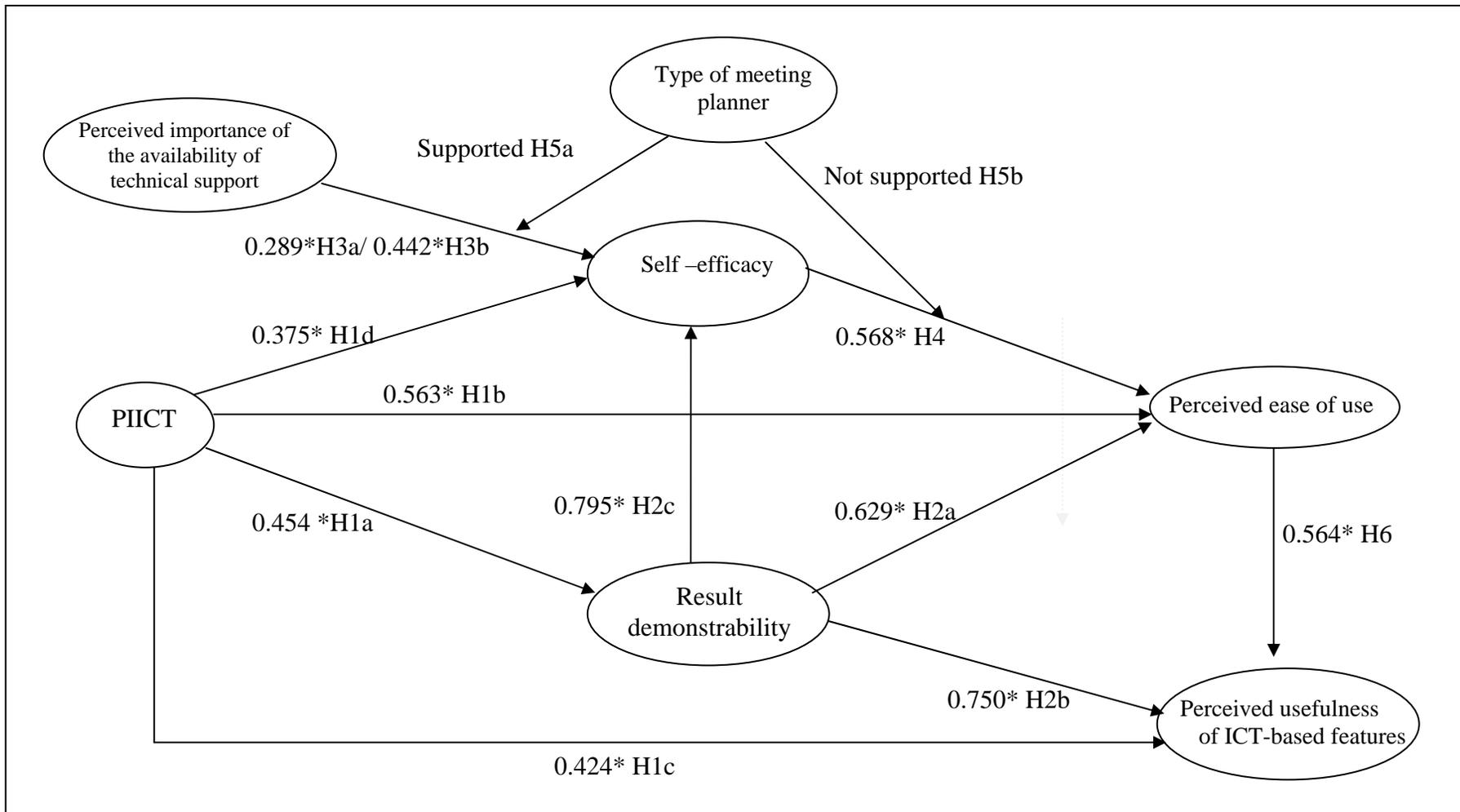
p < .01

4.9 Summary

In this chapter IV, the summary, factor analysis, descriptive statistics, reliability and validity estimates, and the test of research hypotheses were presented using SPSS software. A profile of the respondents and statistical tests to examine the relationship among the variables being studied were presented. Factor analysis of fifteen ICT-based features identified three underlying dimensions. Table 4.36 summarizes the results of testing the hypotheses. The next chapter will present a discussion on the findings and implications for the industry with respect to the factor analysis and hypothesis testing.

Table 4.36 Summary of Hypotheses Tests

Research Question	Research Hypotheses	R	Sig.	direction	Support for Hypothesis
2. How does the perceived importance of availability of technical support influence meeting planners' confidence in use/acceptance of ICT-based features at a conference center?	H3a: The perceived importance of availability of in-house technical support is negatively associated with the self- efficacy	0.289	0.000	+	No
	H3b: The perceived importance of availability of on-site technical support is negatively associated with the self- efficacy	0.442	0.000	+	No
3. Does a relationship exist among attitude toward technology (PIICT), result demonstrability, self-efficacy, ease of use, and perceived usefulness of ICT-based features in recommendation/selection of a conference center?	H1a: Personal Innovativeness in ICT (PIICT) of a meeting planner is positively correlated with result demonstrability	0.454	0.000	+	Yes
	H1b: Personal Innovativeness in ICT (PIICT) of a meeting planner has a positive relationship with perceived ease of use of ICT-based features at a conference center.	0.563	0.000	+	Yes

	Research Hypotheses	**R**	**Sig.**	direction	**Support for Hypothesis**
3. Does a relationship exist among attitude toward technology (PIICT), result demonstrability, self-efficacy, ease of use, and perceived usefulness of ICT-based features in recommendation/selection of a conference center?	H1c: Personal Innovativeness in IT (PIICT) of a meeting planner has a positive relationship with perceived usefulness of an ICT-based feature at a conference center.	0.424	0.000	+	Yes
	H1d: A meeting planner's Personal innovativeness (PIICT) will have a positive effect on the self-efficacy	0.375	0.000	+	Yes
	H2a: A meeting planner's result demonstrability will have a positive effect on the perceived ease of use of use -specific ICT-based features.	0.629	0.000	+	Yes
	H2b: A meeting planner's result demonstrability will have a positive effect on the perceived usefulness of specific ICT-based features.	0.750	0.000	+	Yes
	H2c: A meeting planners' result demonstrability will have a positive effect on the self-efficacy in the use of specific ICT-based feature(s).	0.795	0.000	+	Yes
	H4: Self-efficacy will have a significant positive relationship with perceived ease of use.	0.568	0.000	+	Yes
	H6: Perceived ease of use will have a positive effect on the perceived usefulness of use.	0.564	0.000	+	Yes
4. Does a type of meeting planner influence the relationships of perceived importance of the availability of technical support, self-efficacy and perceived ease of use of ICT-based features in recommendation/selection of a conference center?	H5a: The type of meeting planner will influence the effect of perceived importance of the availability of technical support on self-efficacy.				Yes
	H5b: The type of meeting planner will influence the effect of self-efficacy on perceived ease of use of ICT-based features.				No

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CHAPTER V

DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter presents the conclusion and implications of the study's findings. The limitations of the study and the recommendations for the future study are discussed.

5.2 Conclusion

The objective of this study was two-fold: 1) measure the perceived importance of each ICT-based feature and service when selecting/recommending a conference center and identify underlying dimensions of ICT-based features, and 2) to define the relationships between the key constructs in explaining and predicting technology acceptance by meeting planners.

Research question 1: What types of ICT-based features are perceived as important in selection/recommendation of a conference center by meeting planners?

Conference centers want to better understand their target meeting planners' perceived importance of ICT-based features on meeting facility selection. If ICT-based features can be clustered by their importance, the conference center can market better by packaging those items that matter to its customers. This study identified that "high-speed Internet," "wireless," and "E-mail station (kiosk)" are the important ICT-based features considered by its order when meeting planners select/recommend a conference center. This study also found that there are differences in the perceived importance of several ICT-based features (wireless, fiber optic, Ethernet) depending on the type of meeting planners. The corporate meeting planners perceived "wireless" and "fiber optic" as more important than association meeting planners and government planners

did when they select/recommend a conference center. Interestingly, the government meeting planners considered "Ethernet" more important than other types of meeting planners did. Overall, the corporate meeting planners put more importance on ICT-based features as a determinant of facility selection/recommendation among the three types of meeting planners, while the association meeting planners put least importance on selected ICT-based features. Thus conference centers should wisely invest in and market ICT-based features based on their main target type of meeting planners.

This study also identified meeting planners' lack of knowledge of technology jargon related to network backbones. While no meeting planner had a problem understanding the meanings of "high speed Internet" and "wireless," many have no knowledge of the following terms: category 5 copper cable (34%), ISDN (17%), Fiber Optic (14%), VPN (14%), satellite uplink/downlink (13%), Ethernet (13%), and LAN (13%). Thus conference centers should be careful in using such technology jargon directly in their marketing and communication with meeting planners; they should consider using easier terms or adding in-depth explanations that meeting planners can conceptually link to their meeting planning terms. All types of meeting planners consider the availability of technical support as an important determinant when they select/recommend a conference center with ICT-based features. Notably, the availability of on-site technicians provided by a conference center is more important than the in-house technical support provided by the meeting planners' organization.

The results of the factor analysis of the fifteen items provided three underlying dimensions: 1) high-speed wireless Internet, 2) ICT-based service outlet (computer lab, E-mail kiosk, Web-conferencing), and 3) network backbone. High-speed wireless Internet is the most

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obvious dimension while the other two dimensions show some cross-loadings on multiple

dimensions. Those cross-loadings can be explained as the items in the "network backbone"

factor that are the essential technology for many features related to virtual meeting (video

conferencing, Web broadcasting, and satellite uplink/downlink), computer lab, and E-mail kiosk.

Conference centers can increase their competitive value by packaging the most important feature,

high speed wireless Internet, with additional ICT-based features identified as important

according to its target meeting planners. For example, to corporate meeting planners who value

the availability of high speed wireless Internet, conference centers should market and explain the

tangible advantages of a fast network backbone, including fiber optic and Ethernet, which can

boost the performance of high-speed Internet. And conference centers should emphasize the

built-in fast network backbone that will ensure reliable and effective virtual meetings to

customers who consider utilizing video conferencing and other types of virtual meetings.

Research hypotheses were developed to answer suggested research questions. As

discussed in chapter IV, all of the hypotheses were accepted except the hypothesis H3a, H3b, and

H5b. A detailed discussion of the results of each hypothesis test is presented below.

Research question 2: How does the perceived importance of availability of technical

support influence meeting planners' confidence in the use/acceptance of ICT-based features at a

conference center?

Inconsistent with the proposed hypothesis 3a and 3b, perceived importance of the

availability of technical support did not have a negative effect on self-efficacy, but a significant

positive effect. The result suggested that technical support is an important determinant for a

conference center selection/recommendation no matter what level of self-efficacy meeting planners have.

Research question 3: Do relationships exist among attitudes toward ICT, PIICT, result demonstrability, self-efficacy, ease of use, and perceived usefulness of ICT-based features in recommendation/selection of a conference center?

According to the results of hypotheses tests, PIICT is positively related to perceived ease of use, perceived ease of usefulness, self-efficacy, and result demonstrability. PIICT influences perceived ease of use indirectly through self-efficacy and result demonstrability. PIICT also influenced perceived usefulness directly and indirectly via result demonstrability. This result suggests that if a meeting planner has high PIICT, he/she also possesses high confidence in adopting ICT-based features. They also perceive such ICT-based features as useful in their conference center selection/recommendation. The results of the study further indicate that if conference centers can identify the PIICT of meeting planners, they can effectively use the test scores to market ICT-based features. In other words, those who have high PIICT score represent stronger confidence in using and visualizing the advantages of ICT-based features compared to those with low PIICT. This result is consistent with other research findings, which argue that PIICT is a good indicator of perceived ease of use, perceived usefulness, and result demonstrability with professionals in other industries.

This study also tested the relationships between result demonstrability and self-efficacy, perceived ease of use, and perceived usefulness. Respondents' perceptions of result demonstrability was a significant determinant of both perceived usefulness and perceived ease of use, indicating that when an ICT-based features generates job relevant results that are readily

visible, perceptions of usefulness and ease of use are positively affected. The path coefficients to perceived usefulness and self-efficacy were both high (0.77, 0.73), indicating a strong magnitude of effects by result demonstrability. While respondents' perception of result demonstrability was also a strong determinant of self-efficacy, its regression analysis is questionable due to the high correlation between the two constructs. The relationship should be further re-tested due to the high correlation of measuring items for these two constructs, which assumed a result of order bias. Self-efficacy is positively related to perceived ease of use. As many technology acceptance studies revealed, perceived ease of use was positively related to the perceived usefulness of ICT-based features.

Research question 4: Does the type of meeting planner influence the relationship of perceived importance of the availability of technical support, self-efficacy, and perceived ease of using ICT-based features in recommendation/selection of a conference center?

This study included the new variable "perceived importance of the availability of technical support" and tested its relationship with self-efficacy in the model. From the hypothesis test, the association meeting planners showed that there was a positive relationship between perceived importance of the availability of technical support and self-efficacy. The result represented that association meeting planners who perceive the availability of technical support important have higher confidence in using ICT-based features. Thus, the type of meeting planner influences the relationship of perceived importance of the availability of technical support on self-efficacy of ICT-based features. However, the type of meeting planners did not influence the relationship of self-efficacy on perceived ease of use.

In conclusion, this study confirmed all hypotheses except H3a, H3b, and H5b. The author expanded prior TAM research findings by adding the new variable "perceived importance of the availability of technical support" and testing the influence of the type of meeting planner on relationships between self-efficacy and perceived ease of use, as well as perceived importance of each ICT-based feature and service. This study proposed and confirmed a significant role of PIICT and result demonstrability as the antecedents of positive belief toward ICT-based features in a selection/recommendation of a conference center.

5.3 Implications

As ICT continues to be an important tool in today's meeting business for both meeting planners and meeting attendees, understanding their needs and providing key features and service can be valuable in securing a competitive advantage. The research findings can provide useful managerial implication to conference centers that are interested in marketing their existing ICT-based features. Also these are useful to conference centers that are considering investing in or upgrading ICT-based features and service in the future.

This study identified that high-speed wireless Internet is the most desirable ICT-based feature that impacts the selection/recommendation of a conference center for all types of meeting planners. Therefore, meeting facilities must consider providing high-speed wireless Internet and marketing the service extensively. The corporate meeting planners valued the availability of ICT-based features more than association and government planners do. Thus, marketing and making sales efforts with the identified list of ICT-based features will be an effective way to attract those in the corporate meeting sector.

As the study identified, the long list of technology jargon does not make an impact on meeting planners' selection/recommendation of a conference center. Particularly, considering

the result of the high percentage of meeting planners who do not have any knowledge of technology jargon related to network backbones, improving result demonstrability of those features is very important. Conference centers should be careful using technology jargon directly in their marketing and communication with meeting planners and consider using more easily understandable terms or adding explanation of complex terms in their sales and marketing materials.

Given that PIICT emerged as an important individual difference variable to predict meeting planners' perceived ease of use and perceived usefulness that lead to actual use or adoption (Davis, 1998), it is crucial to identify those individuals who possess high/low PIICT and develop marketing strategies accordingly. This study also suggested that it is important to visualize the outcomes of ICT-based features so the benefits of using such features are tangible to meeting planners. This study highlights that on-site technical support is the most important ICT-based service needed to attract all types of meeting planners. Thus, conference centers must not simply offer planners a list of technology, but they must also help each client choose and use the right technology for their meetings through on-site technical support. Therefore, conference centers should provide both technology and technical support and thrive to be a total solutions provider to be more attractive to meeting planners who consider using ICT-based features.

5.4 Recommendation for Future Studies

Due to the exploratory nature of this study and the selected two conference centers specifically studied, the results may not provide complete facets of the impact of ICT-based features/service on the various types of meeting facility selection/recommendation. Future studies might be undertaken using more samples from a larger pool of conference centers and

with different types of conference centers (resort conference center and university-based conference center) in order to see if there is a significant difference in comparison to this study. Different segments of meeting facilities (e.g., conference hotel or convention center) or geographic regions (other than North America) may also yield new results.

As mentioned earlier in Chapter II, the tested fifteen items were new and had never been tested previously. With the identified three dimensions of the ICT-based features at conference centers, the proposed model can be tested in the future study per each dimension.

Corporations started downsizing and outsourcing their meeting functions and the independent meeting planners group has grown fast as an important segment of the meeting industry. Therefore, future studies can include the independent meeting planners and compare their findings with the results of this study. Given that two constructs: self-efficacy and result demonstrability were highly correlated, future study can be performed with a summated construct by transforming the two constructs into one summated construct and testing the revised parsimonious model.

5.5 Limitations of this Study

There are some limitations to this study. First, this study was conducted with meeting planners who used or planned to use two conference centers in North America. The convenience and purposive sampling used in this study might make the sample less than fully representative while it is often used for exploratory study. Second, an ANOVA test assumes an equality of variance across groups; however, the variation in the government meeting planners group was larger. It was due to the smaller number of collected government meeting planners responses (30

vs. 74, 50). Thus the generalizability of findings from government meeting planners and comparison to other types of meeting planners (association and corporate) was weak. This limitation can be overcome by collecting more data from government meeting planners and it will enhance the comparative study among the different types of meeting planners in general. Lastly, this study proposed two measurement items for the newly developed construct "perceived importance of the availability of technical support." To measure complete facets of the construct, additional measurement items can be developed and tested. Even with such challenges, the results contributed to the identification of the underlying three dimensions of ICT-based features at meeting facilities, reduce the items to manageable size to be tested in future study, and provided meeting planners' beliefs and attitudes toward ICT-based features/service and their relationships.

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APPENDIX

April 15, 2008

Dear meeting planners:

I am a doctoral candidate in the Department of Hospitality and Tourism Management at Virginia Tech and am currently working on my dissertation.

For my Ph.D. dissertation, I am conducting a study that examines the importance of Information Communication and Technology (ICT)-based features on the selection of a conference center and meeting planners' acceptance of technology. This survey will provide valuable information for my research and will help the meeting and conference center industry to understand the needs of meeting planners.

The enclosed questionnaire should take approximately 5-10 minutes to complete. Your participation is strictly voluntary and all responses will be kept confidential and anonymous. Data are being collected for academic purposes only. When you have completed the survey, please return it via the enclosed pre-paid return envelope by May 15, 2008. Completion and return of this survey indicates your voluntary consent to participate in this study.

To thank you for your participation, I would like to offer you the chance to enter your name to win an Outback Steakhouse Restaurant Gift Card. Three winners will be randomly selected, each receiving a $30 gift card as a token of appreciation for your help.

If you have any questions please do not hesitate to contact me via phone at (540) 231-1276 or via email at leesw@vt.edu.

Thank you in advance for your cooperation.

Sincerely,

Seungwon "Shawn" Lee
Doctoral Candidate
Hospitality and Tourism Management
Virginia Tech

Mahmood Khan, Ph.D.,
Dissertation co-chair
Professor
Hospitality and Tourism Management
Virginia Tech

VirginiaTech
Invent the Future

Survey Background: Meeting planners consider a number of factors when making their recommendation or selection of a meeting facility. One of those may be the availability of technology at meeting facilities.

Q1. I am responsible for selection or recommendation of meeting facilities for my organization's meetings (Please mark one that applies to you).

　☐ Yes　　　　　　☐ No

PART I. This section asks questions regarding your perception of technology and **Information and Communication Technology (ICT)-**based features that are available at **conference centers when you recommend or select a conference center for your meeting.**

Q1. Please read each statement carefully and indicate your level of agreement or disagreement with each statement by **circling the number** that most closely describes your opinion.
If you have no knowledge on the given terminology, please check in the "no knowledge".

(1= strongly disagree, 2= moderately disagree, 3= somewhat disagree, 4 = neutral (neither disagree nor agree, 5= somewhat agree, 6= moderately agree, 7= strongly agree)

Type of ICT-based features at conference centers	Strongly Disagree					Strongly Agree		No Knowledge
High-speed Internet is an important determinant when I recommend or select a conference center.	1	2	3	4	5	6	7	
Network is an important determinant when I recommend or select a conference center.	1	2	3	4	5	6	7	
Wireless is an important determinant when I recommend or select a conference center.	1	2	3	4	5	6	7	
Fiber optic is an important determinant when I ecommend or select a conference center.	1	2	3	4	5	6	7	
Videoconferencing is an important determinant when I recommend or select a conference center.	1	2	3	4	5	6	7	
Ethernet is an important determinant when I recommend or select a conference center.	1	2	3	4	5	6	7	

Type of ICT-based features at conference centers	Strongly Disagree					Strongly Agree		No Knowledge
Integrated Services Digital Network (ISDN) is an important determinant when I recommend or select a conference center.	1	2	3	4	5	6	7	
Local Area Network (LAN) is an important determinant when I recommend or select a conference center.	1	2	3	4	5	6	7	
Satellite uplink and downlink is an important determinant when I recommend or select a conference center.	1	2	3	4	5	6	7	
T1 Line is an important determinant when I recommend or select a conference center.	1	2	3	4	5	6	7	
Virtual Private Network (VPN) is an important terminant when I recommend or select a conference center.	1	2	3	4	5	6	7	
Category 5 copper cable is an important determinant when I recommend or select a conference center.	1	2	3	4	5	6	7	
Web broadcasting is an important determinant when I recommend or select a conference center.	1	2	3	4	5	6	7	
Computer lab is an important determinant when I recommend or select a conference center.	1	2	3	4	5	6	7	
E-mail station (kiosk) is an important determinant when I recommend or select a conference center.	1	2	3	4	5	6	7	

Q2. B**ased on the ICT-based feature(s) that you indicated as important in Q1,** please indicate your level of agreement or disagreement with the following statement by circling the number.
(1= strongly disagree, 2= moderately disagree, 3= somewhat disagree, 4 = neutral (neither disagree nor agree, 5= somewhat agree, 6= moderately agree, 7= strongly agree)

	Strongly Disagree						Strongly Agree
I am confident that I am able to apply ICT based-features at a conference center for my next meeting.	1	2	3	4	5	6	7
There is a lot that I can do to be sure of applying ICT based-features at a conference center for your next meeting	1	2	3	4	5	6	7
I have no difficulty telling others about the results of using ICT-based feature(s) at conference centers for meeting functions.	1	2	3	4	5	6	7
I believe I can communicate to others the consequences of using the ICT-based feature(s) for meeting functions at conference centers.	1	2	3	4	5	6	7

	Strongly Disagree						Strongly Agree
The results of using ICT-based feature(s) at conference centers for meeting functions are apparent to me.	1	2	3	4	5	6	7
Using the ICT-based features enables me to accomplish tasks more quickly.	1	2	3	4	5	6	7
Using the ICT-based features improves my job performance.	1	2	3	4	5	6	7
Using the ICT-based features increases my productivity.	1	2	3	4	5	6	7
Using the ICT-based features enhances my effectiveness on the job.	1	2	3	4	5	6	7
Overall, I find the ICT-based features useful in my job.	1	2	3	4	5	6	7
Learning to operate the ICT-based features at conference centers for a meeting function is easy for me.	1	2	3	4	5	6	7
I find it easy to get the ICT-based features at conference centers to do what I want them to do.	1	2	3	4	5	6	7
Using the ICT-based features at conference centers is clear and understandable.	1	2	3	4	5	6	7
It is easy for me to remember how to perform tasks using the ICT-based features at conference centers.	1	2	3	4	5	6	7
Overall, I find the ICT-based feature(s) at conference centers is easy to use.	1	2	3	4	5	6	7

Q3. Please read each statement carefully and indicate your level of agreement or disagreement with each statement by **<u>circling the number</u>** that most closely describes your opinion.

(1= strongly disagree, 2= moderately disagree, 3= somewhat disagree, 4 = neutral (neither disagree nor agree, 5= somewhat agree, 6= moderately agree, 7= strongly agree)

	Strongly Disagree						Strongly Agree
I attempt to experiment with any new information and communication technology (ICT) I hear about.	1	2	3	4	5	6	7
Among my peers, I am usually the first to try new ICT.	1	2	3	4	5	6	7
In general, I am hesitant to try new ICT.	1	2	3	4	5	6	7
I like to experiment with new ICT.	1	2	3	4	5	6	7
Available technical staff/support from a conference center is important to apply ICT-based features at a conference center for my next meeting.	1	2	3	4	5	6	7
Available technical staff/support from my organization (e.g. IT department) is important to apply ICT-based features at a conference center for my next meeting.	1	2	3	4	5	6	7

PART II. DEMOGRAPHIC INFORMATION

Survey Instruction: Please complete the following demographic information, giving your best estimate where exact answers are not known.

1. Please indicate your gender.
   ☐ Male   ☐ Female

2. Please indicate your <u>year of birth</u>: 19_____

3. From the choices below, please indicate your highest level of education.
   ☐ High school   ☐ 4-year college degree
   ☐ Associate degree   ☐ Master's degree
   ☐ 2-year college degree   ☐ Doctorate degree

4. How many years have you been working as a meeting planner?

    ☐ Less than 2 years   ☐ 10-15 years
    ☐ 2-5 years   ☐ More than 15 years
    ☐ 6-9 years

5. What is your job title?

    ☐ Vice president of meetings   ☐ Coordinator of meeting
    ☐ Director of meeting   ☐ Other (please provide your exact title)
    ☐ Manager of meeting   _____

6. Please describe your organization according to the following criteria (Please select only ONE form the type of business then answer questions belong to the type of business)

Type of organization	☐ Association	☐ Corporate	☐ Government

Type of Business	a. Type of membership
	  ☐ Professional
	  ☐ Trade
	
	b. Geographic scope
	  ☐ International
	  ☐ National
	  ☐ State
	  ☐ Regional
		a. Type of business
		  ☐ General
		  ☐ Pharmaceutical
		  ☐ Technology
		  ☐ Financial
		  ☐ Medical
		  ☐ Insurance
			a. Geographic scope
			  ☐ Local
			  ☐ County
			  ☐ State
			  ☐ Federal

7. What types of meeting do you hold at a conference center? (Please check all that apply)

    ☐ Business meeting   ☐ Annual convention
    ☐ Seminars   ☐ Regional conference
    ☐ Board/committee meeting   ☐ State conference
    ☐ Training   ☐ Other(please specify)
    ☐ Management development   _____

Thank you VERY MUCH for your time!

Technology Glossary

Category Cable: (Unshielded Twisted Pair Cable or UTP) usually referred to as Cat 1, 2, 3, 4 or 5 cable. Cat 5 transmits data the fastest. Fast Ethernet requires enhanced Cat 5 cable or Cat 5 to operate at its full potential.

DSL: Digital subscriber line. Brings high bandwidth via copper phone lines.
Ethernet Internet Service   Local area network of computers and associated devices that share a global information system.

Fiber Optic Cable: A cable that is made up of tiny glass strands that are wrapped and bundled together to make up a cable. Fiber can transmit voice, data and video at gigabyte speed, or 1 billion bytes per second, with less signal loss than copper wire because the signal is carried by light rather than electricity. See BACKBONE.
See Also Backbone

Network: Two or more computers or peripherals that are linked together for the purpose of sharing data.

T-1 Line: Transmitting data at speeds of up to 1.544 Mbps, operates at a much higher capacity than an ISDN line and can be split to accommodate several users at one time (known as a fractional T-1).

Telecommunications: Electronic communication that involves the transmission of encoded sound, pictures, or data over significant distances, using radio signals or electrical or optical lines. The most common method of telecommuncation is via telephone or the Internet.

Teleconference: Type of meeting which brings together three or more people in two or more locations through telecommunications. See CONFERENCE CALL.
See Also Conference Call

Videoconference: A meeting between two or more people or groups across a distance, including video, audio, and potentially other data, utilizing telecommunications or communications satellites for transmission of the signal. See TELECONFERENCE.

Satellite Uplink/Downlink :The station used to transmit signals from Earth to a satellite and vice versa (videoconferencing).

Webcast: An event that broadcasts the audio and/or video portion of a keynote presentation or other educational sessions over the Web in real-time or on-demand.

Web broadcasting: Web browser-based broadcasting.