

**EFFECTIVENESS OF INTERNET INFORMATION FOR
PARK, RECREATION AND TOURISM PRACTITIONERS**

A Thesis

by

JONI D. PATTERSON

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

May 2003

Major Subject: Recreation, Park and Tourism Sciences

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May 2003

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ABSTRACT

Effectiveness of Internet Information for Park, Recreation and Tourism Practitioners.

(May 2003)

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Chair of Advisory Committee: Dr. James Petrick

This research is a four-step process. 1) Development of the Park, Recreation and Tourism (PRT) Planning Web site to meet the needs of rural communities, indicated through the Texas Community Futures Forum needs assessment process. 2) Evaluation of the PRT Planning Web site by experts in the field of PRT Sciences. 3) Inspect differences in the information needs and use between rural and urban PRT practitioners. 4) Examine factors contributing to the flow experience while utilizing the PRT Planning Web site.

Evaluation information provided insight about strengths, weakness and modifications to be made to the PRT Planning site. Programming was reported as the service provided most by survey participants. Internet information is considered the most effective information resource, with suppliers/manufacturers and libraries being the least effective. When acquiring information on developing and providing PRT services, not knowing where to find information was the problem experienced most, while not understanding the information was the problem encountered the least. Marketing information was deemed the most useful type of information, and increasing community well being is the most important service benefit provided by respondents.

No significant differences were reported between groups' perception of Internet information as the most effective information resource, intent to return to the PRT Planning Web site, or education levels. Significant differences were reported between groups' Internet connection speed, use of a dial-up modem, computer experience and Internet experience. Study findings also reported less computer and Internet experience for rural and small communities when compared to large and urban communities.

In Skadberg's (2002) proposed model of flow in human-computer interaction, the factors that contribute to the flow experience are, experience, ease of use, response speed, interactivity, vividness, telepresence, knowledge of the information being presented, and challenge of the information being presented. Of these factors, experience was the only variable that did not show a significant or positive relationship with factors in the flow model. Increased learning and change in attitude and behavior are considered outcomes of achieving the flow state; both reflected a positive and significant relationship with the variable flow.

DEDICATION

I dedicate this work to my mom and dad, Jeannie and Denny Patterson, who have shared their love unconditionally, always believed in me and have given support beyond belief.

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There are so many people who I should thank for making this study and my graduate school adventure possible. Completing this process has required the support, assistance and faith from all of them. At the top of my list for thanks is Jesus Christ, who guides my everyday journeys and is the co-author of my life's works.

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Sincere thanks to the Department of Recreation and Park Cooperative Extension for funding this project and to the staff for all of their never ending assistance. Kathryn Nachlinger deserves special appreciation for her backing and friendship that have kept me going when times seemed at their worst. To Andy and Yongxia Skadberg I owe a deserving round of praise. This study could have never been done without their brilliant ideas, computer experience and enduring teachings.

My parents and sister deserve the bulk of my gratefulness for not only being my biggest supporters, but for also having a never ending supply of understanding and faith. With their encouragement I feel that anything is possible.

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CHAPTER I

INTRODUCTION

The way we communicate has changed dramatically through the use of Internet information. The Internet allows information to be shared by a number of people in different geographical areas. Because of this, agencies that serve practitioners in Texas are investing time and money into the development of Internet information resources. Texas Cooperative Extension is one of these agencies. Using information collected in the Texas Community Futures Forum, Texas Cooperative Extension has gained the goal of using Internet information as a way to better serve their rural clients. Disseminating information via the Internet has the potential to offer rural park, recreation and tourism practitioners an alternative source of information delivery.

The Texas Community Futures Forum (TCFF), a series of needs assessments conducted in every county in Texas, has provided insight into the needs of Texas communities. From these needs assessments six broad themes have been derived expressing the vision of Texas communities. These themes are:

- Quality of Life in the Community
- Economic Viability and Growth
- Accessible, Quality Education for All
- Water and the Environment
- Strengthening Families, Supporting Youth
- Health Care and Facilities

This thesis follows the style and format of the *Journal of Park and Recreation Administration*.

Nineteen response teams have been formed to support county responses to the needs identified in the Texas Community Futures Forum process. One of these response teams is the Quality of Community Life Response Team (QualComLife). QualComLife has the following six responsibilities:

1. Develop an understanding of the QualComLife domain
2. Identify county needs for information, resources, and skills in each QualComLife domain,
3. Develop strategies to support counties in responding to their QualComLife needs
4. Develop an evaluation strategy for QualComLife
5. Implement QualComLife program response strategies
6. Plan for QualComLife Response Team and life expectancy

QualComLife's team member contact with rural agencies has provided insight to one goal of many communities, which is to develop and acquire park, recreation and tourism services in their community. Contact with these agencies led to the discovery that many of these communities lack park, recreation, and tourism (PRT) practitioners whose job is to plan, organize, and deliver PRT services (Scott and Shafer, 2001). Larger communities usually have practitioners with these skills and knowledge. The QualComLife recognizes that rural communities have different information needs than urban communities; therefore the development of an Internet information resource to deliver information to rural PRT practitioners should be beneficial for rural communities. It has been suggested that information to be presented via the on-line informational resource targeted at rural communities should focus on elements of the planning, developing, and delivering of PRT services (Scott and Shafer, 2001).

Problem Statement

Many rural communities in Texas are at a competitive disadvantage when acquiring services and funding for park, recreation and tourism amenities. Information dissemination to rural areas is disproportionate to urban areas (Grimes, 2000). Thus an Internet information resource has been developed by QualComLife to assist rural practitioners in the development and acquisition of park, recreation and tourism amenities (Scott and Shafer 2001).

The focus of this study is three-fold. First, institutions are increasingly using the Internet as a way to deliver information to their clientele. As institutions build Internet resources, issues of Web site design, characteristics of the target audience, and differences in user information needs will need to be evaluated in order to build a useful Web site. Second, little attention has been given to the differences in information use and needs between urban and rural park, recreation and tourism practitioners. Third, examination of the factors leading to flow in human-computer interaction as they pertain to the user's experience while utilizing an information Web site.

Purpose and Objective

The purpose of this research is to examine the experience and usefulness of the Internet as a resource for rural park, recreation and tourism practitioners. For this research, the Park, Recreation, Tourism Planning Web site (PRT Planning) has been developed to evaluate how the quality of a person's online experience affects their use and reuse of the information presented. The concept of optimal experience theory provides the theoretical basis for this research. Optimal experience theory states that

flow is achieved when people are deeply involved in some event (Ghani and Deshpande, 1994). Flow is the holistic feeling a person has when they have total involvement in an activity. A person is likely to achieve a flow state when their skill level in an activity matches their perception of the challenge (Csikszentmihalyi, 1988). Two consequences of flow are that it leads to changes in behavior and increased learning (Ghani 1991, Webster, Trevino and Ryan 1993, Ghani and Deshpande 1994, Hoffman and Novak 1996).

The research is a four-step process. 1) The development of the PRT Planning, information Web site to meet the needs of rural communities, indicated through the TCCFF needs assessment process. 2) Evaluate the PRT Planning Web site with experts in the field of Recreation, Park and Tourism Sciences. 3) Examine differences in information needs between rural and urban park, recreation and tourism practitioners. 4) Examine factors affecting the flow experience while utilizing the PRT Planning Web site.

Specific objectives of this study are: (a) to provide general information about the positive and negative attributes of Internet information delivery, (b) evaluate the PRT Planning Web site using four experts in the department of Recreation, Park and Tourism and Sciences at Texas A&M university, (c) determine types of information that would be useful on an Internet information resource, (d) compare differences in information needs based on education level, population size, Internet experience and computer experience, and (e) determine how factors of flow are related to the flow experience in human computer interaction by measuring characteristics of flow using Skadberg's (2002)

proposed model of flow human-computer interaction. This research is exploratory in nature and is used in attempt to measure the relationship between users' experience of the Web site and effectiveness of the site in accomplishing its intended goal of providing visitors with a resource for information on developing park, recreation and tourism services in a community.

In order to better understand the stated objectives, (a) positive and negative attributes of information delivery, literature related to Internet information benefits and barriers will be reviewed, (b) an evaluation based on seven criteria of Web site evaluation used in Skadberg's (2002) study (see Appendix D) was conducted with the help of four experts in the field of Recreation, Park and Tourism at Texas A&M University, and finally, an on-line survey was conducted on park, recreation, and tourism practitioners to gather information on (c) types of information needs, (d) differences in information needs based on population and (e) factors of flow as they pertain to the user's experience.

In chapter two, literature on the advantages and disadvantages of Internet information, flow in the context of human-computer interaction, and rural issues will be reviewed. Skadberg's (2002) Proposed Model of Flow will be discussed with focus on the models of flow in the literature. Also, issues of rural issues will be reviewed to gain insight about the sample and the target population.

Chapter three begins with a discussion on the purpose of the study and the study area will be described. Second, a detailed account of the guidelines of the Web site evaluation is described. Third, hypotheses are stated for each of the objectives of the

study. Description of the development of the data collection instrument is next; followed by the procedures for pre-testing the survey including modifications made to the survey and Web site post pre-test. Finally, the sampling plan and data analysis are discussed.

Research results are presented in chapter four. This section is broken down by objectives and hypothesis. Chapter five is divided into three sections. First, the study's findings will be reviewed sequentially as they relate to the study objectives outlined in chapter 3. The second section discusses the theoretical and managerial implications of the findings. Finally, limitation of the study is discussed and recommendations for future research are made.

CHAPTER II

LITERATURE REVIEW

This chapter's purpose is to provide insight into the effectiveness of the Internet as a way of providing information to rural practitioners in the park, recreation and tourism field. The perspective taken in this research is that using the Internet and visiting a Web site is an information seeking behavior. Therefore, studies related to the benefits and barriers of Internet information will be evaluated. Literature relevant to this study will include research on issues of Internet use, optimal/flow experience in human-computer interaction, and rural communities studies.

Advantages and Disadvantages of Internet Information

Benefits of Internet Information

The distribution of information has been altered due to the use of the Internet (Butler, 1999). Three main benefits of Internet use cause these changes in information distribution (Crowley, Lienhardt and Chang, 2001). First, the cost of sharing information and data becomes minimal through the use of mailing lists and Internet sites. Second, information on the Web can be readily accessed and quickly revised. Third, information on the Web can be accessed on a global scale. Therefore, information can be found and shared between researchers and practitioners regardless of geography. Internet allows for a wide dispersal of information disciplines in a variety of fields to distribute information, allowing for information to be combined and shared in a variety of ways (Crowley et. al. 2001).

Recently, higher education institutions have chosen to develop Web sites to support their work and disseminate information in an effort to better serve their clients. This is important due to the large amount of information in the public domain and institutions not being able to serve clients outside of conventional client-server systems (Hays, 2000). Franklin (1994) states that the ability to gather information in a timely and efficient manner is essential in the decision-making process. It is theorized that the Internet acts as a way of providing information directly to local level managers and improves the overall planning process of resource management (Holt and Rawlings, 1990).

Making use of the Internet can help to close gaps between academics and practitioners because of its inexpensive dispersion of information, rapid pace of revision, and unrestricted access (McAvinia & Oliver, 2002). Benefits of the Web give general improvements to information quality. Information presented on the Internet becomes more public, has increased detail and is more accessible compared to other forms of information dissemination. Use of the Internet allows for different levels of examination and presentation of information (i.e. multi-media and multi-sensory presentation, linear and non-linear choice of navigation) (Crowley, et al., 2001). These levels of examination allow concurrent support of presented information through general overviews of ideas, complete details of report findings, shared opinions, and links to associated sites (Thagard, 2001; Theney, 2001). Thus, Internet information gives researchers and authors of Web sites the ability to strengthen their constructs and

methods by allowing user's to critique and comment immediately on the information being presented (Crowley, et al., 2001).

According to Taylor (1997) the Internet provides opportunities for learning by evoking more of the senses than traditional classrooms do. As stated in one learning theory, there are three modes of learning: enactive, iconic and symbolic (Bruner and Olsen, 1973). Enactive learning is considered learning by doing, iconic learning is learning through the depiction in an image, and symbolic learning is learning by the restatement of words or abstract symbols. Therefore, learning which is to be successful will be active, engaging and multi-representational (Skadberg, 2002).

The Internet utilizes all three modes of learning within Web sites. Thus, providing an active learning environment where audiences can explore the contents of a Web page through interactions with the site depending on their own needs and pace is necessary. An additional learning advantage of Internet use is that it allows for interactivity and non-sequential presentation of information (Hoffman and Novak, 1996). In other words, the user interacts with the Internet program to choose the path and order of information retrieval.

According to Nilsen (1995) several comparisons can be made between the use of Internet information and printed material. The Internet is capable of showing moving images, animations and film, while printed material is not. Unlike printed material Internet information is easily updated and changes can be downloaded immediately after they occur. Information via the Internet can be transferred over networks, eliminating the need to produce copies of printed material so that more than one user may share it in

more than one location (Nilsen, 1995). Thus, the presentation of information via the Internet allows for a potentially better communication environment than traditional forms of information transfer.

Disadvantages of Internet Information

Internet information has become a new initiative for many institutions because the delivery of information to clientele and the development of information material coming from a single point of access. On the other hand, delivery of information from a single point of access has its difficulties. Researchers' and designers' selection and structure of the material to be used on a Web site is important to the effectiveness of that site. Information management proposes a barrier to use if the site lacks a structure that supports the user's learning of information (McAvinia & Oliver, 2002).

Making potential users aware of particular Web sites is another barrier of Internet information. On some level it becomes important to raise awareness of a site's existence. Promoting awareness of informational sites then becomes an additional cost in design, staff time, and financial output required to generate use of a site (McAvinia & Oliver, 2002). For the present study the PRT Planning Web site has been promoted through invitation emails sent to contacts of the Texas Cooperative Extension, faculty, staff and students of the Recreation, Park and Tourism Department at Texas A&M University, and Texas Chambers of Commerce.

Internet users come from different cultures, education levels, and Internet experience levels. This coupled with the fact that information presented on the Internet is limited to the time constraints, opinions, and cultural backgrounds of the researcher

and designer of the site (McAvinia and Oliver, 2002) produces a barrier. This barrier of Internet information use brings up a range of issues. First, how can a centralized information resource take into account the beliefs, values, and methods of the user and the user's institution (Beck and Cable, 1998)? Second, information must take into account the use of terminology and be relevant to the targeted user group(s) (McAvinia and Oliver, 2002). Thus, it becomes important that the researcher and designer develop an understanding of the skills, practices and terminologies given the characteristics and needs of the target user (Bennett, Dunne and Carre, 2000).

Information overload is an additional barrier to Internet use. Hiltz and Turoff (1985) state that information overload is the reception of too much unwanted information. Information overload occurs when the amount of information received has reached a level where information being presented is no longer in relation to the subject matter. According to Winett (1986) information retrieval should start from low involvement learning. Thus, information should be easy to find and to view, as well as comprehensive and simple to remember (1986).

Nilsen (1995) compares the disadvantages of using Internet information to the use of traditional printed materials. When comparing reading speeds of printed material to Internet material, Internet speeds are 30% lower (1995). Internet use requires the site design to employ lower resolution graphics so that response speed and download time is not too long. Overhead costs of setting up and training individuals to use the computer and Internet are higher than printed material use. Unlike printed materials, a standard

for Internet-user interaction has not yet been established. Currently there is no standard for data transfer and no regular publishing channels for the Internet (Nilsen, 1995).

The Internet allows users to receive information that before would have been difficult or impossible to gain access to. On the other hand, the density and sophistication of the Internet can be intimidating to non-computer users. Research via online surveys has revealed that Web sites fail to achieve their goals because of usability problems (Vora 1998, Graphics and Visualization & Usability Center 1998, 1999). These problems include disorganized or confusing Web sites, slow connection speed, slow response speed and not being able to find what one is looking for. The Graphics Visualization & Usability Center (GVU) 1999 survey reported that one of the main problems Web users face is slow response speed. According to Vora (1998) other usability problems encountered by Web users are broken links and inconsistencies in the Web-site design. Reasons for these types of usability problems come from lack of design methodology and guidelines. To avoid these problems the designer should understand the goals of the Web site, be consistent in Web-site design style, and understand the user and the use environment (Vora, 1998). Therefore, by better understanding the user of an Internet site, the designer is able to adapt the contents and style so the user is able to retrieve and understand information that before had not been available through traditional forms of information transfer.

In the current study, problems in design such as slow response speed, broken links and inconsistencies in Web site design have been addressed using a Web site evaluation process. Four experts in the Park, Recreation and Tourism department at

Texas A&M University have evaluated the PRT Planning site using a thirteen question form based on the seven guidelines of Web site evaluation used in Skadberg's (2002) study.

Internet and Optimal/Flow Experience

The purpose of this study is to examine the potential use of Internet information for rural park, recreation and tourism practitioners. Factors effecting Internet experience will be examined in the context of optimal experience/flow in human-computer interactions through the use of Skadberg's (2002) Proposed model of flow in human-computer interaction (see Appendix B). This model will be used for two reasons. First, its design is concerned with one particular Web site and not the entire Web. Second, flow factors are correlated to the development of a Web site and its users' individual differences (Skadberg, 2002). Better understanding of a user's experience with Internet information allows for the Web developer to design a site to better meet the needs of the target group. It also provides insight into the effectiveness of the Web site at achieving its goal (Skadberg, 2002). For the purpose of this study, seven factors contributing to flow on the Internet will be examined. These factors are response speed, ease of use, and experience with the Internet, vividness, experience with information Web sites, and the challenge of the information presented on the site.

According to Crowley et al. (2001) use and reuse of Internet information depends on several factors. First, the information provided on a site depends on the intentions and designs of the institution building the Web site. Second, use of the Internet depends on the interests, intentions and ability of the user to navigate and

understand information presented on a Web site. Therefore, those proposing the development of a Web site as a means of distributing information should ask questions such as: (1) why will people use the site, (2) is the information presented useful for the target user and (3) will the site be returned to and used on more than one occasion (Crowley et al, 2001). These questions make it important to better understand factors contributing to human-computer interaction experience.

To study human-computer interaction, factors influencing the user's Internet experience must be identified. The theory of optimal experience or flow is considered a useful framework for identifying the factors influencing human-computer interactions (Ghani 1991, Hoffman and Novak 1996). The advantages of this theory are its ability to be adapted to a number of situations and its use in explaining human-computer interactions (Ghani and Deshpande 1994, Chen, Wigand and Nilan 1999).

Flow was originally defined by Csikszentmihalyi (1975, p.36) as the "holistic sensation that people feel when they act with total involvement." This definition concentrates on a person's skill level in an activity matching their perceptions of the challenge (Csikszentmihalyi, 1988). The consequences of flow is that it leads to increased learning and changes in behavior. Studies have shown that flow is related to the learning experience (Ghani 1991, Webster, Trevino and Ryan 1993, Ghani and Deshpande 1994, Hoffman and Novak 1996). It is believed that learning is a logical product of flow, and that in a flow state the learning process is both involved and enjoyable (Webster, Trevino and Ryan, 1993).

It is also suggested by Ghani and Deshpande (1991, 1994) that flow is significantly correlated to exploratory use behavior in human-computer interactions. It has been found that in a flow state Internet users are more likely to experiment, browse, and perform exploratory behavior. Therefore, a primary objective for Web site developers should be to help an audience achieve a state of flow.

Flow Definitions

There are several definitions of flow. Some definitions focus on what causes flow, while others focus on the experiences derived from the “flow state”. The original definition of flow, according to Csikszentmihalyi (1975, p.36), describes flow as a “holistic sensation that people feel when they act with total involvement”. This definition emphasizes a person’s match of skill with an activity and their perception of challenge for that activity (Csikszentmihalyi and Csikszentmihalyi, 1988). Another way to define flow is as the linear combination of four characteristics: control, attention, curiosity and intrinsic interest (Trevino and Webster, 1992). Others argue that definition of flow should focus on the necessary conditions needed to achieve flow state. Hoffman and Novak (1996) state that flow achieved through network navigation is characterized by 1) seamless sequence of responses facilitated by machine interactivity, 2) intrinsically enjoyable, 3) a loss of self-consciousness and 4) self-reinforcing.

According to Csikszentmihalyi (1975, 1996) there are nine characteristics of a flow experience.

- 1) Clear goals every step of the way
- 2) Immediate feedback to one’s actions

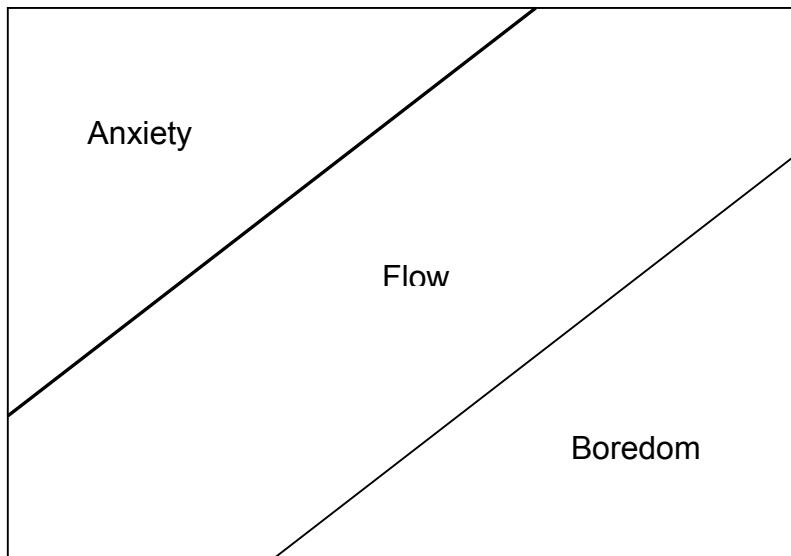
- 3) A balance between challenges and skills
- 4) Actions and awareness are merged
- 5) Distractions are excluded from consciousness
- 6) No worry of failure
- 7) Sense of time becomes distorted
- 8) Self consciousness disappears
- 9) Activity becomes autotelic (Autotelic is derived from the Greek word *auto* meaning seek and *telos*, meaning goal or purpose (Csikszentmihaly,1975)

Flow Models in the Literature

Segment Model

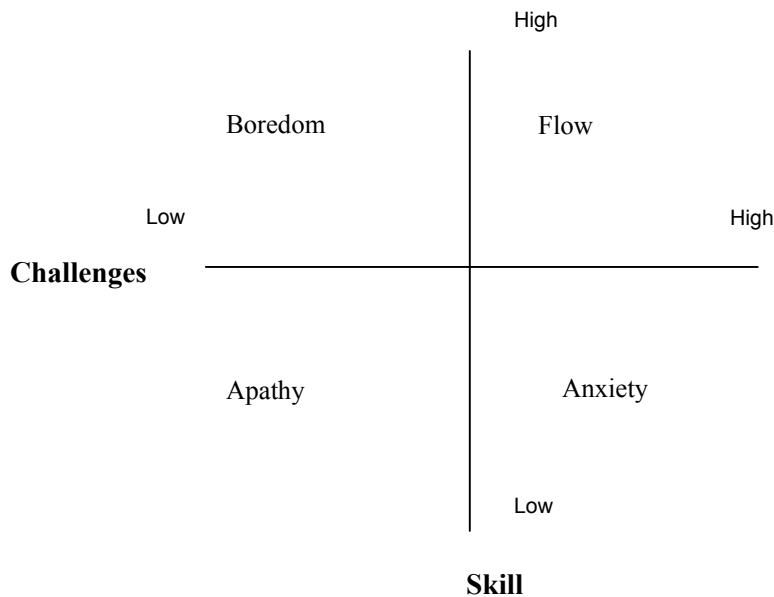
Flow channel segment model (figure 1) focuses on the match of skill to the challenges of an activity (e.g. Ellis, Voelke and Morris 1994; Nakamura 1988; Wells 1988). In the early stages of flow research, flow was considered to occur when a balance between a person's perceived skill and the challenge of the activity was provided (Csikszentmihalyi 1975). The balance existing between perceived skill and challenge leads to three channels of flow—flow, boredom, or anxiety. Thus, if the challenge presented is too simple the audience will become bored. However, if the challenge is too high, the audience will become anxious or frustrated.

Figure 1. Three Channel Flow Model (Ellis, Voelke, and Morris, 1994)



Later studies have changed the model by adding a fourth channel of flow. This fourth channel operates under the notion that a certain level of challenge can help a person to achieve optimal flow (Csikszentmihalyi, 1988). The four-channel flow model (figure 2) indicates that when a person's challenge and skill level are perfectly matched, flow is not a definite result. For instance, a low skill and low challenge experience will result in apathy. A flow experience can only be achieved when skill and challenge level both reach a certain level. When the challenge level is high and the skill level low, the experience will result in anxiety. On the other hand, an experience met with a high skill level and low challenge level will result in boredom (Csikszentmihalyi and Csikszentmihalyi, 1988; Ellis, Voelke and Morris, 1994).

Figure 2. Four-Channel Flow Model (Ellis, Voelke, and Morris, 1994).



Causal Model

Another approach to flow study is the causal model. A causal model is proposed in Trevino and Webster's (1992) study of human-computer interactions during e-mail and voice-mail transactions. This study used the four dimensions of: 1) control, 2) attention focus, 3) curiosity and 4) intrinsic interest to describe characteristics of flow as a multidimensional construct. Three factors contributing to the flow experience were described in this study. These factors are computer-mediated communication technology, perceived technological characteristics (ease of use), and individual characteristics (computer skill). Factors also having a significant correlation with the flow experience were intrinsic interest/curiosity and focused attention (Webster,

Trevino, and Ryan, 1993). For the purpose of the current study these factors prove to be subjective to the user, and therefore factors are not as easily addressed or measurable.

Three Stages Model

Hoffman and Novak (1996) used previous models of flow to propose a conceptual flow model to be used in a computer-mediated environment. Their three-stage model puts attention on the distinction between flow state, potential antecedents, and consequences of flow (Hoffman and Novak, 1996).

Antecedents of flow presented in Hoffman and Novak's (1996) work include: perceived congruence of skills and challenges, focused attention, interactivity and telepresence. Consequences of flow included increased learning, perceived behavioral control and exploratory and positive subjective experience (Hoffman and Novak, 1996).

Later studies conducted by Chen, Wigand and Nilan (1999) put Csikszentmihaly's (1996) nine characteristics of flow into three stages: antecedents, experiences, and effect. The antecedent stage is made up of three dimensions; i) goals, ii) immediate feedback, iii) matched skills and challenges. This stage looks at the qualifying factors for the activity itself for reaching the flow state. The second stage, flow experiences, is created from the merger of action, awareness, concentration and sense of potential control. Characteristics perceived during the flow state are described in this stage. The third stage, effects, is described by a loss of self-consciousness, time distortion, and an experience, which becomes autotelic (Chen, Wigand, and Nilan, 1999).

There are several difficulties in using the aforementioned models of flow in examining the experience of users of an information Web site. First, these flow models

do not use a consistent definition of “flow”. These models also differ in the context of research questions (Skadberg, 2002). Second, although there are studies that have measured flow on the Web (Hoffman and Novak, 1996), flow has not been measured as an experience related to a specific Web site. Instead these studies have focused on the general experience of users browsing the Web (Skadberg, 2002).

Therefore, for the purpose of this study, Skadberg’s (2002) Model of Flow in Human-Computer Interaction will be used to measure the characteristics of flow experience and consequences of that experience. Skadberg’s (2002) Flow model will be used because of its specific use of a flow definition, incorporation of other flow models and its ability to operationalize the flow experience as it relates to a specific Web site.

Skadberg’s Flow Model of Human-Computer Interaction

Skadberg’s (2002) model (see Appendix B) of flow has taken previous models of flow and adapted their context for human-computer interaction on the Web. In Skadberg’s (2002) study, flow is considered a multidimensional construct (Csikszentmihalyi, 1975) and is defined as a cognitive state during the navigation of a virtual Web site. Skadberg’s (2002) flow model is unique in two ways. First, this model is concerned with the flow experience on a particular Web site, instead of studying flow on the Web in general. Second, flow factors used in this study are related to the development of a virtual tour Web site and visitor’s individual differences.

Contributing elements of flow were examined specifically on a virtual tour Web site for nature tourism interpretation of the Great Texas Coastal Birding trail in Texas. Several dimensions were used as the determinants of an optimal experience of flow in a

hypermedia Web environment for a virtual Web site. The dimensions used are as follows: contents, design, performance and individual variation.

Skadberg (2002) has constructed the analysis to correspond with Marchionini's (1989, 1995) model focusing on information seeking in electronic environments.

Marchionini (1989, 1995) proposes that information seeking in an electronic environment is dependent on several factors: the information seeker, search system, domain (field of knowledge), setting (situational context) and search outcomes (feedback).

Elements contributing to flow in Skadberg's (2002) research include: telepresence, visitor's knowledge about birds or the place depicted and birding ability (skills) and content of the Web pages (challenges). These elements have been used because they are affected by design and performance of a nature tourism Web site and individual difference of the Web site user.

Telepresence

Telepresence is an experience, which has been stimulated by media (Steuer, 1992). Steuer (1992) defines telepresence as the user's media stimulated perception of an environment. This environment can be spatially distant, a real environment or in a virtual world (Steuer, 1992). The importance of telepresence is that when a person is surfing a virtual tour Web site, the user not only perceives their present "real" environment but also the environment defined by hypermedia. Therefore, the Internet user is able to perceive two environments: the "real" environment and the environment defined in hypermedia (Hoffman and Novak, 1996). According to Steuer (1992),

telepresence is made up of two variables. These variables are vividness and interactivity.

Vividness

The intensity to which telepresence is experienced is partly reliant on the vividness or attractiveness of a Web site (Steuer, 1992). Vividness of a Web site suggests the representation's richness and quality. Vividness is noted as contributing to a user's focused attention (Skadberg, 2002). A Web site's user's perception of attractiveness is subjective (Steuer, 1992).

Interactivity

Interactivity is considered an important issue for research involving communication and human-computer interaction (Skadberg, 2002). Rogers (1986) defines interactivity as how new communication systems are able to talk with the user. Therefore, interactivity in human-computer interaction simulates our individual participation in conversation. According to Beck and Cable (1998) interactive presentations of any kind are more effective than passive presentations for attracting, retaining attention, and enhancing the learning experience.

Interactivity is determined by four variables. Three of these variables are: response speed, number of possibilities for any given action, and a systems ability to adapt to changes determined by the user (Steuer, 1992). When comparing these variables, response speed is the only variable that varies among users. The fourth variable contributing to interactivity is ease of use. Ease of use refers to the navigational

characteristics of the Internet (Beck and Cable, 1998). Therefore, ease of use is subjective to the user's experience with the Internet.

Skill and Challenge

Skill and challenge are critical factors in a person's experience of flow. A person's perception of skill and challenge represents his/her sense of control over the environment. Control, in Skadberg's (2002) research, refers to the user being able to understand the information being presented on the Web site. Skill, in Skadberg's (2002) research, measures the knowledge a user has about birding and the place (The Texas Gulf Coast). In Skadberg's (2002) study, challenge is derived from the content of the virtual tour Web site. This relationship results from the Csikszentmihalyi's (1988) definition of flow, with flow occurring when challenges and skills are above a certain level and are in balance.

Flow and its Measurement

As stated previously a related consequence of flow is a person's loss of sense of time (Csikszentmihalyi, 1990). This allows for flow to be linked to a person's distortion of time when browsing a Web site. Characteristics of flow are focused attention, complete involvement, and an intrinsically enjoyable experience (Csikszentmihalyi, 1975; Privette and Bundrick, 1987; Ghani and Deshpande, 1994)

Using Skadberg's flow model will provide insight into individual's experience on a particular Web site. Understanding flow factors will aid in the design and content of an Internet site so that flow can be achieved, resulting in increased learning. The next section will present issues of the rural community.

Rural Issues

It is suggested that the planning process for land use is ineffective because essential information is not taken into account during the decision-making process (Williams and Phol, 1987). Therefore, a planner's lack of information in the decision-making and planning processes can lead to unsuitable decisions and may deprive a community of potential resources (Manning, 1987). Most management planning is dependent on the planner's ability to gather information. It has been found that rural planners differ in their management practices because their access to information is unequal to urban planners (Rowen, 1994).

In Texas there are federal, state, and private organizations that offer assistance to communities when planning, developing and managing projects. Assistance comes in the form of technical advice, guidance, membership in organizations, and in some cases financial support. One of the agencies responsible for supplying rural park, recreation and tourism practitioners with outreach and educational information is Texas Cooperative Extension.

Scott and Shafer (2001) as members of the QualComLife response team contacted rural communities that indicated that acquisition and development of park, recreation and tourism amenities is an important goal. Contact with county agents led to the discovery that rural communities lack practitioners whose duties are to plan, organize and deliver services. Larger cities and communities in Texas usually have practitioners with these skills and knowledge. Scott and Shafer (2001), suggested that the design of an Internet resource for information on writing grants, planning, organizing and delivering

park and recreation services would allow for rural practitioner's skills to become more congruent with the skills of larger city practitioners (Scott and Shafer, 2001). This suggestion was made since the use of Internet information allows for planners in rural communities to access information at any time and without the assistance of trained personnel (Cornett, 1994).

Rural Community Studies

Rurality has remained an area of definitional disagreement. Definitions of rurality differentiate themselves in scale and philosophy. National governments use criteria based on population density of communities, and a community's dependence on a particular economic base, to define an area as rural (Roberts and Hall, 2001). Rural areas may also be defined as geographical space which is least affected by the processes of urbanization, have more dispersed patterns of population distribution and less economic activity (Grimes, 2000). Sanders and Lewis (1976) define a rural community as a community, which is relatively small in population size (2,500 people), a non-metropolitan area, and of rural character with a primary economy (Sanders and Lewis, 1976). For the purpose of this study rural has been defined as a community, which is small in population size (5,000 people or less) to allow for a higher response rate in the rural segmentation.

America is made up of metropolitan and rural areas, which continue to grow distinctively different each day. Separating these areas in the past few decades is the considerable alteration of the industrial/employment structure of rural America (Albrecht and Albrecht, 1996). As of 1940 the United States had over 6 million farms and the farm

population exceeded 30 million. Thus, one in every four Americans lived on a farm (Albrecht and Murdock, 1990). Technology improvements consequently led to a decline in the number of farms to 1.9 million in 1992, with the farm population decreasing to 3.9 million in 1990 (Albrecht and Albrecht, 1996).

According to Charlier (1988) as population decreases business begin to leave, the tax base shrinks and communities have to cut down on the services provided to residents. Population decreases have also been coupled with lack of job opportunities in rural communities (Beale, 1993). It is argued that rural communities have lost their competitiveness for attracting industrial jobs. The once cheap, willing and non-union labor available in rural areas has now been found in even cheaper labor overseas. Therefore, the things that once made rural areas competitive in the 70's have now made those areas third world competitive (Charlier, 1988).

During the time when rural communities' economic base was dependent upon the natural resource industries, the rural family structures were significantly different than urban family structures. Rural adults were more likely to be married, and the marriages were less likely to end in divorce. Rural children were more likely to live with both biological parents when growing up, and rural fertility rates were higher than those in urban areas (Cho, Wilson and Bouge, 1970, Duncan and Reiss 1956, Hathaway, Allen and Bryant, 1968). Differences in past rural and urban family structures have been attributed to the constraints of rural life or more specifically, farm life (Nelson, 1955). Migration from rural areas led to a decrease in rural population and changes in the rural family structure. Areas that have traditionally been dependent upon agriculturally

related employment have become dependent on job increases in the service sector (Fitchen, 1981).

The move from agriculturally related jobs to service sector jobs has resulted in changes in rural areas, which have caused and continue to cause rural poverty levels to rise. Results of these changes have led to rural areas having more single parent families, more divorces, smaller family size and more dual-employment families (Coward and Smith, 1982).

Rural Employment Structure

There is little research giving insight into how family structure changes have been related to changes in the industrial/employment structure of rural America.

Albrecht and Albrecht (1996) and Albrecht et al. (2000) explore the relationship between industrial/employment structure in rural counties and major family structure indicators. Information gained from these studies has provided further knowledge into rural issues.

One finding was that the industrial structure of a community will have implications for the quality and way of life in that community. More specifically, different industries will have discrepant wages, different work schedules, vary in proportion of male and female workers, and require different levels of education. These factors are likely to impact family relationships, strengthen or weaken community institutions, and affect other life aspects of residents in the community (Albrecht 1998, Goldschmidt 1978; Lonao et al.1993). When compared to larger communities, lower skill levels of rural park, recreation and tourism practitioners may be the result of several factors such as: rural park, recreation and tourism practitioners not receiving higher

levels of education, poorer economic conditions, smaller employment pools and disproportionate resources for information retrieval. Gaining insight into issues of the rural family structure has found relationships to a number of measures of economic and psychological well being of the community. This information is used to better understand some of the reasons rural communities' park, recreation and tourism practitioners lag behind larger cities in acquiring park and recreation amenities.

Findings from the Albrecht and Albrecht (1996) study indicate that the economic structure of rural communities is highly related to the living and family structures in those areas. The increase in low-wage employment in rural areas due to the increase in service sector jobs has been argued to accentuate the poor economic conditions of rural Americans (Lichter and Eggebeen, 1992). Albrecht et. al. (2000) found increases in the service sector were negatively related to the proportion of married couple households, and positively related to the occurrence of female-headed households. The prevalence of female-headed households was found to be correlated to higher levels of poverty (Albrecht et al. 2000).

Poverty in rural communities is related to several structural factors. Decline in manufacturing jobs along with an increase in low-wage service sector employment has reduced the number of jobs with wages adequate to support a family. Therefore, marriage becomes less attractive and less available to poor women, unwed child bearing increases and female-headed families multiply. These problems increase as males migrate out of areas in search for improved employment opportunities, creating an unbalanced sex ratio (Mulford, Fossett, Cready and Kiecolt 1997, Guttentag and Secord

1983). Movement of rural areas from agricultural/industrial employment to service-sector employment has resulted in increased job opportunities for female workers with reduced opportunities for male workers. Increases in service-sector jobs has increased the number of lower quality jobs available, thus females, especially those acting as the head of a single-parent family, are less willing and less able to migrate out of rural areas (Steiger and Wardwell, 1995). Research has found that families relying on service-sector for employment have lower levels of well being (Albrecht 1998, Albrecht and Albrecht 1996; Kassab, Luloff, and Schmidt 1995).

Dependency and Distance

According to Wilkinson (1986), there are two disadvantages of rural communities when compared to urban communities. These disadvantages are dependency and distance. Dependency occurs when a community is not big enough to provide its residents with essential services and therefore has to rely on other communities for these services. Dependency is caused by a lack of resources available to sustain a population's essential needs. Wilkinson (1986), states "rurality limits community development of ecologically by restricting the ability of the local population to meet its daily needs within the local territory" (1986:6). Thus, barriers of community development and well being are contributed to deficits in resources used to meet the needs of the community (Wilkinson, 1991). To overcome distance, development in rural communities should depend on connections of the area to the outside world (Summers, 1986).

A second disadvantage of rurality is distance. Distance hinders rural communities from seeking assistance from larger communities when in need of resources to meet community needs. According to Wilkinson (1986), distance is a physical disadvantage of rural communities because of their limited access to larger centers upon which they depend. Less access to resources and assistance enhances the problem of rural communities meeting residents' needs (Wilkinson, 1986). Thus, distance restricts rural communities when seeking support and becomes an obstacle to achieving dependency, which is hard to overcome.

The advancement of telecommunications and specifically Internet Service Providers in rural areas has been considered a way to decrease rural areas' issues of dependency and distance by improving access to information and core markets (Grimes, 2000). Rural communities can use advanced telecommunications such as the Internet to bridge the information gap between rural and urban areas. As stated in the National Telecommunications and Information Administration of the US Department of Commerce (1988) in its "Telecom 2000" report, telecommunications and information systems accessible in rural areas can fuel economic and cultural growth. On the other hand, rural areas' telecommunications infrastructure is behind that of urban areas (Nazem et al. 1996).

Rural areas' accessibility to Internet information has fallen behind urban areas for several reasons. First, the complexity and volume of information transferred via the Internet has increased from year to year. Therefore, it is not enough for rural areas just to be connected but to have a high-speed connection. Technologies needed to provide an

adequate speed connection are limited by space and are only available within a several mile radius of a central office (Hartell, 2001).

Second, there is no competitive market for telecommunication services in rural areas. This is in large part due to low population densities of rural areas and their distance from large cities resulting in fewer large users of telecommunications such as corporations (Rowley, 1999). Therefore, Internet Service Providers are less likely to invest in rural areas because of the high costs needed for the development of infrastructure and service needed to reach a relatively small number of rural customers (Stover, 1999). Last, even when telecommunications are available, rural populations are less likely to adopt, use or benefit from the services Internet provides. This is in part due to the lower education and income levels of rural areas (Rowley, 1999).

The potential for rural park, recreation and tourism practitioners to use Internet information as a resource for planning, developing and providing services is unknown. Before an Internet-resource is developed to deliver information, elements affecting the experience of Internet-usage need to be investigated. Similarly, understanding the types of information needed for potential users will assist in making a useful Internet-information resource.

CHAPTER III

RESEARCH METHODOLOGY

The following procedures explain the steps which were taken to implement a study of rural, small, large and urban communities' park, recreation and tourism practitioners. First, the study area is defined. Second, guidelines to Web site evaluation are described. Third, the hypotheses are stated for each of the objectives of the study. The development of the data collection instrument is presented next followed by the procedures for pre-testing the survey. Finally, a detailed account of the sampling plan and data analysis are traced.

Introduction

The Texas Community Futures Forum (TCFF), a series of needs assessments conducted in every county in Texas, has provided insight into the needs of Texas communities. Members of the Quality of Community Life (QualComLife), a response team developed in repose to the TCFF needs assessment process, have contacted extension agents in rural counties where the development and acquisition of park, recreation and tourism amenities is an important goal. Contact with county agents has led to the discovery that many rural communities in Texas lack practitioners whose job is to plan, organize and deliver park, recreation and tourism services. Larger communities in Texas currently have practitioners with these skills and knowledge. QualComLife recognizes that rural communities have different information needs than urban communities. Thus, rural communities are at a disadvantage when providing or competing for park, recreation, and tourism funds and services. Further, rural

communities do not have the trained personnel to write grants, plan, organize and deliver park, recreation and tourism services. These information needs may be met with the use of alternative sources of information delivery. Thus, recognizing these needs has led QualComLife to understand the importance of implementing an Internet-based information resource for park, recreation and tourism practitioners in rural areas (Scott and Shafer, 2001).

The purpose of this research is three-fold: (1) the development of a Web based resource to assist rural park, recreation and tourism practitioners, (2) evaluation of how rural and urban park, recreation and tourism practitioners differ in their information needs and 3) examination of the flow in human-computer interaction using Skadberg's (2002) proposed flow model of human-computer interaction. The Texas Cooperative Extension and the Department of Recreation, Park and Tourism Sciences at Texas A&M University sponsored this project. The purpose of building an Internet information site is to promote awareness of information resources available and provide information to park, recreation and tourism practitioners in rural Texas.

Study Area

The present study was conducted on-line at the Park, Recreation and Tourism (PRT) Planning Web site (<http://www.rpts.tamu.edu/tce/communityrandp>). This site was selected because of its specific development of this study and its presentation of information used to meet the needs of communities indicated in the Texas Community Futures Forum process.

The PRT Planning Web site features six learning tutorials where information is presented on planning, acquiring, and providing park, recreation and tourism services in a community. The six learning tutorials are comprised of financing, general planning, needs assessment, grant writing, maintenance, and programming. Each tutorial has links to additional Internet resources, examples and success stories.

Web Site Evaluation Guidelines

The PRT Planning Informational Web site was developed specifically for this study. In Skadberg's (2002) original study, a prior developed Web site was used for teleological issues. Yet, according to Sakdberg (2002), a Web site designed specifically with the purpose of stimulating people's flow experience, would allow for a controlled test of her model.

Prior to testing the model, an evaluation of the PRT Planning site was conducted. Based on the same guidelines used in Skadberg's (2002) study, development of the Web site evaluation was derived from the literature on interpretation and Web site design (Winett 1986; Gange 1987; Ham 1992; Brigish 1993; Hutchins 1996; Black and Elder 1997; Beck and Cable 1998; Kanerva et al. 1998). Some of the main principles utilized were:

- “1. Keep initial index page short and simple.
2. Use theme titles for all the pages
3. Use pictures to tell stories and provoke feelings and thoughts with text to support the theme.
4. Keep images small in memory storage size to reduce downloading time, thus

enhancing response speed.

5. Test the Web pages on different monitors and with different browsers to ensure dependability.
6. Present the information in multimedia formats of text, images, pictures and sound to stimulate users' multi-sensory response and to gain attention.
7. Follow a consistent presentation style.”

(Skadberg 2002, p. 39)

Four experts in the Department of Park, Recreation and Tourism Sciences at Texas A&M University, were utilized to evaluate the Website, based on the principles mentioned above. Each of the four experts were given an evaluation form (see Appendix D) with thirteen questions based on the seven criteria of Web site evaluation indicated below (all of which are mentioned above).

1. Keep the index page short and simple. The evaluation of this factor was established using three factors: a) the amount of visual elements on each page, b) the amount of hyperlinks and c) if visitors to the site need to scroll down the page to see the entire page.

2. Use theme titles for all pages. This factor was assessed by whether or not the page has a theme title and whether or not each theme is consistent with the overall theme of the site.

3. Pictures are used to tell stories and provoke feelings and thoughts with text to support. This factor's evaluation was based on: a) are both included on the pages,

pictures and text, and b) are the pictures and text effective at representing the message of the page?

4. Images are small in memory storage size to reduce download time.

Evaluation was conducted by viewing the pages of the Web site using a telephone modem connection. Each page was timed to find out the rate at which all images appear on the computer screen.

5. Is there compatibility with different sized monitors and with different browsers? Assessment of this factor was done by viewing the Web pages on two monitor sizes (15 and 19 inch) and on the two most popular browsers (Microsoft Internet Explorer and Netscape Navigator). Evaluation was based on the determination if elements of each page fit on the screen and how the site functioned using the two different browsers.

6. Is the information on the Web site presented in multimedia formats of text, images, pictures and sound? Assessment of this factor was based on the Web site providing a combination of media.

7. Is a consistent presentation style followed? This item was evaluated by comparing the Birding Trail site to the main pages of the TPWD Web site. Comparisons were made on the consistencies of elements, navigation and presentation of the information content.

Presentation of the Hypotheses

The hypotheses are stated sequentially as they relate to the objectives of the study presented in Chapter I.

Objective 1

To develop an informative Web site based on the informational needs of rural park, recreation and tourism practitioners as indicated by the Texas Community Futures Forum process. The steps to completing this objective include:

1. To create learning tutorials related to: financing, general planning, conducting a needs assessment, grant writing, general maintenance, and programming of park, recreation and tourism services in a community.
2. To have experts in the field of recreation, parks and tourism evaluate the PRT Planning Web site using a thirteen-question form based on the seven guidelines to Web site evaluation as presented above.
3. To ask practitioners in the field of recreation, parks and tourism about their information needs.

Objective 2

To determine the differences in information use between rural, small, large and urban communities park, recreation and tourism practitioners

According to Rowen (1994) rural community planners differ in their decision-making practices because their access to information is unequal to urban planners. Furthermore, it is argued that rural communities have the barrier of dependency, meaning there are not enough resources in a community to sustain a population's essential needs. To overcome this barrier, rural community development is dependent on connections to communities with more resources (Summers, 1986). Thus, it is

believed that rural park, recreation and tourism practitioners will have more need for an Internet information resource.

H1a: Rural and small communities' park, recreation and tourism practitioners will feel Internet information is a more effective resource than large and urban communities' park, recreation and tourism practitioners.

H1b: Rural and small communities' park, recreation and tourism practitioners are more likely to return to the PRT Planning Web site than large and urban communities' park, recreation and tourism practitioners.

In rural studies it has been determined that migration from rural areas has led to a decrease in rural population and changes in family structure. When compared to larger communities, rural area employees have lower skill and education levels (Fitchen, 1981). Because of the complexity and volume of information being transferred from year to year via the Internet, a high-speed Internet connection is required. However, high-speed Internet connections are limited by space and require a central distributing point within a few mile radius (Hartell, 2001). Due to low populations in rural areas, the competitive market for telecommunications is limited (Rowley, 1999). Thus, it is believed that rural park, recreation and tourism practitioners will have a lower education level, slower Internet connection speed, less computer experience and less Internet experience when compared to urban park, recreation and tourism practitioners.

H2a: Rural and small communities' park, recreation and tourism practitioners will have a lower education level than large and urban communities' park, recreation and tourism practitioners.

H2b: Rural and small communities' park, recreation and tourism practitioners utilize a slower Internet connection speed than large and urban communities' park, recreation and tourism practitioners.

H2c: Rural and small communities' park, recreation and tourism practitioners are more likely to utilize a dial up modem than large and urban communities' park, recreation and tourism practitioners.

H2d: Rural and small communities' park, recreation and tourism practitioners will have less computer experience than large and urban communities' park, recreation and tourism practitioners.

H2e: Rural and small communities' park, recreation and tourism practitioners will have less Internet experience than large and urban communities' park, recreation and tourism practitioners.

Objectives three through seven were written to address the concepts inherent in Skadberg's (2002) proposed model of flow in human-computer interaction. Elements inherent in her model include: interactivity, response speed, Internet experience, ease of use, vividness, telepresence, knowledge about the information being presented, challenge regarding the information being presented, and flow.

Objective 3

To establish the determinants of interactivity as it relates to human computer interaction for park, recreation and tourism practitioners while utilizing the PRT Planning Web site. Interactivity is determined by four variables. Three of these variables are: response speed, number of possibilities for any given action, and a systems

ability to adapt to changes determined by the user (Steuer, 1992). When comparing these variables, response speed is the only variable that varies among users. The fourth variable contributing to interactivity is ease of use. Ease of use refers to the navigational characteristics of the Internet (Beck and Cable, 1998). Thus, the hypotheses of objective three are as follows.

H3a: Response speed, ease of use and level of Internet are all positively and significantly related to interactivity.

H3b: Level of Internet experience is positively and significantly related to interactivity.

Objective 4

To establish the determinants of vividness (attractiveness) as it relates to human computer interaction for park, recreation and tourism practitioners while utilizing the PRT Planning Web site. Vividness of a Web site suggests the representation's richness and quality. Vividness is noted as contributing to a user's focused attention (Skadberg, 2002). The hypotheses of objective four are as follows.

H4a: Level of Internet experience is positively and significantly related to vividness.

H4b: Interactivity is positively and significantly related to vividness.

Objective 5

Objective five is to establish the determinants of telepresence as it relates to human computer interaction for park, recreation and tourism practitioners while utilizing the PRT Planning Web site. Telepresence is an experience which has been stimulated by

media (Steuer, 1992). Steuer (1992) defines telepresence as the user's media stimulated perception of an environment. According to Steuer (1992), telepresence is made up of two variables. These variables are vividness and interactivity. Hence the hypotheses of objective five are as follows.

H5a: Vividness and interactivity are positively and significantly related to telepresence.

Objective 6

The goal of this objective is to establish the determinants of flow as they relate to human computer interaction for park, recreation and tourism practitioners while utilizing the PRT Planning Web site. Steuer (1992) defines telepresence as the user's media stimulated perception of an environment. This environment can be spatially distant, a real environment or in a virtual world (Steuer, 1992). The importance of telepresence is when a person is surfing a virtual tour Web site, the user not only perceives their present "real" environment but also the environment defined by hypermedia. Skill and challenge are critical factors in a person's experience of flow. A person's perception of skill and challenge represents their sense of control over the environment. Control, in Skadberg's (2002) research, refers to the user being able to understand the information being presented on the Web site. As stated previously a related consequence of flow is a person's loss of sense of time (Csikszentmihalyi, 1990). This allows for flow to be linked to a person's distortion of time when browsing a Web site. Similar to Skadberg (2002) the hypothesis of objective six is:

H6a: Telepresence, knowledge and challenge of information are all positively and significantly related to achieving the flow experience.

Objective 7

The goal of objective seven is to determine if increased learning and change in attitude and behavior are results of achieving flow as it relates to human computer interaction for park, recreation and tourism practitioners while utilizing the PRT Planning Web site. The consequence of flow is that it leads to increased learning and changes in behavior. Studies have shown that flow is related to the learning experience (Ghani 1991, Webster, Trevino and Ryan 1993, Ghani and Deshpande 1994, Hoffman and Novak 1996). It is believed that learning is a logical product of flow, and that in a flow state the learning process is both involved and enjoyable (Wester, Trevino and Ryan, 1993). The consequence of flow is that it leads to increased learning and changes in behavior. Studies have shown that flow is related to the learning experience (Ghani 1991, Webster, Trevino and Ryan 1993, Ghani and Deshpande 1994, Hoffman and Novak 1996). It is believed that learning is a logical product of flow, and that in a flow state the learning process is both involved and enjoyable (Wester, Trevino and Ryan, 1993). Thus, the hypotheses for objective seven are as follows.

H7a: Flow is positively and significantly related to change in attitude and behavior. Specifically, the respondent will have a stimulated interest in developing community park, recreation and tourism resources. Also the respondent will be more likely to return to the Web site when looking for information dealing with community park, recreation and tourism issues.

H7b: Flow is positively and significantly related to increased learning of the information being presented.

Questionnaire Development

The present investigation utilized an online survey to collect data on each of the dependent and independent variables. Using computer-based media has given an opportunity to automatically collect data. Advantages of using Web based surveys include: 1) point and click responses, 2) imposing loose time constraints and 3) low cost. The design method was an online, fill-out form survey. A questionnaire with a one-page cover letter was designed to ask for assistance from rural and non-rural park, recreation and tourism practitioners. The cover letter explained the objective of the research and an overview of who would be using the results of the study. Email letters were sent out inviting rural and non-rural park, recreation, and practitioners to use the Web site and take the on-line survey (see Appendix C). Specifically 846 Texas Cooperative Extension contacts and 200 Texas Chambers of Commerce were sent email invitations and asked to forward the information on to their constituents. Survey invitations explained the purpose of the survey and provided links to the first page of the PRT Planning site and the survey instrument. The survey site has links to the PRT Planning site, and the PRT Planning site has links to the survey site. Users were asked to browse the entire PRT Planning site and then come back to complete the on-line survey.

The survey was hosted on a server in the Department of Recreation, Park and Tourism Sciences at Texas A&M University. The final instrument consisted of three sections (Appendix A). Section one measured respondents' demographic information,

computer and Internet experience, and status as a full-time, part-time or unemployed park, recreation and tourism practitioner. Section two measured respondents' level of effective information retrieval, information retrieval methods and information needs. Section three measured respondents' subjective experience and determinants of flow as they relate to human computer interaction for park, recreation and tourism practitioners while utilizing the PRT Planning Web site.

The survey design followed the format used in Hay's (2000) study on the potential use of electronic information for natural resource management by private landowners in Texas and Skadberg's (2002) format studying a proposed model of flow in human computer interaction.

Research methods have been separated into either quantitative or qualitative methods. Numerous studies have considered quantitative methods to be the dominant method in the social sciences (Cohen, 1988). Quantitative methods are dominant because of their efficiency and generalizability of the data collected. Therefore, many researchers consider data collected by quantitative methods more scientific and supporting (Hartmann, 1988).

Quantitative methods have been scrutinized for guiding respondents' answers into information categories (Heap and Roth, 1973). Often respondents' answers can be biased if the survey questions are presented in a leading or directed manner. Therefore, in the design of the survey, information about certain categories were asked two times in two different ways in order to help decrease bias of question results. This study will be

using quantitative data collection for its time efficiency and its ability to show causal relationships.

In order to estimate the interval consistency of each of the variables Cronbach's alpha coefficient of reliability was used. The range of Cronbach's alpha coefficient can be from 0.0 to 1.0, thus reflecting the relationship between variables within the model. Coefficients of .70 or higher are modestly reliable, coefficients of .90 or above offer good reliability (Nunnally and Bernstein, 1994).

Survey Design

Survey questions were modeled after Hays' (2000) survey developed to study the potential use of electronic information for natural resource management by private landowners. The purpose of Hays' (2000) study was to assess the information needs and the preferred electronic format to deliver information for natural resource management. Objectives of the Hays (2000) study were: to compare traditional means of information delivery with potential means of information delivery through an Internet-based system, conduct a survey of private landowners regarding their potential to use electronic information and to explore the potential of using network-based information systems for information dissemination to private owners.

Survey questions dealing with the flow model were developed similar to Skadberg's (2002) flow model of human-computer interaction questions. The purpose of Skadberg's (2002) study were to answer three questions: 1) Can an interpretive Web site induce a flow experience? 2) What are the factors that affect flow experience, and how do they affect that experience? 3) What is the consequence of flow experience as it

relates to the effectiveness of the Web site in stimulating people's interest to visit the place depicted?

Respondents were asked to "click the appropriate box" on the questionnaire. There were 10 questions aimed at gathering information on the users' characteristics and demographics. Section two included 29 questions regarding the level of effective information retrieval, informational needs, and modes of informational retrieval. A total of 22 questions dedicated to testing the proposed flow model, including: 1) flow, 2) response speed, 3) vividness, 4) ease of use, 5) challenge, 6) skill, 7) experience with information Web sites, 8) interactivity, 9) telepresence, 10) increased learning and 11) changes of attitude and behavior. These questions were presented in the form of opinion questions. (See Appendix A)

Pilot test of the Survey

Professors, staff persons and students in the department of Recreation, Park and Tourism Sciences at Texas A&M University, were utilized as subjects for a pilot test of the questionnaire. The survey was pilot-tested before email letters inviting the sample population to participate in the survey were sent out. Based on input from the pilot test, modifications were made after pre-testing was completed. These modifications include:

- During the pre-test the Web site was not accessible on Saturday, February 8 and Sunday, February 9. This was due to an error by the Web site designer. An index file, containing the Web site evaluation survey was saved to the TCE/Communityrandp folder, causing the server to pull up mixed up html

when the page was accessed. The problem was fixed by removing the file from the folder.

- A line break was added between questions 14 and 15 on the Web site evaluation survey.
- An “other” category was added to question #13 (What types of information resources are most effective for your community’s needs and time).
- The “Survey“ button on the default (home page) was changed to read Web site evaluation.
- Reference numbers on page menus were superscripted to better represent a reference.
- Three categories were added to question #6 (How much time do you spend providing park, recreation or tourism services in your community?). These categories are: Seasonal, Unemployed, and Volunteer.
- An option category of “other “ was added to question #7 (What type of services do you provide as a park, recreation or tourism practitioner?).
- Wording on question #11 was changed to indicate the question should be answered from a practitioner’s perspective.
- There was confusion on question #14 about where the respondent should go after answering question #14. This was fixed by adding links to the questions guiding the respondent after they have responded. A text box was also added with the correct numbers to guide the respondent if they had answered yes or no to the question.

- The Web site address was changed from rpts.tamu.edu/tce/communityr&p to rpts.tamu.edu/tce/communityrandp. The “&” sign is an illegal character when reading Web site addresses.
- There is a repeat question in the Flow section of the survey. These questions are 8 and 28 of question category 22. Both questions are asking if the information presented was new to the user. This was unfortunately found after the real test had started and will be addressed in the analysis section.
- Because of low response rate during the pre-test it was decided to segment the sample by population. These segments are rural (5,000 people or less), small (5,001- 20,000 people), large (20,001-50,000 people) and urban (50,001 +). Segmentation was made to logically represent different sized of communities based on population size, thus allowing for a more equal representation in each segment.

Dependent Variables

The dependent variables in this study are interactivity, vividness, telepresence, flow, increased learning, and change in attitude and behavior.

Interactivity. Similar to Skadberg (2002), Interactivity was measured by asking subjects about their overall interaction with the Web site. Respondents were asked to rate their responses on five 5-point Likert-type scales anchored by strongly agree and strongly disagree.

Vividness. Similar to Skadberg (2002), vividness was measured by asking subjects about their overall opinion about the attractiveness and enjoyment of using the

Web site. Respondents were asked to rate their responses on two 5-point Likert-type scales anchored by strongly agree and strongly disagree.

Telepresence. Similar to Skadberg (2002), telepresence was measured by asking subjects about their overall awareness of their surroundings. Respondents were asked to rate their responses on two 5-point Likert-type scales anchored by strongly agree and strongly disagree.

Flow. Similar to Skadberg (2002), flow was measured by asking respondents about their overall perception of time while utilizing the PRT Planning Web site. Respondents were asked to rate their response on one 5-point Likert-type scale anchored by strongly agree and strongly disagree.

Increased Learning. Similar to Skadberg (2002), increased learning was measured by asking respondents about their overall learning experience after utilizing the PRT Planning Web site. Subjects were asked to rate their response on two 5-point Likert-type scales anchored by strongly agree to strongly disagree.

Change in Attitude and Behavior. Similar to Skadberg (2002), change in attitude and behavior is measured by asking respondents about their behavior after visiting the PRT Planning Web site. Specifically, whether or not the respondent will use the information and return to the Web site to access information in the future, and if their interest in community park, recreation and tourism resources had been stimulated after visiting the site. Subjects were asked to rate their response on two 5-point Likert-type scales anchored by strongly agree to strongly disagree.

Ease of Use/Navigation. Similar to Skadberg (2002), ease of use/navigation was measured by asking respondents about their overall ease when navigating through the PRT Planning Web site. Subjects were asked to rate their response on two 5-point Likert-type scales anchored by strongly agree and strongly disagree.

Independent Variables

The independent variables for the present study are experience, ease of use, response speed, knowledge about the subject matter, challenge of the information being presented, telepresence, flow and increased learning.

Experience. Experience was measured by asking subjects to evaluate their frequency of visiting informational Web sites. Respondents were asked to rate their responses on two 5-point Likert-type scales anchored by strongly agree and strongly disagree.

Ease of Use. Similar to Skadberg (2002), ease of use was measured by asking respondents about their evaluation of the ease of use of the PRT Planning Web site. Respondents were asked to rate their responses on two 5-point Likert-type scales anchored by strongly agree and strongly disagree.

Response Speed. Similar to Skadberg (2002), response speed was measured by asking respondents about the speed of the site's links and page download time. Respondents were asked to rate their responses on two 5-point Likert-type scales anchored by strongly agree to strongly disagree.

Interactivity. Similar to Skadberg (2002), interactivity was measured by asking respondents about their interaction with the Web site. Respondents were asked to rate

their responses on two 5-point Likert-type scales anchored by strongly agree and strongly disagree.

Vividness. Similar to Skadberg (2002), vividness was measured by asking subjects about their overall opinion about the attractiveness and enjoyment of using the Web site. Respondents were asked to rate their responses on two 5-point Likert-type scales anchored by strongly agree to strongly disagree.

Telepresence. Similar to Skadberg (2002), telepresence was operationalized by asking subjects about their overall awareness of their surroundings measures Telepresence. Respondents were asked to rate their responses on two 5-point Likert-type scales anchored by strongly agree and strongly disagree.

Flow. Similar to Skadberg (2002), flow was measured by asking respondents about their overall perception of time while utilizing the PRT Planning Web site. Respondents were asked to rate their response on one 5-point Likert-type scale anchored by strongly agree and strongly disagree.

Knowledge About Subject/ Skill. Similar to Skadberg (2002), knowledge about subject/skill was by asking respondents about their overall knowledge/skill of the information being presented on the PRT Planning Web site. Respondents were asked and rate their responses on two 5-point Likert-type scales anchored by strongly agree and strongly disagree.

Challenge. Similar to Skadberg (2002), challenge of information being presented was measured by asking respondents about challenge of the information being presented

on the PRT Planning Web site. Respondents were asked to rate their responses on two 5-point Likert-type scales anchored by strongly agree to strongly disagree.

Increased Learning. Similar to Skadberg (2002), increased learning was measured by asking respondents about their increased learning after visiting the PRT Planning Web site. Respondents were asked to rate their responses on two 5-point Likert-type scales anchored by strongly agree to strongly disagree.

Sample Design

The sample was derived from contact lists acquired from the Texas Cooperative Extension Agency. Email invitations were sent three times, one a week for three weeks asking 846 Texas Cooperative Extension contacts to participate in the study. Fax invitations were sent to 200 Texas Chamber of Commences and 500 email invitations were sent to contacts on the SPRENET Group wise email list. An online snowball method was used with each contact being asked to forward the email invitation on to their contacts. For the purpose of this study communities have been segmented based on a population of 1) 5,000 or less, 2) 5,001 to 20,000, 3) 20,001 to 50,000 and 4) 50,001 or more. Segmentation was based on the logical separation of the number of respondents per population group. Titles of segmentation groups are as follows: 1) Rural 5,000 or less, 2) small 5,001 to 20,000, 3) large 20,001 to 50,000 and 4) urban 50,001 or more. Practitioner was defined as an individual practicing a profession (Mish, et. al., 1995). In the case of rural and small communities this can be an individual or group of individuals making decisions which affect a community's park and recreation services. Providing park, recreation or tourism services may not be these individual's primary occupation.

Survey Data Analysis

A database was developed on the Web server at Texas A&M University before the Web site or online survey was published on the Internet. The online survey was connected to the database using a Windows ODBC (Open Data Base Connection) data source. After users completed the survey questions and selected the submit button, the data was automatically transferred into the database server.

Individual analysis of variance (ANVOA) and Chi-square statistical analyses were used to look at the differences between rural, small, large and urban communities' park, recreation and tourism practitioners based on perceptions of the Internet as a useful resource, Internet connection speed, computer experience and Internet experience. ANOVA uses the means of two or more factors to see if there are reliable differences between the factors. In addition ANVOA is an analytic procedure based on the comparison of two estimates of variance (Tabachnik & Fidell, 1996).

In order to determine if there were significant differences between rural, small, large and urban communities' park, recreation and tourism practitioners use of Internet information a chi-square test was used. Chi-square test may be utilized when trying to determine the significance of differences between two or more independent groups (Ott, 1993).

Analysis of the relationships among factors in the proposed flow model for the PRT Planning site was done using linear regression. Linear regression was used for its advantage of predicting factors at a local level. Regression is used to examine the effects of one or more independent variables on a dependent variable. The variance of each

independent variable is attributed to its explanation of the dependent variable. This will help to increase the reliability of the measurement and show what factors are good predictors of flow and information use.

The current chapter takes into account methods, which were used to guide this study. First the study area was defined and discussed. Next, the guidelines to the Web site evaluation were listed and clarified. Objectives were presented and hypotheses of the study stated. The data collection instrument was described with specific attention to the studies the questionnaire was modeled after. Steps of pre-testing were stated with an explanation of changes made to the instrument. Further, independent and dependent variables were identified and operationalized. The sample plan, including size and methods were discussed. Finally, statistical approaches to data analysis were explained.

CHAPTER VI

RESULTS

This chapter is comprised of three sections. First, steps two and three of Objective one are reported. Included in this section are the results of the Web site evaluation and findings of information needs reported by respondents. The second section reports the findings of the hypotheses examining the differences in information retrieval between rural, small, large and urban communities' park, recreation and tourism practitioners. Next, the results of hypotheses examining the factors contributing to the flow experience are described.

Results of Web Site Evaluation and Information Needs

Results of Web Site Evaluation

Four experts in the Department of Recreation, Park and Tourism Sciences at Texas A&M University conducted the Web site evaluation. Prior to testing the model, an evaluation of the PRT Planning site was conducted using thirteen questions based on the guidelines used in Skadberg's (2002) study. Development of Skadberg's (2002) Web site evaluation was derived from the literature on interpretation and Web site design (Winett 1986; Gange 1987; Ham 1992; Brigish 1993; Hutchins 1996; Black and Elder 1997; Beck and Cable 1998; Kanerva et al. 1998). Some of the main principles utilized in Skadberg's (2002) study were:

- “1. Keep initial index page short and simple.
2. Use theme titles for all the pages.
3. Use pictures to tell stories and provoke feelings and thoughts with text to

support the theme.

4. Keep images small in memory storage size to reduce downloading time thus enhancing response speed.
5. Test the Web pages on different monitors and with different browsers to ensure dependability.
6. Present the information in multimedia formats of text, images, pictures and sound to stimulate users' multi-sensory response and to gain attention.
7. Follow a consistent presentation style.”

(Skadberg 2002, p. 39)

Each of the four experts was given ten days to complete an evaluation form (see Appendix D) with thirteen questions regarding the seven criteria of Web site evaluation. The results are reported in Table 1. The results will be used for future development of the PRT Planning site.

Modifications, which will be made based on the results of the Web site evaluation are as follows. First, reducing the logo's size, describing whom the site is for and how it is used. The text links were removed, so the home page will display only subject buttons. It was suggested that the information presented on the site is accurate, however the presentation style was dry and paper like. Therefore, the site will be modified so all text does not appear on the page at once. Each subject heading and sub-headings will include pictures, charts, or graphical representation of the text. Next, links reported in the evaluation, which are not working properly, will be rerouted to the correct link location. Keeping a consistent color scheme, button order and replacing the

left button menu with a pull down menu exhibiting the subject headings should help to simplify subject titles. Lastly, spelling errors indicated in the evaluation will be edited.

The specific suggestions for each evaluation principle are displayed in Table 1.

Table 1. Web Site Evaluation Responses

Expert:	Expert 1	Expert 2	Expert 3	Expert 4
Questions				
1. Is the home page/index page short and simple?	Not sure why there are both buttons and underlined topics? How are they different? This is not apparent on the page	Yes	The home page needs to be simplified. The menu on the left should either be taken out, or matched up with the linked statements below. Also, the logos should be smaller, and a little more information on who the site is for, and how to use it should be included. Also, grant writing is not identified as one of the areas that County Agents have identified, though it is provided as a link on the left	Yes
2. Is the download time acceptable?	Yes, but I am logged into the same system.	Very fast! This is a strength!	The download time is extremely fast. Even with a phone line connection (56 KB modem) the download is sufficiently fast.	Yes
3. Are the download times for the pages acceptable?	Yes	Ditto	Same as above.	Yes

Table 1. Continued

Expert:	Expert 1	Expert 2	Expert 3	Expert 4
4. Do the links work?	Yes- Most- “Three steps to the planning process” sent me to the reference page.	Not entirely, “Steps to a needs assessment,” takes you to the four methods of administering a questionnaire	All of the links work.	Yes- but “links” are still under construction
5. Do the links take a long time to download?	No they were smooth- There are some nice links already in place	No- Very fast	The links all download in sufficient time	No
6. Are the subject titles being used properly?	Seem to be	No	Subject titles become a bit confusing, especially main titles (i.e., planning, financing, etc.) I recommend that you leave the link that people are on, on the list to the left, but have the hover button a different color.	“Trends” is limited and generic-more socio demographics needed and Census data is dated
7. Is the information easy to understand?	I think there is a lot of great info here. I’d like to see some of it complimented with graphics. Some of it is a little text heavy and may not be read.	Yes, but perhaps not enough meat and detail.	The information is fairly easy to understand, though is quite dry as presented. Pictures/charts would increase people’s desire to read the material, though it would slow down response speed.	Yes

Table 1. Continued

Expert:	Expert 1	Expert 2	Expert 3	Expert 4
8. In your opinion is the information presented accurate?	Yes	Yes, but not enough detail.	The information as a whole appears very accurate	Yes
9. Are there any spelling, grammar, or documentation errors? If so please give the heading area, sub-heading and word.	On the Planning Case Studies page- the link title to playgrounds by design “Play Grounds” should be one word.		Many of the bullets throughout have spaces after them, while many others do not. Other than a “- “ after the heading “Joint Development with Commercial Sector” on the Financing page (third heading from the bottom), I did not notice any spelling/typographical errors.	Seems ok, but I did not read every word
10. Is the presentation style consistent?	Yes, theme runs throughout the site.	Yes	The presentation style gets a bit confusing, as the links to the left change positions. As recommended before, try to leave all 5 links on each page, in the same order, with the page they are on a different color (hover button).	Yes
11. Is the information being presented in an exciting way?	Graphic images could be used more, especially in planning and design stuff, but I feel that this could be added with time	I am not sure what is expected by exciting way.	The information is not presented in an exciting way. The font is boring (TNR), and a lack of visuals makes the information appear dry.	No, very academic, that’s ok if that is your audience otherwise “Liven it up” figures, photos, less text: avoid park and recreation jargon.

Table 1. Continued

Expert:	Expert 1	Expert 2	Expert 3	Expert 4
12. What Web browser did you use to view this site?	Microsoft	Internet Explorer	Internet Explorer	Internet Explorer
13. What size monitor did you use to view this information?	17"	15"	19"	19"
Additional Comments	Looks very good overall. I spent time in the planning section mostly so that is where my comments really apply.		I recommend you remove the parentheses from the citations, A searchable “ Definitions page would be extremely helpful, The first section of “ Programming, “ Program Development Cycle, needs more information. I recommend you give a little more information about what the outline actually is, or display the information as a conceptual map, A link to “Home” on the bottom of the page would be helpful, Is unclear how Case Studies will be used on the site. A brief explanation of how they will add to the site would be beneficial.	Nice Job! Excellent project. My thoughts: describe who the site is for, how it is used and purpose; reads like a class paper and the green color is not overly attractive.

Results of Information Needs for Park, Recreation and Tourism Practitioners

The third step of objective one is to examine the information needs of park, recreation and tourism practitioners responding to the survey. Survey participants were asked five questions about services they provide, sources of receiving information, problems encountered when seeking out information and the most useful types of information for their community's needs.

To better understand the information needs of the respondents, they were asked about what types of services they provide as a park, recreation or tourism practitioner. Eight service categories were provided including an "other" section. Of those who responded, programming (37.1 %) and conducting needs assessment (31.5 %) were the top two services provided, while (30.1%) marked other as a service they provide. Budgeting (22.4%) was reported as the fourth most service provided by respondents, followed by funding park, recreation, and tourism ventures (17.5 %) and maintenance (17.5 %). Grant writing was ranked last with only (16.1%) reporting they provided this service. Respondents marking the "other" category provided such services as education, water park operations, volunteering, resort activities, information distribution, touring facilitator, promotion and marketing, purchasing, and project management. Table 2 reports the park, recreation and tourism services most likely to be provided by respondents.

Table 2. Services Provided by Respondents

Service	%	Rank
Programming	37.1	1
Conducting Needs Assessment	31.5	2
Other	30.1	3
Budgeting	22.4	4
Site Design	18.9	5
Maintenance	17.5	6
Funding Par, Recreation and Tourism Ventures	17.5	7
Grant Writing	16.1	8

Percentages will not equal 100% because more than one item could be selected.

Respondents were also asked to provide information on what types of information resources they use when seeking out information on developing and providing services in their community. Nine information categories were provided including an “other” category. Participants were asked to check all information resources which apply to them and their community’s needs. Over half (53.8%) of survey respondents use the Internet as a source of information retrieval, followed closely by the use of other park, recreation and tourism practitioners (51.7%), Universities and Colleges were used by close to half (46.9%) of respondents, with (37.8 %) utilizing the services of the Texas Cooperative Extension, and (37.1 %) using magazines and trade journals as a resource of information. State agencies such as the Texas Park and Wildlife Department were utilized by (35%) of respondents and libraries and

suppliers/manufacturers were utilized by (11.2 %) of respondents, while only (9.1%) reported the use of other information resources. Respondents marking the “other” category reported using information resources such as conferences, seminars and leadership programs. Table 3 reports the information resources most likely to be used by respondents.

Table 3. Information Resources

Information Resource	%	Rank
Internet	53.8	1
Other Park, Recreation and Tourism Practitioners	51.7	2
Universities and Colleges	46.9	3
Texas Cooperative Extension	37.8	4
Magazines and Trade Journals	37.1	5
State Agencies	35.0	6
Libraries	11.2	7
Suppliers/Manufactures	11.2	8
Other	9.1	9

Percentages will not equal 100% because more than one item could be selected.

When acquiring information respondents may encounter problems which hinders their ability to retrieve information. To address problems of information retrieval,

respondents were asked to indicate what types of problems they encounter when seeking out information on developing or providing park, recreation and tourism services in their community. Respondents were given five problem categories and asked to check all problems which apply to their situation.

The problem encountered most by respondents (32.9 %) was that they did not know where to find the information, (32.2 %) of respondents felt they had no problems when acquiring information. Information not being relevant to community needs (25.9 %) is the third most encountered problem, followed by information being too hard to acquire (25.2 %). Respondents felt that information not being understandable (16.8 %) was the least problem encountered when acquiring information. Table 4 reports the problems most likely to be encountered when seeking out information on developing and providing park, recreation and tourism services in the community.

Table 4. Problems Encountered When Seeking Out Information

Problem	%	Rank
Did not know where to find information	32.9	1
No problems reported	32.2	2
Information was not relevant to community needs	25.9	3
Information was too hard to acquire	25.2	4
Information was not understandable	16.8	5

Percentages will not equal 100% because more than one item could be selected.

Different types of information have been identified as being useful when communities plan, develop and provide park, recreation and tourism services. Respondents were asked to rate how useful eleven information types, including an “other” category, are to their community’s information needs. A five-point Likert-type scale anchored by not useful and extremely useful was used to collect this information.

Marketing information with a mean of (3.99) was considered the most useful information type, followed by programming information (3.95) and information on grant funding agencies (3.95). Funding through existing community resources (3.86) was the fourth most useful type of information. Information on the sustaining services had a mean of (3.82). Conducting community needs assessment (3.79) information was the next most useful. Technical assistance on grant writing had a mean of (3.79), while information on operations and maintenance had a mean of (3.688), followed by information on site design (3.62). The least useful type of information was maintenance standards with a mean of (3.41). Respondents marking “other” reported information on volunteerism, youth development and including special populations in services to be useful to their community’s needs. Table 5 reports the information types considered most useful by respondents.

Table 5. Types of Information Considered Useful

Information Types	Mean	Rank
Marketing	3.99	1
Programming	3.95	2
Grant funding agencies	3.95	3
Funding through existing community resources	3.86	4
Sustainability of park, recreation, and tourism services	3.82	5
Conducting community needs assessment	3.79	6
Technical assistance on grant writing	3.79	7
Operations and Maintenance	3.68	8
Site Design	3.62	9
Maintenance Standards	3.41	10

Providing an idea about what benefit service areas are considered most important allows for pertinent information to be developed and provided to better fit practitioners' needs. Respondents were asked to rate how important they felt eight general service areas are to their community. A five-point Likert-type scale anchored by not important and extremely important was used to collect this information.

Considered to be the most important service provided by park, recreation and tourism practitioners is increasing community well-being (4.14). The second most important was attracting new business and industry to the community (4.13). Educating the community had a mean importance of (4.04), followed by providing a get-a-way for

others (3.84). The next most important services were providing a place for wildlife (3.79) and providing athletic opportunities (3.79). The least important service was increasing rural community values (3.73). Respondents marking the “other” category indicated services such as attracting retirees, providing youth opportunities, developing eco-tourism and nature tourism to be important services provided by park, recreation and tourism practitioners. Table 6 reports the importance of services provided by park, recreation and tourism practitioners.

Table 6. Importance of Benefit Services Provided

Services	Mean	Rank
Increase community well being	4.14	1
Attract new business and industry	4.13	2
Educate the community	4.04	3
Provide a get-a-way for others	3.84	4
Provide a place for wildlife	3.79	5
Provide athletic opportunities	3.79	6
Increase rural community values	3.73	7

Hypothesis Testing Differences in Information Use Between, Rural, Small, Large and Urban Communities

This section reports the findings of the hypotheses in Objective 2 related to the differences in information use between rural, small, large and urban communities.

Report findings are broken down by statistical analysis performed on the hypotheses.

Chi-square test and ANOVA test were the statistical analysis used in this section.

H1a: Rural and small communities' park, recreation and tourism practitioners will feel Internet information is a more effective information resource than large and urban communities' park, recreation and tourism practitioners.

In order to examine this hypothesis, chi-square statistical analysis was employed. Results comparing the four population segments' perception of Internet information being the most effective information resource showed no significant difference between groups ($\chi^2_9 = 13.845$, $p = .128$). Thus, hypothesis H1a is rejected based on the significance value of the chi-square test. Therefore, results revealed no relationship between the size of community and how effective Internet information is. Since there is not a significant relationship, it can be concluded that these findings are by chance.

H2a: Rural and small communities' park, recreation and tourism practitioners will have a lower education level than large and urban park, recreation and tourism practitioners.

Using chi-square statistical analysis, educational level of the four population segments was analyzed. Results comparing the four population segments' education level showed no significant difference between the groups ($\chi^2_{18} = 23.269$, $p = .180$). Thus, hypothesis H2a is rejected based on the significance level of the chi-square test. Therefore, results revealed no relationship between size of community and education

level. Since there is not a significant relationship, it can be concluded that these findings are by chance.

H2b: Rural and small communities' park, recreation and tourism practitioners will utilize a slower Internet connection than large and urban communities' park, recreation and tourism practitioners.

To examine the speed of Internet connection between the population segments chi-square analysis was used. The chi-square test showed a significant difference between the population segments ($\chi^2_{12} = 21.626, p = .042$). Therefore, hypothesis H2b is accepted based of the level of significance provided by the chi-square test. Information provided by the test showed rural communities reporting (57.7 %) of respondents using an Internet connection of 56 KB or less, small communities reported (34.6 %) of respondents using an Internet connection of 56 KB and (46.2%) of respondents were not sure about the speed of their Internet connection. Large communities reported (42.3%) using a DSL cable modem (128 KB), while (38.5%) were not sure of their Internet connection speed, and urban communities reported (42.6 %) of respondents using a DSL cable modem (128 KB), with (36.2%) not sure about their Internet connection speed. Thus it was revealed that smaller communities have slower connection speeds than larger communities. (Refer to table 7).

H2c: Rural and small communities' park, recreation and tourism practitioners are more likely to use a dial-modem than large and urban communities' park, recreation and tourism practitioners.

Chi-square statistical analysis was employed to examine the use of a dial-up modem between the four population segments. The chi-square test showed a significant difference between the population segments use of a dial-up model ($\chi^2_3 = 25.366, p <$

.001). Hypothesis H2c is accepted based on the significance level of the chi-square test. Information provided by the chi-square analysis reports that over half (55.6%) of respondent in the rural and (40.7%) of respondents in the small segmentations use a dial up modem. Respondents in large communities (20.0%) and in urban communities (8.5%) utilize a dial-up modem. Information also provided by the test, reported large communities utilizing a cable modem (33.3%) more than other modem types. Urban communities reported DSL (20.3%) and LAN (Local Area Network) (20.3%) to be the most utilized modem types. Therefore results revealed that practitioners in smaller communities are more likely to use a dial-modem than practitioners in larger cities. (Refer to table 7).

Table 7 presents the chi-square analyses showing the relationship between population size and respondents' Internet connection speed, and use of a dial-up modem.

Table 7. Chi-Square Comparisons of Respondents

Variable	Chi-square	DF	p
Internet Connection Speed	21.626	12	= .042
Dial- Up Modem	25.366	3	< .001

Hypotheses Tests Utilizing ANOVA Analysis

H1b: Rural and small communities' park, recreation and tourism practitioners are more likely to return to the PRT Planning Web site than large and urban communities park, recreation and tourism practitioners.

This hypothesis was tested using analysis of variance (ANOVA) with an alpha standard of .05. The ANOVA analysis comparing population segments' intent to return to the PRT Planning site showed no significant difference between groups ($F_{3, 128} = 2.228$, $p > 0.05$). Hypothesis H1b is thus rejected based on the significance level of the ANOVA test. Information provided by the ANOVA test reported small (4.04) and urban (3.98) communities' park, recreation and tourism practitioners were most likely to return to the PRT Planning Web site. Table 8 reports there is no significant difference in population segments' intention to return to the PRT Planning Web site.

Table 8. Intention to Return to the PRT Planning Web Site Based on Population Size

Source	DF	Sum of Square	Mean Square	F-Value	p Value
Between Groups	3	4.035	1.345	2.228	.088
Within Groups	128	77.261	.604		

H2d: Rural and small communities' park, recreation and tourism practitioners will have less computer experience than large and urban communities' park, recreation and tourism practitioners.

ANOVA with an alpha standard of .05 was also employed to test hypothesis H2d. The analysis comparing population segments computer experience showed a marginally significant difference between the groups ($F_{3,137} = 2.572$, $p = 0.057$). The hypothesis is marginally accepted based on the $p = .057$ significance value reported in the test. It is believed that a small sample size is keeping the hypothesis from being accepted. The analysis revealed that rural and small communities (2.4615) have less computer experience than, large communities (2.6333) and urban communities (2.7627). Table 9 reports there is a marginally significant difference in population segments' computer experience.

Table 9. Difference in Computer Experience Based on Population Size

Source	DF	Sum of Square	Mean Square	F-Value	p Value
Between Groups	3	2.510	.837	2.572	.057
Within Groups	137	44.568	.325		

H2e: Rural and small communities' park, recreation and tourism practitioners will have less Internet experience than large and urban communities' park, recreation and tourism practitioners.

ANOVA was again used to test hypotheses H2e. The analysis comparing population segments Internet experience showed a significant difference between groups ($F_{3,139} = 3.748$, $p < 0.05$). Thus, hypotheses H2e is accepted based on the significance

level of the ANOVA test. Table 10 reports the results of the analysis of variance. In order to examine which means were different, Tukey's honestly significantly difference (HSD) was used. Tukey's HSD was chosen because it is modestly conservative and controls for different error rates between groups while allowing for groups of different sizes.

Results of the post hoc analysis show that there is a significant ($p < .05$) difference between rural communities (mean= 2.3333) and urban communities (mean = 2.7627), with urban communities' park, recreation and tourism practitioners having more Internet experience than rural communities' park, recreation and tourism practitioners (Table 10).

Table 10. Difference in Internet Experience Based on Population Size

Source	DF	Sum of Square	Mean Square	F-Value	p Value
Between Groups	3	4.574	1.525	.3748	.013
Within Groups	139	56.545	.407		
<u>Tukey's HSD:</u>					
<u>Group</u>		<u>Internet Experience Mean</u>			
Less than 5,000		2.3333 ^a			
5,000 to 20K		2.5556			
20,001 to 50K		2.4000			
50,001 +		2.7627 ^b			
^a Significantly different than ^b at the .05 level					

Hypothesis Testing Related to Factors Contributing to Skadberg's Model of Flow in Human/Computer Interaction

A primary purpose of this research was to test the relationship of variables in Skadberg's (2002) proposed flow model. This section reports the findings of the hypotheses in Objectives 3,4,5,6, and 7 related to the factors contributing to the flow experience indicated in Skadberg's (2002) model of Flow in Human/Computer interaction. Report findings are broken down by objective and hypothesis. Standard regression was used to test the predictability of factors contributing to variables of flow.

Reliability of Study Variables

In order to examine the reliability of the flow factors used in the study, Cronbach's alpha coefficients were employed. The range of Cronbach's alpha coefficient can be from 0.0 to 1.0, thus reflecting the relationship between the factors within the model. When a Cronbach's alpha coefficient is greater than .70 the factor is moderately reliable (Nunnally and Bernstein, 1994). It is suggested that alpha coefficients for variables with few items (six or less) can have a smaller coefficient (.6 or higher) and still be acceptable (Cortina, 1993). Reliability coefficients for the variables used in this study are reported in Table 11.

Table 11. Reliability Coefficients of Variables Used in the Study

Variable	Number of Items	Reliability Coefficient
Response Speed	3	.77
Interactivity	2	.71
Ease of Use	2	.81
Vividness	3	.84
Telepresence	2	.84
Challenge	2	.75
Change in Attitude and Behavior	2	.62
Increased Learning	3	.84
Flow	2	.64

Response speed was operationalized similar to Skadberg (2002). The reliability coefficient of the three item variable was .77. The two item variable interactivity operationalized similar to Skadberg (2002) had a reliability coefficient of .71. Also like Skadberg (2002) were the variables measuring ease of use, telepresence, challenge and change in attitude and behavior.

The two item variables measuring ease of use and telepresence had reliability coefficients of .81 and .84, respectively. Reliability coefficient for the three-item variables vividness and increased learning were .84, while the coefficient for the two-

item variable measuring challenge was .75. The two items engaged to measure change in attitude and behavior created a coefficient of .62. Flow is a two item variable and has a coefficient of .64. Since all of the Cronbach's alpha coefficients stated above were greater than 0.6 the scales were considered reliable.

Objective 3

H3a: Response speed, ease of use and level of Internet are all positively and significantly related to interactivity.

H3b: Level of Internet experience is positively and significantly related to ease of use.

Standard multiple regression was used to examine how well the variables response speed, ease of use and level of Internet experience predict the dependent variable interactivity. Table 12 displays the results of this regression. The standard regression shows that the three variables of interactivity are significant predictors ($F_{3, 125} = 33.496, p < 0.001$) and explain 44.6% of the variance of interactivity. Further, response speed ($p < 0.001$) and ease of use ($p < 0.001$) were found to be significantly related to interactivity, while Internet experience ($p = .395$) was negatively related and not a significant predictor of the dependent variable. Thus, hypotheses H3a and H3b are accepted based on their positive and significant relationship with the variable interactivity. However, hypotheses H3d is rejected based on level of Internet experience having a negative and non-significant relationship with the variable interactivity. Therefore, ease of use and response speed are significant predictors of interactivity, however experience is not.

The standardized regression coefficients are reported for the independent variables in Table 12. Regression coefficients represent the expected change in the dependent variable (interactivity), when all independent variables have been standardized (Tabachnik and Fidell, 1996). Thus, according to the standardized regression coefficients, for each on unit increase in response speed, interactivity increased .41 units. For each unit increase in ease of use, the dependent variable increased .34 units.

Similarly standard regression was used to examine how well Internet experience predicts ease of use. Table 13 reports the results of this regression. The standard regression revealed that level of Internet experience is not a significant predictor ($F_{1,131} = .134, p = .715$) of ease of use. Therefore, hypotheses H3c is rejected based on level of Internet experience having negative and non-significant relationship with ease of use. Consequently, level of Internet experience is not a significant predictor of ease of use.

Table 12. Relationship of Response Speed, Ease of Use and Internet Experience with Interactivity

<u>Regression Statistics</u>			
F-ratio = 33.496			
Degrees of Freedom = 3, 125			
Adjusted R-square = .432			
p Value < 0.001			
<u>Regression Coefficients</u>			
Variable	Standardized Regression Coefficients	Standard Error	p
Response Speed	.411	.050	p< .001
Ease of Use	.338	.060	p<. 001
Internet Experience	-.057	.064	.395

Table 13. Relationship of Internet Experience with Ease of Use

<u>Regression Statistics</u>			
F-ratio = .134			
Degrees of Freedom = 1, 131			
Adjusted R-square = -.007			
p Value > 0.001			
<u>Regression Coefficients</u>			
Variable	Standardized Regression Coefficients	Standard Error	p
Internet Experience	-.032	.277	.715

Objective 4

H4a: Level of Internet experience is positively and significantly related to vividness.

H4b: Interactivity is positively and significantly related to vividness.

Standard regression was used to examine how well the variable level of Internet experience predicts the dependent variable vividness. Table 14 displays the results of this regression. The standard regression shows that the variable Internet experience is not significant ($F_{1, 127} = .830, p > 0.001$) to the dependent variable vividness. Consequently, hypothesis H4a is rejected based on its negative and non-significant relationship with the dependent variable vividness. Therefore, the current analysis suggests that level of Internet experience does not predict vividness.

To examine the relationship between the variable interactivity and vividness, standard regression was again used. Table 15 reports the results of this regression. The standard regression illustrates that interactivity is significantly related to vividness ($F_{1, 124} = 46.356, p < 0.001$) and explained 27.2% of the variance in vividness. Hypothesis H4b was accepted based on the variable interactivity having a positive and significant relationship with the dependent variable vividness. Therefore, interactivity is a significant predictor of vividness.

The standardized regression coefficient is reported for the independent variable in Table 15. The regression coefficients represent the expected change in vividness, when interactivity has been standardized. Thus, according to the standardized regression coefficient, for each one unit increase in interactivity, vividness increases .52 units.

Table 14. Relationship of Internet Experience with Vividness

<u>Regression Statistics</u>			
F-ratio = .830			
Degrees of Freedom = 1, 127			
Adjusted R-square = -.001			
p Value > 0.001			
<u>Regression Coefficients</u>			
Variable	Standardized Regression Coefficients	Standard Error	p
Internet Experience	-.081	.158	.364

Table 15. Relationship of Interactivity with Vividness

<u>Regression Statistics</u>			
F-ratio = 46.356			
Degrees of Freedom = 1, 124			
Adjusted R-square = .226			
p Value < 0.001			
<u>Regression Coefficients</u>			
Variable	Standardized Regression Coefficients	Standard Error	p
Interactivity	.522	.148	.000

Objective 5

H5a: Vividness and interactivity are positively and significantly related to telepresence.

To examine the relationship between the independent variables vividness and interactivity to the dependent variable telepresence, standard regression was utilized. Table 16 reports the results of this regression. The standard regression illustrates the two variables vividness and interactivity are significantly related to telepresence ($F_{2, 120} = 32.271, p < 0.001$) and describe 35.0% of the variance in telepresence. Hence, the hypothesis 5Ha and 5Hb are accepted based on the variables vividness and interactivity having a positive and significant relationship with the dependent variable telepresence.

Therefore, the current analysis suggests that the variables vividness and interactivity are significant predictors of telepresence.

The standardized regression coefficients are reported for the independent variables in Table 16. Regression coefficients represent the expected change in telepresence, when vividness and interactivity have been standardized. Thus, according to the standardized regression coefficients, for each on unit increase in vividness, telepresence increased .43 units. For each unit increase in interactivity, the dependent variable increased .23 units.

Table 16. Relationship of Interactivity and Vividness with Telepresence

<u>Regression Statistics</u>			
F-ratio = 32.271			
Degrees of Freedom = 2, 120			
Adjusted R-square = .339			
p Value < 0.001			
<u>Regression Coefficients</u>			
Variable	Standardized Regression Coefficients	Standard Error	p
Interactivity	.233	.143	.000
Vividness	.437	.074	.008

Objective 6

H6a: Telepresence, knowledge and challenge of information are all positively and significantly related to achieving the flow experience.

Standard regression was employed to examine the relationship between the independent variables telepresence, knowledge of information being presented and challenge of information being presented to the dependent variable flow. Table 17 reports the results of this regression. The standard regression illustrates the three variables telepresence, knowledge about information being presented and challenge of information being presented are significantly related to flow ($F_{3, 121} = 38.611, p < 0.001$) and describe 48.9% of the variance in flow. Hence, hypotheses H6a was accepted based on telepresence, knowledge about information being presented and challenge of information being presented having positive and significant relationships with the dependent variable telepresence. Current analysis suggests that telepresence, knowledge and challenge of information being presented are significant predictors of flow.

The standardized regression coefficients are reported for the independent variables in Table 17. Regression coefficients represent the expected change in the dependent variable flow, when independent variables telepresence, knowledge of information being presented and challenge of information being presented have been standardized. Thus, according to the standardized regression coefficients, for each unit increase in telepresence, flow increased .525 units. With one unit increase in knowledge, flow increases .18 units. For each unit increase in challenge of information being presented, the dependent variable increased .205 units.

Table 17. Relationship of Telepresence, Knowledge About Information Being Presented and Challenge of Information Being Presented with Flow

<u>Regression Statistics</u>			
F-ratio = 38.611			
Degrees of Freedom = 3 121			
Adjusted R-square = .476			
p Value < 0.001			
<u>Regression Coefficients</u>			
Variable	Standardized Regression Coefficients	Standard Error	p
Telepresence	.525	.035	.000
Knowledge about information being presented	.180	.067	.009
Challenge of information being presented	.205	.048	.004

Objective 7

H7a: Flow is positively and significantly related to increased learning of the information being presented.

H7b: Increased learning is positively and significantly related to change in attitude and behavior.

Standard regression was again utilized to examine the relationship between the independent variable flow to the dependent variable increased learning. Table 18 illustrates the results of this regression. The standard regression illustrates the variable

flow is significantly related to increase learning ($F_{1, 127} = 115.887$, $p < 0.001$) and describe 47.7% of the variance in increased learning. Thus, the hypothesis 7Ha is accepted based on the variable flow having a positive and significant relationship with the dependent variable increased learning. Therefore, it can be suggested that flow is a significant predictor of increased learning.

The standardized regression coefficient is reported for the independent variable in Table 18. The Regression coefficients represent the expected change in increased learning, when flow has been standardized. Thus, according to the standardized regression coefficient, for each one-unit increase in flow, increased learning increases .581 units.

Similarly standard regression was used to examine how significant increased learning is to the dependent change in attitude and behavior. Table 19 reports the results of this regression. The standard regression explains increased learning ($F_{1, 128} = 79.480$, $p < .001$) has a significant relationship and explains 38.3% of the variance in the variable change in attitude and behavior. As a result, hypotheses H7b is accepted based on the variable increased having a positive and significant relationship with change in attitude and behavior. Hence, the variable increased learning can be considered a significant predictor of change in attitude and behavior.

The standardized regression coefficient is reported for the independent variable in Table 19. The Regression coefficients represent the expected change in change in attitude and behavior, when increased learning has been standardized. Thus, according

to the standardized regression coefficient, for each one unit increased learning, change in attitude and behavior increases .619 units.

Table 18. Relationship of Flow with Increased Learning

<u>Regression Statistics</u>			
F-ratio = 115.887			
Degrees of Freedom = 1, 127			
Adjusted R-square = .473			
P Value < 0.001			
<u>Regression Coefficients</u>			
Variable	Standardized Regression Coefficients	Standard Error	p
Increased Learning	.581	.084	p < .001

Table 19. Relationship of Increased Learning with Change in Attitude and Behavior

<u>Regression Statistics</u>			
F-ratio = 79.480			
Degrees of Freedom = 1, 128			
Adjusted R-square = .378			
p Value < 0.001			
<u>Regression Coefficients</u>			
Variable	Standardized Regression Coefficients	Standard Error	p
Increased Learning	.619	.049	p< .001

The current chapter investigated the objectives outlined in Chapter 3 related to the study's purpose. In an attempt to organize the results, a condensed summary of the study's findings is displayed in Tables 20, 21, and 22. Chapter 5 is dedicated to reviewing the study findings, reporting managerial and theoretical implications, and stating limitations of the study and future research.

Table 20. Objective 1 Development of an On-line Resource- Study Findings

Steps	Findings
<p>1. Create On-Line learning tutorials related to: financing, general planning, conducting needs assessments, grant writing, general maintenance and programming of park, recreation and tourism services in a community.</p> <p>2. Have experts in the field of recreation, park and tourism evaluate the PRT Planning Web site using thirteen questions based on the seven guidelines of Web site evaluation used in Skadberg's (2002) study.</p> <p>3. Ask park, recreation and tourism practitioners about their information needs.</p>	<p>1. PRT Planning Site http://www.rpts.tamu.edu/tce/communityrandp</p> <p>2. (a) Home page needs to be simplified, (b) inconsistencies are present in each page's left hand button menu, bullet spacing, and link routes, (c) page and link download times are acceptable, (d) presentation style is dry and paper like, (e) there is a need for multi-sensory media to complement text, such as: video, charts, pictures, (f) information is text heavy and not presented in an exciting way, (g) site was not evaluated over more than one browser, (h) site is compatible with different monitor sizes.</p> <p>3. (a) Programming and conducting needs assessments are the top two services provided by respondents, while grant writing was the least provided service, (b) the Internet is considered the most effective information resource, with supplies/manufactures and libraries being the least effective information resources, (c) not knowing where to find information was the top problem encountered by respondents, while information not being understandable was the problem encountered the least, (d) marketing information was considered the most useful information type, while information on maintenance standards was considered the least useful, (e) increasing community well being is the most important services benefit provided by respondents, and increasing rural community values is the least important.</p>

Table 21. Objective 2- Determine the Difference in Information Use Based on Population- Study Findings

Hypotheses	Findings
<p>H1a: Rural and small communities’ park, recreation and tourism practitioners will feel Internet information is a more effective resource than large and urban communities’ park, recreation and tourism practitioners.</p> <p>H1b: Rural and small communities’ park, recreation and tourism practitioners are more likely to return to the PRT Planning Web site than large and urban communities’ park, recreation and tourism practitioners.</p> <p>H2a: Rural and small communities’ park, recreation and tourism practitioners will have a lower education level than large and urban communities’ park, recreation and tourism practitioners.</p> <p>H2b: Rural and small communities’ park, recreation and tourism practitioners utilize a slower Internet connection speed than large and urban communities’ park, recreation and tourism practitioners.</p> <p>H2c: Rural and small communities’ park, recreation and tourism practitioners are more likely to use a dial up modem than large and urban communities’ park, recreation and tourism practitioners.</p> <p>H2d: Rural and small communities’ park, recreation and tourism practitioners will have less computer experience than large and urban communities’ park, recreation and tourism practitioners.</p> <p>H2e: Rural and small communities’ park, recreation and tourism practitioners will have less Internet experience than large and urban communities’ park, recreation and tourism practitioners.</p>	<p>H1a: There is no significant difference between group’s perception of Internet information being the most effective information resource, Information suggests large and urban communities prefer Internet and electronic information while rural and small communities prefer personal contact. Hypotheses rejected.</p> <p>H1b: There is no significant difference between groups’ intent to return to the PRT Planning Web site. Hypothesis rejected.</p> <p>H2a: There is no significant difference in education level between groups. Small communities reported having the highest level of education. Hypothesis rejected.</p> <p>H2b: There is a significant difference between groups’ Internet connection speed. Rural- 56KB or less, Small- 56KB, Large and Urban- DSL (cable modem 128 KB). Hypothesis Accepted.</p> <p>H2c: There is a significant difference between groups’ use of dial up modem. Dial up modems are used by the majority of rural and small communities’ respondents, large- cable modem and urban- DSL and LAN modems. Hypothesis accepted.</p> <p>H2d: There is a marginally significant difference between groups’ computer experience. Small and rural respondents reported having less computer experience. Hypothesis accepted.</p> <p>H2e: There is a significant difference between group’s Internet experience. Small and rural respondents reported having less Internet experience. Hypothesis accepted.</p>

Table 22. Objective 3, 4, 5, 6 and 7- Factors of Flow in Human-Computer Interaction- Study Findings

Hypotheses	Findings
H3 a: Response speed, ease of use and level of Internet experience will be positively and significantly related to interactivity.	H3a: Response speed and ease of use were found to be both positively and significantly related to interactivity, while level of Internet experience was negatively and not significantly related to interactivity. Hypothesis H3a, is accepted,
H3b: Level of Internet experience is positively and significantly related to ease of use.	H3b: Level of Internet experience was negatively and not significantly related to ease of use. Hypotheses H3b, is accepted
H4a,b: Level of Internet experience and interactivity are positively and significantly related to vividness.	H4a,b: Level of Internet experience was negatively and not significantly related to vividness, while interactivity was both positively and significantly related to vividness. Hypotheses H4a, is rejected, H4b, is accepted.
H5a,: Vividness and interactivity are positively and significantly related to telepresence.	H5a,: Vividness and interactivity are both positively and significantly related to telepresence. Hypotheses H5a, is accepted.
H6a,: Telepresence, knowledge about information being presents and challenge of information being presented are positively and significantly related to flow.	H6a,: Telepresence, knowledge about information being presented and challenge of information being presented are positively and significantly related to flow. Hypotheses H6a, is accepted.
H7a: Flow is positively and significantly related to increased learning.	H7a: Flow is positively and significantly related to increased learning: Hypotheses H7a is accepted.
H7b: Increased learning is positively and significantly related to change in attitude and behavior.	H7b: Increased learning is positively and significantly related to change in attitude and behavior. Hypotheses H7b, is accepted.

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

This final chapter is divided into three sections. First the study's findings are reported sequentially as they relate to the objectives of the study outlined in Chapter 3. The second section discusses the theoretical and practical implications of the study findings. Finally, limitations of the study are discussed and recommendations for future research are made.

The use of the Internet is an important phenomenon in the acquisition and delivery of information. A growing number of agencies are utilizing Internet information as a way to disseminate information to their clientele. As institutions build Internet resources, issues of Web site design, characteristics of the target audience, and differences in user information needs will need to be evaluated in order to build a useful Web site. Attention should also be given to the differences in Internet information use between urban and rural communities.

The main purpose of this thesis was to develop an Internet resource for park, recreation and tourism practitioners, which delivered pertinent information to users. Specifically this research attempted to find out information needs of the Web site's potential users, differences in information uses based on population, and determine the factors leading to a flow experience. Consequences of flow are increase learning and change in attitude and behavior. Thus, if differences in information use are apparent based on population, then the increase or decrease of flow factors in Web site design and content will contribute to the effectiveness of the site to meet the needs of users.

Study Findings

The Web site evaluation gave insight into inconsistencies in design and alterations, which should be made to the PRT Planning site. First, the Web site home page should be simplified and offer information about who the site is for and directions on how the site should be used. Second, irregularities are present in subject button order, bullet spacing and broken links. Third, the presentation style is dry and lacks multi-sensory media formats such as graphics, charts, pictures or videos. Last, the site was not evaluated on different browsers, and therefore may not be compatible with other forms of Internet navigation.

Asking respondents about their information needs, services they provide, and importance of park, recreation and tourism service benefits, allows for information to be developed in a manner which is more congruent with PRT Planning site users' needs. It was reported that programming was the service provided most by respondents, with grant writing being the least provided service. Internet information is the most used information resource, while suppliers/manufacturers and libraries are the least used. The problem encountered most by respondents when acquiring information does not know where to find the information. Not understanding the information was the problem encountered the least. Marketing information was considered the most useful type of information, with information on maintenance standards being the least useful. The most important service benefit provided by respondents is increasing community well being, whereas increasing rural community values were reported as the least important.

Objective 2 was to examine the differences in information use based on

population size. Hypotheses of the objective were tested using ANOVA and Chi-square statistical analysis. It was reported that there is no significant difference between population segments perception of Internet information being the most effective information resource. No significant difference was also reported between population segment's intent to return to the PRT Planning site. There is also no significant difference between segments' education levels. There is a significant difference between groups Internet connection speed. It was revealed that rural and small community practitioners are more likely to have slower connections than large and urban community practitioners. The Rural segment reported using an Internet connection speed of 56 KB or less, the small segment used 56 KB connection speed the most, as the large and urban segments reported using a DSL (cable-128 KB) modem the most.

A significant difference was also reported between groups' use of a dial up modem. Rural and small segments were more likely to report using a dial up modem, whereas the large and urban segments were more likely to use DSL and LAN modems. A marginally significant difference was reported between groups' computer experience, with small and rural respondents having less computer experience than large and urban respondents. The segments also showed a significant difference in Internet experience, with rural and small respondents having less Internet experience than large and urban respondents.

Objectives 3, 4, 5, 6 and 7 were established to determine the relationship between the factors of flow in human-computer interaction. Hypotheses of objectives 3, 4, 5, 6, and 7 were tested using standard regression analysis. It was reported that response speed

and ease of use have positive and significant relationships with the variable interactivity, while level of Internet experience was not a good predictor of interactivity. Level of Internet experience was also found to be a poor ($p < .05$) predictor of ease of use and vividness.

Interactivity was found to have a positive and significant relationship with the variable vividness. Vividness and interactivity were found to have positive and significant relationships with the variable telepresence, while telepresence was found to have a positive and significant relationship with the variable flow. Knowledge of the information being presented and challenge of the information being presented also were found to have positive and significant relationships with the variable flow. Flow was further found to positively and significantly be related to the variable increased learning, whereas increased learning was found to be positively and significantly related to change in attitude and behavior.

Implications

Theoretical Implications

The theory of flow has broad implications, especially in the area of Web site development. Yet, one weakness of flow theory is inconsistencies in how to measure the flow state. The current study was based on Skadberg's (2002) proposed model of flow in human-computer interaction. With the exception of visitor's experience, the results of the current study illustrate that the relationships among factors in Skadberg's (2002) proposed flow model are positively and significantly related, thus the variables tested are accurate predictors of the flow experience. Although the findings of this research can

only be applied in the context of this research, it seems as if Skadberg's (2002) proposed model of flow in human-computer interaction offers a useful tool in the measurement of the flow state on the Web.

In the literature, the variable visitor's experience with informational Web sites is suggested to be a contributing factor to the flow state. Early flow models (Ellis, Voelkl and Moriss, 1994; Nahamura 1998; Well) indicate flow is achieved when skill is matched to the challenges of an activity, therefore an individual's experience with that activity would have an impact on their skill level and perception of challenge. Later studies of flow (Cisksentmihalyi, 1988) suggest a certain level of challenge must be met to help a person achieve flow. Again, experience is the latent variable contributing to an individual's perception of challenge level in the activity.

In the current study experience was measured as a factor of ease of use, vividness and interactivity. This suggests Web site users will have greater ease of use with higher levels of experience. Perception of vividness is based on past experiences with other sites and higher level of experience result in more interaction with the site. Therefore, the design of the site must fit the Internet experience level of the user. In Skadberg's (2002) research experience was operationalized as visitor's experience with virtual tour Web sit increased. However this variable was not found to have a significant relationship with interactivity or vividness. It was assumed by Skadberg that these results were inconclusive because there were problems with the measurement of the factor. For this study, experience was operationalized two ways, first with level of Internet experience and user's experience with informational Web sites like the PRT Planning site. Both

measurement methods concluded that experience does not have a significant relationship with ease of use, vividness or the indirect variable interactivity. Therefore, it is suggested that experience be excluded from the model.

There are several reasons why experience does not show a significant relationship with these variables. First, all those participating in the survey were contacted on-line via email. Thus, those participating in the study already have the experience level required for ease in Web site navigation, especially on a simple site such as the PRT Planning site. Second, there seem to be problems with the measurement of the experience factor, therefore making results inconclusive. Operationalizing experience by asking respondents how often they visit Web sites like the one they are currently on is problematic because it only measures their Internet skill based on site type and not familiarity with the Internet. Level of Internet experience should reflect not only their experience with other sites, but their ability to navigate and find information within a site. A suggestion to how experience can be operationalized is made in the recommendations for future research section. Third, traditional models of flow state the flow state is achieved when skill and challenges are matched. However, in the context of human-computer interaction flow is a state, which is, induced through interaction with a Web site. Therefore, a person's experience with other sites will not have an effect on the user if all other factors of flow are present.

Managerial Implications

Results of the current study offer insight into various implications of Web site development. For example, results of the present study suggest that park, recreation and

tourism practitioners consider marketing information to be the most useful information type. However, the PRT Planning site does not address marketing information, but presents extensive information on maintenance and maintenance standards, which are considered the least useful information types. Thus, the needs of the site's users are not properly met. Web site developers must have a complete understanding of the information needs of the site's users.

In addition, results of this study suggest that rural and small community's park, recreation and tourism practitioners are more likely to utilize a dial up modem and slow connection speeds. Thus, connection and download time must be a factor in designing sites directed at the needs of these segments. Images need to be kept in small memory storage size to reduce download time. Unnecessary images, such as button links when text links are sufficient should be excluded from the site.

Results reported small and rural communities' park, recreation and tourism practitioners having less computer and Internet experience than large and urban communities park, recreation and tourism practitioners. Thus, a site targeted at the information needs of rural and small communities should have information on how to properly use the site. Information about who the site is for and how to navigate the site in the most effective manner, site maps and definitional searches will aid those with less experience in appropriately utilizing the site.

Not knowing where to find information was reported as the problem encountered most by respondents. According to McAvinia & Oliver (2002), this is one of the disadvantages of using Internet information. It is the Web site developer's responsibility

to make potential users aware of a particular site. Therefore, time, staff and money should be budgeted to the promotion of a site to potential users.

Results also suggest that while large and urban communities prefer to use the Internet as an information resource, rural and small communities prefer personal contact with state or county agents. Thus, if an informational site is to be effective for these segments, personal contact must be a factor of Web site design. The use of video conferencing, chat rooms and bulletin boards will accentuate the feel of personal contact and increase level of interactivity.

Factors in a Web site's development are strongly related to the quality of experience and effectiveness of a Web site at accomplishing its intended goal. From this research and Skadberg's (2002) study it is concluded that flow is a dependable tool used to better understand the users' experience when interacting with a Web site. The consequence of flow is that it leads to increased learning and change in attitude and behavior. Measuring flow allows for a better understanding of the user's experience with Internet information and allows for the Web developer to design a site to better meet the needs of the target group. Considering the already disproportionate level of information delivery to rural areas, information should not be lost in non-flow inducing designs.

Flow experience on the PRT Planning Web site did not appear to be a common outcome of user's experience. This conclusion is based on insight provided through the Web site evaluation. First, the presentation style of the site was not considered exciting or interactive. Information was presented in a paper like format, thus provoking a sense

of information overload. Second, the site lacked pictures, which could be used to tell stories or invoke feelings and thoughts about the text. Third, the site did not present information in multi-media formats or allow for feedback. Therefore, it is suggested that the design of the PRT Planning Web site be modified to include more factors contributing to the flow experience. This includes reducing the amount of text that is present when an initial page is downloaded, adding images, graphs and pictures to explain text, and using multi-media presentation styles such as video. Improving the quality and amount of flow factors can facilitate a more positive and rewarding Web site experience.

Recommendations for Future Research

Limitations of Study

The current study was an initial attempt to gain a more thorough understanding of Web site design, differences in Internet information between four population segments, and Web site user's experience. As stated in Chapter I, this study is based on a Web site development project through the Texas Cooperative Extension. Thus, design and information provided has been limited by the field expertise and level of design experience of the Web site designer.

Initially the study was to focus on rural communities' park, recreation and tourism practitioners. Lack of contact information for these communities made it difficult to find study participants. Thus, the study was segmented based on population to allow for a more equal distribution of respondents. Sample selection was not specific to the target market of the Web site. However, the sample was specific to the target of

the research. Those selected as the sample have become contacts of the Texas Cooperative Extension because of their requests to receive information and assistance from the cooperative extension.

The study was further limited due to a low response rate. Of the 1546 invitation emails sent out, only 143 responded. This is a response rate of 9.2%. Therefore, the results of this study should not be generalized outside of the study participants. The addition of 200 or more respondents, particularly from rural and small communities would increase the validity of the study, as well as similar research being conducted on similar Web sites.

The research method was limited to on-line anonymous participation. The survey was posted on the Internet, allowing anyone able to find the site to be able to take the survey, reducing the reliability of the study. This too could have contributed to the low response rate, due to email deletions, a non-personal contact, broken links, or servers being down.

A limited time frame did not allow for an in-depth development of the Web site. After all the information had been compiled there was a rush to get it on-line so the remainder of the study could be conducted. Limited time could also be a factor in the low response rate, since the survey did not run longer than three weeks.

The design of the Web site lent itself to information overload. Therefore, information presented on the survey may not be accurate, because participants may not have browsed the entire site. Also, once a respondent was on the survey page, they were

unable to go back to the original window without losing the information they had already entered.

Future Research

The present study provides evidence into the information differences of rural and urban communities, while also giving insight into the theory of flow in human-computer interaction. The study further provides groundwork for future research questions examining the relationship between effective Internet information and the presence of flow factors. For instance, the variable vividness was found in Skadberg's (2002) study to be the most significant contributor to flow experience in the context of human-computer interactions. Future research should examine what factors contribute to the vividness variable and the impact of those factors on people's perceptions of effective information delivery. On the other hand, future research should also examine at what level problems in the variable interactivity such as low ease of use, begin to detract from the vividness of the site.

In addition, telepresence as used in this study and Skadberg's (2002) study is defined with characteristics similar to flow. These characteristics include complete involvement, focused attention, and loss of self-consciousness. However alternative definitions of telepresence characterize the variable as the facilitator, creating the illusion of being there. Anumba and Duke (2000) define telepresence as the facility which enables collaborating parties to be virtually located within a given environment, in which they are able to interact with one another or with virtual objects that are also presented in that environment. Thus telepresence becomes a tangible item, which

enables one to have a sense of being present in a remote location. Future research should examine the implications of this alternate definition on Skadberg's (2002) proposed model of flow in human computer interaction. In addition, items of telepresence in Web design should be identified and their impact on people's ability to achieve a flow state evaluated.

Future research should examine an alternative way to measure Internet experience. According to Reed, Oughton, Ayersman, Ervin and Giessler (2000), experience can be measured by the number of linear steps taken when browsing within a site. According to their study those with more hypermedia experience took fewer linear steps than those with experience in only working with computers or program authoring. An implication of this study is that one can predict the extent to which a hypermedia user may engage in a hypermedia environment by knowing a user's experience in a variety of computer related uses.

The current study examined the relationships of the individual factors contributing to flow and not the flow model as a whole. Although, the results of this study show significant relationships between these factors, it has not examined the model holistically. In addition, the flow model has only been tested on a virtual tour Web site and not an information Web site. Therefore, it is uncertain that the elements contributing to the flow state on a virtual tour Web site would be the same elements contributing to the flow state on an informational site. Moreover, the sample population in this study was relatively small, making it hard to generalize findings. Future research should test the proposed model holistically on an information site and include a larger

sample, with equal representation of each population segment. In addition future research should examine sites with the same information, but with different amounts of flow contributing factors to see at what level the number of flow factors present impacts the effectiveness of that information.

Due to the unequal distribution of information to rural areas, Web information must be effective at achieving its goal. As this research and other studies suggest (Ghani 1991, Webster, Trevino and Ryan 1993, Ghani and Deshpande 1994, Hoffman and Novak 1996) achieving the flow state increases one's ability to learn and changes attitude and behavior, thus making information more effective. Future research should examine the difference between rural and urban Internet information users' perception of achieving the flow state. Are their perceptions of the flow state different? How many flow factors does a Web site need to utilize to produce a flow state, and are the number of factors needed different depending on if the user is from a rural or urban community?

In conclusion, the current study looked at the differences in information use between rural and urban park, recreation and tourism practitioners and the factors of flow contributing to a person's Internet experience. The divide between rural and urban is growing wider every day. Information dissemination via the Internet is a way of closing that divide. It is believed that a more thorough understanding of users' experience while utilizing Internet information will enable Web site developers to produce more effective medians of information delivery on Web sites.

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APPENDIX A**SURVEY INSTRUMENT****Effectiveness of Internet Information for Park,
Recreation, and Tourism Practitioners**

Dear Park, Recreation or Tourism Practitioner,

Texas Community Futures Forum (TCFF), a series of needs assessments conducted in every county in Texas, and the Department of Recreation, Park and Tourism Science at Texas A&M University are studying information distribution to rural community's park, recreation and tourism practitioners. Therefore, it is important to gather information from park, recreation and tourism practitioners like yourself on the types of information you find useful in planning, developing and providing park, recreation or tourism services. Before projects are activated and public monies invested, we would like to know more about what park, recreation or tourism information you need and what your levels of information use are.

This questionnaire has been designed to get input from park, recreation and tourism practitioners like you. It allows the opportunity for park, recreation and tourism practitioners to let us know what are information needs and important issues concerning park, recreation and tourism services in your community.

A second portion of this survey is being used as part of the survey looks at a person's experience while visiting an information Web site. The results of this study will have an impact on these organizations' development of Web resources and the continued development of this information Web site

Please take some time to view and browse the Park, Recreation and Tourism Planning Web site ([PRT Planning](#)). Then take a few minutes to complete the on-line survey.

Comments, opinions and concerns about any portion of this survey, park, recreation or tourism issues or this study are greatly appreciated and will receive close attention. Survey responses are **confidential**, thus do not respond with your name or address on the questionnaire.

Thank you for your time and participation,

Joni D. Patterson
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Email- jpatters@mail.rpts.tamu.edu

This set of questions will be used to report demographic information of the survey group

1. What is your home zip code?

2. What is your work zip code?

3. Which is the highest education level you have completed? (Please mark one)

- No formal education
- Some grade school
- Completed grade school
- Some high school
- Completed high school
- Some college
- Completed college

- Some graduate work
- Completed a graduate degree

4. What is your age?

In Years.

5. Approximately how many years have you been working as a park, recreation or tourism practitioner?

In Years.

6. Please indicate how much time you spend providing park, recreation or tourism services in your community.

- Full-time park, recreation or tourism practitioner
- Full-time occupation other than park, recreation, or tourism practitioner
- Part-time occupation other than park, recreation, or tourism practitioner
- Part-time park, recreation or tourism practitioner
- Seasonal
- Volunteer
- Unemployed

7. What type of services do you provide as a park, recreation or tourism practitioner? (Please mark all that apply)

- Grant writing
- Site design
- Maintenance
- Conducting community needs assessment
- Budgeting
- Programming
- Funding Park, Recreation or Tourism Ventures
- Other (Please be specific)

8. Approximately what level computer experience do you have? (Please mark one)

- No experience
- Basic user (Word Processing)
- Power user (Can set up and run most programs)
- Expert

9. Approximately what level experience do you have with the Internet? (Please mark one)

- No experience
- Basic user (E-mail and Web browsing)
- Power user (Internet file transfers)
- Expert

10. What is the population of the community you work for?

This set of questions will be used to report, information effectiveness, information needs, and information retrieval methods

11. As a practitioner where do you receive information on planning, developing or providing park, recreation and tourism services? (Check all that apply)

- Other park, recreation or tourism practitioners
- Universities or Colleges
- Texas Cooperative Extension Agency
- State Agencies- i.e. Texas Park and Wildlife Department
- Magazines or trade journals
- Internet
- Libraries
- Suppliers/Manufactures
- Others (Please be specific)

12. When you seek out information about planning, developing or providing park, recreation or tourism services for your community, what problems, if any, have you come across? (Check all that apply)

- Information was not understandable
- Information was too hard to acquire

- Did not know where to go to find the information
- Information obtained was not relevant to my community's needs
- No problems have been encountered

13. What types of information resources are most effective for your community's needs and time schedule?

(Please mark one)

- Personal contact or visit with a county agent or state extension agent
- Paper handouts or print-outs of the requested information
- Internet or electronic information delivered through the computer
- Other (Please be specific)

14. As a park, recreation or tourism practitioner, are you or your department connected to the Internet?

(Please mark one)

- Yes (go to question [#15](#))
- No (go to question [#17](#))
- Will be connected to the Internet the near future (1-12 months) (Go to question [#15](#))

15. If you answered "Yes" or "Will be connecting" on question #14, what type of Internet connection do you currently have or will you be using? The following choices refer to the types of connections you may be using or may use in the future (Please check all that apply)

- Modem/Dial up Connection (phone line)
- Cable Modem
- DSL Modem (Digital Subscriber Line)
- ISDN (Intergraded Services Digital Net Work)
- LAN (Local Area Network)
- Not sure
- Other (please be specific)

16. What is or will be the speed of your computer when downloading information from the Internet?

(Please mark one)

- 28.8 KB

- 56 KB
- 10Mb
- DSL (Cable Modem) 128 KB
- Not Sure

The following two questions are for those individuals who answered "No" to question #14. Those answering "Yes" to #14 should continue with question # 19.

17. If you answered "NO" to question #13, what are some of the reasons for not being connected to the Internet? (Check all that apply)

- Too costly
- Too much time needed to set up and run
- Not interested in using the Internet
- No needs in the community justifying the use of the Internet
- Do not know enough about using the Internet
- Other (please be specific)

18. If an information system can be developed to provide you information about planning, developing and providing park and recreation services in your community through a Web-based information resource would you consider getting connected to the Internet?

- Yes-in less than 2 years
- Yes-2 to 5 years
- Yes- in more than 5 years
- No
- Don't know

The following questions are to be completed by all survey participants.

19. Different types of information have been identified as being important to rural communities when planning, developing and providing park, recreation or tourism services. This information is being produced and modified for distribution via the Internet. Please look at the information types listed below

1. Conducting community needs assessment	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
2. Site design	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
3. Technical assistance on grant writing	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
4. Funding through existing community resources	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
5. Grant funding agencies	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
6. Operations and maintenance of community park, recreation or tourism services	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
7. Maintenance standards	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
8. Sustainability of community park, recreation or tourism services	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
9. Marketing (promotion and advertising)	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
10. Programming (youth programming, educational material, adult programming)	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
11. Other (please specify)	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5

and indicate how useful this information would be to you and your community when planning, developing, and providing park, recreation or tourism services in your community.

20. Current technologies have changed the way information can be transferred and gathered. If park, recreation and tourism information were made available through an Internet delivery system would you be interested in using it?

(Please mark one)

- Yes
- No
- I don't know

21. There are many services community park, recreation or tourism departments provide. Therefore your community has different information than your neighboring communities. Some types of information will serve you better than others. Please indicate how important these areas of services are to your community.

	Not Important	A Little Important	Neutral	Important	Extremely Important
1. Increase community well being	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
2. Attract new businesses or industry	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
3. Increase rural community values	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
4. Provide a get-a way for others to your community	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
5. Provide a place for wildlife	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
6. Educate the community	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
7. Provide athletic opportunities	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
8. Provide cultural opportunities	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
9. Other (please specify) <input type="text"/>	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5

22. The following statements/questions ask about your experience while navigating the learning tutorials presented on the **Recreation, Park and Tourism Planning** Web site created from information collected during the Texas Community Futures Forum. Please respond by marking your choice using the scale ranging from (1) strongly disagree to (5) strongly agree.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Overall I enjoyed gathering information from the Park, Recreation and Tourism Planning Web site	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
2. The Web site speed is fast	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
3. There is little waiting time for the Web pages to load	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
4. The Web site is interesting	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
5. The design of the Web site is attractive	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
6. I had no problem finding the information that I wanted	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
7. Navigation of the Web site is simple and easy	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
8. The Web site provided some information that is new to me	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5

9. I consider myself to be knowledgeable in the park, recreation and tourism field	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
10. I felt that I had the freedom to go anywhere in the Web site	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
11. Interacting with the Web site was easy	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
12. The Web site's response to my actions (such as clicking a link) was fast	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
13. While I was browsing the Web pages, time seemed to go by very quickly	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
14. While browsing this Web site, I was not aware of my immediate surroundings	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
15. I felt that I was in the world created by the Web site-Recreation, Park and Tourism Planning	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
16. After visiting the Web site, I feel that I have learned more about community park, recreation and tourism resources in Texas	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
17. I have gained more knowledge about developing park, recreation and tourism services after visiting the Web site	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
18. After visiting the Web site I want to find out more about developing park, recreation and tourism services in my community	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
19. I will return to the Web site for information on planning park, recreation, and tourism services	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
20. This Web site has stimulated my interest in community park, recreation and tourism resources	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
21. This Web site reviewed information that was new to me	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
22. How often have you visited information Web sites like this one? <input type="text" value="Once a week"/>	

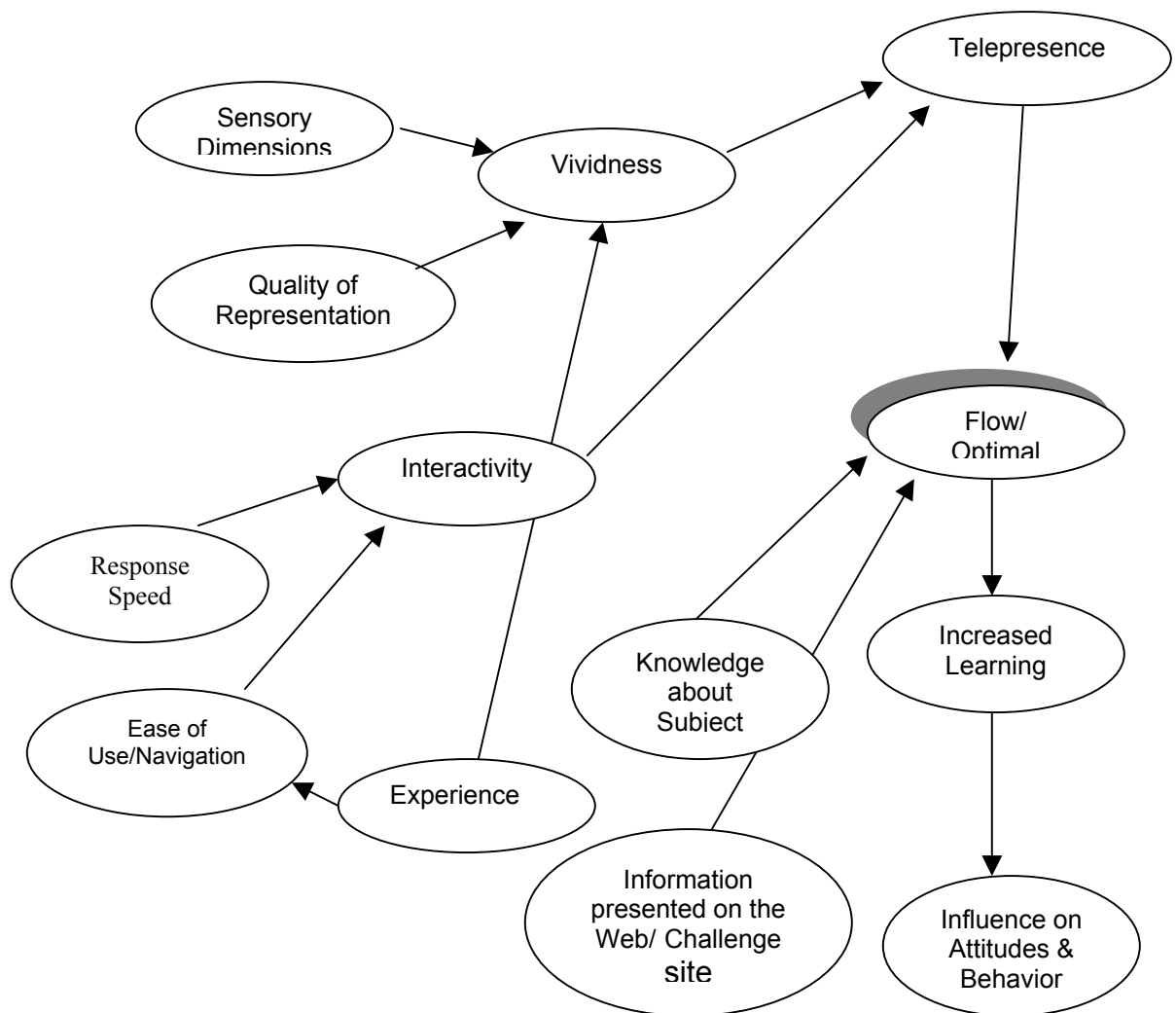
Please, only click the Submit button once.

It might take a few moments to see the confirmation page.

Thank you for taking the time to help us serve you!

APPENDIX B

SKADBERG'S PROPOSED MODEL OF FLOW



APPENDIX C

INVITATION MESSAGE

Dear Park, Recreation or Tourism Practitioner,

Texas Community Futures Forum (TCFF), a series of needs assessments conducted in every county in Texas, and the Department of Recreation, Park and Tourism Science at Texas A&M University are studying information distribution to community's park, recreation and tourism practitioners. Therefore, it is important to gather information from park, recreation and tourism practitioners like yourself on the types of information you find useful in planning, developing and providing park, recreation or tourism services. The results of this study will have an impact on these organizations' development of Web resources and the continued development of this information Web site.

Please thoroughly view and browse the Park, Recreation and Tourism Planning Web site PRT Planning- <http://www.rpts.tamu.edu/tce/communityrandp>. Then take a few minutes to complete the on-line survey.

Comments, opinions and concerns about any portion of this survey, park, recreation or tourism issues or this study are greatly appreciated and will receive close attention. Survey responses are confidential, thus do not respond with your name or address on the questionnaire.

Please enter the research Web site PRT Planning by clicking the link below.

PRT Planning- <http://www.rpts.tamu.edu/tce/communityrandp>

If you have any questions or comments please Email- jpatters@rpts.tamu.edu

Thank you for your time and participation,

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APPENDIX D

PRT PLANNING WEB SITE EVALUATION

The PRT Planning Web site has been developed in response to the Texas Community Futures Forum (TCFF), a series of needs assessments conducted in every county in Texas. From the TCFF process nineteen response teams have been formed to provide insight into the needs of Texas communities. One of these response teams is the Quality of Community Life Response Team (QualComLife).

QualComLife's team member contact with rural agencies has provided insight to one goal of many communities, which is to develop and acquire park, recreation and tourism services. Contact with these agencies led to the discovery that many of these communities lack park, recreation, and tourism (PRT) practitioners whose job is to plan, organize, and deliver PRT services (Scott and Shafer, 2001). Larger communities currently have practitioners with these skills and knowledge. The QualComLife recognizes that rural communities have different information needs than urban communities; therefore the development of an Internet information resource to deliver information to rural PRT practitioners should be beneficial for rural communities. Information to be presented on the Internet resource should focus on elements of the planning, developing, and delivering of PRT services (Scott and Shafer, 2001).

The focus of this study is two fold. First, institutions are increasingly using the Internet as a way to deliver information to their clientele. As institutions build Internet resources, issues of Web site design, characteristics of the target audience, and differences in user information needs, will need to be evaluated, in order to build a useful Web site. Second, little research has attempted to measure the relationship between users' experience of an information site and the effectiveness of the site to accomplish its intended goal.

Therefore a PRT Planning Web site has been developed in response to clients' needs. The Web site will not only act as a medium to deliver information to park, recreation and tourism practitioners, but also as a data collection tool. The first goal of the on-line survey is to provide information about, important issues concerning park, recreation and tourism services in a community. The second goal of the on-line survey is to provide information about the user's experience with using the site. This will be done using Skadergs's (2002) proposed flow model of human-computer interaction.

I would like to ask you to please take some time to visit and browse the Web, its links and the on-line survey, and tell me what you think. Please note any errors in information, quality of information being presented, documentation errors, spelling and grammar, ease of use, attractiveness of the site, presentation style, down load speed and use of theme titles. I have provided an evaluation form, to make it easier to document the evaluation process and to make changes later.

Your time and participation is appreciated, and I thank you in advance for your honest comments and opinions.

8. In your opinion is the information presented accurate?

9. Are there any spelling, grammar, or documentation errors? If so please give the heading area, sub-heading and word.

10. Is the presentation style consistent?

11. Is the information presented in an exciting way?

12. What Web browser did you use to view this site?

13. What size monitor did you use to view this information?

Additional Comments:

VITA

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Education

- 2000 Texas A&M University
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Major: Recreation, Park and Tourism Sciences
Degree: B.S.
- 2003 Texas A&M University
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Major: Recreation, Park and Tourism Sciences
Degree: M.S.

Employment

- 1997-1998 Activities Director, Concierge.
Galveston Island Hilton. Galveston, TX
- 2000 Marketing Intern. Texas Monthly Inc.
Austin, TX.
- 2000-present Graduate Assistant. Department of Recreation, Park and
Tourism Sciences, Texas Cooperative Extension.
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