The Development and Testing of a Relational Model of Competence in the Context of Nature-Based Tourism

Christine Marie Oschell

The University of Montana

Follow this and additional works at: https://scholarworks.umt.edu/etd

Let us know how access to this document benefits you.

Recommended Citation
https://scholarworks.umt.edu/etd/975

This Dissertation is brought to you for free and open access by the Graduate School at ScholarWorks at University of Montana. It has been accepted for inclusion in Graduate Student Theses, Dissertations, & Professional Papers by an authorized administrator of ScholarWorks at University of Montana. For more information, please contact scholarworks@mso.umt.edu.
The Development and Testing of a Relational Model of Competence in the Context of Guided Nature-Based Tourism

By

Christine Marie Oschell

B.S., Ursinus College, Collegeville, Pennsylvania, 1999
M.S., The University of Montana, Missoula, Montana, 2004

Dissertation

presented in partial fulfillment of the requirements for the degree of

Doctor of Philosophy
Forestry

The University of Montana
Missoula, MT

Spring 2009

Approved by:

Perry Brown
Interim Associate Provost for Graduate Studies

Neil Moisey, Chair
Society and Conservation

Stephen McCool
Society and Conservation

Michael Patterson
Society and Conservation

Stephen Yoshimura
Communication Studies

Fletcher Brown
Education
© COPYRIGHT

by

Christine Marie Oschell

2009

All Rights Reserved
Abstract Title: The Development and Testing of a Relational Model of Competence in the Context of Guided Nature-Based Tourism

Chairperson: Neil Moisey

Communication competence is a framework that has been used in many disciplines to understand communication events and their success or failure in achieving objectives. The model most often used to describe competence is the relational model proposed by Spitzberg & Cupach (1984) which includes three elements: knowledge, knowing what behavior is best suited for a given situation; skill, having the ability to apply that behavior in the given context; and motivation having the desire to communicate in a competent manner. This study used the model of relational competence to understand the communication process between guide and client in a nature-based tourism context where communication is critical for the achievement of objectives, such as, education and safety.

The model of relational competence has never been applied to this context. This research uses standard psychometric procedure to create scales to measure the components of the relational model of competence in a guided nature-based tourism context.

A two-page onsite questionnaire was used to measure white water rafting customers’ perceptions of the levels of motivation, knowledge, and communicative skills exhibited by their guide as well as their overall communication competence.

Two hundred and fifty two completed questionnaires were received from the 343 customers surveyed, for a response rate of 73 percent. A process of refining and purifying the scales with correlation analysis, Cronbach’s alpha reliability analysis, and exploratory factor analysis led to valid and reliable measures of perceived knowledge, skills, and overall competence. The scale measuring communicative motivation was found to lack content validity. Perceived motivation, knowledge, and skills were all found to significantly predict a unidimensionsal construct of perceptions of competence in a regression model that explained 74 percent of variation in the data.

This model is an appropriate framework to understand the communication process between guide and customer. The instrument developed and validated in this study provides further evidence of the relationships posed in the model of relational competence was also provided by this research. Future research needs focus on the content validity of the motivation scale and subsequently test the model again with confirmatory factor analysis. This study was the first step in having a valid and reliable measure of communicative motivation, knowledge, skills, and overall competence in the nature-based guided context.
Acknowledgements

First, I would like to thank my family for all of their amazing love, support, and faith in my ability to accomplish this goal. Eric, thank you for being everything to me and never doubting my ability to finish this dissertation. Thank you for being an amazing father to Nolan and always making sure that he got everything he needed when mom was busy with school. Nolan, thank you baby for being with me during my comprehensive exams and giving me a little kick to remind me that you were proud of your mom no matter what happened.

I want to acknowledge both my aunts, Nancy and Jeanne, for all of their amazing support throughout my life as a student. They always pushed me to excel. I would especially like to thank my Aunt Nancy for always being there when I needed her. Thanks to my dad and his wife Karen for the support they have always given me. Last but not least, I have to acknowledge that this great day and four years before it have happened in the absence of my amazing mother who I miss dearly. This day would be so much more complete if she was here. Thank you, mom, for everything you did to make me a strong, intelligent woman. You are missed every minute of every day.

Thanks to my committee chair, Neil Moisey, for sticking with me even as I made some decisions that were not always popular. Thank you to my whole committee, Steve McCool, Steve Yoshimura, Fletcher Brown, and Mike Patterson for advising and supporting me throughout this project. I would like to thank Bill Borrie for his advice and expertise which guided much of this project. I also want to acknowledge Norma Nickerson for giving me the opportunity to do BIG things even when others were unsupportive. I would also like to acknowledge her for the great deal of support she gave me through difficult times in this process.

I would also like to thank all my friends for their amazing and unending support. I would especially like to recognize Melissa Baker for everything that she did for me throughout this process. I could not have done this without you Melissa!
# Table of Contents

Table of Contents................................................................................................................... v
List of Tables and Figures.......................................................................................................... vii
Chapter 1: Introduction ........................................................................................................... 8
  The Context......................................................................................................................... 9
  Problem Definition............................................................................................................ 17
  Problem Statement............................................................................................................ 18
  Goals............................................................................................................................... 18
  Research Questions.......................................................................................................... 18
Chapter 2: Literature Review ................................................................................................. 20
  Communication and Nature-Based Tourism ........................................................................ 20
  Guides and Communication............................................................................................... 24
  Communication Competence............................................................................................. 32
Chapter 3: Conceptual Foundation ......................................................................................... 38
  Why Communication Competence?..................................................................................... 45
  The Model....................................................................................................................... 46
Chapter 4: Methodology ......................................................................................................... 49
  Instrument Design............................................................................................................ 50
    Generation of an Item Pool for the Customer Questionnaire ....................................... 50
    The Guide Questionnaire............................................................................................... 52
  Research Design................................................................................................................ 54
    The Population and the Sample...................................................................................... 54
    The Pilot Test ................................................................................................................ 55
    Procedures...................................................................................................................... 56
Chapter 5: Results .................................................................................................................. 59
  Research Question 1......................................................................................................... 59
    Reliability of Motivation, Knowledge, and Skills Scale............................................. 59
    Validity of Motivation, Knowledge, and Skills Scales............................................... 63
    Reliability of Competence Scales................................................................................. 70
    Validity of Competence Scales..................................................................................... 71
  Research Question 2......................................................................................................... 76
  Research Question 3......................................................................................................... 78
  Research Question 4......................................................................................................... 78
  Research Question 5......................................................................................................... 79
Chapter 6: Discussion ............................................................................................................ 81
  Reliability and Validity..................................................................................................... 81
  The Model of Relational Competence ............................................................................. 83
  A Hybrid Model for Nature-Based Guided Context...................................................... 84
  Perceived Competence as a Unidimensional Construct............................................... 85
  Communication Competence of the Customer.............................................................. 86
  Evaluation of the Use of the Relational Model of Competence in the Guiding Context ................................................................................................................................. 88
  Contribution to Communication ..................................................................................... 92
  Contribution to Guiding in Nature-Based Tourism....................................................... 93
List of Tables and Figures

Table 1: Initial Cronbach's Alpha for Motivation Scale* ................................................. 62  
Table 2: Initial Cronbach's Alpha for Knowledge Scale* ................................................ 62  
Table 3: Initial Cronbach's Alpha for Skills Scale* .......................................................... 63  
Table 4: KMO and Bartlett's Test..................................................................................... 64  
Table 5: Initial Rotated Component Matrix*.................................................................... 65  
Table 6: Rotated Component Matrix for Motivation, Knowledge, and Skills............... 68  
Table 7: Cronbach's Alpha Results for Motivation to Communicate Scale ..................... 70  
Table 8: Cronbach's Alpha Results for Knowledge to Communicate Scale.................... 70  
Table 9: Cronbach's Alpha Results for Communicative Skills Scale ............................. 70  
Table 10: KMO and Bartlett's Test................................................................................. 71  
Table 11: Rotated Component Matrix for Combined Competence Factor....................... 72  
Table 12: Cronbach's Alpha Results for Communication Competence Scale ............... 72  
Table 13: Spearman's Correlation Among Components of the Relational Model of Competence....................................................................................................................... 73  
Table 14: Rotated Component Matrix for All item Factor Analysis ............................... 75  
Table 15: Regression on Relational Model of Communication Competence................. 78  
Table 16: Regression on Relational Model with Customer Variables Included.............. 79  
Table 17: Mean Scores and ANOVA Testing for Differences among Guides on the Variables of the Relational Model of Competence ...................................................... 80  
Table 18: Customer Characteristics ............................................................................. 106  
Table 19: Customer Characteristics ............................................................................. 106  
Table 20: Customer Residence .................................................................................... 107  
Table 21: Mean, Standard Deviation of Items measuring Motivation, Knowledge, and Skills ........................................................................................................................... 107  
Table 22: Mean, Standard Deviation of Items measuring Appropriateness and Effectiveness......................................................................................................................... 109  
Table 23: Guide Characteristics .................................................................................... 110  

Figure 1: Model of Relational Competence in the Context of Guided Rafting ............ 48  
Figure 2: Measures........................................................................................................ 53  
Figure 3: Final Model of Relational Competence....................................................... 82
Chapter 1: Introduction

Communication is central to human life. It is pervasive, essential, and complex. Since communication is irrevocably entwined with human life, any study involving people should touch on communication (Littlejohn, 2002). The focus of a great deal of communication research has been competent communication, or the ability of a person to communicate effectively and appropriately. Spitzberg and Hurt (1987) contend that it is “axiomatic that interpersonal communication competence is crucial to academic, occupational, personal and social success” (1987: 28). Considering the crucial and ubiquitous nature of communication competence, it is a worthwhile and timely area of study in many contexts.

According to Spitzberg (1993), “competence plays a central role in the success and failure of all human relationships.” We all pursue goals, objectives, intentions, and outcomes in our interactions with others. No matter how lasting or ephemeral a communicative relationship may be, the desired outcome is more likely to be achieved when competent communicators are involved. It is for this reason that competence has been applied in a multitude of fields and disciplines over its forty year history.

Communication competence research is diverse. Doctor/patient interactions (Cegala et al., 2004), conflict management (Gross et al., 2004), student teacher success (Rubin, 1981), mental health counseling success (Trower et al., 1977), and marital adjustment (Gottman & Porterfield, 1981) are but a few examples of the arenas in which competence has been successfully applied.

Considering the breadth of application of the concept of communication competence in the past, it seems natural to apply this concept to the interaction of guides
and clients in a nature-based tourism setting where the transfer of information from guide to client can serve the important purposes of persuasion, education, resource protection strategies, entertainment, and safety. In fact, the success or failure of the communicative interaction between guides and customers may be the primary determinate of whether these objectives will be achieved. While the importance of the individual objectives may vary, each can be an important part of a satisfactory nature-based tourism experience for the guide, client, and the managing agency of the land on which the guide is operating.

An illustration of the importance of competent communication in protecting the resource will make clear the need to understand competent communication in this arena. This section will discuss one of the potential objectives, resource protection through education, of the interaction of guides and their customers for which competent communication is necessary.

**The Context**

Although nature-based tourism has been touted as a way to allow for use while still protecting the environment, it is not impact free. Resource impacts associated with recreational use (e.g. tourism) are inevitable (Leung & Marion, 2001). Increasing nature-based tourism or recreational use of protected areas impacts water, soil, vegetation, and wildlife. Managers are mandated to provide opportunities for recreation and tourism while keeping impacts to a minimum or within acceptable ranges.

Management policies across the federal land management agencies require managers to reduce or mitigate impacts as a primary management objective (NPS, 2001; USFS, 2000). There is a recognized need for effective visitor management and resource protection programs that will seek to balance visitation with their associated resource
impacts. The research community has responded to the needs of the US Forest Service (FS), National Park Service (NPS), and the Bureau of Land Management (BLM) by providing an understanding of the relationship between use and biophysical impacts and the most effective ways of mitigating impacts (Frissell, 1978; Washburne & Cole, 1983; Cole et al., 1987; Cole, 1990; Cole & Landres, 1996; Leung and Marion, 2001; Marion, 1991; Roggenbuck et al., 1993).

Protected area managers use a variety of strategies to reduce depreciative behaviors that can lead to resource impacts. More heavy-handed or direct managerial strategies that act directly on the visitor (e.g., monetary fines, trail closures, and use limits) give the visitor little freedom of choice and may not be appropriate in protected areas such as Wilderness or National Park backcountry zones. Indirect measures such as providing information, education, interpretation, or persuasion can be more effective in developing appropriate behaviors than direct measures (Peterson & Lime, 1977; McCool & Christensen, 1996). Research has shown that the most effective indirect measure is face-to-face communication (Washburn & Cole, 1983; Roggenbuck and Berrier, 1982; Krumpe and Brown, 1982). For this reason, protected area managers, tourism providers, and other organizations often employ education programs to address visitation-related impacts of natural and cultural resources and social conditions (Marion and Reid, 2007). One challenge faced by protected area managers, however, is that they do not have a great deal of face-to-face contact with visitors (Leung and Marion, 2001).

In contrast, it is common for nature based tourism trips to be led by a guide. Guides operating in protected areas typically are in direct contact with many visitors both by guiding their own clients and by meeting other visitors in the field. Guides operate in
many nature based tourism activities, such as river rafting, hiking, horse-packing, hunting, fishing, and winter sports like snowmobiling and skiing. Guided trips vary in length from one-day trips to multiple day expeditions. Regardless of the length of time spent with visitors, guides have their attention and the opportunity to communicate. Through their face-to-face contact with visitors, guides can be an integral communication channel for managers in achieving the goal of mitigating of impacts.

The NPS, the FS, and the BLM are the primary providers of nature based tourism opportunities in the United States (Zinser, 1995). Each agency has policies regarding outfitter and guide services with the common thread that guides and outfitters are expected to assist in mitigating resource impacts. For example, the policy in the National Parks states that guiding services “will be provided in a manner that furthers the protection, conservation, and preservation of the environment, and park resources and values” and “will support a park’s purpose and significance, exceptional resource values, and visitor experience objectives, and will be consistent with enabling legislation” (NPS, 2001). The U.S. Forest Service also relies on outfitters and guides to help address the needs of an increasingly urban population which may lack the necessary ability, skills, or equipment for wilderness travel, environmental learning, or other wilderness dependent visits. The Forest Service declares that “outfitter and guide permittees exist because the Forest Service desires their assistance in accomplishing management goals and objectives” and further states that “If the client is not ecologically aware when they go in, they should know more when they come out. That learning can be facilitated by the outfitter guide” (USFS, 2000).
An example of the increasingly important role that guides can play with competent communication in protected area management can be found in the Forest Service’s Ten Year Wilderness Challenge (USFS, 2004). This program was developed by the USFS Chief’s Wilderness Advisory Group to quantify the Forest Service’s success in wilderness stewardship. The goal of the program is to “insure that Wildernesses are passed to the next generation in better condition than when they were designated” (USFS, 2004). The challenge includes ten elements that exemplify the goals of the Forest Service for Wilderness areas in the next decade. Among these elements are the need for a wilderness education program to heighten visitor appreciation and knowledge to reduce impacts; the importance of preventing degradation of Wilderness by monitoring the social, ecological, and managerial conditions of Wilderness; the requirement that future “outfitter and guide operating plans for Wilderness direct outfitters to model appropriate Wilderness practices and incorporate appreciation for Wilderness Values in their interactions with clients and others.”

Several theoretical models conceptualize the roles of guides on a nature-based tourism trip (Cohen, 1985; Pond, 1993; Weiler & Davis, 1993; Oschell, 2004). While each of these different viewpoints are distinct there is agreement that guides have a role as a communicator or even an educator.

A study by Oschell (2004) empirically tested Cohen’s (1985) conceptualization of the roles of guides to identify the effect on the outcomes of guided recreation within a natural resource setting. The results of this study indicated that while the roles of guides were somewhat different than those proposed by Cohen, the communicative role was the most reliable and highest rated of the roles and had a positive effect on learning by the
clients in this study. The study concluded, “Learning about the natural environment is much more likely to occur if an individual goes on a trip with a guide who is cognizant of their communicative role” (Oschell, 2004: 48). This implies that it is possible for guides to assist managers in achieving their goals by communicating with visitors.

Guides have a unique opportunity to communicate with visitors. While the content of their messages is very important, the delivery of these messages and how they are perceived dictates whether or not visitors will learn and possibly change their attitudes and behaviors (Vander Stoep & Roggenbuck, 1993). Therefore, managers of protected areas can best take advantage of this opportunity by ensuring that guides are conveying messages that are structured and delivered in a manner which best achieves their visitor management goals.

Clearly, the potential exists for guides to be interpreters and aid in the management of protected areas. But how can the effectiveness of their efforts be understood and evaluated? In an attempt to answer this question, recent studies have evaluated the effectiveness of education programs in nature-based tourism (Beaumont, 1997; Orams, 1997; Tubb, 2003). The focus of these studies has been on the content and effects of guide-led interpretive programs on learning and attitude change of visitors. While content is indeed an important aspect of informing and educating visitors, these studies have not evaluated the cognitive and behavioral qualities of the people delivering these programs and how these affect outcomes.

Several studies have been conducted to determine the effectiveness of interpretive programs regarding education of and attitude shift in visitors (Beaumont 1997; Oram 1997; Tubb 2003). Beaumont (1997) found that interpretation can induce a change in
understanding and a positive shift in attitude amongst individuals who already have some form of conservation ethic. However, this study does not give any insight into which characteristics of the program caused these changes. Similarly, Orams (1997) explored the effectiveness of an education program in Tangalooma, Australia. In this study, the tourists were visiting a resort where they were able to hand-feed a group of wild dolphins. An education program was delivered to some and not to others (control group). The results of this study show that desirable changes can result from an educational program.

Orams (1997) found that there was an increase in enjoyment and an increase in knowledge for those individuals who had the education program. This study also shows that education programs are worthwhile but it does not provide an understanding of how to make sure these programs have these positive effects. Tubb (2003) did a similar study in Dartmoor National Park. This study had the goal of evaluating the effectiveness of interpretation in reaching the goals of sustainable tourism. The results of this study show that interpretation led to an increase in visitor knowledge and awareness. Results also showed that exposing visitors to interpretation increased their understanding of how to change their behavior in order to minimize their environmental impact. Similar to the other two studies this study did not look at the specifics of the program; it merely showed that something about the program caused these changes. The interactions between clients and visitors are not examined in these studies and it is the specifics of these that need to be understood.

According to Pond (1993), the guide and visitor are involved in an interpersonal relationship. The ability of the guides to build a strong interpersonal relationship with the visitor depends on their ability to communicate with them (Morreale et al., 2001). In
order for any goals that the guide or visitor may have (i.e. education) for their interaction to be achieved, the communicative interaction must be successful. Before we can evaluate the content of interpretive programs or the specific information given by guides to visitors we must understand what makes the interactions succeed or fail. It is the specifics of these interactions that we do not yet understand.

Communication competence is a construct that represents the extent to which something desired is accomplished through communication interactions in a manner that fits the situation (Morreale et al., 2001). Competence is defined as the perceived effectiveness and appropriateness of a person’s communication, in this case a guide’s communication, is in a given context. People must display competence in order to achieve interpersonal objectives, such as, disseminating information, gaining compliance, or mediating conflict (Spitzberg & Cupach, 1984). In the context of commercially guided trips, guides must behave in a way that is perceived as competent by their clients in order to successfully inform, educate, and gain compliance.

Competent communication is an interpersonal process, in which, through interaction, impressions are shaped and satisfactory outcomes are developed (Spitzberg & Hecht, 1984). There is an on-going debate in the communication literature on what constitutes communication competence as will be discussed in the upcoming review. There are varying perspectives including behavioral models, cognitive models, and hybrid models. A model of relational competence was developed by Spitzberg (1981) and includes cognitive, behavioral, and affective components. This model posits that the perception of a person’s knowledge, motivation, and skills affect impressions of communication competence along two dimensions: effectiveness and appropriateness.
According to the relational model of competence, the communicative efforts of guides are more likely to be perceived by clients as appropriate and effective, and are more likely to result in the achievement of outcomes if the guide is perceived as being: (1) motivated to interact with clients during a trip, (2) knowledgeable about how to communicate with their clients, and (3) skilled in behaving in these contexts.

Communication competence is not always measured by way of perceptions of other persons. Self reports and third party observation are also used. The reference point from which the components of competence are measured should be determined by the research questions asked. In subsequent studies on competent communication of guides, the guide’s perceptions of themselves may be important but in order to understand how effective and appropriate their communication is in the eyes of the customers, it is the customers’ perceptions that must be measured.

To understand what customers perceive guides’ motivation, knowledge, skills, and overall competence to be is as important as the actual level of these constructs that the guide would report. The impression a customer has of their guide may largely determine the extent to which guides are viewed as competent and subsequently how well any planned objective for the interaction is achieved.

Communication competence is contextual and will vary by situation (Spitzberg & Cupach, 1984). For example, although we may have an understanding of what competence looks like in a traditional classroom setting (Rubin, 1988), we do not yet understand what competence looks like in a commercially guided context. Understanding the relationships among the components of communication competence and allowing for measurement of what makes a guide a competent communicator would
help fill the informational gap that currently exists. The studies referenced earlier have shown us that information given by guides helps to educate visitors about resource impacts but they have not helped us to understand specifically how guides can better achieve this. An understanding of the knowledge, motivation, and skills of guides that lead to perceptions of competence and subsequently education about resource impacts would ensure that guides are helping managers preserve and protect the areas in which they are guiding. Chapter two will review the relevant literature on this topic and present the conceptual framework on which this study will be based.

**Problem Definition**

Studies have shown that guided trips involving an educational component can result in positive outcomes but it is the specific characteristics of the communication events between guides and clients that enhance or detract from the ability to achieve positive outcomes that we do not understand. The likelihood of a positive outcome is increased greatly if the guide is perceived as a competent communicator. This study, using the framework of relational competence, examines what predicts guided customers’ perceptions of the communication competence of their guides.

The framework of relational communication competence is one that could provide an understanding of the communicative relationship of guides and their customers, but this framework has not been applied to the recreation guide arena thus far. Due to the highly contextual nature of relational competence, it is necessary to adapt the scales used in studies of other types of communication situations to measure the components of competence with these previous studies serving as a guide in this process.
Problem Statement

How can we measure the components of the model of relational competence in a valid and reliable manner in the guided nature based tourism context and will this model explain competence in an effective and efficient manner in this context?

Goals

1. To create scales to measure components of communicative competence in a nature-based tourism guided context. To test these scales for reliability and validity in measuring customer perceptions of their guides’ knowledge, motivation to communicate, and communicative skills portrayed.

2. To create a valid and reliable scale to measure the competence level of guides as perceived by customers.

3. To understand how the perception of guide communication competence is affected by the elements (perceived knowledge of guides, motivation of guides, and skills portrayed by guides) of the model of relational competence. Specifically, this portion of the study would examine the extent to which perceived competence is affected more by cognitive, behavioral, or motivational factors in the guided nature based tourism context.

4. To determine if other characteristics of customers affect their perception of their guide’s competence.

Research Questions

1. Are the scales (See Appendix B) that measure visitors’ perceptions of guides’ knowledge, motivation, skills, and competence valid and reliable?

2. Are visitor perceptions of guides motivation, knowledge, and skills significant in predicting customers perceptions of their guide’s communication competence?
3. Which elements of the relational model of communication competence (perceptions of guide knowledge, motivation of guides to communicate, and skills portrayed by guides in a communicative event) is the strongest predictor of the competence level perceived by clients in the guided nature based context?

4. Do characteristics of clients (age, gender, number of previous guided experiences) explain any additional variance in this model?

5. Are there significant differences in perceived motivation, knowledge, skills, and perceived competence between guides in this sample?

This research will use traditional psychometric logic to measure the components of this model in this context. According to many authors (Churchill 1979; DeVellis 1991; Nunnally 1978; Peterson 2000), there are seven stages in scale development: (1) determine what to measure, (2) generate items to measure the construct of interest, (3) develop the final list of items and determine the type of rating scale, (4) purify the measure (checking reliability and validity), (5) replicate the study, (6) refine the scale with a new sample (reassessing reliability and validity of the scale via confirmatory factor analyses), and (7) establish norms (developing standards and norms for decision makers). This research will use the suggested scale development procedure as a guideline throughout and will fulfill the process through step four.
Chapter 2: Literature Review

In order to understand the communication competence of customers in a nature-based tourism context, it is necessary to look back at previous research in recreation, tourism, and communication. The first section of this literature review will discuss communication in nature-based tourism. The second section will review the research that has been done on guides and communication. Finally, past research on communication competence will be discussed.

Communication and Nature-Based Tourism

Research has traditionally been beneficial in informing managers of the most effective ways of communicating with visitors. A number of studies have looked at indirect management techniques, such as information and education (Vander Stoep & Roggenbuck, 1993). These studies have been aimed at understanding three main aspects of these techniques: message channel, message/content/type, and visitor characteristics and social context. Studies on message channel (Washburn & Cole, 1983; Martin & Taylor, 1981; Schomaker, 1975; Lime & Bailey, 1977; Canon et al., 1979; Lucas 1981; Roggenbuck & Berrier, 1982; Krumpe & Brown, 1982; Widner & Roggenbuck, 1996; Roggenbuck et al., 1982) have shown that personal contact, or face-to-face contact, with recreationists is perceived by resource managers in various agencies to be the most effective means for successful communication with park and backcountry visitors.

Interpretation is a method of face-to-face communication that is frequently used to communicate with visitors. The concept of interpretation was born in the National Park Service. In the early years of the National Park Service, the goals of interpretation included providing information, conveying the magnificence of a place, passing on the
legacy of the place, inspiring visitors, and finally to convince them of the need to protect park lands (Pond, 1993).

The publication of Tilden’s *Interpreting our Heritage* in 1957 sparked the beginning of the field of interpretation. Tilden defined interpretation as “an educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual knowledge” (Pond, 1993:71-72). Tilden emphasizes that one of the most important principles, of which he developed six, was that interpretation is not only information, but also revelation based on information. This is one thing that distinguishes interpretation from conventional education and instruction. Although the terms are often used interchangeably in the field of ecotourism, this distinction between interpretation and education is useful in that they are two different ways of communicating. While education is a more formalized, usually directed toward a captive audience, interpretation aims to capture the attention of an audience that is there voluntarily and may leave at any time (Wearing & Neil, 1999). Therefore, education develops facilities and programs specifically designed for the captive audience.

Orams (1997) argues that interpretation should be provocative and that it should reveal relationships and meanings of the natural environment. Similarly, Stewart et al. (1998), believe that interpretation “stimulates, facilitates and extends people’s understanding so that empathy and concern towards conservation and landscapes can be developed, prompting more responsible behavior.” Others have said that interpretation is simply a link between the visitor and the area’s resources (Sharpe, 1982). Armstrong and Weiler (2002) define interpretation in ecotourism as an educational activity that tries to
develop intellectual and emotional connections between the visitor and the natural and cultural environment. Similarities in all the conceptions do exist in that they all emphasize a connection and an understanding of the environment. Not all conceptualizations, however, include the cultural environment. The understanding and conservation of the cultural environment has been stressed as a component of ecotourism but it may be that interpretation is not the tool to accomplish it.

Interpretation, as a management tool, has many advantages over other methods of controlling visitor behavior, such as regulations and restrictions. These other methods do not necessarily change visitor attitudes or their concurrent behavior (Orams, 1994). In many cases, restrictions can interfere with ecotourism experiences. Furthermore, while regulations work, they are only effective to the extent that the personnel and infrastructure are available to enforce them. In contrast, interpretation offers an enhanced experience within the bounds of visitor education. Interpretation works with people, as opposed to the other methods, which work against them (Wearing & Neil, 1999).

The goals of interpretation differ depending on the area and type of tourism in which it is used. Interpretation in the National Park Service aims to assist visitors in developing a keener awareness, appreciation and understanding of the area they are visiting, to accomplish management goals by encouraging thoughtful use and reasonable behavior that minimizes impacts on the environment, and to promote public understanding of agency goals and objectives (Pond, 1993: 73). The goals of interpretation in ecotourism are not as structured but are summed up by Wearing and Neil (1999) as influencing “a visitor’s cognitive and emotional state in order to raise awareness, enhance understanding, and clarify or enlarge each participant’s perspective
and attitude” (Wearing & Neil, 1999:57). Upon examining these two sets of goals, one can see some inherent differences. In the National Park Service there is an addition of the understanding of agency goals and objectives. The goals may be similar to those of ecotourism in that the desired outcome is appreciation, understanding, and conservation, however, in ecotourism the way in which this will occur is explicated, through a change in perspectives and attitudes. The goals of interpretation for ecotourism are not very specific. They are general to pertain to the diversity of ecotourism ventures. Another reason for this generality is that ecotourism aims to benefit both the biological environment as well as the cultural environment. The techniques used by ecotours will differ depending on which of these is the focus.

Face-to-face interpretation is considered to be one of the most powerful and worthwhile interpretive techniques available. This type of interpretation is dynamic and can be altered to fit certain types of visitors. The guide can adapt his/her agenda depending on the composition of the group at hand. Another benefit of guiding as a form of interpretation is the control of visitors. On a guided trip where the visitors go and what they do is controlled by the guide. This is not the only purpose of the guide in ecotourism. Guides play certain roles in the context of a guided tour.

The difference between interpretation and guiding is that the work of those who call themselves “interpreters” occurs solely at one site. They remain in one place as different groups of visitors “visit” them per se. Those that consider themselves “guides” travel with a group to different sites and often accompany them to meals and hotels. A great deal more time is spent with the visitor in guiding than it is in interpretation. This
allows for a greater degree of influence of the guide on the client. Relationships may even be built between the guide and the client (Arnold & Price, 1993).

**Guides and Communication**

The antecedents of the modern tour guide are numerous and varied, reaching far back into mythology, allegoric literature, history, and geographic exploration. The historical origins of the modern tourist guide date from the 17th and 18th centuries. Cohen (1985) states that throughout history, guides have played two distinct roles, the pathfinder and the mentor.

Originally, pathfinders were local people who had no training but who knew their native land. It is still possible to hire local youths to guide in some remote areas of the world, such as in the hill tribe villages of Northern Thailand. Pathfinding can now be equated to specialized guides, such as safari guides and hunting guides. The historical role of the guide as a mentor is much more complicated in its origin. Great allegorical journeys in Western Literature are conducted by mentors who guide the hero in both a spiritual and geographic sense (Cohen, 1985: 7). Today, we can see this role most prominently in guides who take their clients to areas of different cultures and aid them in transcending to new spiritual levels. The tour guide of today possesses and expands on both of these roles, the pathfinder and the mentor.

Although the literature on this topic is limited, the evolving nature of the guide is reflected in the studies that have been conducted (Cohen, 1985: 9). There is no specific definition of a guide, but many are put forth by different sources and organizations. The Professional Tour Guide Association of San Antonio defines a guide as “a person with an effective combination of enthusiasm, knowledge, personality qualities and high standards
of conduct and ethics who leads groups to the important sites (in our city) while providing interpretation and commentary.” This definition is modern and reflects the many roles a guide is expected to play today. The definition, however, does not encompass the full role of guides in all circumstances. As ecotourism increases in popularity (Weiler, 1993), the word “environment” and the concept of being a steward of conservation are finding their way into the definitions of a guide (Ap, 2001: 551). Other more versatile definitions of guides appear in the literature on nature-based tourism. One of these definitions is simply someone who acts as an interpreter and educator in their respective area (Campbell, 1997: 75).

Considering the complex and varying definitions of guides, the roles that they play in the tour must be equally complex. According to Cohen (1985), the historical roles of pathfinder and mentor have evolved into two conceptualizations of the role of the tourist guide: as a leader and as a mediator. Each of these “spheres”, leadership and mediatory, consists of an outer and an inner-directed role. The outer-directed roles are those that involve relations between the group and the host environment; the inner-directed components involve the inner workings of the group itself. Most of the activities of a guide can be considered under one of the components in this scheme.

Within the leadership sphere, there are two components, instrumental and social, a distinction that is well-established in general sociological theory (Cohen, 1985). The first major component in the leadership sphere is the instrumental component. This refers to the guide’s ability to make the trip or tour a social experience. This role is further broken down into components of direction, access, and control. The direction component refers to the guide’s responsibility to find and choose the appropriate direction of the trip,
increasing the likelihood that the clients will experience and see all of the interesting aspects of a given location. Access refers to the guide’s ability to take people to locations that they would be unable to travel if not with an organized group. Control refers to the guide’s responsibility of keeping the group safe, secure, and comfortable.

According to Cohen (1985), the next component of the leadership sphere, the social component, is the part of the guide’s leadership role that relates to his/her responsibility for the cohesion and morale of the group. This component is also divided into several elements, tension-management, integration, morale, and animation. In the tension-management realm, the guide is responsible for preventing tension between members of the group. In integration, the guide is expected to be an “instigator of sociability” and “provides integration” to the group (Schmidt, 1979: 454). The morale of the group is also the responsibility of the guide. The guide is expected to keep the group in high spirits in all conditions. The animation role refers to the guide’s responsibility for all members of a group to engage in the activities of the trip despite their possible reservations. Guides may have to instill confidence and courage in members of the group in order to achieve this.

The mediatory sphere is comprised of the interaction and communicative components. The interaction component concerns the guide’s ability to act as a middleperson between their party and the host population, sites, and touristic facilities. This component is divided into two elements: representation and organization. In the representation element, guides makes certain that the people in their party are at ease in the setting and that they respect the area that they are visiting. The organization element refers to the responsibility of the guide to plan meals, lodging, and all other comforts.
The last component is the communicative component of the mediatory sphere. According to Cohen (1985), this is the principal component of the guide’s role. This role exemplifies the need for the guide to be a teacher or an instructor to clients. The communicative component consists of four elements: selection, information, interpretation, and fabrication. The selection element refers to the guide’s responsibility to point out the objects of interest that are worthy of the client’s attention. Guides may choose the noteworthy objects in accordance with their personal preference and taste, their training, the instructions from their employer or from the tourist authorities, or the interests of the party. The resulting information may include aspects of safety and learning skills that are necessary to complete the trip. The guide may also choose to convey positive messages through the communicative role. These messages may focus on appreciating nature and confidence building, for example. The information element refers to the fact that the guide is expected to disseminate correct information about the area of interest. The element of interpretation carries this role one-step further and requires that the guide make the information understandable to the tourist. This element also requires the guide to interpret the host environment to the clients. They may not feel immediately comfortable in their surroundings and it is the responsibility of the guide to buffer this. The last element is one that is often prevalent in untrained and unregulated tour guides. This element is when the guide fabricates information to make the trip more exciting or interesting. This aspect may cause intervention by a regulating authority.

Considering these diverse roles, it is apparent that guides are directly responsible for the overall success or failure of a trip. Guides have the ability to turn the tourist’s visit from a tour into an experience. In other words, people can either come away from a
trip with only pictures and stories, or they can have achieved some higher state of experience from their trip. Clients are paying for their services and deserve a satisfying experience. Guides strongly shape the impression that the client has of the destination (Ap, 2001: 551). The role of the guide varies with the type of trip, but Cohen’s general model gives an idea of the complexity of being a guide.

The importance of quality communication in guiding has been demonstrated in various studies (Armstrong & Weiler, 2002; Haig & McIntyre, 2002; Ballantyne & Hughes, 2001; Ham & Weiler, 2003; Holloway, 1981; Orams, 1994; Orams, 1995; Oschell, 2004; Pearce, 1984; Weiler & Davis, 1993; Yu et al., 2001). Clients of nature-based tours want guides that can communicate. Also implicit in the results of many studies is that clients want their guides to be competent.

Pearce (1984) explored the social psychological aspects of tourist-guide interaction to further understand issues associated with guided tours. He focused on developing a framework to explain the quality of social interactions, the meanings people attribute to their behavior and experience, and the cognitive that which accompany action on guided tours. His framework centered around eight features of social situations: goals, rules, roles, repertoire of elements, sequences, concepts and cognitive structures, environmental setting, and language and speech. He then used these eight components to analyze tourist-guide interactions. Pearce (1984:135) emphasizes that problems with communication can “ruin an entire holiday experience” and that communication difficulties led to dissatisfaction. This study reminds us of the importance of communication in social interactions.
Studies have demonstrated that communication is an integral component of the roles and responsibilities of guides. Ballantyne and Hughes (2001) conducted a study in Queensland and Western Australia that surveyed guides to investigate their perceptions of the roles and responsibilities that they hold. This study found that guides place a great deal of emphasis on their role as information providers. This included educating and informing visitors, providing correct information, and giving as much and as interesting information as possible. A critical function of guiding that was identified in their study was audience awareness. Within this function, it was identified as important for guides to: “respect visitors from other cultures, speak clearly and at an appropriate speed, consider visitor comfort, and to tailor information to the specific audience.” Interestingly, these are all qualities mentioned in the literature on competent communication (Spitzberg & Cupach, 1984).

Haig and McIntyre (2002) examined the client’s perceptions of the importance of the roles of guides and the advantages sought by clients to guided ecotours in Australia. The clients felt that the most important role of the guide was providing understanding and appreciation of the environment. Also examined in this study were the advantages that clients felt they gained by participating in a guided tour. The second most important advantage to clients, behind gaining access to special places, was learning about the environment from their guide. This study further exemplifies the importance of the communicative aspect of guiding.

Looking more specifically at the guide/client communication, Armstrong and Weiler (2002) conducted a study with the aim of analyzing messages delivered by tour operators to visitors of Victoria, Australia. Armstrong and Weiler (2002) state that
personal interpretation enhances the quality of visitor’s experience but that there is a lack of research into the effectiveness of interpretive efforts. This study found that the most frequently used messages were those concerned with minimizing impacts of visitors on the host environment and these messages were well received by visitors. They also argue that the results of this study imply that successful interpretation may lead to more environmentally appreciative attitudes and ultimately behavior.

Ham and Weiler (2003) have shown that clients in their study wanted guides to exhibit “enjoyable communication.” Clients in this study specifically reported that they wanted a guide that spoke “loudly, clearly, and slowly” and wanted a guide that had “enjoyable style” and a “varied and interesting delivery.” These descriptors qualify as communication skills as they are used in communication competence constructs (Spitzberg & Cupach, 1984). They were also expected to be “enthusiastic,” “personable,” and “adaptable.” The Ham and Weiler (2003) study also showed that guides were expected to be knowledgeable, also a component of models of competence.

Guided tours often involve people of different ethnic and cultural backgrounds. Yu et al. (2001) explored the concept of intercultural communication and mediation in Australian guided tours with Chinese tourists. According to Yu et al. (2001), most mainland Chinese tourists travel to Australia as part of tour groups and rely on their tour guides to decrease language and cultural obstacles. In order to serve the needs of these tourists, tour operators almost exclusively employ guides who recently immigrated to Australia but were born and raised in China. They note that anecdotal evidence suggests that some of these guides have limited English language proficiency and low levels of knowledge regarding the geography, history, and culture of Australia. This may inhibit
the “high quality intercultural experience that their Chinese visitors are seeking.” (pg. 78)

The framework presented by Yu et al. (2001) suggests that these guides may be lacking in intercultural competence, which they argue consists of a guide’s knowledge, attitudes, and most importantly their interpersonal communication skills. Their study presents an important component of competence, which is the adaptability of communication to culturally diverse groups.

Another example of the application of intercultural communication competence is the study by LeClerc and Martin (2004) which sought to understand the communication competence of tour guides to three different nationality groups: French, German, and American tourists. Results of their study showed that there are significant differences in the perceptions of competence between nationalities. This underscores the importance of understanding varying perceptions of competence. This study also illustrates the usefulness of this concept in the tourism arena.

Ryan and Dewar (1995) looked at the communication process between interpreters and visitors in a heritage tourism setting and sought to identify if communication competency could be tested in this setting, and whether or not an interpreter’s communication competency was correlated with what the visitor learned. The model of competence used in this study is not clear but a modified Communication Competency Scale (Spitzberg & Hurt, 1987) was used to measure competence. The results of their study did not show strong correlations between competence scores and learning by visitors, but the use of the competency scale was considered successful and it was suggested that it be used in subsequent studies.
Communication Competence

The concept of communication competence is widely diversified with roots in both the trait and state perspectives of behavior. An historical approach to competence would argue that the ability of a person to communicate competently is a trait of their personality and that people possess this to a certain degree without much variation with different situations. In contrast to this viewpoint, a state perspective proposes that the ability to communicate is a behavior that is influenced by the situational elements of the communication event. This perspective also holds that this ability can fluctuate over time and according to the situation. Models that embrace both viewpoints are considered hybrid models (Spitzberg & Cupach, 1984).

Communication competence has been comprehensively researched and practically applied for approximately forty years (Spitzberg & Cupach, 1984). Although widely studied, researchers have yet to agree on a consistent definition of the construct of competence. Many issues within the study of competence have limited the ability of researchers to come to consensus. One of these issues is the lack of an agreed upon definition. The definitions that do exist often do not specify the components of competence and “leave undefined certain crucial concepts which are necessary to understand the nature of communication competence” (Cooley & Roach, 1984). Two differing perspectives can be found in the definitions of competence in the literature: cognitive and behavioral (Wiemann, 1980). The cognitive class of definitions of competence conceives of it as being a “mental phenomenon distinct and separated from behavior” (Wiemann & Backlund, 1980: 187). Chomsky (1965) is most widely known for his cognitive view of competence. Chomsky concentrated on linguistic knowledge and avoided factors of performance or behavior. For Chomsky and others who conceive
of competence in this way, the goal of competence theory would be the discovery of the
cognitive structure and mental representations that underlie interactions as opposed to the
behaviors that occur within them.

Much more widely used, the behavioral perspective conceives of competence in
the most basic sense as effective behavior (Wiemann & Backlund, 1980). In the early
1970’s, Hymes criticized Chomsky’s conceptualizations of competence for failing to
account for any actual language behavior and omitting social and cultural factors (Cooley
“dependent on both (tacit) knowledge and (ability for) use.”

Wiemann and Backlund (1980:188) argue that the cognitive and behavioral
aspects of competence must be combined and defined the construct as: “The ability of an
interactant to choose among available communicative behavior in order that he (she) may
successfully accomplish his (her) own interpersonal goals during an encounter.”

Although there is not one accepted way of defining competence, the cognitive/behavioral
hybrid definitions are the most widely accepted. A general, concise, and often used
definition of communication competence is “the knowledge of appropriate
communication patterns in a given situation and the ability to use the knowledge”
(Cooley & Roach, 1984).

Criticisms of early work in communication competence led to the call for a
theoretical foundation that allows for general and specific explanation (Cooley & Roach,
1984). Instructional, intercultural, and health communication have all benefited from the
series of model building relevant to competence (Wiemann et al., 1997). However,
theory construction in this area has not been diverse or adequate. “Typical research in the
area has placed a focus on the skills or dispositions of the individual, a reductionist approach which cannot take into account the individual’s dynamic interaction with contextual factors” Wiemann et al., 1997:26).

Seven unique competence models have emerged in the literature, including fundamental competence, social competence, interpersonal competence, linguistic competence, communicative competence, social skills, and relational competence (Spitzberg & Cupach, 1984). These models have been differentiated by grouping them according to the degree to which they focus on outcomes of interactions versus the actual messages that are produced in an interaction. Fundamental competence, social competence, and interpersonal competence constructs focus on the outcomes of interaction. In these constructs, the defining criterion of possessing competence is whether some end state is successfully attained. The constructs of linguistic and communicative competence stress the message itself and not the outcome. There is a third category, hybrid constructs of relational and social skills models that “attempt to explore the functional association of message behavior with the attainment of relatively desired outcomes” (Spitzberg & Cupach, 1984).

Fundamental competence is an outcome-focused approach to competence in communication and work in this area has focused primarily on the relationship between competence and mental health. According to Spitzberg and Cupach (1984), fundamental competence is considered to be an individual’s ability to adapt effectively to the surrounding environment over time to achieve outcomes. Within this construct, competence is characterized by the general fitness of someone to adapt and interact successfully in his or her environment. The idea of adaptability is at the core of most
models of competence and considering its importance in this construct, fundamental competence serves as a conceptual building block for other more elaborate competence models. Fundamental competence theorists confine their analyses to psychological issues and are concerned with the cognitive capacities leading to personal effectiveness and the developmental processes that lead to or detract from general adaptability.

Social competence is also an outcome focused construct and is mostly concerned with identifying the specific enduring characteristics or traits that facilitate competent interactions (Spitzberg & Cupach, 1984). Traits that have been identified as those that contribute to competence are nonverbal sensitivity, nonverbal expressiveness, extraversion, self-monitoring, social anxiety, assertiveness, locus of control, empathy, self-congruence, unconditional regard, androgyny, and attentiveness. Spitzberg and Cupach (1984:43) state that “collectively, these studies have provided a varied and inconsistent picture of the traits underlying competent interaction.” This is of little help in theoretical development. It has been suggested that a more useful approach would be to examine traits that are more broad and encompass many of the more specific traits mentioned above. The four broad areas that have been identified by Spitzberg and Cupach (1984) as bearing a strong conceptual and empirical relation to competent interaction are cognitive complexity, empathy, role taking, and interaction management. Although these broad traits help to explain competence, this model does not provide the full picture of communication competence.

The social skills model is a hybrid construct that looks at not only the traits but also the molecular behaviors that are representative of these traits. The intent of most of the research subscribing to this model are to either identify which behaviors differentiate
competent groups from incompetent ones or to find out what behaviors are related to third-party perceptions of competence (Spitzberg & Cupach, 1984). This approach addresses the links between communication processes and functional outcomes, but ignores the cognitive precursors to competent interaction (Argyle, 1969). This model is normative and seeks to identify socially acceptable communicative behaviors.

Interpersonal competence is basically concerned with the ability of communicators to accomplish tasks successfully. The concepts found in the literature are from both the fundamental competence models and the social competence models (Spitzberg & Cupach, 1984). Similar to fundamental competence, interpersonal competence concerns having control over the environment to achieve objectives and similar to social competence, this model focuses on certain abilities that enhance success in communicative interactions.

In contrast to the models just discussed, linguistic competence is a message-focused approach and is interested in the knowledge of rules underlying the use of language. This model is interested in the ideal speaker-hearer’s intrinsic competence or his or her intuitive knowledge of language (Spitzberg & Cupach, 1984). There are differing models within the broad construct of linguistic competence but none consider the outcomes of communication.

Communicative competence is also a message-focused approach. This form of competence is broader than linguistic competence and is considered to be the ability to adapt messages appropriately to the context of the interaction. The difference between linguistic and communicative competence goes back to the debate discussed in the beginning of this chapter that centers on the distinction between knowledge or cognition
and behavior or performance (Wieman, 1977). Linguistic competence is concerned with only the former whereas communicative competence considers both as well as the context in which the communication occurs.

The distinction between the models of competence discussed above has been expressed as outcome focused versus message focused, but it can be thought of in a different way that makes the final competence construct discussed here, relational competence, stand out from the others. Fundamental competence, social competence, and interpersonal competence are concerned with the effectiveness of communication or as stated before, successful outcomes. Linguistic competence and communicative competence are concerned with the appropriateness of language use in communication or as stated before, the messages. Relational competence, like the hybrid social skills model, looks at both the appropriateness and effectiveness of communication interactions. Unlike the social skills model, relational competence is not normative. It does not attempt to identify socially accepted behaviors in certain common situations but instead focuses on the perceptions of competence by the participants in a communicative interaction (Spitzberg & Cupach, 1984).

There are many models of competence but the hybrid, relational model of competence is the most holistic and inclusive. The nature of the relational model allows for a deeper understanding of communicative interactions. The following chapter explains the model as the foundation for this study.
Chapter 3: Conceptual Foundation

The purpose of the chapter is to explain the conceptual foundation of this research, relational competence. The model will be described and the seven assumptions will be outlined. Lastly, an explanation of why this model was used to understand communication in nature based guiding is given.

Relational competence is defined as the extent to which communicative objectives are fulfilled through interpersonally appropriate interactions. In the relational model, competent communication is an interpersonal process, where through interaction, impressions are shaped and satisfactory outcomes are developed (Spitzberg & Hecht, 1984).

A model of relational competence was developed by Spitzberg (1981) and is based on constructs of interpersonal interaction. This model considers that the perception of a person’s knowledge, motivation, and skills affect impressions of communication competence as described by two dimensions: effectiveness and appropriateness. Relational competence is best explained by laying out the seven assumptions of the framework. The first assumption of the relational model is that communication competence is perceived appropriateness and effectiveness.

 Appropriateness refers to behavior that is socially sanctioned or behavior that does not violate the social norms of the interactants involved (Spitzberg & Cupach, 1984). Effectiveness is a common criterion by which communication is judged. Effectiveness is often defined as the achievement of goals or outcomes or the satisfaction of interactants. An important facet of relational competence is that appropriateness and effectiveness are separate constructs and both need to be achieved for judgments of competence. For instance, a guide may be appropriate by making his or her
communication sensitive to the different cultural backgrounds in the group but may be ineffective because they talked so fast that people did not understand them and therefore did not learn the important facts about the area.

The second assumption of this model is that competence is contextual. Governing communicative interactions are rules, norms, and expectations and these will differ depending on many factors, such as, the people involved and the location where the interaction takes place. The perception of competence will also differ when the context varies. Considering this, when trying to apprehend competence, one must consider the context for true understanding. The appropriateness of behavior can only be understood within the mutually defined standards of a specific relationship and situation. In this study, context is a guided rafting trip. Guiding is especially contextual. The composition of groups and the locations to which they travel are examples of how context is a factor in nature-based guiding. Some behaviors may be appropriate across contexts but this may not be the case always.

The importance of context in nature-based guiding can be seen in the literature. Yu et al. (2001) stress the importance of guides considering cultural differences when communicating. Ballantyne and Hughes (2001) report that guides consider the race and sex of customers when communicating, indicating that guides adapt to different contexts. The fact that the model of relational competence considers context makes it ideal for use in understanding the competence of nature-based guides.

The third assumption of the relational competence model is that competence is a matter of degree. An individual is not simply competent or incompetent. Because of the multiple dimensions of competence, as well as, the contextual nature of competence, an
individual may be competent in one regard but incompetent in all of the others thus resulting in perceptions of moderate competence.

In the relational model of competence, judgments of competence are based on both molar and molecular perceptions. To assess the competence of an individual, both specific, molecular behaviors (for example, he/she maintained eye contact) and more general, molar impressions (for example, he/she was enjoyable to listen to) need to be considered (Spitzberg & Cupach, 1984). This gives a more complete picture of an individual’s competence in communicating.

The fourth assumption of this model is that competence is functional. Communication exists to accomplish things and competence in communicating increases the chances of achieving goals related to communication. When measuring competence, the functional outcomes of communication must be considered (Spitzberg & Cupach, 1984). The importance of this assumption is in the distinction between examining only the process of communication and looking at the process and the outcomes, a more desirable and holistic view of competence.

The fifth assumption of this model is that competence is an interdependent process. The main idea of this assumption is that communicative interactions are relationships where the impression of the other person/people is what matters. The implications of this assumption are that in measuring competence, a person’s self-reported competence is not of interest. It is the impression of the other individual in the interaction that should be considered. Another implication of this is that in the assessment of the outcomes of an interaction the competence of both interactants needs to
be assessed. The competence of both individuals will affect the achievement of outcomes or interpersonal objectives.

The last assumption of this model is that competence is an interpersonal impression. Competence is not inherent in an individual and is not just a set of personality traits that a person possesses. Competence is an impression that a person may hold of themselves or others (Spitzberg & Cupach, 1984).

Relational competence has been used in a variety of disciplines, from social psychology to business and marketing, and in a variety of contexts, from relationship satisfaction to conflict strategies. People must display competence in order to achieve interpersonal objectives, such as, disseminating information, gaining compliance, or mediating conflict see Spitzberg and Cupach, 1984 for review. In the context of commercial guiding, guides must display competence to successfully inform and educate their clients, influence clients to behave in an environmentally friendly manner, and potentially mediate conflicts that may arise among members of touring groups or between guides and clients.

The first component of this framework (see Fig. 1), motivation, or the inclination to use communication appropriately and effectively, is a trait-oriented construct (Rubin & Feezel, 1986). Motivation is viewed here as a function of perceived rewards and costs in an interpersonal interaction. In a general sense, an individual’s perceived desire to converse would indicate his or her relative motivation. Five underlying constructs that apply to motivation in this context are: potential rewards and costs of communication, other-orientation, anxiety, and involvement (Spitzberg & Hecht, 1984). Guides must be motivated to competently communicate with their clients. Characteristics of guide’s
communication that may be representative of their motivation can be found in the tourism literature (Ballantyne & Hughes, 2001; Ham & Weiler, 2003; Hockings, 2004). These studies helped refine the questionnaire items for this research.

In the relational model, knowledge represents an individual’s awareness of the routines, cues, rules, strategies, and behavioral patterns of conversationally competent behavior (Spitzberg & Cupach, 1984). The more knowledgeable a person is about the context of the situation, the individuals involved, and the topics discussed, the more likely the person is to have the ability to act competently. Pearce (1984) confirms that in the tourist-guide interaction there exist rules for interaction. According to the relational model of competence, the guide would need to be aware of in order to be perceived as competent. A guide would also need to possess knowledge of their clients and the environment in which the trip takes place.

Skills are another component of competence in the relational model. Although an individual may possess the desire to communicate and may know how to communicate, they may not possess the ability or skills to communicate competently. Skills are defined according to Spitzberg and Hecht (1984) as the successful performance of a behavior related to communication, such as, speaking. Five skill areas that are relevant to communication are: anxiety, immediacy, expressiveness, interaction management, and other orientation. The questionnaire items intended to measure skills came from these five skill areas.

Issues of anxiety have differentiated competent and incompetent subjects in numerous studies (Spitzberg & Hecht, 1984). Social anxiety plagues certain individuals and is exhibited by excessive sweating, shakiness, and vocal shakiness. Immediacy is a
nonverbal skill relevant to competence. This construct includes approach behaviors and signal interest, intimacy, and attentiveness. Immediacy may be signaled by smiling, nodding, eye contact, and gesturing.

Another skill relevant to competent communication is expressiveness which is defined as the degree to which individuals seem to be involved in both verbal and nonverbal behaviors. Examples of a high degree of expressiveness include: appropriate affect, appropriate volume, laughing and smiling. The fourth construct of the skills domain is interaction management. Interaction management refers to the degree to which the conversational setting and procedure are satisfactory for all interactants. The final component of the skills domain is other orientation. This refers to an individual’s tendency to consider the other interactant in the conversation. Examples of this include: listening well and providing feedback during the conversation. Examples of desired skills of guides, such as, appearing comfortable, speaking clearly and at an appropriate speed, and engaging clients can be found in the literature (Ballantyne & Hughes, 2001).

The final aspect of the relational framework is outcomes. An individual’s motivation, skills, and knowledge combine to leave an impression of appropriateness and effectiveness and will result in either the achievement of goals or outcomes or the failure to achieve outcomes. A common outcome of appropriate and effective communication is satisfaction. Satisfaction is a critical outcome for nature-based tourism guides as they are being paid to deliver it. Dissatisfaction in guided trips does result from poor communication (Pearce, 1984).

This study complements previous research and fills an information gap in the current literature by operationalizing the framework of relational competence to design a
framework to measure the perceived competence of rafting guides in communicating with their customers. Studies conducted previously have looked at the content of messages and the importance of communication on guided trips but none have looked at the cognitive (knowledge), affective (motivation), and behavioral (skills) components of guide competence. This study will allow for an understanding of what guides need to have and how they must behave in order for their communicative efforts to be successful. It is vital for guide communication to be effective due to the intense interaction that they have with visitors.

Competence of the guide was rated by each customer, and this perception of competence is expected to vary among clients. Two other potential choices could have been made when measuring the competence of guides. The competence of the guide could be self-reported or the researcher could assess the competence of the guide. Neither of these is appropriate for this study. A self-report of competence was not used for two reasons. There is potential bias introduced in this scenario. Guides may have a distorted view of how competent their communication may be. Another, more conceptually based reason for having clients rate guide’s competence is based on the model of relational competence. Guides and clients are in a relationship and in that relationship competence is an interpersonal impression. It is the impression that the client has of the guide in the relationship that they have established that is important. It is for this same reason that the researcher did not assess competence of the guide. The researcher is not a client and is not in the same situation as the client.

In this study, the outcome portion of the model is represented by the level of guide competence perceived by customers. Perceived competence is conceived of as
appropriateness and effectiveness of the guide’s communicative effort. In subsequent studies on the relational competence of guides, another more terminal outcome may be measured, like learning or satisfaction. The focus of this study is on designing valid and reliable instruments to measure the components of competence. Future research can use the instruments and results from this study.

**Why Communication Competence?**

Three models have evolved over the last century developed to understand the communication process: information transfer, communication as sharing meaning, and communication as persuasion. This research embraces the model of information transfer and examines the efficacy of this process.

Communication as shared meaning is another model that could have been used here to understand the communication process between guide and customer. The theory of coordinated management of meaning (CMM) is “the most comprehensive and codified theory of social construction” (Littlejohn, 2002). As a rule theory, CMM argues that people interpret and act on the foundation of rules. Constitutive rules and rules of meaning are used by communicators to interpret or understand an event or message while regulative rules are used to determine how to respond or behave in a communicative interaction. This theory has yet to be used to understand communication in recreation and tourism.

Communication as persuasion is another way that the communication process can be understood. This route to understanding communication has been used widely in the recreation and tourism setting. Persuasive communication “involves the use of verbal
messages to influence attitudes and behavior” (Manfredo, 1992: 2). The use of a model of persuasion was not considered here because it is argued that communication competence is a construct that first needs to be understood before persuasion can be examined. One cannot persuade if they are not first competent in their communication efforts.

The model of information transfer and more specifically the model of relational competence was chosen for this research because the success or failure of information transfer is considered a ground level need for communication. Persuasion or shared meaning cannot be achieved if first the communicators are incompetent. These other models are second level frameworks for the understanding of communication. Once competence is understood in this context, then more specific or higher order objectives of communication, like persuasion, can be understood. Focusing on persuasion, for example, would have narrowed the focus of this research to messages that were only meant to persuade visitors to change their attitudes or behaviors. This is not always the objective of educational programs in guided atmospheres. The objective may be merely to educate visitors about the area and it’s wildlife as one will see was the objective of the talk focused on in this research.

The Model

The model developed for testing in this research is presented in Figure 1. A distinction between past measurement models of competence and this current study is that while the guide’s motivations, knowledge, and skills precede the communication event this research seeks to measure visitor’s perceptions of the guide on these dimensions and assess to what extent these perceptions might be causal influences on the
visitors perception of the guides communication competence. Past communication research would suggest measuring the motivation and knowledge from the guide perspective however this presents methodological problems as there would be only a few guides but hundreds of customers. This would result in an unequal number of cases for the variables being asked from the guide perspective as opposed to the variables being asked from the customer perspective. Therefore, this model differs from traditional competence research.
Figure 1: Model of Relational Competence in the Context of Guided Rafting
Chapter 4: Methodology

The purpose of this chapter is to provide an overview of the research methodology used to address the research questions posed. This chapter will address instrument design, the resulting measures, the pilot test conducted, the populations and samples, the procedures followed for collection of data and preparation of data for analysis.

A review of the literature on measurement and scale development reveals various authors’ attempts to suggest a procedure for scale development (Churchill, 1979; Clark & Watson, 1995; DeVellis, 1991; Downing, 2003; Gerbing & Anderson, 1988; Worthington & Whittaker, 2003; Williams & Vaske, 2003). Using these suggested methods as a guide, a process was developed for the creation and testing of a scale to measure customer perceptions of their guide’s communicative motivation, knowledge, and skill. This dissertation takes this process through number six of the following procedure:

1. Identification of construct to measure
2. Generation of item pool
3. Review of items by experts
4. Administration of items to appropriate sample
5. Evaluation and purification of items
6. Assessment of reliability and validity of scales
7. Replication of the study
8. Refinement of the scale with a new sample; reassessing reliability and validity of the scale via confirmatory factor analyses
9. Establishment of norms (developing standards and norms for decision makers).
The first step in the process was to decide what construct was to be measured. Communicative competence, specifically the model of relational competence, is the focus of this research and the components of the model (Fig. 1) are the constructs to be measured. The second step in this process was to develop the items to measure the constructs.

**Instrument Design**

The first aspect of the methodology to be addressed is the design of the instruments used in this research. Two instruments were used with a brief questionnaire for guides and a questionnaire for customers. The items in the customer instrument were adapted from Spitzberg and Hurt (1987) and Spitzberg and Cupach (1984) studies, while the guide instrument was unique to this study.

**Generation of an Item Pool for the Customer Questionnaire**

Items were developed to represent each dimension of the model of relational competence (Figure 2). The first part of the questionnaire contained items to measure perceived motivation of the guide to communicate with the customer. The basis for these items was the pool of items developed by Spitzberg and Hurt (1987) to measure motivation to communicate. The original items were changed to reflect both the context of a nature based guided white water trip as well as the perspective from which the statements were being asked. The original instrument was asking from the speaker perspective asking about their own motivation where here the customer is being asked to rate their perception of the guide’s motivation.

The motivation items were built around five aspects of communicative motivation: desire to communicate, rewards of communication, costs of communication, involvement, and audience orientation. This portion of the questionnaire was in a 4 point
likert-type scale format and asked the guides to rate statements from -2 (Strongly disagree), -1 (Disagree), +1 (Agree) +2 (Strongly agree). A multi-point response scale was used due to the fact that motivation is not a clear cut, yes/no concept. Respondents needed to be able to rate their agreement/disagreement within a range. A four point scale was chosen because more points on the scale may require more thought than the customer would like to put into answering the questionnaire, thus possibly resulting in a refusal or incomplete questionnaire. No neutral point was included because customers were being asked to give an evaluation and a neutral response represents the absence of evaluation (See Appendix B).

Customers’ perceptions of their guide’s knowledge were also assessed with this questionnaire. The basis for these items was the Spitzberg and Hurt (1987) communicative knowledge scale. The knowledge component of competence refers to the possession of the information necessary to communicate competently with clients. The questionnaire items seek to tap aspects of communication routines, cues, and context. This was asked on a 4 point likert-type scale from +2 (strongly agree) to -2 (strongly disagree) using the same rationale as above.

Customer’s impressions of the communicative skills of their guide are based on the Spitzberg and Cupach (1984) communication competency skill assessment instrument. This was again asked on a scale to allow for a range of answers corresponding to varying degrees of the skill. The scale was a 4 point scale from +2 (Strongly agree) to -2 (Strongly disagree). Again no midpoint is included due to the statements being evaluative.
To measure customer perceptions of the overall communication competence displayed by their guide in the natural history talk, customers were asked to rate statements based on how much they agree or disagree. These items are based on the Cupach and Spitzberg (1981) questionnaire designed to measure perceived communication competence of another individual on two dimensions, appropriateness and effectiveness. These items were in a likert-type 4 point scale format from -2 (Strongly disagree) to +2 (Strongly agree) with no neutral point.

In the last section of this questionnaire, other questions that have potential effects on perceived competence are also asked (See Appendix B). This included customer age, gender, and number of previous guided trips. The first three variables have been found to influence perceptions of competence in other studies in the communication literature (Anderson, 1987). The number of guided trips that respondents had previously taken was not a variable that had been suggested in past literature. Due to the lack of studies of competence in the guided context, there was no previous observation or evidence that this variable would influence competence. However, the communication literature does suggest that experience in similar situations can influence perceptions of competence. This full questionnaire can be found in Appendix B.

**The Guide Questionnaire**

The purpose of the guide questionnaire was to gather information about the guide for informational purposes. Because of the discrepancy in sample sizes, one guide to many customers (10 or more), the information on guides cannot be used in further analyses. The questionnaire asks the guides their age, the number of years they have
been guiding rafting trips, and which if any communication related training they have received.

**Figure 2: Measures**

**Independent Variables**

**Communicative Motivation**

It appeared that my guide enjoyed talking to customers.
It seemed as if my guide enjoyed presenting information to his/her customers.
My guide seemed nervous.
My guide seemed relaxed.
It appeared that my guide had a positive effect on customers (e.g. they learned).
It seemed like customers listened to our guide.
I will remember the information my guide presented to me.
My guide helps protect the river by communicating with customers.
My guide helps protect customers by communicating with them.
My guide presented information in an enjoyable way.
My guide took his/her time talking with us.
My guide made an effort to get to know us.
It appears that my guide likes to teach customers about the river.
My guide seems to love his/her job.

**Communicative Knowledge**

My guide seemed knowledgeable about the topics he/she spoke about.
My guide organized his/her ideas.
My guide related information to customers.
My guide summarized material.
It appears that my guide has been well trained.
It appears that my guide is experienced in talking with large groups.
It does not seem like my guide has been trained to communicate with customers.
When my guide spoke to us about the river, the speech flowed well.
My guide used language that I could understand.
My guide encouraged people to ask questions.

**Communicative Skills**

My guide spoke too fast.
My guide spoke too loud.
My guide was difficult to understand.
My guide’s voice was shaky.
My guide was expressive.
My guide was enthusiastic.
My guide made eye contact with customers.
My guide asked questions of his/her customers.
My guide sounded confident.
My guide is personable.
Customer age and number of previous guided trips

**Dependent Variable**

**Perceptions of Communicative Competence**
My guide presented information that I consider to be important.
I enjoyed my interaction with my guide.
I felt that the material presented was appropriate.
My guide did not say anything offensive.
I learned something from my guide.
My guide ensured that everyone could hear.
I was able to understand everything my guide said.
The information my guide presented was interesting to me.

**Research Design**

Context is of critical importance to this research so the proposed study was conducted in the field. An experimental situation could have been developed in a laboratory setting but a great deal of information would be lost in trying to understand relational competence in a laboratory setting. People can be competent communicators in one setting and not in another. The guided trip presents a unique situation in which communication occurs. Money is exchanged for services making people’s expectations of quality communication higher than they would be in an ordinary conversation. The guide is a unique situation where he/she must present information in a way that is effective but also appropriate considering the audience is on vacation and expecting a pleasurable experience.

**The Population and the Sample**

This study draws from two populations: the guides of an anonymous rafting company (the company wished to remain anonymous for this study), and their August and September 2008 white water rafting customers. A rafting company was chosen for this research because rafting is a popular activity for nature based tourists. For instance,
in Montana in 2005, 124,000 people went on guided white water rafting trips. This represents 39% of all of the guiding that occurred in Montana in 2005 (Nickerson et al., 2007). Competent communication is of great importance on rafting trips where safety and river protection are of extreme importance. The data resulting from this study will inform decisions for the management of communication in any activity but rafting businesses stand to gain the most from this research.

The Pilot Test

The instruments and planned methods of questionnaire implementation were pilot tested with 14 white water rafting customers during the first week in August. Customers were given the questionnaire after the initial orientation talk. They were asked to point out any areas of confusion and to give input on the questions. There was no apprehension with the statements in the questionnaire but the planned methodology was of concern. Customers indicated that they felt they could not answer many of the questions after the brief orientation talk given by their guide. Admittedly, the orientation talk given by the guide was much shorter than anticipated from the discussion with the owner of the business.

The original plan was for the questionnaire to be administered immediately after the orientation talk to minimize the effects of any extraneous factors. It is important to reference a communicative event when measuring components of competence (Spitzberg and Hurt, 1987). There was a concern that if the questionnaire took place any later in the trip that perceptions of competence could be influenced by, for example, other customers’ impressions or non-related exchanges which customers may have had with their guide. It was the intention of this study to get a pure measure of perceived motivation, knowledge,
skills, and overall competence that had not been tainted by other factors for which no
control was possible. However, the pilot study indicated that the orientation was too brief
to allow for a meaningful assessment of the communication measures. Therefore a
modification to the original design was necessary. The next talk given by guides was in
the bus on the way to the launch point. This talk was approximately 30 minutes in length
and gave customers an overview of the natural history of the area in which they were
rafting. The questionnaire was implemented just after this talk. The concern of the
influence of other factors was minimal considering that this talk took place soon after the
orientation talk.

**Procedures**

The guides were told ahead of time that a graduate student from The University of
Montana would be studying the communication process between them and their
customers. They were also informed that they would be receiving a questionnaire. The
guide questionnaire was given to the eight guides running half day trips for the company
on the day that the pilot test was conducted (this represented all guides operating for this
company).

After consulting with the company it was clear that a random sample of customers
late in the summer was going to yield a very small sample size. A census was attempted.
All customers over the age of 18 from August 3rd through September 30th 2008 were
asked to complete the questionnaire. A folded questionnaire and a golf pencil were
placed inside an envelope and given to customers as they boarded the bus. The
customers were told to hold on to the questionnaire and they would be given instructions
at a later time. After the natural history talk, approximately five minutes from the launch,
the customers were asked to fill out the questionnaire and to place it back in the envelope to be returned to a box at the front of the bus when they exited. The envelopes and box were used to maintain privacy. The customer questionnaire directed customers to think of the interaction they just had with their guide during the natural history talk. Two hundred and fifty two questionnaires were collected from the 343 individuals in August and September for a response rate of 73 percent.

The questionnaires were created with the SNAP software which creates a document that can later be scanned for data entry. The questionnaires were scanned and the data was cleaned, which involved going through and checking that the scanner read the responses accurately. Also, any open ended responses, like age, and residence, had to be checked and the majority had to be hand entered as the scanner does not read letters and numbers well. After cleaning, the data was exported to the SPSS program for analysis.

Once the data had been exported, the resulting database was further refined by naming, labeling, and properly coding variables. The survey scale was -2 to 2 but the data was exported as 1 through 4, with 1 being strongly disagree and 4 being strongly agree. Items that were negatively worded were reverse coded.

Below are the research questions posed in this study and the analysis that was used to address them.

1. Are the modified scales measuring perceived knowledge, motivation, skills, and competence valid and reliable? Correlation analysis, Cronbach’s alpha reliability analysis and factor analysis.
2. Are perceptions of guide’s motivation, knowledge, and skills significant in predicting customer’s impressions of their guide’s communication competence? Regression

3. Which of the elements of the relational model of communication competence (perceptions of guide knowledge, motivation of guides to communicate, and skills portrayed by guides in a communicative event) is the strongest predictor of the competence level perceived by clients in the guided nature based context? Regression

4. Do characteristics of clients (age and number of previous guided experiences) explain any additional variance in this model? Regression

5. Are motivation, knowledge, skills, and competence average scores significantly different among the guides in this study? ANOVA
Chapter 5: Results

The purpose of this chapter is to present the analysis and results for each research question posed in this study. Descriptive results, customer demographics and the characteristics of the eight guides who participated in this study are available in Appendix A. Missing values in all analyses were dealt with by using a listwise method in SPSS, which allows only cases with valid values for all variables to be included in the analysis. This method was chosen due to the small number of missing values, 31, in this data set.

Research Question 1
Are the modified scales that measure perceived knowledge, motivation, skills, and competence reliable and valid?

Reliability of Motivation, Knowledge, and Skills Scale
Multiple authors suggest (Choi & Sirakaya, 2005; Churchill, 1979; DeVellis 1991) examining the correlations among items in a scale as well as item-scale correlations as the first step in examining the reliability and validity of measures. Spearman’s correlation was used to ensure that items in each scale were highly intercorrelated. Item-scale correlations were also calculated comparing each individual item with the remaining scale items (DeVellis, 1991). Correlations are examined to ensure that each scale is comprised of highly intercorrelated items. The procedure for items lacking significant correlations with other items in a scale or with the scale itself is to discard them before the remainder of the analyses is conducted because this would indicate that the item does not measure the same thing as the others.
All items in the motivation scale were highly intercorrelated and significant at the .01 level. Correlations ranged from .387 to .924. Additionally, all items in the knowledge scale were highly intercorrelated and significant at the .01 level with correlations ranging from .324 to .797. Finally, all items in the skills scale were highly intercorrelated and significant at the .01 level with the exception of one item. Significant correlations for this scale ranged from .370 to .947. The item “my guide spoke too loud” was negatively correlated with two other items and was not significantly correlated with 5 other items. Therefore, this item was removed from the scale.

Item-scale correlations were also examined. Each item of the scale was correlated with the remaining items in the scale. For motivation, each item was correlated with an aggregate variable containing the remaining 13 variables. All the individual items were highly correlated with the scale with correlations ranging from .693 to .952. The same process was employed for the knowledge scale. All the individual items were highly correlated with the scale and significant at the .01 level with correlations ranging from .552 to .923. Similarly, for the skills scale, all items within the scale were highly and significantly correlated with the scale at the .01 level. Correlations ranged from .511 to .760.

All but one item (“my guide spoke too loud”) was retained after examining the correlations. The remaining items in each scale were highly intercorrelated suggesting that they have a relationship with one another. These variables were then subject to Cronbach’s Alpha reliability analysis to provide evidence that these items are internally consistent.
All of the items intended to measure motivation to communicate were examined for reliability. The standards used by DeVellis (1991:85) consider that alpha levels below .6 are unacceptable; between .6 and .65, undesirable; between .65 and .7, minimally acceptable; between .7 and .8, respectable, between .8 and .9, very good. The removal of one of the items, “my guide seemed nervous”, would increase the alpha from .932 to .960 (Table 1). This item was removed. All of the items intended to measure knowledge to communicate were examined for reliability. The removal of one of the items, “it does not seem like my guide has been trained to communicate with customers”, would increase the alpha from .855 to .931 (Table 2). This item was removed. All of the items intended to measure skills to communicate were examined for reliability. The removal of multiple items increased the alpha for this scale indicating that these items do not share a common core with the other items. The items, “my guide spoke too fast”, “my guide was difficult to understand”, and “my guide’s voice was shaky”, were removed (Table 3). The alpha for this scale is also very low in comparison with the other scales. The alpha for this scale is considered undesirable by the standards set by DeVellis (1991) before these items are removed. Once removed, this scale has an alpha of .921 which is considered very good. This translates to 92% of the variation in the data is due to the true score while 8 percent due to error or noise.
<table>
<thead>
<tr>
<th>Scale Item</th>
<th>( \alpha ) if Item Removed</th>
<th>( \alpha ) of scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>It appeared that my guide enjoyed talking to customers.</td>
<td>.923</td>
<td></td>
</tr>
<tr>
<td>It seemed as if my guide enjoyed presenting information to his/her customers.</td>
<td>.924</td>
<td></td>
</tr>
<tr>
<td>My guide seemed nervous.</td>
<td>.960</td>
<td></td>
</tr>
<tr>
<td>My guide seemed relaxed.</td>
<td>.930</td>
<td></td>
</tr>
<tr>
<td>It appeared that my guide had a positive effect on customers (e.g. they learned).</td>
<td>.920</td>
<td></td>
</tr>
<tr>
<td>It seemed like customers listened to our guide.</td>
<td>.921</td>
<td></td>
</tr>
<tr>
<td>I will remember the information my guide presented to me.</td>
<td>.924</td>
<td></td>
</tr>
<tr>
<td>My guide helps protect the river by communicating with customers.</td>
<td>.922</td>
<td></td>
</tr>
<tr>
<td>My guide helps protect customers by communicating with them.</td>
<td>.921</td>
<td></td>
</tr>
<tr>
<td>My guide presented information in an enjoyable way.</td>
<td>.920</td>
<td></td>
</tr>
<tr>
<td>My guide took his/her time talking with us.</td>
<td>.921</td>
<td></td>
</tr>
<tr>
<td>My guide made an effort to get to know us.</td>
<td>.922</td>
<td></td>
</tr>
<tr>
<td>It appears that my guide likes to teach customers about the river.</td>
<td>.918</td>
<td></td>
</tr>
<tr>
<td>My guide seems to love his/her job.</td>
<td>.928</td>
<td></td>
</tr>
</tbody>
</table>

*bold items were removed

**Table 1: Initial Cronbach's Alpha for Motivation Scale***

<table>
<thead>
<tr>
<th>Scale Item</th>
<th>( \alpha ) if Item Removed</th>
<th>( \alpha ) of scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>My guide seemed knowledgeable about the topics he/she spoke about.</td>
<td>.836</td>
<td></td>
</tr>
<tr>
<td>My guide organized his/her ideas.</td>
<td>.831</td>
<td></td>
</tr>
<tr>
<td>My guide related information to customers.</td>
<td>.814</td>
<td></td>
</tr>
<tr>
<td>My guide summarized material.</td>
<td>.852</td>
<td></td>
</tr>
<tr>
<td>It appears that my guide has been well trained.</td>
<td>.818</td>
<td></td>
</tr>
<tr>
<td>It appears that my guide is experienced in talking with large groups.</td>
<td>.822</td>
<td></td>
</tr>
<tr>
<td><strong>It does not seem like my guide has been trained to communicate with customers.</strong></td>
<td>.934</td>
<td></td>
</tr>
<tr>
<td>When my guide spoke to us about the river, the speech flowed well.</td>
<td>.814</td>
<td></td>
</tr>
<tr>
<td>My guide used language that I could understand.</td>
<td>.819</td>
<td></td>
</tr>
<tr>
<td>My guide encouraged people to ask questions.</td>
<td>.824</td>
<td></td>
</tr>
</tbody>
</table>

*bold items were removed

**Table 2: Initial Cronbach's Alpha for Knowledge Scale***
Table 3: Initial Cronbach's Alpha for Skills Scale*

<table>
<thead>
<tr>
<th>Scale Item</th>
<th>α if Item Removed</th>
<th>α of scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>My guide spoke too fast.</td>
<td>.701</td>
<td></td>
</tr>
<tr>
<td>My guide was difficult to understand.</td>
<td>.681</td>
<td></td>
</tr>
<tr>
<td>My guide's voice was shaky.</td>
<td>.581</td>
<td></td>
</tr>
<tr>
<td>My guide was expressive.</td>
<td>.473</td>
<td></td>
</tr>
<tr>
<td>My guide was enthusiastic.</td>
<td>.429</td>
<td></td>
</tr>
<tr>
<td>My guide made eye contact with customers.</td>
<td>.452</td>
<td></td>
</tr>
<tr>
<td>My guide asked questions of his/her customers.</td>
<td>.441</td>
<td></td>
</tr>
<tr>
<td>My guide sounded confident.</td>
<td>.513</td>
<td></td>
</tr>
<tr>
<td>My guide is personable.</td>
<td>.468</td>
<td>0.570</td>
</tr>
</tbody>
</table>

*bold items were removed

The reliability of the motivation and knowledge scales is considered “very good” according to the standards set by DeVellis (1991) while the skills scale is considered unacceptable. The skills scale was entered into the next phase of the research hoping that after the measure is purified using factor analysis that the resulting reliability will be higher. The items remaining after optimizing alpha levels were then entered into a factor analysis to delineate the dimensions of the underlying data.

**Validity of Motivation, Knowledge, and Skills Scales**

Principal components factor analysis (PCA) was conducted on all items measuring perceptions of motivation, knowledge, and skills. A factor analysis was performed on only the motivation, knowledge, and skills items because they are the independent variables in the model. They were not combined with the dependent variable items because we know that the items measuring competence are and should be correlated with the items measuring the perceived motivation, knowledge, and skills.

The correlation of these items to one another would hamper the interpretation of the data.
Another decision made was that motivation, knowledge, and skills were all placed into one factor analysis. This was done to help purify the scales. By placing them in an analysis together it became evident when an item was measuring more than one construct. This purification step is vital in a model where the constructs are believed to be highly correlated with each other. This is a disadvantage of "exploratory factor analysis". With confirmatory factor analysis one can specify the relationships of the measurement model and test and see how well the proposed measurement model works. Future research needs to move toward a confirmatory approach to avoid the need to conduct separate analyses.

A Kaiser-Meyer-Olkin measure of sampling adequacy was performed, to ensure the data was appropriate for factor analysis. This yielded a value of .902 indicating that the sample size is adequate for factor analysis (Choi & Sirakaya, 2005). Bartlett’s test of sphericity was found to be significant, $\chi^2, N=252=4947, p<.001$, indicating that the correlation matrix is not an identity matrix (Table 4). This test indicates that all correlations in the correlation matrix are significant (Hair et.al, 1998). If this test had not been significant the factor model would be determined as inappropriate.

Table 4: KMO and Bartlett's Test

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | .902 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 4946.586 |
| | Df | 153 |
| | Sig. | .000 |
The procedures for factor analysis provided by DeVellis (1991) were used to guide the following process. A principal components analysis using guidelines for extraction of factors of eigenvalues over one was performed with a varimax rotation. Varimax rotation was used to uncover the simplest structure underlying the data. Factor loadings of less than .4 were suppressed in this analysis to allow for easier viewing of the rotated component matrix. Factor loadings of this magnitude are not significant (DeVellis, 1991). Throughout this analysis, when items loaded above .4 on more than one factor the item was removed. This process was suggested by DeVellis (1991).

This factor analysis revealed six factors that together explained 83 percent of the variation in the data. Upon examination, the fifth and six factors were not conceptually meaningful (Table 5). There were only two items that loaded higher than .4 on factor five and one of these items also loaded higher than .4 on another factor which is grounds for removal in DeVellis (1991) description of factor analytic strategy. All items loading higher than .4 on multiple factors were removed. These items are not pure measures of a single dimension. The literature also supports the decision to remove items that load above .4 on more than one factor (DeVellis, 1991; Tabchnick and Fidell, 2007).

Table 5: Initial Rotated Component Matrix*

<table>
<thead>
<tr>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>It appeared that my guide enjoyed talking to customers.</td>
<td>.570</td>
<td>.421</td>
<td>.521</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It seemed as if my guide enjoyed presenting information to his/her customers.</td>
<td>.546</td>
<td>.410</td>
<td>.507</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide seemed relaxed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.462</td>
<td></td>
</tr>
<tr>
<td>Statement</td>
<td>Factor 1</td>
<td>Factor 2</td>
<td>Factor 3</td>
<td>Factor 4</td>
<td>Factor 5</td>
<td>Factor 6</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>It appeared that my guide had a positive effect on customers (e.g. they learned).</td>
<td>.473</td>
<td>.687</td>
<td>.403</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It seemed like customers listened to our guide.</td>
<td></td>
<td></td>
<td>.779</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I will remember the information my guide presented to me.</td>
<td></td>
<td></td>
<td>.739</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide helps protect the river by communicating with customers.</td>
<td></td>
<td></td>
<td>.746</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide helps protect customers by communicating with them.</td>
<td>.413</td>
<td>.705</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide presented information in an enjoyable way.</td>
<td>.461</td>
<td>.649</td>
<td>.437</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide took his/her time talking with us.</td>
<td></td>
<td></td>
<td>.864</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide made an effort to get to know us.</td>
<td></td>
<td></td>
<td>.791</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It appears that my guide likes to teach customers about the river.</td>
<td></td>
<td></td>
<td>.660</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide seems to love his/her job.</td>
<td>.422</td>
<td></td>
<td>.490</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide organized his/her ideas.</td>
<td></td>
<td></td>
<td>.693</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide related information to customers.</td>
<td></td>
<td></td>
<td>.651</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide summarized material.</td>
<td></td>
<td></td>
<td></td>
<td>.745</td>
<td></td>
<td></td>
</tr>
<tr>
<td>It appears that my guide has been well trained.</td>
<td></td>
<td></td>
<td></td>
<td>.748</td>
<td></td>
<td></td>
</tr>
<tr>
<td>It appears that my guide is experienced in talking with large groups.</td>
<td></td>
<td></td>
<td></td>
<td>.715</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When my guide spoke to us about the river, the speech flowed well.</td>
<td></td>
<td></td>
<td></td>
<td>.802</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide used language that I could understand.</td>
<td></td>
<td></td>
<td></td>
<td>.767</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide encouraged people to ask questions.</td>
<td>.565</td>
<td>.482</td>
<td>.471</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide spoke too loud.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.831</td>
<td></td>
</tr>
<tr>
<td>My guide was expressive.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.530</td>
<td></td>
</tr>
</tbody>
</table>
The remaining 17 variables were again entered into a principal components analysis with a varimax rotation with the same guidelines stated above. The resulting analysis revealed 3 distinct factors explaining 77 percent of the variation in the data but with 3 items (I will remember the information my guide presented to me, my guide summarized material, my guide is personable) loading higher than .4 on more than one factor. The high cross loading items were again removed. The same analysis was performed again and the result was 3 distinct factors measuring motivation, knowledge, and skills (Table 6). These factors together explained 75% of the variation in the data. Knowledge explained 60 percent, motivation explained 9 percent, and skills explained 6 percent.

Because in the original scales many items were measuring both motivation and knowledge to communicate a T-test was run to ensure that the purified motivation and knowledge scales were measuring different things. There was a significant difference (p<.001) between the mean of the motivation (mean=3.23, sd=.845) and knowledge scales (mean=3.37, sd=.629) indicating that they are measuring different things now that they have been purified.
The analysis began with 34 items and six factors and the final factor solution contained 14 items measuring 3 domains: motivation to communicate, knowledge of how to communicate, and skills of how to communicate. This resulting factor structure provides evidence of the construct validity of these scales. The items are measuring three dimensions as the model of relational competence posits. However, there is a content validity issue that has been identified in this analysis.

The scale measuring motivation lost the most items because of high cross loadings on other factors mainly the knowledge scale. There were five facets of motivation to communicate that should have been measured with the motivation scale. After removing items that appeared to measure motivation and also knowledge, the facet of motivation that includes the rewards of communication was no longer represented in the items used to measure motivation to communicate. Not all aspects of motivation are being measured with this instrument. The motivation scale lacks content validity. The implication of this will be discussed in the final chapter.

Table 6: Rotated Component Matrix for Motivation, Knowledge, and Skills

<table>
<thead>
<tr>
<th></th>
<th>Motivation</th>
<th>Knowledge</th>
<th>Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>It seemed like customers listened to our guide</td>
<td>0.820</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide took his/her time talking with us</td>
<td>0.837</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide made an effort to get to know us</td>
<td>0.855</td>
<td></td>
<td></td>
</tr>
<tr>
<td>It appears that my guide likes to teach customers about the river</td>
<td>0.706</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide organized his/her ideas</td>
<td></td>
<td>0.841</td>
<td></td>
</tr>
<tr>
<td>My guide related information to customers</td>
<td></td>
<td>0.776</td>
<td></td>
</tr>
<tr>
<td>It appears that my guide has been well trained</td>
<td></td>
<td>0.704</td>
<td></td>
</tr>
<tr>
<td>It appears that my guide is</td>
<td></td>
<td>0.747</td>
<td></td>
</tr>
</tbody>
</table>
The factor analysis served two purposes in this study. First, the analysis was used to determine the underlying structure of the items used in this study. The second purpose was scale purification. In the process of discovering the dimensionality of the scale, it became evident that the analysis showed that there were items that were explaining variance in more than factor. This indicated that the item in question was not a pure measure of that dimension alone. When this was discovered, the items were removed, purifying the measure. Cronbach’s alpha was again used to determine the level of internal consistency among the items in each scale remaining after the factor analysis. The alpha of all the scales was considered “very good” in the process outlined by DeVellis (1991). All scales are internally consistent indicating that they are highly reliable (Table 7, 8, 9).
Table 7: Cronbach's Alpha Results for Motivation to Communicate Scale

<table>
<thead>
<tr>
<th>Motivation Scale Items</th>
<th>α if Item Removed</th>
<th>α of scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>It seemed like customers listened to our guide</td>
<td>0.920</td>
<td></td>
</tr>
<tr>
<td>My guide took his/her time talking with us</td>
<td>0.909</td>
<td></td>
</tr>
<tr>
<td>My guide made an effort to get to know us</td>
<td>0.922</td>
<td></td>
</tr>
<tr>
<td>It appears that my guide likes to teach customers about the river</td>
<td>0.938</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.941</td>
</tr>
</tbody>
</table>

Table 8: Cronbach's Alpha Results for Knowledge to Communicate Scale

<table>
<thead>
<tr>
<th>Scale Item</th>
<th>α if Item Removed</th>
<th>α of scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>My guide organized his/her ideas</td>
<td>.950</td>
<td></td>
</tr>
<tr>
<td>My guide related information to customers</td>
<td>.939</td>
<td></td>
</tr>
<tr>
<td>It appears that my guide has been well trained</td>
<td>.941</td>
<td></td>
</tr>
<tr>
<td>It appears that my guide is experienced in talking with large groups</td>
<td>.943</td>
<td></td>
</tr>
<tr>
<td>When my guide spoke about the natural history of the area, the speech flowed well</td>
<td>.936</td>
<td></td>
</tr>
<tr>
<td>My guide used language that I could understand</td>
<td>.942</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.951</td>
</tr>
</tbody>
</table>

Table 9: Cronbach’s Alpha Results for Communicative Skills Scale

<table>
<thead>
<tr>
<th>Scale Item</th>
<th>α if Item Removed</th>
<th>α of scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>My guide was enthusiastic</td>
<td>0.890</td>
<td></td>
</tr>
<tr>
<td>My guide made eye contact with customers</td>
<td>0.888</td>
<td></td>
</tr>
<tr>
<td>My guide asked questions of his/her customers</td>
<td>0.887</td>
<td></td>
</tr>
<tr>
<td>My guide sounded confident</td>
<td>0.911</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.916</td>
</tr>
</tbody>
</table>

Reliability of Communication Competence Scale (Dependent Variable)

Spearman’s correlation was utilized again to determine if all of the items in the appropriate and effectiveness scales were related to one another. All items measuring effectiveness, a facet of competence, were highly and significantly (.01) correlated with one another with correlations ranging from .441 to .592. The same was true for the items
intended to measure the other facet of competence, appropriateness. Correlations ranged from .666 to .859.

Item-scale correlations were also computed for the effectiveness scale and the appropriateness scale using the same process as described above. For the scale measuring effectiveness, all items were correlated with the scale and were significant at the .01 level. Correlations ranged from .832 to .921. The appropriateness items were also highly correlated with the scale and all significant at the .01 level. Correlations ranged from .805 to .912.

Validity of Competence Scales

All items measuring perceived appropriateness and effectiveness, both considered to be domains of the relational model of communicative competence, were entered into a principal components factor analysis with a varimax rotation.

A Kaiser-Meyer-Olkin measure of sampling adequacy was performed, to ensure the data was appropriate for factor analysis. This yielded a value of .849 indicating that the sample size is adequate for factor analysis (Choi & Sirakaya, 2005). Bartlett’s test of sphericity was found to be significant, $\chi^2, N=252=1487, p<.001$, indicating that the correlation matrix is not an identity matrix (Table 10). If this test had not been significant the factor model would be determined as inappropriate.

Table 10: KMO and Bartlett's Test

<table>
<thead>
<tr>
<th>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</th>
<th>.849</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bartlett's Test of Sphericity</td>
<td>Approx. Chi-Square 1486.748</td>
</tr>
<tr>
<td></td>
<td>df 28</td>
</tr>
<tr>
<td></td>
<td>Sig. .000</td>
</tr>
</tbody>
</table>
The initial solution revealed a undimensional structure explaining 64 percent of the variation. All items loaded highly (above .6) on this factor (Table 11). An average score based on the items in this factor will be used as the dependent variable, competence.

Table 11: Rotated Component Matrix for Combined Competence Factor

<table>
<thead>
<tr>
<th>Item</th>
<th>Appropriateness and Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoyed my interaction with my guide</td>
<td>.823</td>
</tr>
<tr>
<td>I felt that the material presented was appropriate</td>
<td>.885</td>
</tr>
<tr>
<td>My guide did not offend me with his/her communication</td>
<td>.736</td>
</tr>
<tr>
<td>I learned something from my guide</td>
<td>.902</td>
</tr>
<tr>
<td>My guide ensured that everyone could hear</td>
<td>.867</td>
</tr>
<tr>
<td>I was able to understand everything my guide said</td>
<td>.864</td>
</tr>
<tr>
<td>The information my guide presented was interesting to me</td>
<td>.733</td>
</tr>
</tbody>
</table>

Table 12: Cronbach’s Alpha Results for Communication Competence Scale

<table>
<thead>
<tr>
<th>Scale Item</th>
<th>α if Item Removed</th>
<th>α of scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoyed my interaction with my guide</td>
<td>.904</td>
<td></td>
</tr>
<tr>
<td>I felt that the material presented was appropriate</td>
<td>.900</td>
<td></td>
</tr>
<tr>
<td>My guide did not offend me with his/her communication</td>
<td>.912</td>
<td></td>
</tr>
<tr>
<td>I learned something from my guide</td>
<td>.895</td>
<td></td>
</tr>
<tr>
<td>My guide ensured that everyone could hear</td>
<td>.899</td>
<td></td>
</tr>
<tr>
<td>The information my guide presented was interesting to me</td>
<td>.912</td>
<td></td>
</tr>
<tr>
<td>I was able to understand everything my guide said</td>
<td>.876</td>
<td></td>
</tr>
</tbody>
</table>

0.917
Table 13: Spearman's Correlation Among Components of the Relational Model of Competence

<table>
<thead>
<tr>
<th></th>
<th>Motivation score</th>
<th>Knowledge score</th>
<th>Skills score</th>
<th>Combined competence score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Motivation score</strong></td>
<td></td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>247</td>
<td>245</td>
<td>238</td>
<td></td>
</tr>
<tr>
<td><strong>Knowledge score</strong></td>
<td></td>
<td>.580(**)</td>
<td>.684(**)</td>
<td>.724(**)</td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td></td>
<td>1.000</td>
<td>.604(**)</td>
<td>.658(**)</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>245</td>
<td>250</td>
<td>241</td>
<td>241</td>
</tr>
<tr>
<td><strong>Skills score</strong></td>
<td></td>
<td>.684(**)</td>
<td>1.000</td>
<td>.789(**)</td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td></td>
<td>.604(**)</td>
<td></td>
<td>.789(**)</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>238</td>
<td>241</td>
<td>243</td>
<td>237</td>
</tr>
<tr>
<td><strong>Combined competence score</strong></td>
<td></td>
<td>.724(**)</td>
<td>.658(**)</td>
<td>1.000</td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>238</td>
<td>241</td>
<td>237</td>
<td>243</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).

Evidence of convergent validity, defined by DeVellis (1991) as evidence of similarity between measures of theoretically related constructs, was also shown with strong correlations among all the components of the relational model of competence as is posed in the model. Evidence of convergent validity was seen in the strong correlations among all of the aspects of the relational model of competence operationalized here (Table 13). The literature on communication competence argues that motivation, knowledge, and skills should all be correlated with one another and each should have a significant, positive correlation with perceptions of competence.

The knowledge, skills, and competence scales used here are reliable measures of these constructs. However, a single study is not nearly sufficient for establishing construct validity. The factor analysis resulted in operational measures that are consistent
with the theoretical definition of these constructs. However, the motivation scale is reliable but not content valid. It fails to include any items that were intended to measure rewards of communication, a dimension of communicative motivation. However, the high correlations show both evidence of the reliability of the measures and the convergent validity of the measures. The high Cronbach’s alpha indicates high internal consistency, a necessary characteristic for reliability (DeVellis, 1991). The exploratory factor analysis provided evidence of the construct validity of these measures. Research question one is not fully supported by this data with the lack of content validity of the motivation scale.

The independent variables are very highly correlated with the dependent variables. This is to be expected if the relational competence model is supported by this data. However, it seems necessary to rule out the possibility that these items are all just measuring the same things, competence. A principal components factor analysis with a varimax rotation was run on all the variables in the dataset that were meant to measure all the components of the model. The purpose of this was to ensure that the items to measure competence were not also measuring the perceived motivation, knowledge, or skills. Are these independent of one another? The items that were meant to measure overall perceptions of competence should not load highly on factors where perceived motivation, knowledge, and skills have loaded highly (above .4). This would ensure that these items are all measuring parts of the model.

Most of the items meant to measure the combined communication competence, or appropriateness and effectiveness of guides did not load highly (above .4) on the same factors as did items meant to measure the independent variables. However, one item, my
guide ensured that everyone could hear, that loaded above .4 on the same factor as the skills items (Table 14). Also, two other items, I learned something from my guide and my guide presented information that I consider to be important, loaded moderately high (.434 and .465 respectively) on the skills factor. Overall, the dependent variable items appear to be separate from the independent variable items. The dependent variable items that did load above .4 on factors with independent variable items should be reworked in future studies involving these scales.

Table 14: Rotated Component Matrix for All item Factor Analysis

<table>
<thead>
<tr>
<th></th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
<th>Factor 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>It seemed like customers listened to our guide (M)</td>
<td>.775</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide took his/her time talking with us (M)</td>
<td>.786</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide made an effort to get to know us (M)</td>
<td>.725</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It appears that my guide likes to teach customers about the river (M)</td>
<td>.578</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide organized his/her ideas (K)</td>
<td>.564</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide related information to customers (K)</td>
<td>.708</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide summarized material(K)</td>
<td>.653</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It appears that my guide has been well trained (K)</td>
<td>.690</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It appears that my guide is experienced in talking with large groups (K)</td>
<td>.620</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When my guide spoke to us about the river, the speech flowed well (K)</td>
<td>.760</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide used language that I could understand (K)</td>
<td>.773</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide was enthusiastic (S)</td>
<td></td>
<td>.611</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide made eye contact with customers (S)</td>
<td></td>
<td></td>
<td>.636</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide asked questions of his/her customers (S)</td>
<td></td>
<td></td>
<td></td>
<td>.609</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Factor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide sounded confident (S)</td>
<td>.743</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide presented information that I consider to be important (C)</td>
<td>.615</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I enjoyed my interaction with my guide (C)</td>
<td>.612</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt the material presented was appropriate (C)</td>
<td>.562</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide did not say anything offensive (C)</td>
<td>.596</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I learned something from my guide (C)</td>
<td>.517</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My guide ensured that everyone could hear (C)</td>
<td>.639</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I was able to understand everything my guide said (C)</td>
<td>.612</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The information my guide presented was interesting to me (C)</td>
<td>.475</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

M=motivation, S=skills, K=knowledge, C=competence
Bold=an item which loaded above .6 on a factor which contains independent variable items

**Research Question 2**

Are perceived motivation, knowledge, and skills significant in predicting customer’s impressions of their guide’s communication competence?

At this point in the analysis, average scores were calculated for perceived motivation, knowledge, skills, and the competence score. The items in each purified scale were summed for each case and divided by the total number of items in the scale resulting in a perceived motivation, knowledge, skills, and competence score for each customer.

Ordinary least squares regression was performed to create the model. The assumptions of ordinary least squares regression, which are, normally distributed variables, a linear relationship between the independent and dependent variable(s), variables measured without error, and homoscedasticity, were satisfied. Using the
“enter” method in SPSS, which selects variables for inclusion in the regression model by entering them all in a single step, the variance explained in competence scores by the perceived motivation to communicate, knowledge of how to communicate, and the perceived communicative skills of guides was tested. The “enter” method was used because although past studies have suggested an order for inclusion (Spitzberg, 1993), this framework is being applied in a new context and thus specifying the order by which the variables enter the model, such as in a hierarchical method, would be presumptuous. Missing values were replaced using a listwise method, which allows only cases with valid values for all variables to be included in the analysis. This method was chosen due to the small number of missing values in this data set.

The regression equation for this test is:

\[ C_i = \beta_0 + \beta_1 M_i + \beta_2 K_i + \beta_3 S_i + e_i \]

Where \( C \) is perceived communication competence, \( M \) is the perceived motivation to communicate mean score, \( K \) is perceived communicative knowledge mean score, \( S \) is the perceived mean skills score, and \( e \) is error term.

Linear regression revealed a significant relationship between each of the predictors and communication competence (Table 15) \((n=235, F=208.502, P<0.05)\). The regression equation explained 74 percent of the variability in communication competence \((R^2 = .735)\).

Results indicated that each of the constructs of the model of relational competence was a significant predictor of perceived competence thereby answering the second research question posed. More specifically, guides perceived as motivated, knowledgeable, and skilled in communicating are seen as more appropriate and effective
in their communication. This supports the model of relational competence and also is
evidence of the construct validity of the instrument used in this study.

Table 15: Regression on Relational Model of Communication Competence

<table>
<thead>
<tr>
<th></th>
<th>Standardized Coefficients</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td></td>
<td>8.290</td>
<td>&lt;0.01</td>
<td></td>
</tr>
<tr>
<td>Motivation</td>
<td></td>
<td>0.275</td>
<td>5.042</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Skills</td>
<td></td>
<td>0.462</td>
<td>7.887</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Knowledge</td>
<td></td>
<td>0.199</td>
<td>3.627</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

**Research Question 3**

The regression equation above was used to test the third research question of:

which of the elements of the relational model of communication competence (perceptions of guide knowledge, motivation of guides to communicate, and skills portrayed by guides in a communicative event) is the strongest predictor of the competence level perceived by clients? Skills were the strongest predictor of perceived competence indicated by a Beta value of .462 in relation to motivation which was .275 and knowledge which was .199 (Table 15). However, with two of the skills items loading highly on the same factor as the competence items, there is concern that the skills items are not pure. Future research is needed to ensure that skills are in fact the strongest predictor and independent of measures of competence.

**Research Question 4**

Do characteristics of clients (age and number of previous guided trips) explain any additional variance in this model?

Ordinary least squares linear regression using the “enter” method in SPSS, which selects variables for inclusion in the regression model by entering them all in a single step, was
used to test the variance explained by customer characteristics (age and mean number of guided trips) when added to the original model of relational competence presented above. The regression equation for this test is:

\[ C_i = \beta_0 + \beta_1 M_i + \beta_2 K_i + \beta_3 S_i + \beta_4 A_i + \beta_5 N T_i + e_i \]

Where \( C \) is perceived competence, \( M \) is the perceived motivation to communicate mean score, \( K \) is perceived communicative knowledge mean score, \( S \) is the perceived mean skills score, \( A \) is age, \( N T \) is the number of guided trips in the past, and \( e \) is error term (n=229, F=208.502, P<0.05).

Table 16: Regression on Relational Model with Customer Variables Included

<table>
<thead>
<tr>
<th></th>
<th>Standardized Coefficients</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td></td>
<td>6.364</td>
<td>&lt;0.01</td>
<td></td>
</tr>
<tr>
<td>Motivation</td>
<td></td>
<td>0.272</td>
<td>4.898</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Skills</td>
<td></td>
<td>0.450</td>
<td>7.541</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Knowledge</td>
<td></td>
<td>0.216</td>
<td>3.769</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Number of trips</td>
<td></td>
<td>0.006</td>
<td>.176</td>
<td>0.860</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>0.010</td>
<td>.289</td>
<td>0.773</td>
</tr>
</tbody>
</table>

Regression revealed a non-significant relationship between each of the additional predictors and communication competence (Table 16). The model produced an R² of .730, explaining slightly less variation in competence than the original model. The addition of these additional variables did not affect the model very much and are not significant in predicting competence in this study.

**Research Question 5**

Are there significant differences in perceived motivation, perceived knowledge, perceived skills, and perceived competence level among the guides in this sample?
The results of the ANOVA suggest that there are significant differences among guides on all the variables in the model of relational competence (Table 17). This result demonstrates that the instrument constructed here and the individual scales are sensitive enough to detect differences among guides.

Table 17: Mean Scores and ANOVA Testing for Differences among Guides on the Variables of the Relational Model of Competence

<table>
<thead>
<tr>
<th></th>
<th>Mean for Guide 1</th>
<th>Mean for Guide 2</th>
<th>Mean for Guide 3</th>
<th>Mean for Guide 4</th>
<th>Mean for Guide 5</th>
<th>Mean for Guide 6</th>
<th>Mean for Guide 7</th>
<th>Mean for Guide 8</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation Score</td>
<td>2.98</td>
<td>3.05</td>
<td>3.33</td>
<td>3.59</td>
<td>3.56</td>
<td>2.94</td>
<td>3.27</td>
<td>3.21</td>
<td>2.839</td>
<td>.003</td>
</tr>
<tr>
<td>Knowledge Score</td>
<td>3.06</td>
<td>3.29</td>
<td>3.39</td>
<td>3.70</td>
<td>3.57</td>
<td>3.33</td>
<td>3.43</td>
<td>3.20</td>
<td>3.707</td>
<td>.001</td>
</tr>
<tr>
<td>Skills Score</td>
<td>3.01</td>
<td>3.11</td>
<td>3.41</td>
<td>3.60</td>
<td>3.42</td>
<td>3.19</td>
<td>3.23</td>
<td>3.22</td>
<td>2.127</td>
<td>.024</td>
</tr>
<tr>
<td>Competence Score</td>
<td>3.13</td>
<td>3.24</td>
<td>3.43</td>
<td>3.68</td>
<td>3.49</td>
<td>3.29</td>
<td>3.45</td>
<td>3.28</td>
<td>3.022</td>
<td>.005</td>
</tr>
</tbody>
</table>
Chapter 6: Discussion

The purposes of this chapter are to briefly summarize the findings of this research; to discuss the implications of the research; to explain the limitations of the research; and to suggest avenues for future research.

Reliability and Validity

The main purpose of this research was to establish the reliability and to explore the validity of an instrument to measure the components of relational competence: perceived motivation, knowledge, skills, and overall competence in a new context, a nature based guided trip. The assessment of validity is never absolute and is a matter of degree because we can never be entirely certain that we are measuring exactly what we claim to measure (Shadish et al. 2002). However, over time one can build a stronger case for the validity of measures and can produce observed scores that increasingly approximate true scores. Aspects of validity that were examined include: face validity, content validity, convergent validity, and construct validity. The reliability of the measures was also examined.

The scales developed here were partially validated and found to be reliable. Some aspects of validity were not addressed because of limitations of the study which will be addressed further. The scales measuring perceptions of knowledge, skills, and perceived competence were found to have face validity, content validity, convergent validity, and construct validity.

The motivation scale was found to lack content validity. Theoretically, an instrument has content validity when its items are truly and wholly representative of the construct of interest. The model of relational competence contends that there are five
dimensions of communicative motivation: desire to communicate, rewards of communication, costs of communication, involvement, and audience orientation. The reward of communication dimension was not represented by the items in the motivation scale that remained after the factor analysis. The items meant to measure this dimension did not load on the same factor on which the other items appeared. This scale was reliable and valid in measuring the other four dimensions of communicative motivation. The knowledge, skills, and perceived competence scales were all found to be content valid in that all the proposed dimensions of these constructs were represented.

The instrument constructed for this research was found to be face valid, which is a property of a test in which its appearance suggests to an observer that it will measure that which it has been designed to measure, but only after some changes were made to the implementation of the questionnaire. Face validity can never take the place of other forms of validity but it is nonetheless an important aspect to consider. In future research, the face validity of the instrument should be checked with a large group of potential respondents to ensure that the timing of the questionnaire is appropriate.

Convergent validity can be considered as evidence of similarity between measures of theoretically related constructs. Evidence of similarity is in the form of strong correlations. Evidence of convergent validity can be seen in the strong correlations among all of the aspects of the relational model of competence operationalized here.

Construct validity is “the degree to which a measure relates to other variables as expected within a system of theoretical relationships” (Babbie, 2004: 144). As demonstrated in the previous chapter, motivation, knowledge, and skills are highly and significantly correlated with perceived competence as theoretically proposed in the
The relational model of competence. Motivation, knowledge, and skills were also found to be significant predictors of perceived competence, also a contention of the model. This instrument has construct validity. Validity is crucial to accurate measurement of latent constructs as is the reliability of the measures.

Babbie (2004: p.141) defines reliability as “the quality of measurement method that suggests that the same data would have been collected each time in repeated observations of the same phenomenon.” In a statistical sense, reliability is contingent upon how much of the variation in scores is attributable to random errors (Churchill, 1979). Cronbach’s alpha scores of .916 to .951 support the argument that reliable measures have been developed.

The Model of Relational Competence

The model of relational competence has changed in two ways over the course of this study. First, the original model (Fig. 1) had the perceptions of the aspects of competence at the beginning of the model feeding into the communicative event. This was not drawn accurately. After peer review, it was evident that the perceptions of motivation, knowledge, and skill occur during and after the communicative event so that the event itself begins the model (Fig. 3).

The second thing that has changed about the model includes the removal of the variables that were being tested for significance in predicting competence, age and number of previous guided trips. In this study, these variables were not significant in predicting perceptions of competence. The model seen here still is not a perfect simplification of reality. There are many other factors influencing competence in these
situations that can hopefully be discovered in future research. Factors potentially affecting competence will be discussed in the future research section.

Another aspect of this model that needs to be expanded upon is the relationships among the variables. The strength of each path between variables is of interest and can be a goal of future studies. Also, the overall fit of the model to the data is obviously missing as a result of limitations with this data, mainly sample size.

Figure 3: The Model of Relational Competence in this Guided Context
A Hybrid Model for Nature-Based Guided Context

This research showed support for a hybrid model of competence in this context. Some models of competence acknowledge only the behavioral or cognitive aspects while this model considers multiple dimensions. The behavioral, cognitive, and affective components of competence were all significant in predicting competence. The implications of this for the guiding arena are critical. This provides support for guide training programs to not only focus on giving correct facts but to instead have a holistic approach to communication that involves cognitive, affective, and behavioral aspects. Guides need to be knowledgeable of how to communicate, they need to be motivated to communicate, and they need to use the right skills to communicate.

Perceived Competence as a Unidimensional Construct

Competence dimensions of appropriateness and effectiveness are conceptually interrelated. However, one of the assumptions of the model of relational competence that this research did not support is that communication competence is represented by two separate dimensions: perceived appropriateness and effectiveness. Results showed that the items meant to measure both appropriateness and effectiveness were measuring one dimension of perceived competence. The scree plot from the exploratory factor analysis as well as the eigenvalue rule supports the result of a unidimensional factor structure. Efforts were made to try and force the items into two factors. The result was two factors with only one item loading very low on the second factor. This is clearly a one factor solution. The items making up that factor were meant to measure effectiveness. The items meant to measure appropriateness did not load highly on any factor.
It is also possible that in this context appropriateness and effectiveness are not mutually exclusive. In other words, guides cannot be effective without being appropriate. Research done on communicative competence has not always treated effectiveness and appropriateness as separate constructs making the assumption that one cannot be judged as effective without also being appropriate in their communicative behavior. The research done by Rubin (1981, 1984) is an example of past research that has treated perceived competence as a unidimensional concept. Rubin’s research looked at the validity and reliability of scales based on relational competence used to measure the communication competence of college students in a public speaking class, and the competence of student teachers. In this research, competence was considered to be the appropriateness of behavior and “may or may not entail an impression of effectiveness” (Rubin, 1984). This statement implies that the concept of effectiveness is nested within the idea of appropriate communication.

It is conceptually sound to treat perceived competence as a unidimensional construct. It is argued then that in the guided context, appropriateness and effectiveness are not mutually exclusive. A guide cannot be one without the other.

**Communication Competence of the Customer**

One of the assumptions of the relational model of competence is that competence is an interdependent process, or that the overall success or failure of the objectives in a communicative interaction is dependent on the competence of all members of the interaction. Put into this context, a plausible objective of the natural history talk given by guides is that customers will learn something about the environment and history of the area in which they are rafting. Regardless of the level of motivation, knowledge, skills,
and competence level perceived by customers, they will not learn if they are not 
motivated, knowledgeable, skilled, or competent in their own communicative behavior. 
It was considered outside the scope of this project to assess the perceived motivation, 
knowledge, skills, and overall competence of the customer. However, interviews were 
done with guides to get an anecdotal idea of the competence of customers that these 
guides have encountered.

Guides were asked about their perceptions of the overall competence of their 
customers. The majority impression of competence of customers gained through these 
interviews was positive (they listen, they ask questions). One of the six guides 
interviewed (there were eight guides but only six agreed to be interviewed) did not feel 
that customers were competent partners in the communicative episode. This guide 
believed that customers were only interested in the white water and were preoccupied 
with the pending excitement of their trip. Three out of the six guides interviewed found it 
necessary to change their normal repertoire when they encountered customers who did 
not appear competent. Adaptations included asking questions of the customers to get 
them involved and trying to relate the information to the lives of the customer.

Another behavior of customers that was considered a barrier to competent 
communication was talking during the presentation. Four of the six guides mentioned 
that when customers converse with other members of their group during the guide’s 
presentation that this hindered their ability to communicate with them. One of the six 
guides interviewed also conveyed a concern that some customers may be too shy to speak 
up and ask a question or to request that the guide speak louder.
Evaluation of the Use of the Relational Model of Competence in the Guiding Context

Borrowing from Littlejohn (2002) the use of the model of relational competence in understanding the effectiveness of guide communication is evaluated here using the following criteria: appropriateness, scope, operationality, heuristic value, and parsimony.

The first criteria borrowed from Littlejohn (2002) for the evaluation of the use of this framework is appropriateness. Appropriateness of a framework is concerned with the match between the epistemological, ontological, and axiological assumptions and the claims made by the framework. Are the claims made consistent with the assumptions of the model? It is argued here that the assumptions of the model and the claims that the model makes are in concert with one another. It is also argued that the methodology used here is consistent with the assumptions of the relational competence model.

It is apparent from this discussion that using relational competence to help explain the effectiveness of guides is fitting. The components of relational competence: knowledge, skills, motivation, appropriateness, and effectiveness, are all relevant in nature-based tourism having been identified in tourism literature as important aspects of a guided experience (Ham & Weiler, 2003). Epistemologically, the relational competence model claims that to know competence, one must look at perceptions of those involved. In an ontological sense, there is agreement on the nature of competence in that competence is contextual and it is a function of social interaction and not viewed on an individual basis. The model of relational competence is also consistent with this study’s axiological assumptions that the goal of measurement is to understand the underlying relationships among the variables in the relational model. The empirical evidence supporting the conclusion that the measures were reliable and valid and that the model
has explanatory power supports the argument of the appropriateness of this approach to measurement relative to axiological goals.

The second criterion given by Littlejohn (2002) and used to evaluate this framework is scope. This is a consideration of the comprehensiveness of the framework. Relational competence is not generalizable between contexts, meaning that research done on competence in a classroom setting cannot be generalized to the context of guided nature-based tourism. This is due to the nature of competence itself. As was discussed earlier, there is no list of personality traits that guarantees competence. Competence is an impression and varies widely with the context of the situation.

A potential limitation of the scope of this model is that it does not take into consideration other factors which may affect competence as the guide and customers continue to interact. This research purposefully asked customers as close to the beginning of the trip as possible to limit these factors. However, if there was a critical interaction later in the trip in which competence needed to be understood these other factors may influence the results. This is a limitation of scope that can be overcome as research on competence in the guide context becomes more commonplace. As more factors which affect competence are identified, the model will continue to grow and its explanatory power will as well. Qualitative research may also be conducted to further understand what affects competence. The scope of this model is somewhat limited but this is due to the early stage in which this research lies.

The third criterion used to evaluate this framework is heuristic value, or the potential to generate new ideas for future research. The relational model of competence has the potential to generate new theoretical and empirical inquiry. Its successful use in
this context is illustrative of its heuristic value. Beyond using the model to explain the
competence of guides, empirical relationships among constructs were investigated and
the relationships posited in the model were upheld. This research has opened up areas for
future research further illustrating its heuristic value.

Operationality is another criterion used to evaluate a theoretical framework.
Operationality can be thought of as having two components: consistency with the
theoretical framework (does it capture the complex nature of the phenomenon) and ease of
operationalization. This model is consistent with the theoretical framework. Relational
competence is an important model for understanding the complex nature of
communication. While other competence models stress either cognitive aspects of
competence or behavioral, the relational model includes both. By taking a behavioral-
cognitive approach, this research shows complexity but Spitzberg and Cupach (1984)
clearly define the aspects of the model. However, the operationalization of the
"independent" measures (from measures of motivation to measures of perceived
motivation) had to change to suit the guided context. This is an issue of operationality
that suggests future research must examine this from the opposite perspective to ensure
that this does not change the relationships seen here. Also, the dependent measure had
some overlap with the skills independent measure. This may be a result of changing the
perspective from which the constructs are measured. Future research should clarify the
distinction to ensure that this approach is viable.

In terms of the second component, ease of operationalization, the model has some
limitations. The results of this study, for instance, are not generalizable to another
different guided situation. Also a limit on operationality is the need to conduct the
questionnaire after a talk which is of a length where customers feel like they can evaluate their guides. These limitations do not mean though that this model is not applicable in this new context. This means that research on this topic will be more difficult logistically but by understanding a contextual construct like competence we are enriching our knowledge of a complex but vital component of guide communication.

The last criterion for evaluating this framework is parsimony. One of the purposes of a framework is to explain reality by simplification. The model of relational competence is parsimonious yet explains a great deal about quality communication. The model captures the complexity of communication by including a behavioral and cognitive component but does so efficiently with a small number of explanatory constructs (motivation, knowledge, and skills).

The relational model of competence has been chosen for use in understanding the communication competence of guides in nature-based tourism. This choice is based on the review of other frameworks of communication competence and the evaluation of relational competence. The components of the model are already being studied in the tourism context but in a singular fashion. Using this model helped gain an overall understanding of competence in guiding. Specifically, the use of this model has shown that cognitive and affective aspects of the guide also affect perceptions of competence but that the behavioral aspect is the strongest predictor. The assumptions of the model are consistent with those considered for this study. With the framework having been evaluated, the next section will discuss the contribution this research has made to communication.
**Contribution to Communication**

This research has made important contributions to communication. This research has contributed to communication research by establishing another context in which communication competence can be operationalized in a valid and reliable manner. Communication competence has been used in a wide variety of disciplines and fields but it has never been used to understand the communication process between guide and customer. Ryan and Dewer (1995) came closest by trying to understand the communication process between interpreter and visitor in a heritage tourism atmosphere. They embraced the idea of competence as a way to understand this phenomenon but did not use the relational model of competence as a framework. They too found support for the use of competence to understand the communication process in the tourism context.

This research has also contributed to communication studies by providing further evidence of the relationships in the relational model of competence. In this research, the model of relational competence was operationalized and the relationships found between variables upheld the notions put forth by Spitzberg and Cupach (1987). The differing schools of thought concerning competence in communication were presented in a previous chapter. Tension exists over whether competence is behavioral or cognitive but the relational model embraces both and argues that there are affective (motivation), cognitive (knowledge) and behavioral (skills) aspects to competent communication. This research provided further evidence that motivation, knowledge, and skills are all significant predictors of perceived competence. It has also been argued that although all three aspects affect competence, skills (the behavioral component), would have the strongest influence on perceptions of competence (Spitzberg, 1981). Evidence for this was also found in this study.
**Contribution to Guiding in Nature-Based Tourism**

A guide’s behavior or skills in communicating are not the only aspect of the guide affecting customers’ perceptions of competence. Customers have perceptions of their guides’ motivation and knowledge as well and these are significant in predicting competence. For guiding companies this means that it is important for their guides to appear motivated when communicating which includes attempting to get to know their customers and being enthusiastic in their interactions. Guide training and orientation programs should point out to guides that their motivation is important to the customer. Further educating guides about the importance of communication with their customers should also be a focus of training. Guiding companies can also use the instrument constructed here to assess the current status of their guides in the components of the model.

This research provides public land managers with a framework and tools to either use themselves or have guiding companies use to evaluate how motivated, knowledgeable and skilled their guides are in communicating with customers. It is not expected that the USDA Forest Service or National Park Service will be using this model and instruments on a regular basis but, for instance, if there are important messages that the agency wants certain guiding company to disseminate, they can implement this model and instruments to ensure that the message is being portrayed effectively and appropriately to the customer.

The continued use of the scales developed in this study makes possible the development of normative data against which guide performances can be compared and appropriate steps taken to alleviate diagnosed deficiencies. Normative data is critical for the development of guide communication training programs. However, the contextual
nature of competence needs to be kept in mind when developing norms. Training programs will need to acknowledge the contextual nature of communication and will likely have normative data that will relate only to certain situations.

Once the method is established, the model can be instituted in varying contexts within guided trips and we can begin to compare results and see how relationships differ. Also, more data can be collected once the instrument is established so that we can understand more fully how different aspects of the context affect relational competence. Guides have great potential as partners to land managers in protecting public lands by communicating with their customers; something that managers cannot regularly accomplish. However, for this partnership to work we must understand how they can effectively and appropriately communicate with people. Relational competence is complex but it is critical that we understand competence in communicating in the guided arena. The results of this study will be generalizable to future guided rafting groups of the same company used in the study.

**Limitations**

There were two main limitations of this research. The first involves the restricted time frame in which this research took place. The second is that the model of relational competence includes all interactants involved and this research only surveyed the customer.

This research only sampled people rafting in the months of August and September. It is possible that these people are different from others who rafted earlier in the summer. Future research should ensure that an entire season is examined to ensure that there are no differences.
The other limitation of this research is that it did not develop a measure for guide’s perception of customer’s competence, an important aspect of the relational model. The model of relational competence is interdependent so that the unexplained variance in the model could be attributable to the competence, or lack of competence that guides perceived. Future research can use the instrument developed here and design an instrument to explain the entire picture of relational competence.

**Future Research**

Psychometric procedure (Churchill 1979; DeVellis, 1991; Nunnally, 1978) suggests seven stages in scale development: (1) determine the construct to measure, (2) generate items to measure the construct of interest, (3) develop the final list of items and determine the type of rating scale, (4) purify the measure (checking reliability and validity), (5) replicate the study, (6) refine the scale with a new sample (reassessing reliability and validity of the scale via confirmatory factor analyses), and (7) establish norms (developing standards and norms for decision makers). This research carries the development of an instrument to measure the communication competence of nature based tour guides though step four of this process. Future research should continue this development for the instrument used here with items added to measure the reward of communication domain of motivation. Future research should also begin this process for an instrument to measure the perceived competence of customers from the guide perspective.

The next step in the development of an instrument to measure communication competence of nature based tour guides is replication of this study in a similar context focusing on the attainment of a larger sample size. This would allow for the appropriate
use of confirmatory factor analysis in reaffirming the validity and reliability of these measures and would take this research further.

There are likely many other factors that can effect perceptions of communicative motivation, knowledge, skills, and overall competence. These other factors should be identified, measured, and their effect assessed. Two of these factors that deserve discussion are gender and culture. The effects of gender in communication competence have been researched in the past (Boggs & Wiemann, 1994; Smythe, 1991) but has never been examined in the guided context. There was anecdotal evidence from guide interviews that gender may play a part in the success of communicative interactions between guide and customer but gender was not significant in predicting perceptions of competence. The sample size was too small to split the sample and decipher if gender differences could be seen in this way. Gender of both customers and guides in communication competence should be explored in the future.

The effect of culture on perceptions of competence has been studied (Beamer, 1992; Chen & Starosta, 1996; LeClerc & Martin, 2004) and in fact has been looked at in the tour guide arena. LeClerc and Martin (2004) found that perceptions of competence did differ depending on the culture of the other communicative individual. Future research should examine the how culture effects the perceptions of motivation, knowledge, and skill as well. Cultural differences could lead to negative perceptions of competence even when the communicator is motivated, knowledgeable, and skilled in a way that would satisfy American customers. The culture of customers should be recognized and adapted to by guides.
Another future research endeavor would be to develop and test an instrument to measure the perceived motivation, knowledge, skills, and overall competence of customers from the guide perspective. This instrument could be used in conjunction with the instrument developed here to understand the complete picture of communication competence in a guided nature based tourism context.

The final aspect of future research that needs discussion is the scale on which the items in the questionnaire were placed. One will recall that an assumption of the relational model of competence is that competence is a matter of degree. It could be argued that having the items on a strongly agree to strongly disagree scale did not accurately respect this assumption. By placing the items on this scale, it could be argued that the customer was given a spectrum of confidence by which to respond not a degree. Placing the items on a scale from “to a large degree” to “to no degree” could satisfy this assumption more accurately. Future research should attempt to use a scale which is more in line with the assumptions of the model.

Conclusions
This research developed and tested an instrument to measure the perceived motivation, knowledge, skills, and overall competence of white water rafting guides. Exploratory factor analysis was used to determine the underlying structure of the data measuring the components of the relational model. After removing some items, the resulting factors were found to be representative of perceived motivation, knowledge, skills, and a unidimensional factor representing overall competence. These dimensions were found to be reliable measures of these concepts through a Cronbach’s alpha reliability analysis. Average scores were created and entered into a regression model
which showed that perceived motivation, knowledge, and skills were all significant 
predictors of competence in a model explaining 73 percent of the variation in the data. 
The results of the analysis were then used to determine the validity of this instrument in 
this context.

The model was successfully transported to this context but brings to the surface 
limitations of this research. Some of the limitations arose because of the nature of 
competence while others due to lack of resources and constraints that were unavoidable. 
Relational competence is complex and difficult to measure especially in the guided 
context.

Conceptually, the model of relational competence is a good fit for the guiding 
context; however, the methodology is difficult. Having one guide to ten or more people 
makes surveying all members of the communicative event complicated. It creates a 
situation where data must be repeated for each of the customers who had the same guide. 
This creates problems with analysis of the data. The error inherent in measurement 
would be inflated by repeating the data. A possible solution would be to find a guiding 
company that operates year round and to obtain a very large sample size so that only one 
person per guide would be counted in the analysis.

Also, because of the contextual nature of competence, numerous different guiding 
companies could not be used. The communication event should be the same so that the 
judgment of motivation, knowledge, skills, and overall competence is referring to the 
same situation. This should not be viewed as a limitation of research but an 
acknowledgement of the complex but crucial nature of understanding communication 
competence. It is the specifics that are gained through this type of research that have
been absent in the literature. Future research should work around the intricacies of competence and not try to simplify or generalize results to make for easier collection and analysis of data. Communication competence is a worthwhile area of study in tourism and recreation.
References


Gottman and Porterfield 1981


Appendix A: Descriptives and Customer and Guide Characteristics

Customer Characteristics

Two hundred and fifty-two surveys from the 343 adult customers in August and September were completed, for a response rate of 73 percent.

Survey participants were asked to respond to a series of questions about their personal characteristics. Fifty-seven percent of participants were female and 43 percent were male (Table 1). Most had a Bachelor’s degree and the mean age was 42.11. The mean number of previous guided trips was 3.70 (Table 2). Respondents resided in a variety of states with the largest proportions indicating they were from California, followed by Washington and Illinois (Table 3).

Table 18: Customer Characteristics

<table>
<thead>
<tr>
<th>Customer Characteristic</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>107</td>
<td>43%</td>
</tr>
<tr>
<td>Female</td>
<td>143</td>
<td>57%</td>
</tr>
<tr>
<td><strong>Highest Level of Education Completed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than high school graduate</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>High school graduate (including GED)</td>
<td>49</td>
<td>20%</td>
</tr>
<tr>
<td>Two-year college degree (Associates degree)</td>
<td>18</td>
<td>7%</td>
</tr>
<tr>
<td>Four-year college degree (Bachelor’s degree)</td>
<td>124</td>
<td>50%</td>
</tr>
<tr>
<td>Graduate or professional degree</td>
<td>70</td>
<td>28%</td>
</tr>
</tbody>
</table>

Table 19: Customer Characteristics

<table>
<thead>
<tr>
<th>Customer Characteristic</th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of previous guided trips</td>
<td>247</td>
<td>3.70</td>
</tr>
<tr>
<td>Age</td>
<td>248</td>
<td>42.11</td>
</tr>
</tbody>
</table>
Table 20: Customer Residence

<table>
<thead>
<tr>
<th>Customer Residence</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>7%</td>
</tr>
<tr>
<td>Washington</td>
<td>6%</td>
</tr>
<tr>
<td>Illinois</td>
<td>6%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>5%</td>
</tr>
<tr>
<td>Colorado</td>
<td>4%</td>
</tr>
<tr>
<td>Kansas</td>
<td>4%</td>
</tr>
<tr>
<td>Montana</td>
<td>4%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>4%</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>4%</td>
</tr>
<tr>
<td>Wyoming</td>
<td>3%</td>
</tr>
</tbody>
</table>

*n=251

Table 21: Mean, Standard Deviation of Items measuring Motivation, Knowledge, and Skills

<table>
<thead>
<tr>
<th>Motivation, Knowledge, and Skill Items</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>It appeared that my guide enjoyed talking to customers.</td>
<td>252</td>
<td>3.62</td>
<td>.730</td>
</tr>
<tr>
<td>It seemed as if my guide enjoyed presenting information to his/her customers.</td>
<td>250</td>
<td>3.53</td>
<td>.879</td>
</tr>
<tr>
<td>My guide seemed nervous.</td>
<td>251</td>
<td>1.48</td>
<td>.761</td>
</tr>
<tr>
<td>My guide seemed relaxed.</td>
<td>251</td>
<td>3.47</td>
<td>.878</td>
</tr>
<tr>
<td>It appeared that my guide had a positive effect on customers (e.g. they learned).</td>
<td>251</td>
<td>3.43</td>
<td>.747</td>
</tr>
<tr>
<td>It seemed like customers listened to our guide</td>
<td>251</td>
<td>3.13</td>
<td>.944</td>
</tr>
<tr>
<td>I will remember the information my guide presented to me.</td>
<td>251</td>
<td>3.22</td>
<td>.751</td>
</tr>
<tr>
<td>My guide helps protect the river by communicating with customers.</td>
<td>252</td>
<td>3.39</td>
<td>.783</td>
</tr>
<tr>
<td>My guide helps protect customers by communicating with them.</td>
<td>252</td>
<td>3.52</td>
<td>.760</td>
</tr>
<tr>
<td>My guide presented information in an enjoyable way.</td>
<td>252</td>
<td>3.46</td>
<td>.759</td>
</tr>
<tr>
<td>My guide took his/her time talking with us</td>
<td>252</td>
<td>3.30</td>
<td>.903</td>
</tr>
<tr>
<td>My guide made an effort to get to know us</td>
<td>248</td>
<td>3.14</td>
<td>1.014</td>
</tr>
</tbody>
</table>
### Motivation, Knowledge, and Skill Items

<table>
<thead>
<tr>
<th>Motivation, Knowledge, and Skill Items</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>It appears that my guide likes to teach customers about the river</td>
<td>252</td>
<td>3.37</td>
<td>.794</td>
</tr>
<tr>
<td>My guide seems to love his/her job.</td>
<td>248</td>
<td>3.66</td>
<td>.569</td>
</tr>
<tr>
<td>My guide seemed knowledgeable about the topics he/she spoke about</td>
<td>252</td>
<td>3.54</td>
<td>.658</td>
</tr>
<tr>
<td>My guide organized his/her ideas</td>
<td>252</td>
<td>3.34</td>
<td>.657</td>
</tr>
<tr>
<td>My guide related information to customers</td>
<td>252</td>
<td>3.27</td>
<td>.696</td>
</tr>
<tr>
<td>It appears that my guide has been well trained</td>
<td>252</td>
<td>3.43</td>
<td>.725</td>
</tr>
<tr>
<td>It appears that my guide is experienced in talking with large groups.</td>
<td>251</td>
<td>3.26</td>
<td>.790</td>
</tr>
<tr>
<td>It does not seem like my guide has been trained to communicate with customers.</td>
<td>252</td>
<td>1.89</td>
<td>.996</td>
</tr>
<tr>
<td>When my guide spoke about the natural history of the area, the speech flowed well</td>
<td>252</td>
<td>3.32</td>
<td>.743</td>
</tr>
<tr>
<td>My guide used language that I could understand</td>
<td>251</td>
<td>3.41</td>
<td>.718</td>
</tr>
<tr>
<td>My guide was enthusiastic</td>
<td>251</td>
<td>3.37</td>
<td>.850</td>
</tr>
<tr>
<td>My guide encouraged people to ask questions.</td>
<td>250</td>
<td>2.98</td>
<td>.927</td>
</tr>
<tr>
<td>My guide spoke too loud.</td>
<td>246</td>
<td>1.43</td>
<td>.573</td>
</tr>
<tr>
<td>My guide spoke too fast.</td>
<td>250</td>
<td>1.73</td>
<td>.977</td>
</tr>
<tr>
<td>My guide was difficult to understand.</td>
<td>252</td>
<td>1.70</td>
<td>.938</td>
</tr>
<tr>
<td>My guide’s voice was shaky.</td>
<td>252</td>
<td>1.35</td>
<td>.659</td>
</tr>
<tr>
<td>My guide was expressive.</td>
<td>251</td>
<td>3.12</td>
<td>.882</td>
</tr>
<tr>
<td>My guide made eye contact with visitors</td>
<td>249</td>
<td>2.99</td>
<td>.969</td>
</tr>
<tr>
<td>My guide asked questions of his/her customers</td>
<td>249</td>
<td>3.02</td>
<td>.984</td>
</tr>
<tr>
<td>My guide sounded confident.</td>
<td>247</td>
<td>3.59</td>
<td>.637</td>
</tr>
</tbody>
</table>
## Motivation, Knowledge, and Skill Items

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>My guide is personable.</td>
<td>247</td>
<td>3.41</td>
<td>.749</td>
</tr>
</tbody>
</table>

Table 22: Mean, Standard Deviation of Items measuring Appropriateness and Effectiveness

## Appropriateness and Effectiveness Items

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoyed my interaction with my guide.</td>
<td>251</td>
<td>3.49</td>
<td>.717</td>
</tr>
<tr>
<td>I felt that the material presented was appropriate.</td>
<td>250</td>
<td>3.51</td>
<td>.596</td>
</tr>
<tr>
<td>My guide did not say anything offensive.</td>
<td>250</td>
<td>3.45</td>
<td>.716</td>
</tr>
<tr>
<td>I learned something from my guide.</td>
<td>250</td>
<td>3.34</td>
<td>.782</td>
</tr>
<tr>
<td>My guide ensured that everyone could hear.</td>
<td>249</td>
<td>3.05</td>
<td>.869</td>
</tr>
<tr>
<td>I was able to understand everything my guide said.</td>
<td>250</td>
<td>3.10</td>
<td>.877</td>
</tr>
<tr>
<td>The information my guide presented was interesting to me.</td>
<td>252</td>
<td>3.41</td>
<td>.689</td>
</tr>
<tr>
<td>My guide presented information that I consider to be important.</td>
<td>250</td>
<td>3.63</td>
<td>.553</td>
</tr>
</tbody>
</table>

## Guide Characteristics

In order to gather additional information on the guides involved in this study, the eight guides were asked four questions: their gender, age, number of years guiding, and communication training. There were six male guides and two female guides. The guide’s ages ranged from 25 to 35 years of age and the number of years they have been guiding ranged from two to ten. Six of the guides had taken a college course in
communication but two had no formal communication training. This data was gathered to understand the guides that were involved in this study. No further analysis is performed on this data.

Table 23: Guide Characteristics

<table>
<thead>
<tr>
<th>Guide</th>
<th>Gender</th>
<th>Age</th>
<th># of years guiding</th>
<th>Communication training</th>
<th>Number of customer completed surveys per guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M</td>
<td>34</td>
<td>5</td>
<td>no formal training</td>
<td>36</td>
</tr>
<tr>
<td>2</td>
<td>M</td>
<td>27</td>
<td>2</td>
<td>college course</td>
<td>37</td>
</tr>
<tr>
<td>3</td>
<td>F</td>
<td>25</td>
<td>2</td>
<td>college course</td>
<td>37</td>
</tr>
<tr>
<td>4</td>
<td>M</td>
<td>35</td>
<td>10</td>
<td>college course</td>
<td>34</td>
</tr>
<tr>
<td>5</td>
<td>F</td>
<td>29</td>
<td>4</td>
<td>no formal training</td>
<td>29</td>
</tr>
<tr>
<td>6</td>
<td>M</td>
<td>26</td>
<td>3</td>
<td>college course</td>
<td>28</td>
</tr>
<tr>
<td>7</td>
<td>M</td>
<td>27</td>
<td>4</td>
<td>college course</td>
<td>24</td>
</tr>
<tr>
<td>8</td>
<td>M</td>
<td>27</td>
<td>3</td>
<td>college course</td>
<td>27</td>
</tr>
</tbody>
</table>
Appendix B: Customer Questionnaire

For this questionnaire, please focus on the orientation talk just given to you by your guide. Please indicate how strongly you agree or disagree with the following statements about your guide. -2 (Strongly disagree), -1 (Disagree), +1 (Agree) +2 (Strongly agree)

**Communicative Motivation**
- It appeared that my guide enjoyed talking to customers.
- It seemed as if my guide enjoyed presenting information to his/her customers.
- My guide seemed nervous.
- My guide seemed relaxed.
- It appeared that my guide had a positive effect on customers (e.g. they learned).
- It seemed like customers listened to our guide.
- I will remember the information my guide presented to me.
- My guide helps protect the river by communicating with customers.
- My guide helps protect customers by communicating with them.
- My guide presented information in an enjoyable way.
- My guide took his/her time talking with us.
- My guide made an effort to get to know us.
- It appears that my guide likes to teach customers about the river.
- My guide seems to love his/her job.

**Communicative Knowledge**
- My guide seemed knowledgeable about the topics he/she spoke about.
- My guide organized his/her ideas.
- My guide related information to customers.
- My guide summarized material.
- It appears that my guide has been well trained.
- It appears that my guide is experienced in talking with large groups.
- It does not seem like my guide has been trained to communicate with customers.
- When my guide spoke to us about the river, the speech flowed well.
- My guide used language that I could understand.
- My guide encouraged people to ask questions.

**Communicative Skills**
- My guide spoke too fast.
- My guide spoke too loud.
- My guide was difficult to understand.
- My guide’s voice was shaky.
- My guide was expressive.
- My guide was enthusiastic.
- My guide made eye contact with customers.
- My guide asked questions of his/her customers.
- My guide sounded confident.
- My guide is personable.
**Perceptions of Competence**
My guide presented information that I consider to be important.  
I enjoyed my interaction with my guide.  
I felt that the material presented was appropriate.  
My guide did not say anything offensive.  
I learned something from my guide.  
My guide ensured that everyone could hear.  
I was able to understand everything my guide said.  
The information my guide presented was interesting to me.

1. What is your gender?  
2. What is your age?  
3. How many guided trips have been on in the past?  
4. Residence  
5. Name of your guide
Appendix C: Guide Questionnaire

1. Gender: M  F
2. Age: ____________
3. Please indicate the number of years you have been guiding rafting trips. __________
4. Have you received any communication related training? (Please check all that apply)
   high school course
   college course
   guide training course
   other: _______________