THE EFFECTS OF TOURISM IMPACTS UPON QUALITY OF LIFE OF RESIDENTS IN THE COMMUNITY

By

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Dissertation submitted to the Faculty of the
Virginia Polytechnic Institute and State University
In partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

In

Hospitality and Tourism Management

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November 5, 2002
Blacksburg, Virginia

Keywords: Perceptions, Tourism Impacts, Development Cycle and Quality of Life

The effects of tourism impacts upon Quality of Life of residents in the community

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ABSTRACT

This study investigates how tourism affects the quality of life (QOL) of residents in tourism destinations that vary in the stage of development. The proposed model in this study structurally depicts that satisfaction with life in general derives from the satisfaction with particular life domains. Overall life satisfaction is derived from material well-being, which includes the consumer's sense of well being as it is related to material possessions, community well-being, emotional well-being, and health and safety well-being domains. The model also posits that residents' perception of tourism impacts (economic, social, cultural, and environmental) affects their satisfaction of particular life domains. Lastly, this study investigates that tourism development stages moderate the relationship between residents' perception of tourism impacts and their satisfaction with particular life domains. Accordingly, the study proposed four major hypotheses: (1) residents' perception of tourism impacts affects their QOL in the community, (2) residents' satisfaction with particular life domains is affected by the perception of particular tourism impact dimensions, (3) residents' satisfaction with particular life domains affects residents' life satisfaction in general, and (4) the relationship between residents' perception of tourism impacts and their satisfaction with particulate life domains is moderated by tourism development stages.

The sample population consisting of residents residing in Virginia was surveyed. The sample was proportionally stratified on the basis of tourism development stages covering counties and cities in the state. Three hundred and twenty-one respondents completed the survey. Structural Equation Modeling and Hierarchical Multiple Regression were used to test study hypotheses.

The results revealed that the residents' perception of tourism impacts did affect their satisfaction with particular life domains significantly, and their satisfaction with particular life domains influenced their overall life satisfaction. The hypothesized moderating effect of tourism development stages on the relationship between the perception of tourism impacts and the satisfaction with particular life domains was not supported. The results indicated that the relationship between the economic impact of tourism and the satisfaction with material well-being, and the relationship between the social impact of tourism and the satisfaction with community well-being were strongest among residents in communities characterized to be in the maturity stage of tourism development. This finding is consistent with social disruption theory which postulates that boomtown communities initially enter into a period of generalized crisis, resulting from the traditional stress of sudden, dramatic increases in demand for public services

and improving community infrastructure (England and Albrecht's (1984). Additionally, residents develop adaptive behaviors that reduce their individual exposure to stressful situations. Through this process, the QOL of residents is expected to initially decline, and then improve as the community and its residents adapt to the new situation (Krannich, Berry & Greider, 1989). However, when a community enters into the decline stage of tourism development, the relationship between the economic impact of tourism and the satisfaction with material well-being, and the relationship between the social impact of tourism and the satisfaction with community well-being may be considered to be the capacity of the destination area to absorb tourists before the host population would feel negative impacts. This is consistent with the theoretical foundation of carrying capacity, suggesting that when tourism reaches its maturity or maximum limit, residents' QOL may start deteriorating.

Further, the relationship between the cultural impact of tourism and the satisfaction with emotional well-being, and the relationship between the environmental impact of tourism and the satisfaction with health and safety well-being were strongest in the decline stage of tourism development. Neither the theories of social carrying capacity nor social disruption offered much to explain this result. However, this result is consistent with Butler's (1980) argument that in the decline stage, more tourist facilities disappear as the area becomes less attractive to tourists and the viability of existing tourist facilities becomes more available to residents in the destination community. As residents' perception of negative environmental impacts increases, their satisfaction with health and safety well-being decreases in the decline stage of tourism development unless the area as a destination provides rejuvenating or alternative planning options.

It has been well established that residents in certain types of tourism communities might perceive a certain type of tourism impact unacceptable, while in other communities, the same impact type may be more acceptable. Thus, the study suggests that the proposed model should be further tested and verified using longitudinal data.

To My Loving Parents

But when perfection comes, the imperfect disappears. When I was a child, I talked like a child, I thought like a child, I reasoned like a child. When I became a man, I put childish ways behind me. Now we see but a poor reflection as in a mirror; then we shall see face to face. Now I know in part; then I shall know fully, even as I am fully known. And now these three remain: faith, hope and love. But the greatest of these is love.

- Corinthians I: 13:10-13 -

ACKNOWLEDGEMENT

A project of this magnitude is not an individual endeavor. Consequently, I dedicate this dissertation to the many individuals who provided support, encouragement and assistance for its realization.

A very special gratitude goes to my committee members, Dr. Muzaffer Uysal, Dr. Ken McCleary, Dr. Joseph Sirgy, Dr. Susan Hutchinson and Dr. Joseph Chen, for their support and input.

Dr. Muzaffer Uysal, committee Chairman, has been an inspiration and a mentor for me throughout my doctoral pursuit. I am sincerely grateful for the research opportunities he afforded me. Particularly valued are his accessibility, the breadth and depth of his knowledge, and his ability to instill confidence. In particular, his unique way of encouraging me with research opportunities and praise has benefited me greatly and has guided me in the accomplishment of my dissertation.

For helping me stretch and reach for the best, I am grateful to Dr. Joseph M. Sirgy. His expansive knowledge and firm commitment to supporting this work have set high standards, which allowed me to explore and discover on my own. And also the gift he offered me was the inspiration to be all that I could be, to reach beyond what is acceptable to what is excellent.

I wish to thank Dr. Ken McCleary for his assistance in elucidating the research question, and resecifying unclear location and inconsistence. His cheerful nature of expansive knowledge and academic diligence are highly valued.

Dr. Susan Hutchinson's gift of making students feel comfortable asking question is especially appreciated. Her probing question was helpful in discerning the precepts underlying my research in statistical area. Gratitude is expressed for her sincerely and sagacity.

I would like to thank you Dr. Joseph Chen for offering many insight and keen questions and that contributed to this study and for showing me kindness when I needed it most.

I am grateful to the National Tourism Foundation, which awarded me a "Luray Caverns Graduate Research Grant". Without this grant, I could not be able to finish the survey of my study.

Last, but not least, I am grateful to my mother, Byungrae L. Kim, for having always emotionally supported my academic endeavors. I wish to thank my father, Wonsang, who showed me his love and passion for education. I would like to thank my sisters, Kyunghwa and Kyungae, and my brothers, Eungsun and Eungsoo, for their love, support and patience.

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CHAPTER I

INTRODUCTION

1.1 INTRODUCTION

The introduction provides an explanation of and support for the research question. Subsequently, the study objective is defined and the theoretical basis for the study is explained. Four propositions with associated hypotheses are presented. A description of the structural model used in the study is presented next. Then a discussion of the contributions of the study is given.

1.2 RESEARCH QUESTIONS

Tourism is often viewed as an expression of human behavior. Przeclawski (1986) indicates that tourism is the set of ideas, theories, or ideologies for being a tourist, and that it is the behavior of people in tourist roles, when these ideas are put into practice. It is essential that tourism industry professionals properly identify those ideas, theories, and ideologies important to their "consumers" to provide the services and experiences desired by tourists. When tourists feel that they are welcome by the host community, they are more likely to return and recommend the destination to others. In that context, a survey of tourism literature reveals that most tourism studies emphasize tourists rather than permanent residents of the area in which tourism takes a place.

Once a community becomes a destination, the lives of residents in the community are affected by tourism, and the support of the entire population in the tourism community is essential for the development, planning, successful operation and sustainability of tourism (Jurowski, 1994). Therefore, the quality of life (QOL) of the residents in a community should be a major concern for community leaders. If the development of tourism results in a lesser quality of life, residents may be reluctant to

support tourism in their community. Therefore, government planners and community developers should consider residents' standpoints when they develop and market recreation, travel, and tourism programs, and help residents realize their higher order needs related to social esteem, actualization, knowledge, and aesthetics.

Measuring QOL of residents based on this ideal, a theoretical perspective can help assess the effectiveness of government planners and community developers' marketing and developing strategies and tactics. Numerous studies have examined local residents' perceptions of the economic, social, cultural and environmental impacts of tourism. In addition, development-marketing scientists in the tourism field work closely with other scientists in the leisure and recreation field to enhance the positive impact of recreation and travel upon residents in communities. In doing so, it is proposed that travel/tourism industry professionals can enhance community residents' satisfaction and increase their QOL in the community. From this standpoint, the first research question is proposed:

Research Question 1:

Does tourism affect the quality of life of residents in a community?

QOL used in marketing and related disciplines can be conceived and measured at the individual level, the family level, the community level, and the societal level (Metzen, Dannerbeck, & Song, 1997). At a given level of analysis, QOL can be conceptualized and measured in terms of reflective or formative indicators (Sirgy, 2001). Reflective indicators are eccentric measures of the construct in the most proximate fashion; they reflect a view of the construct as being unidimensional. In contrast, formative indicators represent the view that the construct is multidimensional, and that the best way to measure the construct is through some composite of the dimensions that make them up (Sirgy, 2001). Argyle and Lu (1990) and Andrew and Withey (1976) measured QOL using the formative concept, made up of happiness and life satisfaction. The results revealed that fun and family contribute more to happiness than to life satisfaction. Money, economic security, one's house, and the goods and services bought

in the market contribute to life satisfaction more than to happiness. Similarly, Michalos (1980) showed that evaluations of ten measured life domains (health, financial security, family life, and self-esteem, etc.) were more closely related to life satisfaction (which refers to the satisfaction that people may feel toward their overall living conditions and life accomplishments) than to happiness.

Measuring QOL overall or within a specific life domain can be done through subjective indicators or objective indicators (Samli 1995). Objective indicators are indices derived from areas such as ecology, human rights, welfare, education, etc. According to Diener and Suh (1997), the strength of objective indicators is that these usually can be relatively easily defined and quantified without relying heavily on individual perceptions. By including measures across various life domains, researchers are able to capture important aspects of society that are not sufficiently reflected in purely economic terms.

Perdue, Long and Gustke (1991) investigated how the level of tourism development affected QOL of the residents in the community by using objective measures such as population, economic level (income), education, health, welfare, and crime rate in the community. They concluded that tourism affected net population migration, the types of jobs, education expenditure, the overall level of education and available health care; however, it did not affect population age distribution, unemployment rates, welfare needs and costs, and the per capita number of crimes. In a study of objective indicators of rural tourism impact, Crotts and Holland (1993) concluded that tourism affects positively the quality of life of rural residents in terms of income, health, recreation, personal services and per capita sales, and negatively the level of poverty.

Subjective indicators are mostly based on psychological responses, such as life satisfaction, job satisfaction, and personal happiness, among others. Despite the impression that subjective indicators seem to have lesser scientific credibility, their major advantage is that they capture experiences that are important to the individual (Andrew & Withey, 1976). By measuring the experience of well-being on a common dimension such as degree of satisfaction, subjective indicators can more easily be compared across domains than can objective measures, which usually involve different units of

measurement. Many researchers have considered overall life satisfaction as the sum of satisfactions in important life domains measured by subjective indicators.

The great majority of more recent definitions, models, and instruments have attempted to break down the QOL construct into consequent domains. There is little agreement, however, regarding either the number or scope of these domains. The possible number of domains is large. When he asked respondents to indicate how various domains of life are important to them, Abrams (1973) found the four domains were health, intimacy, material well being, and productivity. Campbell, Converse, and Rodgers (1976) asked people to rate domain importance on a five point scale; they found that four domains were scored 91%, 89%, 73%, and 70% for health, intimacy, material well being, and productivity, respectively. Flanagan (1978) and Krupinski(1980) found that the five domains were regarded as very important aspects of their lives by a large majority of people, and scored health, 97%; intimacy, 81%; emotional, 86%; material well being, 83%; and productivity, 78%. Cummins (1997) proposed two additional domains of safety and community. Cummins, McCabe, Romeo, and Gullone (1994) have provided both empirical and theoretical arguments for the use of seven domains, these being material, health, productivity, intimacy, safety, community, and emotional well-being. Finally, Cummins (1996) reviewed 32 studies and found 173 different terms that have been used to describe domains of life satisfaction. He attempted to identify clear QOL domains and found that a majority supported seven of the proposed domains, such as emotional well-being, health, intimacy, safety, community, material well-being, and productive activity. However, tourism is most likely to affect material well being, community well-being, emotional well-being, and health and safety well-being domains, as this study proposes.

Perdue, Long and Kang (1999) studied how residents' perception of community safety, community involvement, local political influence, and changes in job opportunities, social environment, and community congestion influenced their quality of life in the community. Their findings showed that the key community characteristics affecting residents' QOL were community safety, social environment, and community involvement. In that sense, the research question 2 and 3 are proposed.

Research Question 2:

Does tourism impact affect the particular life domain?

Research Question 3:

Does the particular life domain affect overall QOL of the residents in the community?

Over the past decades, interest in tourism development as a regional economic development strategy has grown dramatically (Getz, 1986; Gursoy, Jurowski, & Uysal, 2002; Jurowski, Uysal, & Williams, 1997; Liu & Var, 1986). Increasingly, tourism is perceived as a potential basic industry, providing local employment opportunities, tax revenues, and economic diversity. As a result, concerns over the potential impacts of tourism development have created a significant demand for comprehensive planning and a need for systematic research on the effects of tourism on local quality of life (Crotts & Holland, 1993; Loukissas, 1983; Murphy, 1983; Pearce, 1996; Perdue, Long & Gustke, 1991; Perdue, Long & Kang, 1999). The objectives and goals of organizations in communities may be very different, but one of the commonalities that they share may be to improve the quality of life in their communities.

Butler (1980) explained why tourism almost always becomes unsustainable. Using a life-cycle model, he described how initially, a small number of adventurous tourists explore a natural attraction, leading to the involvement of local residents and subsequent development of the area as a tourist destination. The number of tourists thereafter grows, eventually consolidating and maturing into mass tourism. Unless the tourism products are rejuvenated, the result is stagnation and eventual decline when overuse beyond the destination's carrying capacity has been reached and then exceeded, making mass tourism unsustainable. Mass tourism can generate large quantities of waste, a problem particularly compelling in developing countries, in which systems for sewage treatment and solid waste disposal are not well developed. As mass tourism adversely affects the environment, environmental degradation in turn adversely affects tourism demand, leading to its probable decline. Ironically, once tourists snub the destination, the

best source of money to repair the tourists' damage dries up as well. Consequently, these results reach the perceived negative attitudes of locals and affect the quality of life of the residents in the community in negative ways.

The impact of tourism at the upper level of development may be most detrimental to residents' life satisfaction. Allen, Long, Perdue, and Kieselbach (1988) examined changes in resident perceptions according to tourism development stages. Their findings generally support tourism development cycle theories. The perceptions of tourism's impacts increased with increasing levels of tourism development, and resident support for additional tourism development initially increased with increasing levels of actual development, but attitudes became less favorable when tourism reached its maximum status.

Research Question 4:

Does residents' life satisfaction with particular life domains affected by tourism depend on tourism development stages? So to speak, do development stages have a moderating effect on the relationship between tourism impacts and particular life domains?

1.3 KNOWLEDGE OF FOUNDATION

Previous studies have addressed issues related to the ability of travel/tourism to both enhance and diminish the QOL of life local residents in the host community (e.g., Cohen 1979; Gursoy, Jurowski & Uysal, 2002; Jurowski, Uysal & Williams 1997; Linton 1987; Perdue, Long, & Kang 1999; Williams & Shaw 1988); to contribute to the leisure satisfaction of travelers (e.g., Jeffers & Dobos 1992; Kelly, 1978; Kousha & Mohseni 1997); to prevent abating the QOL (e.g., Cleland 1998); and to enhance the QOL of travelers (e.g., Neal, Sirgy & Uysal, 1997; Neal, Uysal & Sirgy, 1995, 1999). Few have addressed the effect of tourism impact on enhancing the overall life satisfaction of

residents in a community. Enhancing the life satisfaction of individual residents is believed to improve their QOL in a community.

Most travel and tourism textbooks address the issue of the impacts of tourism as an important component which needs to be considered by decision makers involved with the planning of tourism (Gee, Mackens, & Choy, 1989; Gunn, 1994; McIntosh, Goeldner, & Ritchie, 1995; Murphy, 1983). De Kadt (1979) pointed out the general failure of tourism destination planners to establish a clear framework to determine which questions need to be considered, and what factors should enter into their decision-making. Similarly, Mathieson and Wall (1982) present a synthesis of the research on the impacts of tourism, and analyze tourism impact studies that have focused on interrelationships of a combination of phenomena associated with tourism development.

The economic impact of tourism has been commonly viewed as a positive force which increases total income for the local economy, foreign exchange earnings for the host country, direct and indirect employment, and tax revenues; it also stimulates secondary economic growth (Bryant & Morrison, 1980; Gursoy et al., 2002; Jurowski et al., 1997; Peppelenbosh & Templeman, 1989; Uysal, Pomeroy, & Potts, 1992). Cultural impact studies consider tourism as a cultural exploiter (Fanon, 1966; Greenwood, 1977; Pears, 1996; Young, 1977). Additionally, tourism has frequently been criticized for the disruption of traditional social structures and behavioral patterns (Butler, 1975; Kousis, 1989). However, tourism has also been viewed as a means of revitalizing cultures when dying customs are rejuvenated for tourists (Witt, 1990).

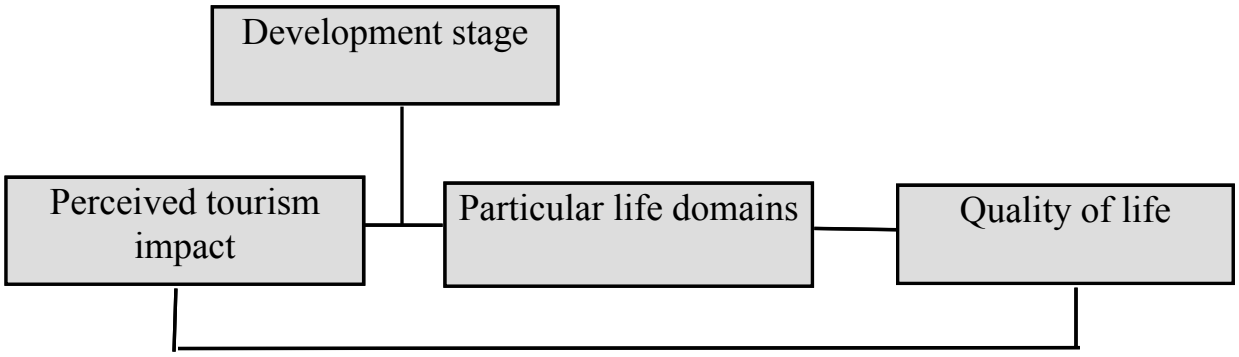
Studies of the environmental impact of tourism focus on tourism development, stress and preservation (Farrell & Runyan, 1991). Alpine areas, coastlines, islands, lakes, and habitat areas are generally sensitive to the intense usage resulting from tourism development (Murph, 1983). Krippendorf (1982) urges planners to protect the resources on which tourism is dependent.

Most of our knowledge about residents' attitudes toward tourism has come from the analysis of surveys, which ask respondents to indicate a level of agreement with positive or negative statements about the impact of tourism (Allen, Hafer, Long & Perdue, 1993; Ap & Crompton, 1998). Some researchers found a linear relationship between support for tourism and certain perceptions and personal characteristics (Perdue,

Long & Allen, 1987). Other studies have inferred that there are varying levels of support for tourism within a community (Dogan, 1989; Doxey, 1975), as well as differences in support for tourism the perceptions of local residents in the host community (e.g. Cohen, 1978; Linton 1987; Jurowski, Uysal, & Williams, 1997; Perdue, Long, & Kang, 1999; Williams & Shaw 1988).

A few studies have addressed the effect that tourism has on enhancing the overall life satisfaction of residents in a community. Enhancing the life satisfaction of individual residents is believed to improve their QOL in a community. Figure 1.1 is used to explain the relationship between tourism impacts and the quality of life of residents, mediated by particular life domains and moderated by tourism development stage.

Figure 1.1 The relationships among perceived tourism impacts, development stage, particular life domains, and quality of life.



1.4 OBJECTIVES

This study will build upon a model designed to explain the role of tourism impact on the quality of life of residents in a tourism community that has demonstrated direct relationships among tourism impacts, particular life domains and QOL of the residents. Another objective of the study is to investigate the moderating role of the tourism development stage between tourism impacts and particular life domains.

The research objectives are to identify:

1) The direct effects of the economic, social, cultural, and environmental impacts of tourism on the quality of life of residents.

2) The direct effects of the perception of the economic, social, cultural, and environmental impacts of tourism on particular life domains.

3) The direct effects of particular life domains on the quality of life of residents.

4) The moderating effects of the tourism development stage between the perception of economic, social, cultural and environmental impacts of tourism and particular life domains.

1.5 THEORETICAL BASIS

To date, little is known about the effect of tourism impacts on the quality of life of residents in communities. This study is generally predicated on the importance of social impact assessment as a component of both tourism (Blank, 1989; Loukissas, 1983; Marsh & Henshal, 1987) and comprehensive community planning (Freudenburg, 1997; Gramling & Freudenburg, 1992; Inter-organizational Committee, 1994). A primary goal of such planning is to enhance resident QOL (O'Brien & Ayidiya, 1991). It is important to extend these descriptive studies of tourism impacts to begin developing and testing alternative theoretical explanations of their effects on residents' QOL.

A theoretical explanation of tourism impact on resident QOL exists in the literature. Tourism literature includes several "tourism development cycle" theories (Butler, 1980; Doxey, 1975; Lundberg, 1990; Smith, 1992), all of which are generally based on the concept of social carrying capacity (Long, Perdue & Allen, 1990; Madrigal,

1993). The underlying premise of these theories is that residents' QOL will improve during the initial phases of tourism development, but reach a "carrying capacity" or "level of acceptable change" beyond which additional development causes negative change. These studies suggest that communities have a certain capacity to absorb tourists. Growth beyond this capacity or threshold may result in negative social and environmental impacts and diminishing returns on tourism investments. If carrying capacity is determined, then economic, social and environmental benefits can be optimized and negative consequences minimized (Allen, Long, Perdue, & Kieselbach, 1988).

Martin and Uysal (1990) investigated the relationship between carrying capacity and tourism life cycle: management and policy implication. Martin and Uysal (1990) defined carrying capacity as the number of visitors that an area can accommodate before negative impact occurs, either to the physical environment, the psychological attitude of tourists, or the social acceptance level of hosts. They also found that each development stage has its own carrying capacity. Butler (1980) explained that tourist areas go through a recognizable cycle of evolution; he used an S-shaped curve to illustrate different stages of popularity.

O'Reilly (1986) describes two schools of thought concerning carrying capacity. In one, carrying capacity is considered to be the capacity of the destination area to absorb tourism before the host population feels negative impacts. The second school of thought contends that tourism carrying capacity is the level beyond which tourist flows will decline because certain capacities, as perceived by tourists themselves, have been exceeded, causing destination areas to cease to satisfy and attract tourists. Mathieson and Wall (1982) say that carrying capacity is the maximum number of people who can use a site without an acceptable alteration in the physical environment and without an acceptable decline in the quality of experience gained by visitors. O'Reilly (1986) claims that carrying capacities can be established not only from a physical perspective but also for the social, cultural, and economic subsystems of the destination.

Economic carrying capacity, as described by Mathieson and Wall (1982), is the ability to absorb tourist functions without squeezing out desirable local activities. They define social carrying capacity as the level at which the host population of an area

becomes intolerant of the presence of tourists. Economic carrying capacity involves two dimensions: physical and psychological. Physical carrying capacity is the actual physical limitations of the area-the point at which no more people can be accommodated. It also includes any physical deterioration of the environment caused by tourism. Psychological carrying capacity has been exceeded when tourists are no longer comfortable in the destination area, for reasons that can include perceived negative attitudes of the locals, crowding of the area, or deterioration in the physical environment.

Social capacity is reached when the local residents of an area no longer want tourists because they are destroying the environment, damaging the local culture, or crowding them out of local activities. According to Martin and Uysal (1990), the carrying capacity for a destination area is different for each life cycle stage of the area. For instance, in the beginning stage, the carrying capacity might be nearly infinite on a social level, but, because of lack of facilities, few tourists can actually be accommodated. In this instance, the physical parameters may be the limiting factor. At the other extreme is the maturity stage, at which facility development has reached its peak and large numbers of tourists can be accommodated, but the host community is showing antagonism toward the tourist. The changes in the attitudes of locals toward tourists have been documented by Doxey (1975) as an index of irritation, which shows feelings that range from euphoria to regret that tourism came to the area. At this point, social parameters become the limiting factor. Understanding the life cycle concept and its interrelationship with the concept of carrying capacity is important to those concerned with establishing a tourism policy for a destination area. Only through life cycle position determination and utilization of an optimal carrying capacity can the future of a destination area be controlled.

At some point, the negative effects of too many tourists cause permanent residents to resent tourists altogether. Doxey (1975) predicted residents' change in perceptions and attitudes in responses toward visitors by indexing the progression of feeling from euphoria, enthusiasm, and hope to apathy and irritation. Negative feelings result from tourists' encroachment, and eventually evolve into overt antagonism when the environment and community life have been damaged beyond repair. As has happened, the transformation from residents' welcoming visitors to despising them can be speeded

along when tourists introduce disease agents or other medical issues that otherwise could have been avoided.

Other researchers have tried to explain why residents respond to the impact of tourism the way they do and why there are various levels of support within the same community (Gursoy, Jurowski & Uysal, 2002; Jurowski, Uysal & Williams, 1997). Social exchange theory has provided an appropriate framework for Gursoy et al.'s study questions about resident reactions to tourism.

Social exchange theorist, Emerson (1972) has adopted principles from behavioral psychology theory and utilitarian economic theory to formulate the principles of social exchange. Psychological behavioral principles are principles of reward and punishment, which have been brought into modern social exchange as rewards and costs (Turner, 1986). The theory assumes that individuals select exchanges after having assessed rewards and costs.

On the other hand, according to Emerson (1972), utilitarian principles propose that humans rationally weigh costs against benefits to maximize material benefits. Exchange theorists have reformulated utilitarian principles by recognizing that humans are not economically rational, and do not always seek to maximize benefits, but instead engage in exchanges from which they can reap some benefit without incurring unacceptable costs (Turner, 1986). Homans (1967) proposed that humans pursue more than material goals in exchange, and that sentiments, services, and symbols are also exchange commodities. Thus, the exchange process includes not only tangible goods such as money and information, but also non-materialistic benefits such as approval, esteem, compliance, love, joy, and affection (Turner, 1986). The perception of the impact of tourism for this study is a result of this assessment. The way that people perceive the impact of tourism affects their subjective well-being domains, and will affect their life satisfaction. However, individuals who evaluate the exchange as beneficial will perceive the same impact differently than someone who evaluates the exchange as harmful.

A few researchers have attempted to apply the principles of social exchange in an effort to explain the reaction of residents. For example, Perdue, Long and Allen (1987) used the logic in social exchange theory to explain the differences in tourists' perceptions and attitudes based on variance in participation in outdoor recreation. They hypothesized

that outdoor recreation participants, when compared to non-participants, would perceive more negative impacts from tourism because of the opportunity costs associated with tourists' use of local outdoor recreation areas. However, their findings failed to support this hypothesis. They explained that the reason for this failure was that residents might feel that tourism had improved rather than reduced the quality of outdoor recreation opportunities. Support for this supposition can be found in the results of several studies, which found that residents view tourism as a benefit to increase recreational opportunities (Keogh, 1989; Liu, Sheldon & Var, 1987).

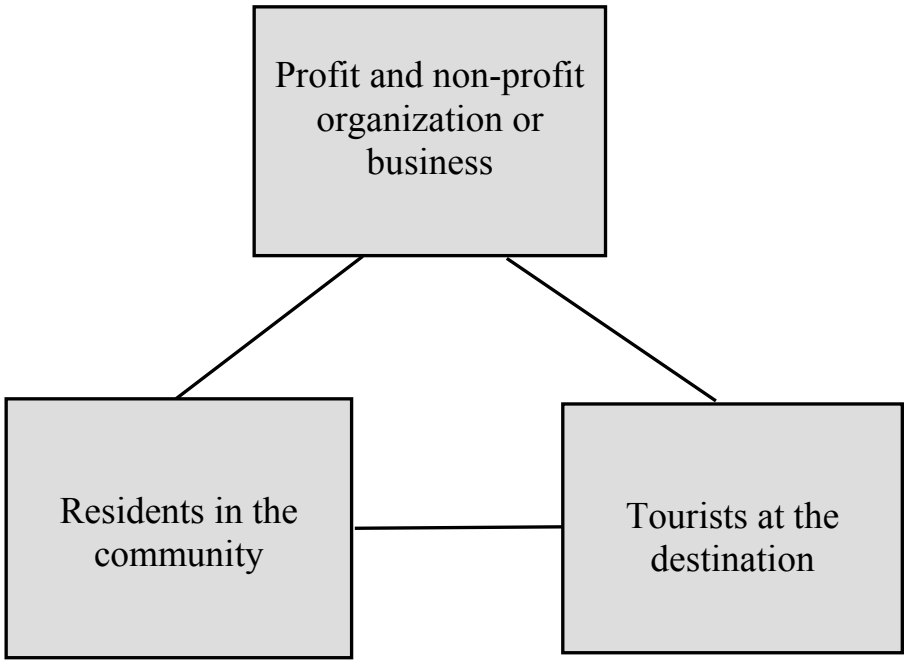
Ap (1992) also based his research on social exchange principles in an exploration of the relationship between residents' perceptions of their power to control tourism and their support for tourism development. However, his finding revealed that the power discrepancy variable did not emerge as the most important variable in explaining the variance of perceived tourism impacts. He suggested that a study of the value of resources and perceived benefits and costs might provide further insight into exchange relationships, and that a quasi-experimental design might better test power discrepancy as a factor influencing host community residents' attitudes toward tourism.

Another study (Jurowski, Uysal & Williams, 1997) explored how the interplay of exchange factors influences not only the attitude about tourism but also the host community residents' perceptions of tourism's impacts. This model explained how residents weighed and balanced seven factors that influenced their support for tourism. The study demonstrated that potential for economic gain, use of tourism resources, ecocentric (support for eco-tourism) attitude, and attachment to the community affect residents' perceptions of the impacts and modify, both directly and indirectly, residents' support for tourism.

The model in Figure 1.2 describes that tourism is: a system of exchange between tourists and the businesses/services at the destination; an exchange between businesses/services and the residents in the host community; and an exchange between tourists and residents in the host community. Theoretically, if any component perceived the distribution as positive, it would seek to maintain the exchange relationship. On the other hand, if that component perceives a negative distribution, it will seek to discontinue the relationship. However, the profit from tourism depends on the carrying capacity of

the community. As the carrying capacity permits, residents may tolerate the costs of tourism. However, once the carrying capacity reaches its maximum capacity, the residents will not tolerate the costs any more.

Figure 1.2 Tourism Exchange System modified from Jurowski, 1994



Based on the previously-described theoretical framework, the current study proposes the effect of tourism impacts on the quality of life of residents in a community using economic, social, cultural, and environmental impact assessments as components of tourism. Also, the study suggests that the benefits of perceived tourism impacts enhance the QOL of the residents affected by particular life domain indicators, as mediator

variables. The specific hypothesized relationships between the aspects of tourism impacts and overall life satisfaction are explained in the next section.

1.6. PROPOSITIONS

Social capacity is reached when the local residents of an area no longer want tourists because they are destroying the environment, damaging the local culture, or crowding them out of local activities. At some point, the negative effects of too many tourists cause permanent residents to resent tourists altogether. Doxey (1975) predicts residents' changes in perceptions and attitudes in responses toward visitors by indexing the progression of feeling from euphoria, enthusiasm, and hope to apathy and irritation. Negative feelings result from tourists' encroachment, and eventually evolve into overt antagonism when the environment and community life have been damaged beyond repair. Figure 1.3 shows the direct relationships between the residents' perceptions of tourism impact and their life satisfaction.

Proposition 1: Residents' perceptions of tourism impacts affect their QOL in the community.

Hypothesis 1: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the economic impact of tourism.

Hypothesis 2: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the social impact of tourism.

Hypothesis 3: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the cultural impact of tourism.

Hypothesis 4: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the environmental impact of tourism.

After the carrying capacity at the destination is reached, residents' unpleasant perception of the tourism impacts takes place in the physical environment. This feeling gradually becomes more and more negative; affects residents' social consciousness (their general feeling of community well-being and health and safety well-being); and influences their possessions, material well-being, and emotional well-being in the community. Residents' social consciousness and satisfaction of material possessions finally affect life satisfaction in general.

Proposition 2: Residents' satisfaction in a particular life domain is affected by the perception of the particular tourism impact dimension.

Hypothesis 5: The material well-being domain is a positive function of the perception of the economic impact of tourism.

Hypothesis 6: The community well-being domain is a positive function of the perception of social impact of tourism.

Hypothesis 7: The emotional well-being domain is a positive function of the perception of the cultural impact of tourism.

Hypothesis 8: The health and safety well-being domain is a positive function of the perception of environmental impact of tourism.

Proposition 3: Residents' satisfaction in particular life domains affects residents' life satisfaction in general.

Hypothesis 9: Residents' life satisfaction in general is a positive function of the material well-being domain.

Hypothesis 10: Residents' life satisfaction in general is a positive function of the community well-being domain.

Hypothesis 11: Residents' life satisfaction in general is a positive function of the emotional well-being domain.

Hypothesis 12: Residents' life satisfaction in general is a positive function of the health and safety well-being domain.

The perception of various social, economic, cultural, and environmental impacts is related strongly to the level of tourism development. This relationship suggests that the impact of tourism at the upper level of development may be most detrimental to residents' life satisfaction. Allen et al. (1988) examined changes in resident perceptions of seven dimensions of community life across 20 communities classified on the basis of the percentage of retail sales derived from tourism. Their finding generally supports tourism development cycle theories. According to Allen et al. (1988, p.20), "Lower to moderate levels of tourism development were quite beneficial to the study communities, but as development continued, residents' perceptions of community life declined, particularly as related to public services and opportunities for citizens' social and political involvement." Using the same data set, Long, Purdue, and Allen (1990) concluded that (1) perceptions of tourism's impacts increased with increasing levels of tourism development and (2), residents' support for additional tourism development initially increased with increasing levels of actual development, but reached a threshold social carrying capacity level beyond which attitudes became less favorable.

Proposition 4: The relationship between residents' perception of tourism impacts and their satisfaction in particular domains is moderated by the tourism development cycle.

Hypothesis 13: The relationship between the economic impact of tourism and material well-being is strongest in relation to the beginning and growth stages of the tourism development cycle and weakest in relation to the maturity and decline stages.

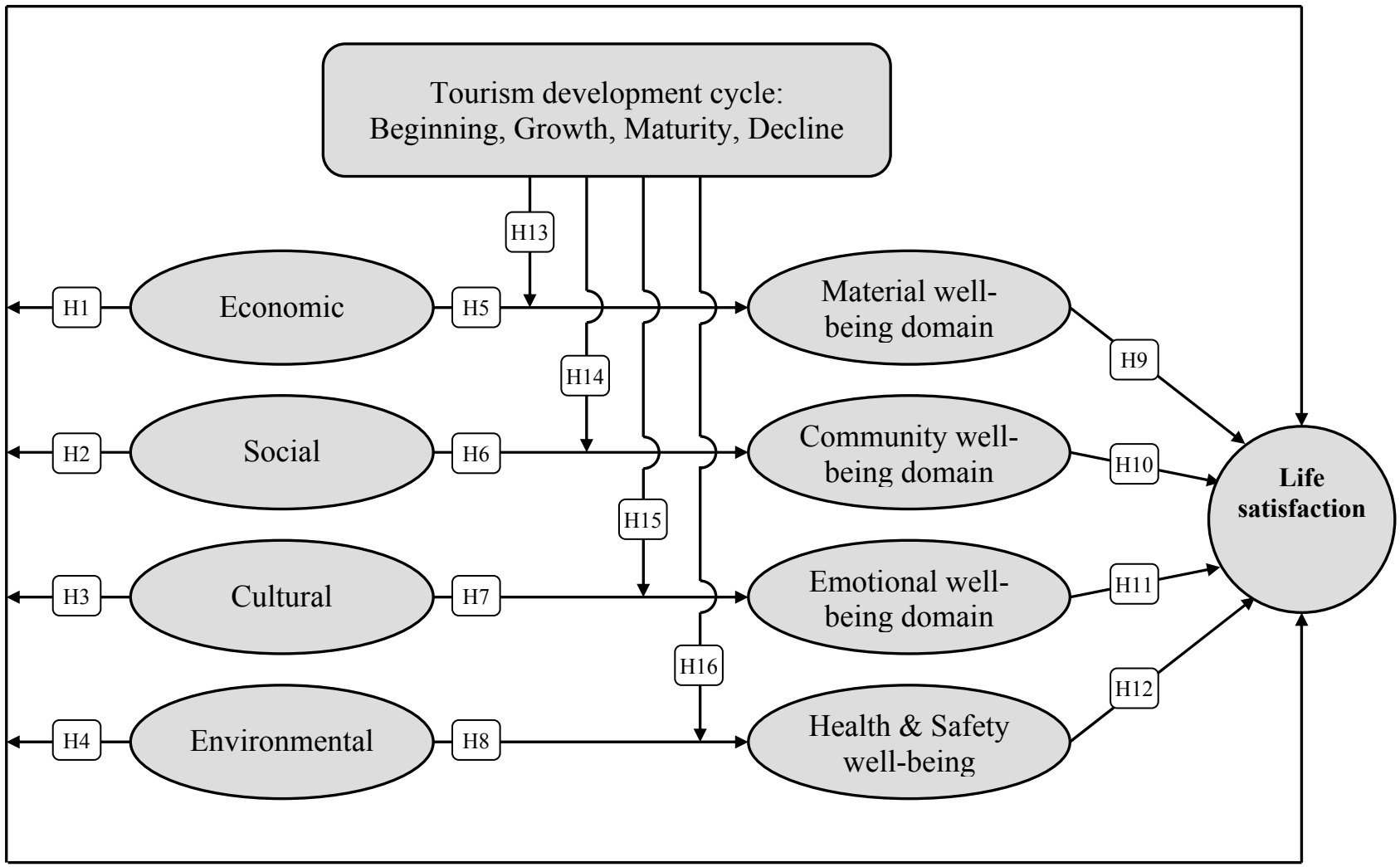
Hypothesis 14: The relationship between the social impact of tourism and community well-being is strongest in relation to the maturity and decline stages of the tourism development cycle and weakest in relation to the beginning and growth stages.

Hypothesis 15: The relationship between the cultural impact of tourism and emotional well-being is strongest in relation to the maturity and decline stages of the tourism development cycle and weakest in relation to the beginning and growth stages.

Hypothesis 16: The relationship between the environmental impact of tourism and health and safety well-being is strongest in relation to the maturity and decline stages of the tourism development cycle and weakest in relation to the beginning and growth stages.

The specific hypothesized relationships are shown in Figure 1.3. The tourism impacts upon QOL model depicted in Figure 1.3 is used to explain the relationship between the tourism impacts and life satisfaction in general mediated by particular life domains and moderated by tourism development stage. This model depicts that overall life satisfaction is derived from the satisfaction of particular life domains such as material well-being, community well-being, emotional well-being, and health and safety well-being. A specific tourism impact dimension affects satisfaction with each life domain. For instance, perceived tourism economic impact will strongly affect the satisfaction with material well-being domain, but will not affect the community well being domain, emotional well-being domain, and health and safety well-being domains. Also, residents' perception of tourism impacts on particular life domains will vary according to different tourism development stages.

Figure 1.3 Tourism Impact Model of Quality of Life



1.7. STRUCTURAL MODEL OF THE STUDY

Using a structural equation model allows a theoretical scheme to be developed and tested which is based on a sequence of events. The model in Figure 1.3 shows the hypothesized relationships. The model describes the logical flow of factors related to residents' perception of tourism, which affects residents' life satisfaction.

The model structurally depicts that satisfaction with life in general is derived from satisfaction with particular life domains. For example, overall life satisfaction is derived from the material well-being domain, which includes consumer well-being related to material possessions. The model illustrates that overall life satisfaction is also derived from satisfaction with the social well-being dimension. The community well-being dimension consists of the relation between community environment and satisfaction with community service. The model also proposes that overall life satisfaction is derived from satisfaction with emotional well-being, which is related to the spiritual well-being and leisure well-being dimension. According to Neal, Sirgy, and Uysal (1997), the leisure well-being dimension is obtained from the components of leisure experiences at home and satisfaction with a travel/tourism trip experience. The travel/tourism trip experience is most likely derived from leisure satisfaction with travel/tourism services and leisure satisfaction stemming from leisure trip reflections.

Figure 1.3 illustrates that overall life satisfaction is derived from residents' perception of various tourism impacts such as economic, social, cultural, and environmental impacts. However, various tourism impact dimensions also affect particular life domains to formulate the general life satisfaction. Finally, the relationships between tourism impact dimensions and particular life domains are moderated by the tourism development stage.

In this model, tourism impacts are considered to be the exogenous variables (i.e., those that are not predicted by any other variables in the model); the particular life domains and QOL of residents are endogenous variables (i.e., variables that are dependent variables in at least some of the relationships in the model). Reflective satisfaction of life is the ultimate dependent variable (the one that is affected by all of the others). Satisfaction with particular life domains (material well-being, community well-

being, emotional well-being and health and safety well-being) is considered to be the mediating variable (which either directly or indirectly affects the ultimate dependent variable) between perception of tourism impact and the life satisfaction variable. All relationships between the perception of tourism impact and the particular life satisfaction variable depend on tourism development stages in a destination.

1.8 CONTRIBUTION OF THE STUDY

The potential contribution of this study can be seen from both theoretical and practical perspectives:

1.8.1. Theoretical advancement in tourism study

This study contributes to a theoretical advancement in the field of tourism by proposing a model to explain the effects of the interaction of elements important to individuals and their perceptions of the impact of tourism on their life satisfaction. It adds to existing knowledge by creating a model that explains factors regarding how individuals' perceptions of tourism impacts vary according to the destination development stage, the factors which influence the particular life domains, and the factors which subsequently affect individuals' life satisfaction. The study's uniqueness lies in the interactive treatment of the variables. The dynamic nature of the proposed structural model provides new insights into understanding factors which affect the quality of life of residents in the community.

1.8.2. Practical application for the tourism-planning program

The findings of this study will aid in the planning of strategic development programs for tourist destinations. The model can be helpful in understanding factors that influence the quality of life of residents in the tourism community. An understanding of what is important to the individuals within a community will assist resource planners to

preserve that which is most valued. Furthermore, communication messages designed to elicit support for tourism development can be more effectively designed if planners are cognizant of the values of their audience.

1.9 CHAPTER SUMMARY

Chapter I presented the overview of the study and included the statement of the problem, theoretical background of the problem, the research question, the theoretical framework of the study, and the theoretical model that is based of the study. In Chapter II, a review of the relevant literature is presented.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

The aim of this literature review is to generate awareness, understanding, and interest for studies that have explored a given topic in the past. This chapter defines the current level of knowledge about the theoretical and conceptual research on tourism impact and quality of life studies derived from different sources, such as sociology, planning, and marketing. First, this chapter explains the relevance of this research. In the second section, the concept of carrying capacity, tourism life cycle with explanation of the characteristics of different stages, and their interrelationships with tourism impacts and residents' QOL are reviewed. The third section addresses the review of tourism impacts and its dimensions. The last section presents the particular life domains related to tourism.

2.2 RELEVANCE OF THE RESEARCH

Tourism is an interdisciplinary field and involves a number of different industries and natural settings. Planning is essential to stimulate tourism development and its sustainability. Without tourism planning, many unintended consequences may develop, causing tourist and resident dissatisfaction. These include damage to the natural environment, adverse impacts upon the cultural environment, and a decrease in potential economic benefits. The negative experience of many unplanned tourist destinations and the success of local and regional planned destinations demonstrate that tourism development should be based on a planning process that includes a solid assessment of the resources at the destination and their attractiveness potential (Blank, 1989; Formica, 2000; Gunn, 1994; Inskeep, 1994).

Some government and private researchers have studied the measurement of tourism resources and the development of appropriate tourism plans. Resource assessment and planning become increasingly important in order to achieve long-term development of new or developing tourism destinations. Planning is also important for developed tourist destinations at which major efforts are generally focused on revitalizing the area and sustaining its attractiveness over time (Dragicevic, 1991; Formica, 2000; McIntosh, Goeldner, & Ritchie, 1995; Witt, 1991).

Other researchers have studied tourism impacts in planning marketable tourism destinations within a community, and have demonstrated that tourism development has costs as well as benefits. Tourists have been accused of destroying the very things that they came to enjoy (Krippendorf, 1982). Early development planning focused on economic benefits, with almost complete disregard for social and environmental impacts. The planning and marketing of tourism have been primarily oriented towards the needs of the tourist, but this planning should include efforts to manage the welfare of the host population. Failure to consider the needs of the indigenous population has resulted in the disruption or destruction of cultures and values, the disruption of economic systems, and the deterioration of the physical and social environment. Tourism planning cannot succeed by focusing only on resource assessment. Planning should employ holistic approaches, including the QOL of residents in the community impacted by tourism.

Among the different theoretical explanations of tourism impact on residents' QOL, the tourism literature includes several "tourism development cycle" theories (Butler, 1980; Doxey, 1975; Smith, 1992), all of which are generally based on the concept of social carrying capacity (Long, Perdue, Allen, 1990; Madrigal, 1993). The underlying premise of these theories is that resident QOL will improve during the initial phases of tourism development, but reach a "carrying capacity" or "level of acceptable change" beyond which additional development may cause negative change. Butler (1980) explained why tourism almost always becomes unsustainable. Using a life-cycle model, he describes how initially, a small number of adventurous tourists explore a natural attraction, leading to the involvement of local residents and subsequent development of the area as a tourist destination. The number of tourists thereafter grows, eventually consolidating and maturing into mass tourism. Unless tourism products are rejuvenated,

the result is stagnation and eventual decline when saturation beyond the destination's carrying capacity has been reached and then exceeded, making mass tourism unsustainable.

These studies suggest that communities have a certain capacity to absorb tourists. Growth beyond this capacity or threshold may result in negative social and environmental impacts and diminishing returns on tourism investments. If carrying capacity is determined, then economic, social and environmental benefits can be optimized and negative consequences minimized (Allen, Long, Perdue, & Kieselbach, 1988). Consequently, sustainable development has become an important topic in tourism literature. Because the host population is a key element in the success of a tourist destination, sustainable tourism is dependent upon the willingness of the host community to service tourists. From that standpoint, the next section explains tourism impact and its related theories: carrying capacity and the tourism development cycle.

2.3 TOURISM IMPACTS

Impact studies emerged in the 1960s with much emphasis on economic growth as a form of national development, measured in terms of "Gross National Product (GNP)," rate of employment, and the multiplier effect (Krannich, Berry & Greider, 1989). The 1970s saw the impacts of tourism ventures on social-cultural issues (Bryden, 1973). Environmental impacts of tourism became the sole concern of tourism researchers in the 1980s (Butler, 1980). 1990s tourism impact studies are an integration of the effects of the previous determined impacts, leading to a shift from "Mass Tourism" to "Sustainable Tourism" in the form of Eco-tourism, heritage tourism, and Community tourism (Jurowski, Uysal, & Williams, 1997).

Tourism is an industry with enormous economic impacts. It is also an industry that has many environmental and social consequences. A thorough understanding of each component of the tourism phenomenon is essential so that those involved with planning, management, and policy determination have a basis for decision-making.

The early research in this area focused on identifying the various perceived impacts of tourism development (Belisle & Hoy, 1980; Liu, Sheldon, & Var, 1987; Liu & Var, 1986; Perdue, Long, & Allen, 1987; Ross, 1992; Sheldon & Var, 1984). The major impacts and variables have been identified, methodological approaches developed, and problems and research needs delineated. Generally, residents recognized the positive economic impact of tourism development, but were concerned with potentially negative social and environmental impacts such as traffic congestion, crime, public safety issues, and pollution.

This early research also typically examined differences in perceived impacts among different types of local residents identified on the basis of socio-demographic characteristics (Belisle & Hoy, 1980; Liu & Var, 1986; Milman & Pizam, 1988; Pizam, 1978); place of residence or distance from the tourism area of the community (Belisle & Holy, 1980; Sheldon & Var, 1984); and economic dependency on tourism, measured both as type of employment (Milman & Pizam, 1988; Pizam, 1978) and by comparing local entrepreneurs, public official and other residents (Thomason, Crompton & Kamp, 1979; Lankford, 1994; Murphy, 1983). This research found little consistent difference in perceived tourism impacts by socio-demographic characteristics. Perceived impacts of tourism decrease as distance between individuals' homes and the tourism sector of the community increases. Overall favorability of tourism impact perceptions increases with the individual's economic dependency on tourism.

Among tourism impact studies, the development of a tourism impact assessment scale has also been one of the important topics espoused by scholars starting about two decades ago (Chen, 2000). Pizam (1978) brought up tourism impact attributes; research started using various resident attitude-related attributes to postulate-perceived tourism impacts. Several researchers (Liu & Var, 1986; Liu, Sheldon & Var, 1987) further distilled these attributes into fewer identical impact domains. After that, Lankford and Howard (1994) found two factors from a 27-item tourism impact scale. McCool and Martin (1994), who investigated mountain residents' attitudes toward tourism, revealed four factors including impacts, benefits, equity, and extent. However, Burns (1996), who surveyed 102 inhabitants from 14 villages in the Solomon Islands, noticed that

respondents' greatest concern was tourism's socio-cultural impact with regard to the demonstration effect and different cultural values of tourists.

According to the Inter-organization committee (1994), in general, there is consensus on the types of impacts that need to be considered (social, cultural, demographic, economic, social psychological). Also, political impacts are often included. Recently Ap and Crompton (1998), in their effort to develop a reliable and valid impact assessment scale, revealed a 35-item tourism impact scale that helps monitor sustainable tourism development. However, the Inter-organization committee (1994) concluded that the Social Impact Assessment (SIA) practitioner should focus on the more significant impacts, use appropriate measures and information, provide quantification where feasible and appropriate, and present the social impacts in a manner that can be understood by decision makers and community leaders. In addition to investigations of scale development, scholars have facilitated discussions on the issues of perceived economic, social, cultural, and environmental impacts as a result of the presence of tourism. In the next section, the major positive and negative impacts of tourism development is discussed and summarized in Table 2.1.

2.3.1. Economic impacts

Tourism can create jobs, provide foreign exchange, produce return on investment for emerging economics, bring technology, and improve living standards. The most prominent benefits used to promote tourism development are the economic benefits that communities can expect to derive from an increase in tourism activity. Every study of resident perception of tourism impacts has included questions concerning economic factors. The studies demonstrate that residents feel tourism helps the economy (Ritchie, 1988), that tourism increases the standard of living of host residents (e.g., Var & Kim, 1990), and that tourism helps the host community and country earn foreign exchange (e.g., Ahmed & Krohn, 1992; Var & Kim, 1990). Also, tourism helps generate employment (e.g., Ahmed & Krohn, 1992; Backman & Backman, 1997; Milman & Pizam, 1987; Var & Kim, 1990), and increase revenue to local business (Backman & Backman, 1997; Sethna & Richmond, 1978) and shopping facilities (Backman & Backman, 1997). Services of all kinds are established and offered to tourists, which in

turn also serve local residents, and tourism generates the impetus to improve and further develop community infrastructure and community service (Var & Kim, 1990). However, tourism contributes to resentment concerning the employment of non-locals in managerial and professional positions (e.g., Var & Kim, 1990). Tourism is related to foreign domination of tourist services and facilities, increases in the cost of land and housing, increases in prices of goods and services, increases in food and land prices, and shortage of certain commodities (Var & Kim, 1990). Some researchers conclude that residents agreed that tourism's economic gains were greater than social costs (Liu & Var, 1986; Sheldon & Var, 1984; Weaver & Lawton, 2001). The vast majority of studies have focused on employment opportunities, standard of living, the revenue that a community derives from tourism activities, and cost of living.

Employment opportunities

A study conducted in British Columbia and Alberta Canada revealed that 87% of the respondents felt that tourism was important to the number of jobs in the province, while only 10% did not consider tourism an important contributor to employment (Ritchie, 1988). In British Columbia, Belisle and Hoy (1980) found similar results in a study which demonstrated that more than 84% of the respondents felt that tourism had generated employment in the area. Tyrrell and Sheldon (1984) found that the creation of jobs was one of the four most-frequently-mentioned benefits of tourism. Tosun (2002), in his comparative study, also noted that the residents from Urgup, Turkey; Nadi, Fiji; and Central Florida perceived employment opportunities as the positive tourism impact. Many other studies found recognition by the residents of an increase in the number of jobs from tourism (Davis, Allen, & Cosenza, 1988; Keogh, 1990; Liu & Var, 1986; Pizam, 1978; Soutar & McLead, 1993; Weaver & Lawton, 2001; Tosun, 2002). However, they also found that rapid construction led to heavy unemployment after completion, and that the frequently seasonal nature of the industry disrupts the employment structure.

Revenues from tourists for local business and standard of living

Like many other industries, the measure of receipts, and especially the net income generated by those receipts, that a community can expect from tourism expenditure is dependent upon government policies and a variety of local economic characteristics. One study revealed that net income from tourism ranges from 25% to 90% of the total receipts, depending upon the share of national and local interest in the tourist business (Peppelenbosch & Templeman, 1989). Researchers have also asked residents if they felt that tourism improved the economy (Allen et al., 1988; Bradley et al., 1989; Ritchie, 1988), provided an improved standard of living (Belisle & Holy, 1980; Tosun, 2002; Um & Crompton, 1990), increased investment (Liu et al., 1987) and more business activity (Prentice, 1993). The findings of these studies suggest that residents perceive an improvement in income, standard of living, investments and business activities ensuing from tourism activities. For example, Liu and Var (1986) reported that 90 % of the residents in Hawaii agreed that tourism brought the community more investment and local business.

However, the research on residents' perception of tax revenues has been mixed. In Rhode Island and Florida, residents expressed the belief that tax revenues derived from tourist expenditures and tariffs could lower their own taxes (Tosun, 2002; Tyrrell & Spaulding, 1984). Other researchers found that residents felt that their property taxes increased as a result of tourism (Allen et al., 1993; Perdue et al., 1987). The majority of residents in a British Columbian, Canada study did not agree that higher taxes should be based on tourist expenditures (Belisle & Hoy, 1980). Residents did not much care about the tax revenue for the local community, and perceived the tax as a negative impact of tourism. Residents were unlikely to support tax expenditures for tourism if they did not directly benefit from the industry (Prentice, 1993).

Cost of living

Negative economic impacts caused by an increase in the price of goods and services have been perceived by residents in several surveys (Belisle & Hoy, 1980; Keogh, 1989; Pizam, 1978; Tosun, 2002; Weaver & Lawton, 2001). Sheldon and Var (1986) found only moderate agreement with a statement which suggested that increases

in tourism were the cause of increased prices of goods and services. Very few respondents perceived tourism as the cause of the high cost of living in Zambia (Husbands, 1989). Only 26% of a sample of New Brunswick, Canada residents felt that the addition of a new park would cause price inflation in stores (Keogh, 1989).

Tourism can cause the price of land to rise rapidly, as noted by Lundburg (1990), who found that the cost of land for new hotel construction rose from 1 percent to nearly 20 percent as the site was being developed. An early study by Pizam (1978) found that residents viewed the cost of land and housing as a negative effect of tourism. More than 70% of the respondents in a Turkish study agreed that tourism increases property value and housing prices (Tosun, 2002; Weaver & Lawton, 2001; Var, Kendall, & Tarakcoglu, 1985). However, other studies found more neutral attitudes. For example, Belisle and Hoy (1980) determined that approximately 90% of respondents described the effect of tourism on the cost of land and housing as neutral. About half of the respondents agreed with the statement that tourism unfairly increases real estate costs, while, in a study of Colorado residents, the other half disagreed (Perdue et al., 1987). These mixed findings suggest that, even though dramatic real estate change has commonly been associated with tourism development, the perception of the effect of these changes on residents is mixed and irregular.

2.3.2. Social impacts

Tourism increases traffic congestion and crowdedness in the public area, and brings social problems. Tourism also contributes to social ills such as begging, gambling, drug trafficking, and prostitution, as well as the uprooting of traditional society, and causes deterioratin of the traditional culture and customs of host countries (Ahmed & Krohn, 1992, Var & Kim, 1990). Tourism contributes to an undesirable increase in the consumption of alcohol, increased traffic congestion, and overcrowding because of visitors (Backman & Backman, 1997). However, tourism brings more opportunities to upgrade facilities such as outdoor recreation facilities, parks, and roads, but brings crowdedness in theaters, movies, concerts, and athletic events (Lankford & Howard, 1994; Liu & Var, 1986).

Congestion

Another common theme in tourism resident attitude is that of crowding and congestion, especially focused on traffic inconveniences. Rothman (1978) concluded from his study on seasonal visitors that residents curtailed their activities during the peak tourism season because of congestion. Liu and Var (1986) reported that residents in Hawaii experienced crowdedness during the peak tourism seasons. Tyrrell and Spaulding (1980) determined that the residents of the state of Rhode Island saw congested roads as well as parking and shopping areas as a problem caused by tourism. Several other studies also found that residents perceived that traffic was a major problem created by tourism activities (Long et al, 1990; Keogh, 1990; Prentice, 1993). However, residents' perceptions of the congestion caused by a major world event were less than predicted (Soutar & McLeod, 1993). The majority of respondents in a Florida study did not agree with a statement which suggested that traffic problems would disappear with the absence of tourists (Davis et al., 1988). A concept that is closely related to congestion is that of carrying capacity, which is defined in the literature as the level at which tolerance is exceeded. The concept of carrying capacity is fully examined in section 2.3.5. The residents in British Columbia, Canada, disagreed with statements that suggested that the government should determine and enforce the carrying capacity of the island (Belisle & Hoy, 1980).

Local service

Along with tax revenue and employment opportunities, residents have differing views on the effects of tourism on local services. An early study by Sethna and Richmond (1978) found that residents in the Virgin Islands agreed that the money acquired from tourism contributed to the improvement of public services. Likewise, residents in Cape Cod perceived a positive effect of tourism on local services (Pizam, 1978). The Rhode Island study found that only government officials perceived an increase in the cost of police services (Tyrrell & Spaulding, 1980). An important finding in the aspect of services was made by Murphy (1983), who examined the differing views of residents, administrators, and business owners. He found that three groups differed in their perception of the impact of tourism on local services. Allen et al. (1993) discovered

that tourism development increases sensitivity to change of public services, but concluded that satisfaction with, and the availability of, services was more a function of population size than tourism impact. One study found a relationship between satisfaction with local services and tourism development. As development increased, satisfaction with public services decreased. However, research results on the whole suggest that residents feel that tourism improves local services (Keogh, 1989).

O'Leary (1976) found that residents view themselves as being forced out of traditional leisure places through management agency regulations and indifference, and through sharp increases in tourist visitations. In a similar vein, another qualitative study uncovered resident expectations about losing leisure time because of the need to keep longer business hours as tourism increased (Cheng, 1980). However, the results of most quantitative studies imply that residents view tourism as a benefit, which increases recreational opportunities (Perdue et al, 1991).

Increasing social problem

Crime is conceptualized here as any anti-social behavior including increased sale or consumption of drugs and alcohol, as well as behavior considered immoral by the society as a whole. Smith's study (1992) of Pattaya, Thailand supported the view that tourism development brought prostitution, drug abuse linked to many tourist deaths, sex-related disease and injuries, and police corruption . A Florida study revealed that residents perceived tourism as a causal factor in increasing crime and alcoholism (King, Pizam, & Milman, 1993). On the other hand, Liu and Var (1986) reported that when they asked residents in Hawaii if they perceived that tourism increased crime generally, only 37% of respondents felt that tourism contributed to crime. Other researchers who have examined resident attitudes towards crime and tourism development also found little perceived relationship between crime and tourism overall (Allen et al., 1993).

2.3.3. Cultural impacts

Even though tourism contributes to the renaissance of traditional arts and craft (Var & Kim, 1990), tourism has frequently been criticized for the disruption of traditional social and culture structures and behavioral patterns. Destination areas that

have embraced tourism for its economic benefits have witnessed heightened levels of crime and prostitution, and displacement due to rising land costs and loss of the cultural heritage of local people, particularly youth. Tourism has been charged not only with the debasement of socio-cultural factors but also with degradation of the environment. Acculturation takes place when two or more cultures come into contact for a sustained period and ideas are exchanged (Liu & Var, 1986). In the case of relatively undeveloped countries, however, local cultures and customs tend to be overwhelmed by more-developed cultures, especially Western ones (Liu & Var, 1986; Weaver & Lawton, 2001). Moreover, some attraction operators will actually modify local standards to suit tourists' expectations. An example of acculturation is the accommodation of heritage: residents try to convince tourists that corrupted and shortened cultural presentations are, indeed, authentic. For example, the authentic Balinese dance has been shortened for tourist events, and the dancers' costumes have been made more colorful and attractive than tradition dictates. Thus, tourists end up paying to see what they expect to see, not what they are supposed to see.

Preservation of local culture

There is some debate over whether tourism preserves or destroys cultures, but the primary position is that the impact is deleterious (Mathieson & Wall, 1982). Tourism has been denounced as being responsible for the depletion of the diversity of non-western cultures (Turner & Ash, 1975). This position is supported by the documentation of rapid and dramatic changes in social structure, land use patterns, and value systems in traditional Mexican and Indian cultures (McKean, 1976). Anthropologists have written about the changes in style and form of traditional arts and crafts caused by the commercial demands of tourists for native wares (Schadler, 1979). Others, however, claim that tourism revitalizes cultures. Studies have shown that tourism contributes to the renaissance of traditional art, crafts, dance and music (McKean, 1977). Resident attitude studies do not conclude (with anthropological analysis of the impact of tourism on the local culture) that residents appear to believe that tourism is a vehicle for the preservation and enrichment of local culture. Pizam (1978) found that Cape Cod residents perceived tourism as having a positive impact on cultural identity. Comparable data suggest that

residents found tourism to have a negative effect on the evolution of cultural traditions (Belisle & Hoy, 1980; Liu et al., 1987). However, Virgin Islanders exhibited consensus that tourists seem to respect local traditions and cultures and want to know more about them (Sethna & Richmond, 1978).

Meleghy et al. (1985) examined tourism in two Alpine villages, one with capitalist structures and values and the other with a more traditional culture. This study implied that a harmonious relationship could exist between tourism and local culture. These authors concluded that tourism does not demand modern capitalist structures and values, but that it is thoroughly compatible with traditional pre-capitalist structures and values. Provided that development is relatively slow and of an equable nature, tourism can integrate itself into traditional structures. Instead of causing their destruction, it can make their survival possible.

Cultural exchanges between residents and tourists

Residents of the Virgin Islands viewed the interaction with tourists as positive consequences of tourism activities. Likewise, residents of Hawaii and North Wales found the cultural exchange between residents and tourists to be valuable, and generally rated tourists as nice and considerate. Residents in Hawaii and North Wales appeared to desire to meet tourists from other countries (Liu et al., 1987). Belisle and Hoy (1980) concluded that residents felt that the exposure to cultural differences to be a positive effect of tourism. Other researchers have found that resident attitudes approved of tourists (Keogh, 1989). However, in his comparative study, Tosun, (2001) asked the residents in three areas, Urgup, Nadi, and Florida, about social relationships: 63% of residents in Urgup, Turkey, responded that they had no contact with tourists, while 35% of those in Nadi, Fiji, and 43% of respondents in Central Florida mentioned that they had no contact with tourists. He concluded that the difference in the three regions may be related to respondents' level of education, lack of foreign language, and the perception of international tourists. However, a majority of respondents in three areas supported or strongly supported expansion of tourism in Nadi, Central Florida, and Urgup.

2.3.4. Environmental impacts

Studies of resident's perception of the impact of tourism on the environment imply that residents may view tourism as having either a positive or negative impact on their environment. Some people believe that tourism helps create a greater awareness and appreciation for the need to preserve the environment to capture its natural beauty for tourist purposes, and increase investments in the environmental infrastructure of the host country (Var & Kim, 1990). Tourism is also thought to be a clean industry, without the pollution problems associated with other types of economic development. Residents have expressed agreement with statements that suggest that tourism improves the appearance of their town or surroundings (Perdue et al., 1987). Ritchie (1988) found that 91% of respondents agreed that tourism affected the quality and upkeep of attractions and 93% believed that tourism affected the quality of national provincial parks.

However, others believe that tourism causes environmental pollution, the destruction of natural resources, the degradation of vegetation and the depletion of wild life (Ahmed & Krohn, 1992; Andereck, 1995; Koenen, Chon, & Christianson, 1995; Var & Kim, 1990). Sethna and Richmond (1978) found that Virgin Islanders agreed with a statement that suggested that the water and beaches were being spoiled by tourism. Residents of Cape Cod expressed the opinion that tourism negatively affected noise, litter, and air and water quality (Pizam, 1978).

Pollution

Air pollution is primarily a result of emissions from vehicles and airplanes. In rural areas, air pollution due to tourism is minimal, but in congested areas, emissions harm vegetation, soil, and visibility. On the island of Jersey in the English Channel, for example, the number of cars increased from less than 250 to over 2,500 during the summer peak session, resulting in high levels of emissions and associated impacts (Romeril, 1985). Water resources are a prime attraction for tourism and recreational developments, and they frequently suffer negative impacts (Andereck, 1995). Water pollution is primarily a result of wastewater generated by tourist facilities and runoff. Water pollution occurs on inland lakes and streams and in the marine environment. Much

of this pollution, such as septic tank seepage, lawn fertilizer, road oil, and runoff from disturbed soil, is not serious (Gartner, 1987).

Solid waste

The tourism industry produces large quantities of waste products. Hotels, airlines, attractions and other related businesses that serve tourists throw away tons of garbage a year. The problem seems to be particularly troublesome in third world countries with less sophisticated solid waste management programs and technologies (Andereck, 1995). Lankford and Howard's (1994) study showed that the majority of respondents felt that tourism brings more littering and waste problems. Liu and Var (1986) reported that 62% of the residents in Hawaii felt that government expenditure should be used to protect the environment rather than encouraging tourists to visit; 52% of residents agreed to fine tourists who litter.

Wildlife

Even though in recent years wildlife-oriented tourism has increased (Vickerman 1988), our understanding of tourism effects on wildlife is limited. Most research looking at the impact of tourism on wildlife has generally focused on a limited number of larger mammals and birds in natural environments. For some species, parks and preserves are now the only sanctuary. Unfortunately, for species that require large territories or engage in migratory behaviors, these relatively small areas of protected land are not enough. Liu et al. (1987) showed that Hawaiian residents failed to agree with statements that the economic gains of tourism were more important than the protection of the environment, and that tourism had not contributed to a decline in the ecological environment. An inquiry of Hawaiian students revealed that the majority of the sample did not agree that tourism conserves the natural environment (Braley et al., 1989). Residents in North Wales also agreed that tourism plays a major role in ecological degradation (Sheldon & Var, 1984). This segment felt, however, that long-term planning could control the environmental impact of tourism.

Table 2.1 presents the major positive and negative tourism impacts. The next section is a brief review of literature about carrying capacity and tourism development cycle.

Table 2.1. The major positive and negative impacts of tourism

Positive economic impacts

1. Provides employment opportunities
2. Generates supply of foreign exchange
3. Increases income
4. Increases gross national products
5. Improves an infrastructure, facilities and services (sewage system)
6. Raises government revenue (tax)
7. Diversifies the economy

Negative economic impacts

1. Causes inflation of land value
2. Increases demand for local products, raising price on food and other products
3. Diverts funds from other economic development projects
4. Creates leakage through demand for imports
5. Results in seasonal employment
6. Displaces traditional patterns of labor
7. Involves costs of providing the construction and maintenance of infrastructure

Positive social impacts

1. Creates favorite image of the country
2. Provides recreational facilities for residents as well as tourists
3. Facilitates the process of modernization
4. Provides opportunities education

Negative social impacts

1. Creates resentment and antagonism related to dramatic differences in wealth
2. Causes overcrowding, congestion, traffic jams
3. Invites moral degradation resulting in increased crime, prostitution, drug trafficking
4. Causes conflicts in traditional societies and in values

Positive cultural impacts

1. Encourages pride in local arts, crafts, and cultural expressions
2. Preserves cultural heritage

Negative cultural impacts

1. Create demonstration effect whereby natives imitate tourists and relinquish cultural traditions.
2. Encourage the tranquilization of crafts

Positive environmental impacts

1. Justifies environmental protection (marine reserve) and improvement
2. Protects wildlife
3. Encourages education of value of natural based tourism

Negative environmental impacts

1. Fosters water pollution, air pollution and solid waste
2. Tramples delicate soil and beaches
3. Destroys coral and coastal dunes
4. Disrupts flora and fauna (wildlife, plant life wetlands)

This list of tourism impacts was drawn from the literature on the impacts of tourism (Andereck, 1995; Ap & Crompton, 1998; Crandall, 1994; Farrell & Runyan, 1991; Gunn, 1988; Mathieson & Wall, 1984; Murphy, 1985; Tosun, 2002; Weaver & Lawton, 2001; Witt, 1990)

2.3.5. Social carrying capacity

O'Reilly (1986) describes two schools of thought concerning carrying capacity. In one, carrying capacity is considered to be the capacity of the destination area to absorb tourism before the host population feels negative impacts. The second school of thought contends that tourism carrying capacity is the level beyond which tourist flows will decline because certain capacities, as perceived by the tourists themselves, have been exceeded, and therefore the destination area ceases to satisfy and attract them. In the same context of O'Reilly's (1986) second definition, Mathieson and Wall (1982) say that carrying capacity is the maximum number of people who can use a site without an acceptable alteration in the physical environment and without an acceptable decline in the quality of experience gained by visitors. However, O'Reilly (1986) criticizes this definition in that it only takes into consideration the physical impact of tourism on the destination from an environmental and experimental point of view. He claims that carrying capacities can be established not only from a physical perspective, but also for the social, cultural and economic subsystems of the destination.

Economic carrying capacity, as described by Mathieson and Wall (1982), is the ability to absorb tourist functions without squeezing out desirable local activities. They define social carrying capacity as the level at which the host population of an area becomes intolerant of the presence of tourists. Martin and Uysal (1990) define carrying capacity as the number of visitors that an area can accommodate before negative impact occurs, either to the physical environment, the psychological attitude of tourists, or the social acceptance level of the hosts. According to Martin and Uysal (1990), physical carrying capacity involves two areas: the actual physical limitations of the area (the point at which not one more person can be accommodated) and any physical deterioration of the environment which is caused by tourism. Psychological carrying capacity has been exceeded when tourists are no longer comfortable in the destination area, for reasons that can include perceived negative attitudes of the locals, crowding of the area, or deterioration in the physical environment.

Social capacity is reached when the local residents of an area no longer want tourists because they are destroying the environment, damaging the local culture, or crowding them out of local activities. The carrying capacity for a destination area is

different for each lifecycle stage of the area (Martin & Uysal, 1990). For instance, in the exploration stage, the carrying capacity might be nearly infinite on a social level, but because of lack of facilities, few tourists can actually be accommodated. In this instance, physical parameters may be the limiting factor. At the other extreme is the stagnation stage, at which facility development has reached its peak and large numbers of tourists can be accommodated, but the host community is showing antagonism toward the tourists. This stage is in contrast to the initial stages of tourism, which are usually met with a great deal of enthusiasm on the part of local residents because of perceived economic benefits. It is natural for this perception to occur, as unpleasant changes take place in the physical environment and in the type of tourist being attracted. This feeling gradually becomes more and more negative. The changes in the attitudes of locals toward tourists have been documented by Doxey (1975) via an index of irritation, which shows feelings that range from euphoria to regret that tourism ever came to the area. At this point, social parameters become the limiting factor. Understanding the lifecycle concept and its interrelationship with the concept of carrying capacity is important to those concerned with establishing tourism policy for a destination area. Only through life cycle position determination and use of an optimal carrying capacity can the future of a destination area be controlled, that is, once those in charge of formulating a tourism policy have decided in what stage of the lifecycle their area is positioned, and what the optimum carrying capacity for their area is at that stage.

2.3.6 Life cycle model

Christaller (1963) proposed the concept that tourist areas have a life cycle similar to that of other products. He observed that tourist areas follow a relatively consistent process of evolution: from discovery, to growth, to decline. Butler (1980) took a more complicated approach. He contended that tourist areas go through a recognizable cycle of evolution; he used an S-shaped curve to illustrate their different stages of popularity. According to Butler, there are six stages through which tourist areas pass. These include the exploration stage, involvement stage, development stage, consolidation stage, stagnation stage, and decline stage. His study also reveals that evolution is brought about by a variety of factors, including changes in preferences and needs of visitors, the gradual

deterioration and possible replacement of physical plant and facilities, and the change of the original natural and cultural attractions, which is responsible for the initial popularity of the area.

Haywood (1986) made an attempt to operationalize Butler's Tourist Area Life Cycle (TALC) concept. His criteria for four stage identifications, such as the introductory stage, the growth stage, the maturity stage and the decline stage, are based on the percentage of tourist arrivals and annual growth rate. However, Toh, Khan, and Koh (2001) mentioned that their criteria did not work well for finding a tourism destination life cycle, and expanded Haywood's criteria into the indicator of international destination life cycle. The proposed Travel Balance Account (TBA) model, as they called it, is premised on the notion that the economic development of a country in general, and tourism development in particular, will demarcate four stages of a country's travel balance, defined as the net of travel exports over imports. By using their TBA model, Toh, Khan, and Koh found that Singapore was about to enter the decline stage.

In 1992, Smith analyzed the beach resort evolution using the number of hotel rooms, the number of employment-related tourism areas, and the number of residents in the resort area. According to the development of the beach resort, the cluster of the hotels had changed from the beachfront to inside the cities.

Perdue, Long, and Gustke (1991) investigated the relationship between tourism development and objective quality of life indicators such as education, economic and population. They calculated the county's tourism expenditures per capita measures by dividing by the county's population as a development variable. They found that the level of in-migration at the highest level of tourism development is more than twice that of any other county. Crotts and Holland (1993) investigated how tourism development affected the rural residents' quality of life. Using the mean per capita tourism and recreation sales tax collected from 1979-1990, they suggested that tourism development is a viable means of improving the quality of life in the community.

Allen, Long, Perdue, and Kieselbach (1988) investigated how residents' perceptions of community life varied with the level of tourism development in their community, classified on the basis of the percentage of income derived from tourism. Their study supported tourism development cycle theories, in that a lower level of

tourism development was beneficial, but as development continued, residents' perceptions of quality of life declined.

Perdue, Long, and Gustke (1991) examined changes in several objective indicators of QOL across 100 counties of North Carolina, which were classified into 5 different development stage groups. Using the tourism expenditures per capita as the development stage variable, they checked how objective quality of life measures, such as population characteristics, economic, education, health, welfare status and crime rate, are different from development stages. Their findings revealed that there was no major difference in population age distribution by the level of tourism development. However, they found that substantial differences in net population migration exist in North Carolina depending on level of tourism development. Net migration at the highest level of tourism was more than twice that of the other levels. Although the distribution of jobs by types varies significantly over the level of tourism development, a very weak relationship between tourism development and per capita income was observed. Per capita retail sales receipts, available health care, and overall level of education increase very significantly with increasing levels of tourism development. However, tourism development was not related to the per capita number of crimes.

Various proposals for modifications or additions to Butler's stage model have previously appeared in academic literature. However, in consideration of all previous authors' studies, as well as the simplicity of the current study, the current study uses four development stages, including beginning stage, growth stage, maturity stage, and decline stage. The next section explains the characteristics of different stages; these stages are summarized in Table 2.2.

Table 2.2 The characteristics of tourism development stage

Stage	Beginning	Growth	Maturity	Decline
Number of Visitors	Small number of tourists (annually less than 5% of the peak year Allocentrics Explorer	Tourists equal or exceed the residents +0.5SD<growth rate	-.5SD<growth rate<+.5SD, Organized mass tourist Psychocentric	No vacationers, but day trip and weekend trip Growth rate< -.5SD
Market	Irregular visitation pattern	Well defined tourist market	Frequent change in ownership	Property turnover is high
Attraction and Facilities	Non-local visitors attracted by natural features No specific facilities	Natural attraction supplemented by man made facility Up-to-date facility for visitor accommodation	Well established but no longer fashion Surplus beds available	Tourist facilities disappear Hotels become condominiums, retirement homes or apartments for the elderly
Economic significance of tourism	Little significance to the economic and social life of the residents Limited amount of receipts	High contact between locals and tourists Positive and growing travel balance	Capacity level reached; onset of environmental, social, economic problems Rapid growth in tourism imports	Negative travel balance
Involvement of organization	Low	Heavy advertising	Needed new development	Likely increase
Example	Canadian Artic Latin America		Costa Brava	Miami Beach

Note: These data were abstracted from Butler (1980); Haywood (1986); Plog (2001); Toh, Khan, & Koh (2001).

2.3.6.1. Beginning stage

Butler (1980) suggested that exploration (involvement) is characterized by small numbers of tourists, Plog's (2002) allocentrics, and Cohen's (1978) explorers, who make individual travel arrangements and follow irregular visitation patterns. From Christaller's (1963) model, tourists can also be expected to be non-local visitors who have been attracted to an area by its unique or considerably different natural features. At this stage, there would be no specific facilities provided for visitors. The physical fabric and social milieu of the area would be unchanged by tourism, and the arrival and departure of tourists would be of relatively little significance to the economic and social life of permanent residents. Examples of this stage can be seen in part of the Canadian Arctic and Latin America, to which tourists are attracted by natural and cultural historical features. Haywood (1986) found that this stage was demarcated as years, in which the annual number of tourist arrivals is less than 5% of the peak year. Lundtorp and Wanhill (2001) verified Butler's theory that during this stage, the number of tourists was below 9% of the maximum and rising moderately. Toh et al. (2001) explained the introductory stage using travel balance, in which the primitive destination country earns a limited amount of receipts from adventurous tourists from developed countries, resulting in a relatively small surplus in the travel balance.

2.3.6.2. Growth stage

According to Butler (1980), the growth stage (Butler called this stage a development stage) reflects a well-defined tourist market area, shaped in part by heavy advertising in tourist-generating areas. As this stage progresses, local involvement and control of development decline rapidly, and some locally-provided facilities will disappear, being superceded by larger, more elaborate, more up-to-date facilities provided by external organizations, particularly for visitor accommodation. Natural and cultural attractions are developed, and the original attractions are supplemented by man-made imported facilities. In this stage, a number of tourists at peak period probably equal or exceed the permanent local population, and the annual growth rate is more than half the standard deviation of annual growth rates for the entire period under study (Haywood, 1986). This stage typifies steady increases in the annual growth of tourists to a maximum,

whereby the location has established itself in the marketplace to the point where the volume of tourists exceeds 50 % of the potential market (Lundtorp & Wanhill, 2001). According to Toh et al. (2001), at this stage, a few residents from developing countries start to travel abroad. But the rate of growth of travel exports far exceeds that of travel imports, resulting in a positive and growing travel balance.

2.3.6.3 Maturity stage

As the area enters the maturity stage (Butler, 1980, called this stage a stagnation stage), the peak numbers of visitors will have been reached. Capacity level for many variables will have been reached or exceeded, with attendant environmental, social, and economic problems. The area will be well established but it will no longer be in fashion. At this stage, according to Haywood (1986), the growth rate of visitors is between minus half and plus half the standard deviation of the annual growth. The type of visitor can also be expected to move towards the organized mass type of tourist identified by Cohen (1978) and the psychocentric type described by Plog (2001).

There will be a heavy reliance on repeat visitation and on conventions and similar forms of traffic (Butler, 1980). Surplus bed availability and strenuous efforts will be needed to maintain the level of visitation. Travel exports will almost peak, but the rate of growth slows down in this stage, partly because over-development, commercialization, and environmental pollution destroy the pristine nature of the original tourist attractions (Haywood, 1986). At the same time, given rapid economic development and higher income levels in newly industrialized countries, residents go abroad, resulting in relatively rapid growth in tourism imports. During this period, the rate of growth of tourism imports is higher than that of tourism exports, thus lowering the still-positive travel balance (Toh, et al., 2001). The type of visitor can also be expected to change towards the organized mass tourist identified by Cohen, and the psychocentric type described by Plog (2001).

Natural and genuine cultural attractions will probably have been superceded by imported artificial facilities. New development will be peripheral to the original tourist area, and existing properties are likely to experience frequent changes in ownership. The

type of visitor can also be expected to change towards the organized mass tourist type identified by Cohen and the psychocentric type described by Plog (2001).

2.3.6.4 Decline stage

Butler (1980) describes the decline stage in many ways. First, the area is not able to compete with newer attractions and so faces a declining market, both spatially and numerically. Second, the area no longer appeals to vacationers but is used increasingly for weekend or day trips because it is accessible to a large number of people. Third, property turnover is high (e.g., major tourist facilities are replaced by non-tourist related structures, as the area moves out of tourism). Hotels may become condominiums, convalescent or retirement homes, or conventional apartments, since the attractions of many tourist areas make them equally attractive for permanent settlement, particularly for elderly. Then, more tourist facilities disappear as the area becomes less attractive to tourists and the viability of other tourist facilities becomes more questionable. Ultimately, the area may become a veritable tourist slum or lose its tourist function completely. However, local involvement in tourism is likely to increase at this stage, as employees and other residents are able to purchase facilities at significantly lower prices as the market declines. Finally, the country's focus shifts to high-tech and value-added industries and services with less emphasis on tourism development. Toh et al. (2001) describes the decline stage: the wealthy travel abroad in large numbers, so that the absolute amount of tourism imports exceeds that of tourism exports, resulting in a negative travel balance for the country. Such trends can be seen clearly in older resort areas in Europe. Miami Beach would also appear to be entering this stage.

The perception of various social, economic, cultural, and environmental impacts is related strongly to the level of tourism development. Sometimes, a negative perception of tourism development can itself be the reason that creates residents' perceptions that community life has declined, particularly as related to public services and opportunities for citizens' social and political involvement. These life conditions from tourism impact on the community make up the life domain in general. Satisfaction or dissatisfaction with living conditions (e.g., employment and income) from tourism impacts spill over

vertically to satisfactions in the life domains, and determine overall life satisfaction. The next section addresses how tourism impacts affect residents' major life domain and QOL in general.

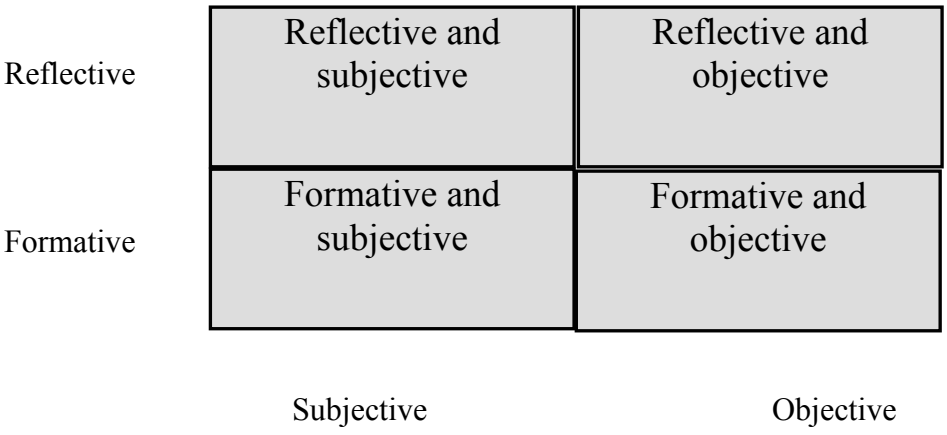
2.4. QUALITY OF LIFE STUDIES

Historically, the early attempts to measure QOL have come from the social indicators movement (Biderman, 1974; Parke & Sheldon, 1974). The late 60's were officially the beginning of the social indicators movement. The U.S. Department of Health, Education, and Welfare published two significant works, *Toward the Social Report* (US Department of Health, Education, and Welfare, 1969) and *Toward Social Reporting: Next Step* (Duncan, 1969). Measurement of QOL used in marketing and related disciplines can be classified in terms of levels of analysis (Metzen, Dannerbeck & Song, 1997). QOL can be conceived and measured at the individual level, the family level, the community level, and the societal level. Within a given level of analysis, QOL can be conceptualized and measured in terms of reflective or formative indicators. Individual measurement of QOL can be classified in two dimensions: (1) subjective versus objective indicators, and (2) reflective versus formative indicators (Figure 2.1). In other words, the description of the measures is divided in terms of four categories: subjective reflective indicators, objective reflective indicators, objective reflective indicators, and objective formative indicators (Sirgy, 2001).

Reflective indicators are eccentric measures of the construct in the most proximate fashion, and reflect a view of the construct as being unidimensional. The societal measure of QOL involves mostly one-item measures (e.g., "On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the life you lead? Would you say: very satisfied, fairly satisfied, not very satisfied, or not at all satisfied?"). This measure is an example of a reflective indicator because the measure itself is designed to capture the construct itself in a global way. The measure is not a composite of several other measures, which in turn capture dimensions of the constructs.

Reflective indicators often involve measures that capture the construct directly, not factors that determine the construct.

Figure 2.1. Individual measure of QOL

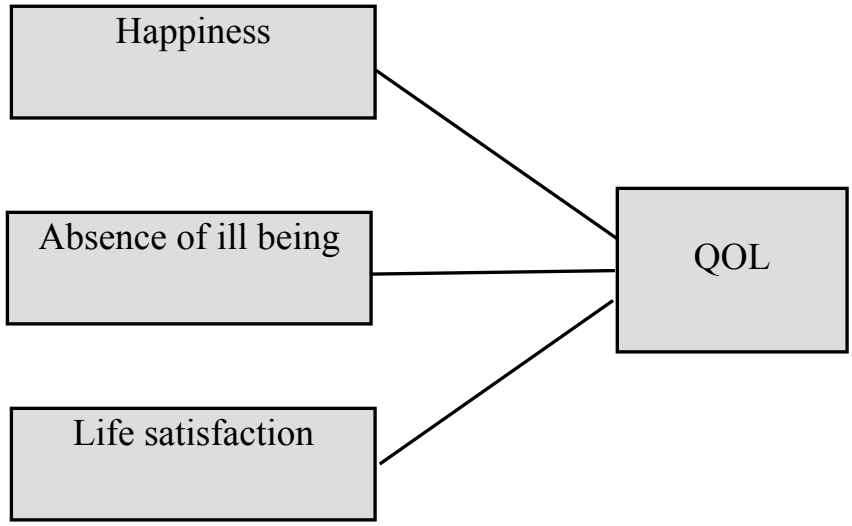


By contrast, formative indicators represent the view that the construct is multidimensional and the best way to measure the construct is through some composite of the dimensions that make it up. Based on the formative-indicators view, the dimensions making up the construct can be thought of as determinant of that construct.

According to Argyle (1996), QOL is measured by the formative concept and subjective well-being, made up of happiness, life satisfaction, and absence of ill being, as represented in Figure 2.2 (Argyle, 1996). Veenhoven (1991) defines happiness as the degree to which an individual judges the overall quality of his life favorably; he summarized the happiness theory in three basic postulates and four inferences. The postulates are that happiness results from comparison that standards of comparison adjust, and that standards of comparison are arbitrary. It is inferred that happiness is insensitive to actual quality of life: people can be subjectively happy in objectively bad condition, or feel unhappy in good ones. Happiness is a function of the brain. Happiness cannot be raised permanently. Because standards adjust, change for the better or worse

only has a short-lived effect on happiness. Happiness builds on hardship. Because standards of comparison are anchored in earlier experience, people tend to be happier after hard times. Happiness tends to be neutral. Because standards adjust continually, people are typically neutral about their life, rather than positive or negative. However, Veenhoven concluded that the overall appreciation of life (happiness) does not result from conscious comparison exclusively, but also depends on how well we feel affectively.

Figure 2.2. Formative QOL measure



Life satisfaction involves one's evaluation of one's life or life accomplishments against some standard, e.g., achievements of significant others (Sirgy, 2001). A measure of life satisfaction involves the following question about global evaluations of, or feelings toward, life: how satisfied are you with your life these days? The results of a national survey revealed that fun and family contribute more to happiness than life satisfaction. By contrast, money, economic security, one's house, and the goods and services bought in the market contribute to life satisfaction more than happiness (Andrew & Withey, 1976). Similarly, Michalos (1980) showed that evaluations of all ten measured domains (health, financial security, family life, and self-esteem, etc.) were more closely

related to life satisfaction than to happiness. Argale (1996) has argued that subjective well-being cannot be experienced when people experience ill being in the form of depression or anxiety. However, happiness and life satisfaction are indeed two distinguishable constructs, one effective and the other cognitive. QOL researchers are advised not to use the constructs of happiness and life satisfaction interchangeably (Sirgy, 2001). Therefore, in the present study, only life satisfaction is used to measure the QOL of the residents in the community.

Measuring QOL overall or within a specific life domain (at any level of analysis) can be done through subjective indicators or objective indicators (Samli 1995). Objective indicators are "hard" measures devoid of subjective assessments such as standard of living, physical health status, and personal income, among others. Indices derived from areas such as ecology, human rights, welfare, and education also have been sampled frequently as social indicators. According to Diener and Suh (1997), the strength of objective indicators is that these indicators can usually be relatively easily defined and quantified without relying heavily on individual perceptions. For example, virtually everyone in modern nations may agree that infant mortality is bad and that literacy is good. Another strong point of social indicators is that by including measures across various life domains, important aspects of society that are not sufficiently reflected in purely economic terms can be captured. However, the largest limitation of objective indicators is that they may not accurately reflect people's experience of well-being (Andrew & Withey, 1976).

On the other hand, subjective indicators are mostly based on psychological responses, such as life satisfaction, job satisfaction, and personal happiness, etc. Despite the impression that subjective indicators seem to be lower in scientific credibility, the major advantage is that they capture experiences that are important to the individual. By measuring the experience of well-being on a common dimension such as degree of satisfaction, subjective indicators can more easily be compared across domains than can objective measures, which usually involve different units of measurement. Diener and Fujita (1995) provided a comprehensive review of methodological pitfalls and solutions in the use of subjective measures of QOL. They pointed out problems associated with the current mood of respondents, memory biases, and communication norms, among others.

They provided specific and constructive suggestions on the effective use of subjective measures of QOL. For example, they recommended the use of multi-method measurement of satisfaction, on-line sampling, varying the order of questions, systematically manipulating the anonymity of respondents, and assessing respondents' mood states.

Using life history methods, Parker (1997) conducted a QOL study using a qualitative method that focuses on life history narratives to identify major factors that influence subjective well-being. She analyzed the lives of 40 men and five women from Cambodia, Laos, and Vietnam who re-settled in the Minneapolis/St. Paul, Minnesota region. The results indicated that QOL of these people was influenced by their feelings of loss of a way of life, loss of key relationships, role loss, and fears about the loss of cultural heritage and cultural transmission to younger generations. Harvey (1997) has argued that time-series studies can provide a valuable source of data for measuring QOL. He maintains that time-series analysis can be applied in QOL research in relation to traditional analysis of activity participation and time allocation. Time spent in activities failed to predict life satisfaction among the disabled, although financial stress and social support did.

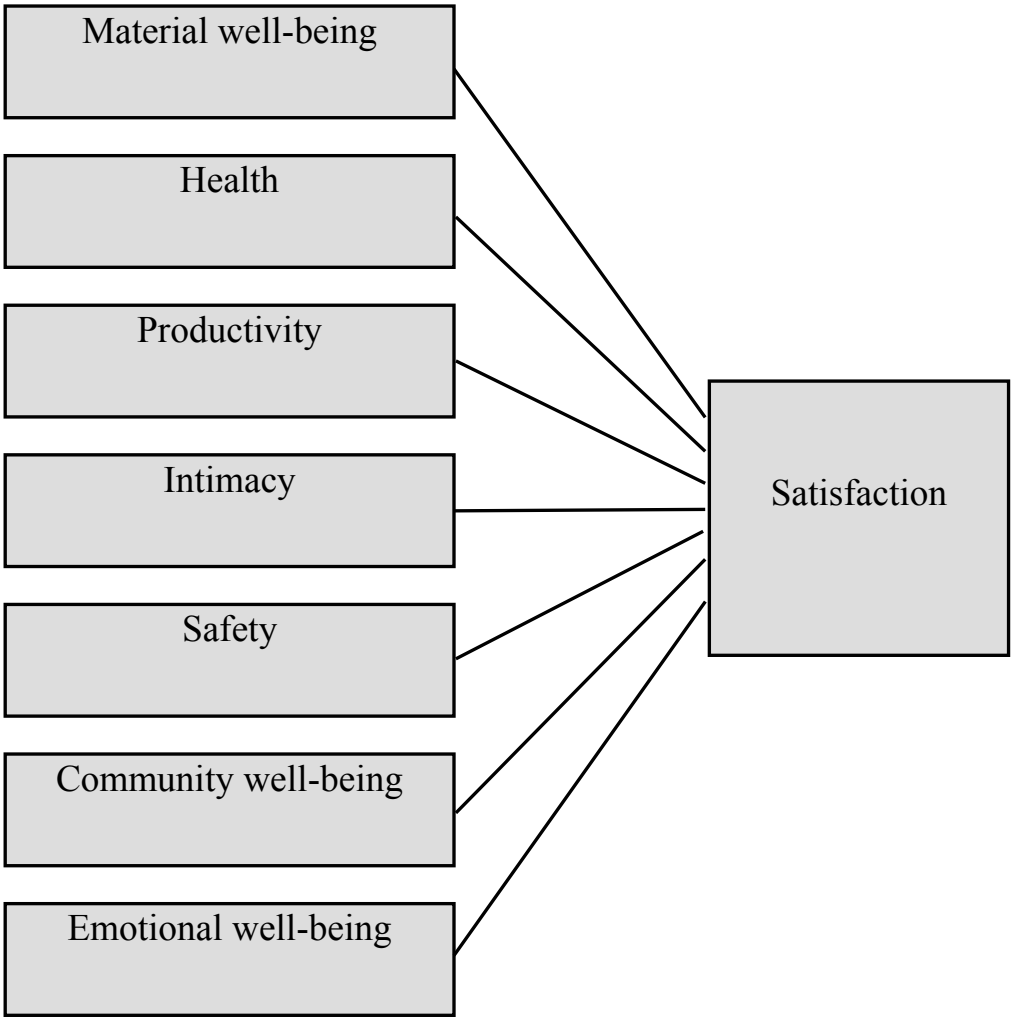
In the present study, the measures for QOL of individuals will be representative of subjective/reflective indicators measured by life satisfaction.

Many QOL researchers focus on the effects of many factors involved with QOL within specific domains such as health, work, leisure, family, and community. Bubolz, Eicher, Evers, and Sontag (1980) investigated the important quality of life domains by using 21 Self-Anchoring Ladder of Satisfaction (SALS) items of Andrew and Withey (1976). In the Michigan counties' study, they found that over half of the total variance in perceived life quality could be accounted for by only four of the variables in the SALS scale: accomplishing something, family life, work, and financial security. Andrew and Withey (1976) found 12 concerns, including these five, that contributed to considerable variance: family life, work, accomplishing something, house or apartment, and fun. Cummins, McCabe, Romeo, and Gullone (1994) and Cummins (1996) have provided both empirical and theoretical arguments for the use of seven domains: material well-

being, health productivity, intimacy, safety, community, and emotional well-being. Cummins (1997) reviewed 27 definitions of life quality that attempted to identify QOL domains. In summary, he found that a clear majority supported five of the proposed domains. Eighty- five percent included emotional well-being in some form (leisure, spiritual well-being, morale, etc.), 70% included health, 70% social and family connections (Intimacy), 59% material well-being, and 56% work or other form of productive activity. Further empirical support for the inclusion of these five domains is provided by data from surveys which asked respondents to indicate whether various domains of life are important to them (Abrams, 1973; Campbell, Converse, & Rodgers, 1976; Flanagan, 1978; Krupinski, 1980). Cummins (1995) has proposed the two additional domains of safety and community.

Cummins (1997) reviewed 32 studies and reported data on 173 different terms that had been used to describe domains of life satisfaction. Then he classified each term according to whether or not it could be placed within one of the seven proposed domains: material well-being, health, productivity, intimacy, safety, community well-being, and emotional well-being (Figure 2.3). Since these domains form the basis of the Comprehensive Quality of Life Scale (Cummins, 1993) they will be referred to as the ComQol domains. From the seven domains, this current study will use the particular life domains related to tourism impacts, including material well-being, community well-being, emotional well-being, and health and safety well-being domains. The characteristics of each specific domain are explained in the next section.

Figure 2.3. Seven major QOL domains by Cummins (1997)



2.4.1. Material well-being domain

Campbell et al. (1976), in the study of domain importance, reported that 73% of the respondents scored material well-being as one of the most important domains. Flanagan (1978) and Krupinski (1980) supported Campbell's study that 83% of the respondents rated the material well-being domain as important. The material well-being domain is comprised of different components, including standard of living from consumer well-being and income and employment from economic well-being. Each of these components is described below.

Standard of living

According to Cummins (1996), satisfaction in the material well-being domain mostly comes from one's economic situation, income, living situation, standard of living, housing, socio-economic status, financial situation, and personal possessions. This view posits that quality of life is partly determined by satisfaction with standard of living. Satisfaction with one's standard living, in turn, is mostly determined by evaluations of one's actual standard of living compared to a set goal. Sirgy (1998) defines the material domain as a psychological space that groups value-laden beliefs related to standard of living. These beliefs are related to possession of material goods, wealth, and income. For example, a person may see himself as poor in contrast to their actual situation; in other words, people have a desired image of what they want to become or what they aspire to be. Positive self-evaluations in the material life domain result in satisfaction with standard of living. Belk (1988, p.291) states "Materialism reflects the importance a consumer attaches to worldly possessions. Possessions assume a central place in a person's life and are believed to provide the greatest sources of satisfaction and dissatisfaction in life." Day (1987) and Leelakulthanit et al. (1991) conceptualized the consumer life domain in terms of two dimensions: the acquisition and possession of material goods. Possession of material goods refers to the collection of objects that have monetary value (e.g., house/apartment, furniture, etc.). Meadow (1983) generated a measure of consumer satisfaction/dissatisfaction with retail institutions for the elderly. The measure, called the Overall Consumer Satisfaction Composite (OCSC), is based on the theoretical notion of a satisfaction attitude hierarchy. Nakano, McDonald, and

Douthitt (1992) used the following instrument to measure QOL of consumer well-being. The instrument involved questions such as, "How do you feel about your standard of living – the things you have, like housing, car, and furniture?"

Income and employment

QOL researchers in the area of economic well-being have addressed many questions. What is economic well-being? In all societies, more money for the individual typically means more individual happiness. However, Duncan (1975) argued on the basis of studies of happiness in some 19 countries, that raising incomes of all people does not increase the happiness of all people. In explanation of this conclusion, Esterlin (1973) observed that individuals assess their material well-being, not in terms of the absolute amount of goods they have, but relative to a social norm of what goods they ought to have. Subjective indicators of economic well-being typically involve any one or combination of the following constructs: income satisfaction and feeling of financial security and satisfaction (Andrew & Withey, 1976). Andrew and Withey (1976) measured economic well-being in terms of people's feelings regarding how secure they are financially, their family income, and how well off they think they are.

The money index was found to be a significant and strong predictor of life satisfaction. Previous research has also shown that income plays a significant role in the perception of QOL (Campbell, 1981), although it may not be the most important factor. Veenhoven (1991) calculated the covariation between income and happiness across countries or regions of the world, and he found strong correlations of 0.51, 0.59 and 0.84 across several different data sets. He also found that the income and subjective well-being relation was significant in all of the analyses at two points in time, indicating that income is a resource that does covary with well-being.

However, there were no social comparison, adaptation, or expectancy effects found, and the results generally were in the opposite direction from those predicted by the relative approach. Diener (1994) has shown that happiness levels in the U.S.A., France, and Japan has not changed since World War II, despite rapid economic growth in these countries. Duncan (1975) showed that no aggregate change in satisfaction with the standard of living occurred over a 16-year period. He showed that the mean satisfaction

score was 2.47 in 1971 and 2.41 in 1955 in the Detroit, Michigan Area. The difference of 0.06 produces a t-statistic of 1.20, p=0.23, which is a non-significant value. This result was emphasized because data on income collected from the same respondents leave little doubt that material levels of living were in fact higher in 1971 than in 1955. The median family income reported in the 1955 survey was $5,827 as compared with $12,407 in 1971. Over this period, however, the consumer price index for Detroit (1967=100) rose from 82.2 to 127.7 (U.S. Bureau of the Census, 1974); hence, the 1955 dollar was worth 1.5 times as much as the 1971 dollars. Expressing 1955 median family income in 1971 dollars, Duncan obtained $8,740, so that the median income in constant dollars increased by a factor of 1.42 over this period. Thus, the proposition in Easterlin's conclusion is strongly confirmed; increasing the standard of living in real terms does not lead to a subjective increase in the standard of living for the population as a whole. Therefore, the relationship between economic well-being is construed and operationalized through subjective indicators or objectives. Support for the effect of economic well being on overall QOL comes from studies employing subjective indicators only.

Lane (1991) emphasized that people who succeed in the labor market tend to attribute their financial success to themselves, and thus feel proud of their accomplishments. These feelings of pride and personal control play a significant role in general feelings of life satisfaction. Gerlach and Stephen (1997) have conducted a comparative analysis of East versus West Germany. The study indicates that unemployment is higher in East than West Germany. By contrast, subjective well-being is lower in East Germany than in West Germany. The authors conclude that unemployment plays a significant role in subjective well-being. Work plays an important role in subjective well-being. Lane (1991) also argues that subjective well-being affects financial well-being. This is because those who feel happy about life in general tend to work harder, and thus generate more income. Good management of financial resources paves the way to higher levels of economic well-being and life satisfaction.

2.4.2. Community well-being domain

Many public policy makers interested in regional economic development have become increasingly interested in broadening the concept of economic development to socio-economic development. In doing so, they have begun to use social indicators in assessing QOL of a given region or community. Community QOL plays a significant role in overall QOL. From the viewpoint of community residents, the overall findings from QOL research point to the importance of information communicated through the local media, perception of safety and crime, and community beautification programs. Also Cummins (1997) found that the satisfaction associated with the community well-being domain occurs when people achieve satisfaction with education, neighborhood, service and facilities, social life and social relations.

Norman, Harwell, and Allen (1997) conducted a study showing that community satisfaction does make a significant and positive contribution to community residents' perceptions of their own quality of life. The study involved five rural South Carolina communities. The sample involved 360 residents who responded by completing a survey questionnaire. The study revealed that satisfaction with recreational services provided by the town does positively affect community satisfaction. In 1995, Wagner, with the regional plan association and the Quinnipiac College Polling Institute of Hamden, New Jersey, examined the determinants and consequences of perceived community QOL in New York, New Jersey, and Connecticut. The study also surveyed 400 people from each of four other major metropolitan areas, namely Los Angeles-Riverside-Orange County, Dallas/Forth Worth, Atlanta, and Seattle-Tacoma-Bremerton. The results of this survey indicated that a person's satisfaction with their community has a big effect on their perceived QOL. Sirgy and Cornwell (2001) extended and refined Sirgy et al.'s (2000) study. The modified study found that satisfaction with community at large is mostly determined by satisfaction with government service, business service, non-profit service, as well as satisfaction with other aspects of community (e.g. quality of environment, rate of change of natural landscape, etc.).

Another factor that may affect overall life satisfaction through its impact on a community is an individual's perception of the quality of public services. Studies by

O'Brian and Lange (1986) and Schuman and Gruenberg (1972) have shown assessments of the satisfaction of the service quality on community for some residents can be found. Similarly, the availability and use of retail service may affect life satisfaction through related impacts on community. Some studies have shown that the use of real facilities in a community increases a sense of community (e.g., Roach & O'Brian, 1982).

2.4.3. Emotional well-being domain

When Cummins (1997) reviewed the 32 studies and classified 173 different terms into seven proposed domains, the satisfaction of emotional well-being domain mostly came from leisure activities, religion, recreation, and hobbies. He found that 85% of the studies included emotional well-being in some form of leisure, spiritual well-being, morale, etc. Flanagan (1978) and Krupinski (1980) asked respondents to rate domain importance. Eighty-six percent of the respondents for both studies ranked emotion well-being in the top two categories (important/very important). Also most of respondents answered that the satisfaction of emotional well-being comes from spiritual and leisure activities. Therefore, the present study adopts leisure and spiritual activities as components of the emotional well-being.

Leisure activity

Leisure has been defined in terms of discretionary time use: a person experiencing leisure is using the time remaining after work is completed. Thus, leisure is total time minus time spent on non-discretionary activities (Gerstl 1983; Page-Wood, Lane, & Lindquist 1990; Vickerman 1980). This definition of "leisure" is grounded in traditional economic theory, which divides human activities in terms of time spent on production, consumption, and leisure. QOL researchers have conceptualized leisure well-being in terms of: leisure satisfaction (e.g., Neal, Uysal, & Sirgy 1995, 1999: Norman, Harwell, & Allen 1997); leisure-life experience-construed and measured in terms of leisure boredom (e.g., Haggard, Granzin, & Painter, 1995); satisfaction with non-working activities (e.g., Campbell et al. 1976); amount of fun one is having (e.g., Andrews & Withey, 1976); things done with family (e.g., Andrew & Withey, 1976); time to do things

(e.g., Andrew & Withey, 1976); spare time activities (e.g., Andrew & Withey, 1976); and leisure experience in terms of peace, achievement, exercise, and risk (e.g., Unger & Kernan, 1990).

Leisure is an important source of subjective well-being. A study by Veroff et al. (1981) found that 34% of people in jobs find leisure equally as satisfying as work, and 19% find it more satisfying. Orman, Harwell, and Allen (1997) have conducted a study showing that leisure satisfaction in one's community does make a significant and positive contribution to community residents' perceptions of their quality of life. The study involved five rural South Carolina communities. The sample included 360 residents who responded by completing a survey questionnaire. Haggard, Granzin, and Painter (1995) conducted a study on a sample of 513 adults to investigate the relationship between leisure-life experience (construed and measured in terms of leisure boredom) and QOL. The data indicated that leisure-life experience does influence QOL but its effect is indirect, through an intervening variable such as mental health.

Neal, Uysal, and Sirgy (1995, 1999) have shown empirically that leisure satisfaction plays a significant role in affecting life satisfaction; they have developed a conceptual model that captures the relationship among satisfactions with various aspects of tourism, leisure, and overall life. Leisure satisfaction has two main derivatives: leisure satisfaction experienced at home and away from home. Leisure satisfaction experienced away from home comes from essentially two sources: satisfaction with travel and tourism services, and satisfaction with own travel efforts. Finally, satisfaction with travel and tourism service comes from satisfaction with travel pre-trip services, satisfaction with travel trip route services, and satisfaction with travel destination services. Campbell et al. (1976) showed that satisfaction with non-working activities contributes approximately 29% variance accounted for in life satisfaction, the greatest amount of variance controlling for the effects of family life, standard of living, savings and investments, work, marriage, friendship, and housing.

There are many factors affecting leisure well being. Examples of significant factors are: time with significant other; preference for activities having skill, identity, autonomy; and differences in allocentricism and psychocentrism (individual difference factor). Staats, Partlo, Holzapfel, and Miller (1992) have examined family patterns in use

and wished-for use of free time. They conducted a survey using college students and their parents. The study reveals that most people spend most of their leisure time with family and friends and that they desire to do so, too. The implication of this finding for marketers of leisure goods and services is to design such goods and services to enhance family/friends' interactions. Argyle and Lu (1990) conducted a study of 39 leisure activities and found that these activities fall into at least two major categories such as teams and clubs, dances, parties, debates, and meeting new people. Neal, Sirgy, and Uysal (1995) have conducted a study of 373 consumers of travel/tourism services employed in a major state university to examine differences between allocentrics and psychocentrics in their satisfaction with leisure life and various aspects of travel and tourism services. Psychocentrics are travelers who are self-inhibited and non-adventuresome on vacation. Allocentrics, on the other hand, are those who enjoy trying a wide variety of pursuits and challenges while on a vacation. The study results indicate that the more allocentric a traveler is the more she or he is likely to be satisfied with destination services, travel services in general, trip experiences, perceived freedom from control, perceived freedom from work, involvement, arousal, spontaneity, leisure experience at home, and leisure life in general.

Spiritual (religious) activity

Researchers have defined this concept in various ways. One popular definition of spiritual well-being is the satisfaction one feels in relation to one's conception of his or her God (e.g., Paloutzian and Ellison 1982). Another definition includes the extent to which one finds meaning and purpose in life (Ellison 1983). Paloutzian (1997) has argued that spiritual well-being does play a significant and positive role in subjective well-being. A literature review of studies in this area reveals that spiritual well-being is positively related to purpose in life, coping with terminal illness, adjustment to hemodialysis; this variable is negatively related to anxiety, depression, and other psychological and health related variables. The spiritual well-being measure was originally developed by Paloutzian and Ellison (1979, 1982) and re-tested by Brinkman (1989), Bufford et al. (1991), Ellison (1983), and Scott, Agresti, and Fitchett (1998). This is a 20-item self-report measure in which responses were recorded on a 6-point scale

ranging from strongly disagree to strongly agree (e.g., I don't find much satisfaction in private prayer with God, or I don't know who I am, where I came from, and where I'm going, etc.). Scott, Agresti and Fitchett (1998) factor analyzed these items and showed that there are three factors imbedded in this measure, namely affiliation (6 items), alienation (6 items), and dissatisfaction with life (3 items).

2.4.4. Health and safety well-being domain

From the ecology, Bubloz et al. (1980) addressed QOL, using concepts of the human environed unit, the environment, and the interactions. A "human environed unit" is a social unit placed in an environmental context. The environment is the place that provides energy and matter (resources) for sustenance of the human environed unit. The interactions involve interrelationships among the components of the human environed unit, among the components of the environment, and/or between the units and the environment. From this perspective, QOL is viewed as a high need satisfaction across life domains. Thus, the environment should be preserved and enhanced to provide sufficient resources to meet those needs of the human units within it. Also, for a number of reasons, including interest in the social determinants of health, the impact of Healthy Cities and Health Communities movements, and growing concern with consumer's view of health and social service resources and provision, more attention is being directed to environmental indicators of quality of life (Raphael, Renwick, Brown, & Rootman, 1996).

Much research has shown that feelings about personal health spill over to overall life satisfaction, because personal health is considered important in one's evaluation of life (Andrew & Withey 1976). For example, Maddox and Douglass (1978) have shown that the healthier an elderly person feels, the more likely he or she is to be satisfied with life in general. However, the subjective belief that one is healthy or ill may be more important than the actual medical status in predicting an individual's general emotional status and behavior. Maddox and Douglass (1978) also investigated the relationship between the self and the health ratings of the individual by their physician. In their experiments, in all observations, the panel of older persons tended to present congruous

responses. The first hypothesis, that the subjective belief that one is healthy or ill may be more important than one's actual medical status, is supported. When incongruity is observed, there will be over-estimation of health more likely than under-estimation. Walker, Lee, and Bubolz (1990) have shown that the number of health symptoms is significantly related to overall QOL and marital happiness. Okun et al. (1984) performed a meta-analysis of 104 studies published before 1980 focusing on the American elderly and concluded that objective and subjective measures of health account for 8-14% of the variance in subjective well being.

Rahtz, Sirgy, and Meadow (1989) explored the role of personal health on the relationship between community healthcare satisfaction and life satisfaction among the elderly. The study revealed a stronger relationship between community healthcare satisfaction and life satisfaction when personal health is perceived as poor (as compared to good). Sirgy et al. (1995) conducted another study to investigate the mediating versus moderating roles of personal health satisfaction on the spill over effect of community health care satisfaction on life satisfaction. The results indicated that personal health satisfaction is a mediator between community healthcare satisfaction and life satisfaction for a general population involving elderly, and the results indicate a moderation effect.

There are many measures of health-related QOL. Example measures include the Barak, and Rahtz Measure of Health Satisfaction (1990) which contains the following items: "I never felt better in my life; My health is just beginning to be a burden; I still feel young and full of spirit; I am perfectly satisfied with my health." Responses to these statements were recorded on a 5-point scale varying from "strongly disagree" to "strongly agree," and the study produced a reliability coefficient of .70.

2.4.5. Other well-being domains

Family well-being

There is much evidence suggesting that family QOL does play a significant role in the overall QOL. For example, Andrew and Withey (1976) found family well-being to be a significant predictor of life satisfaction, controlling for the effect of efficacy, money, amount of fun one is having, house/apartment, things done with family, time to do things,

spare-time activities, recreation, national government, and consumer. Western (1997) conducted a study involving 2,850 young people (aged 11 to 19 years) and their parents in Australia. The major finding of this study related to QOL is that satisfaction with relationships within the family is a strong predictor of subjective well-being for both adolescents as well as parents.

Examples of measures of family QOL at the individual level of analysis (not the family level) include the Perceptual Indicators of Family Life Quality (PIFQ) measure and the Kansas Family Life satisfaction measure. Retting and Leichtentritt (1997) developed the Perceptual Indicators of Family Life Quality (PIFQ) scale. The measure is theoretically grounded in resource theory. It involves items related to six resources: love, status, services, information, goods, and money. The individual's evaluation of family life essentially reflects the degree to which the family environment satisfies personal needs for love and affection (love), respect and esteem (status), comfort and assistance (service), communication resulting in shared meaning (information), ownership of personal things (goods), and money for personal use (money). The combination of family well-being scores from several family members indicates family QOL. A study was conducted involving 560 adults, and the results provided some validation support, mostly form the women's data. Walker, Lee, and Bubolz (1990) have used the Kansas Family Life Satisfaction Scale (Schumm et al. 1986). This measure consists of four statements regarding satisfaction with family, relationship with spouse, relationship with children, and children's relationships with each other. Responses to these statements were recorded on a 7-point scale varying from "completely dissatisfied" to "completely satisfied".

Neighborhood well-being

The neighborhood community may affect overall life satisfaction in its role as an intervening variable through which residents' experiences of other neighborhood conditions come to affect their assessments of their lives in general. For example, it has been argued that the presence of crime in a neighborhood not only affects individuals directly through an increase in fears about their safety, but also reduces their interaction with one another and seriously impedes the development and/or maintenance of community at the local level (Wilson, 1975). If the preceding assertions about the

importance of neighborhood community in individuals' lives are correct, then the experience of victimization in a neighborhood is likely to have a specific and measurable negative impact on overall subjective quality of life through its weakening of the bonds of community that individuals' sense regarding attachment to his or her community. Widgery (1995) conducted a study in which he measured QOL of a community through a self-report (subjective) instrument of community residents. Community residents were asked to indicate their satisfaction with eight aspects of neighborhood life: overall neighborhood quality, neighbors, home, aesthetic quality, government services, racial mix, school, and security from crime.

2.5. CHAPTER SUMMARY

This chapter defines the constructs to be studied based on the conceptualization and previous empirical and theoretical studies. While there could be other factors (the elements of tourism impacts or well-being domains) that would affect life satisfaction in general, it is believed that this study has incorporated the relevant variables necessary to answer the four questions stated in Chapter I.

First, this chapter explains the relevance of this research; in the second section, it reviews the concept of carrying capacity, tourism life cycle with an explanation of the characteristics of different stages, and their interrelationships with tourism impacts and residents' QOL. The third section addresses residents' perception of tourism impacts, explaining its four dimensions from marketing, recreation, and consumer behavior fields. The last section presents particular life domains of the quality of life of residents. The next chapter provides a summary of research hypotheses and discusses research design and methodology in detail. The items that are going to be used to measure each construct are also discussed in a brief manner.

CHAPTER THREE

RESEARCH METHODOLOGY

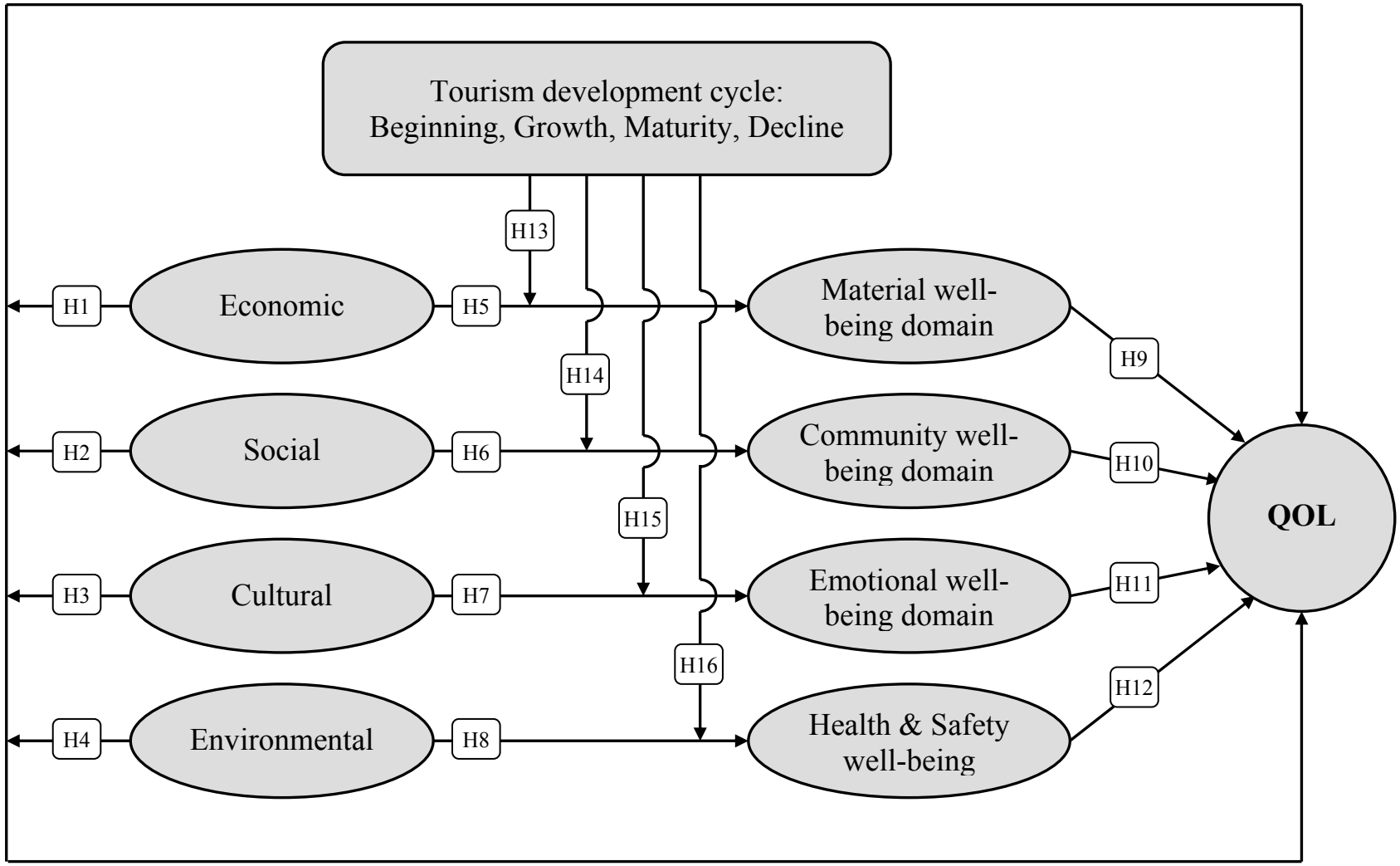
3.1 INTRODUCTION

This chapter defines the study's research problems and explains the framework of the research. Research propositions and hypotheses are discussed at great length. A description of the survey instrument and a discussion regarding the development of survey questions is given. Data collection and methods of statistical analyses are discussed. The final section addresses the issues of reliability and validity of measurement scales.

3.2 RESEARCH FRAMEWORK

There were four research questions addressed by this study, as stated in Chapter I. The first was to examine the influence of tourism impact on QOL of residents in the community. Perceived tourism impact was found to have four dimensions: economic, social, cultural, and environmental. The second research question was to determine the influences of tourism impact on the particular life domains. The particular life domains were tested as having four domains: material well-being, community well-being, emotional well-being, and health and safety well-being. The third research question was to investigate the influence of the particular life domains on overall life satisfaction of the residents in the community. The final research question was to determine the influences of tourism development stages on the relation between tourism impact dimensions and the particular life domains. The tourism development stage was divided into four different stages: beginning, growth, maturity, and decline stages. Figure 3.1 presents the theoretical model and the hypotheses in this study. The next section of this chapter presents the study hypotheses.

Figure 3.1 Theoretical model and the hypotheses



3.3. RESEARCH HYPOTHESES

The following is a list of the hypotheses that are presented in the theoretical model that was empirically tested in this study.

Hypothesis 1: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the economic impact of tourism.

Hypothesis 2: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the social impact of tourism.

Hypothesis 3: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the cultural impact of tourism.

Hypothesis 4: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the environmental impact of tourism.

Hypothesis 5: Material well-being domain is a positive function of the perception of the economic impact of tourism.

Hypothesis 6: Community well-being domain is a positive function of the perception of social impact of tourism.

Hypothesis 7: Emotional well-being domain is a positive function of the perception of cultural impact of tourism.

Hypothesis 8: Health and Safety well-being domain is a positive function of the perception of environmental impact of tourism.

Hypothesis 9: Residents' life satisfaction in general is a positive function of material well-being domain.

Hypothesis 10: Residents' life satisfaction in general is a positive function of community well-being domain.

Hypothesis 11: Residents' life satisfaction in general is a positive function of emotional well-being domain.

Hypothesis 12: Residents' life satisfaction in general is a positive function of health and safety well-being domain.

Hypothesis 13: The relationship between economic impact of tourism and material well-being is strongest in relation to the beginning and growth stages of the tourism development cycle and weakest in relation to the maturity and decline stages.

Hypothesis 14: The relationship between social impact of tourism and community well-being is strongest in relation to the maturity and decline stages of the tourism development cycle and weakest in relation to the beginning and growth stages.

Hypothesis 15: The relationship between cultural impact of tourism and emotional well-being is strongest in relation to the maturity and decline stages of the tourism development cycle and weakest in relation to the beginning and growth stages.

Hypothesis 16: The relationship between environmental impact of tourism and health and safety well-being is strongest in relation to the maturity and decline stages of the tourism development cycle and weakest in relation to the beginning and growth stages.

3.4. STATISTICAL METHOD EMPLOYED

The study adopts two different multivariate data analysis techniques to test the proposed model, consisting of two phases. The first phase focuses on the testing from the hypothesis 1 to hypothesis 12 for the proposed antecedents and consequences of tourism impacts, particular life domains, and overall quality of life. The second phase focuses on examining the proposed moderating effects of tourism development stage on tourism impact dimensions and its associated consequences, the particular life domains.

3.4.1. Phase I: Structural equation modeling

Structural equation modeling (SEM) was utilized to empirically test the relationships between the constructs in this study. SEM allows simultaneous estimation of: 1) a measurement model that relates the observed indicators in each scale to the construct they represent, giving factor loadings for each observed indicator; and 2) a structural model that relates constructs to one another, providing parameter values (i.e., path coefficients). This method was chosen so that both a model accounting for measurement error in the constructs and their respective scale measurements, and simultaneous estimation of those relationships for the complex model can be achieved (Anderson & Gerbing, 1988). The properties of the observed indicators of the constructs in the proposed model and the hypotheses was tested using the LISREL 8 structural equation analysis package (Jöreskog & Sorbom, 1993) with the maximum likelihood (ML) method of estimation (Anderson & Gerbing, 1988; Bentler, 1983), in combination with the two-stage process recommended by Anderson and Gerbing (1988) and Sethi and King (1994). More specific discussion is presented in the next section.

3.4.1.1. Measurement model

First a confirmatory measurement model that specifies the posited relationships of the observed variables to the underlying constructs, with the constructs allowed to intercorrelate freely was tested as recommended by Sethi and King (1994), and Anderson and Gerbing (1988), and Jöreskog (1993). They recommend the use of a measurement model to separate measurement issues from model structure issues. Use of confirmatory

factor analysis (CFA) ensures the unidimensionality of the scales measuring each construct in the model. It also avoids interaction of the measurement and structural models that could affect the parameters associated with the hypothesized relationships between the constructs in the model. Therefore, before testing the overall measurement model, the measurement unidimensionality of each construct is assessed individually (Sethi & King, 1994). This present study used at least three indicators to measure one construct. Constructs with unacceptable fits (lower than 0.7 of factor loading) are respecified by deleting the indicators that did not work out as planned to have a unidimensional measurement (Anderson & Gerbing, 1988).

After assessing the unidimensionality of each construct individually (Sethi & King, 1994), a measurement model for each pair of constructs was estimated, combining them two by two (Jöreskog, 1993). First, each construct's fit is measured. After making sure that the fit of each construct is acceptable, the fit of two constructs (a pair) is measured. All constructs are paired with each other. For example, assume that we have three constructs, A, B, and C. First, constructs are paired as AB, AC, BC (all possible pairs). Afterwards, each pair of constructs' fit is measured separately to make sure that indicators of each construct do not load on other constructs. Then the overall measurement model fit is tested (Anderson & Gerbing, 1988; Jöreskog, 1993; Sethi & King, 1994).

As fit indices, the chi-square statistic (and associated p values) is examined first. The model is deemed acceptable if the chi-square value is less than three times the degree of freedom (Carlmines & McIver, 1981). However, as noted by Jöreskog (1993, p.309) "since chi-square is N-1 times the minimum value of the fit function, the chi-square test tends to be large in large samples." Because of the large effect of sample size on the chi-square values (and associated p values), other fit indices are also selected to measure the fit of the tested models based on the recommendations of several researchers from a number of different disciplines. These selected fit indices are the standardized root-mean square residual (SRMR), the incremental fit index (IFI; Bollen, 1989), the parsimonious normed-fit index (PNFI; Mulaik, James, Alstine, Bennet, Lind & Stilwell, 1989), the non-normed-fit index (NNFI; Hu & Bentler, 1995), the comparative fit index (CFI; Bentler, 1990) and the root mean squared error of approximation (RMSEA: Hu & Bentler, 1999).

The values of IFI, PNFI, NNFI, and CFI range from zero to one, with a value close to 1.0 indicating a good fit. SRMR and RMSEA also range from zero to one, with a value close to 0.0 indicating a good fit (e.g., Byrne, 1989; Mulaik et al, 1989). Hu and Bentler (1999) suggested that, for the ML method, a cutoff value close to 0.95 for NNFI, IFI, CFI, and RNI (for all these, Hair et al. (1998) suggested that cutoff value of .8 is marginally acceptable level in social science); a cutoff value close to 0.08 for SRMR; and a cutoff value close to 0.06 for RMSEA are needed to conclude there is a relatively good fit between the hypothesized model and the observed data.

The principal advantages of the overall model fit measures are that they evaluate the whole model and they can indicate inadequacies not revealed by the fit of model components (e.g., equations and parameter estimates). One limitation is that they are inapplicable to an exactly identified model, and a second limitation is that overall fit measures can differ from the fit of components of the model. For example, the overall fit may be good, but parameter estimates may not be statistically significant or may have signs opposite to that predicted. And conversely, in many cases, component fit may suggest adequate fit while the overall measures of fit suggest an inadequate model. For these reasons the overall fit measures should not be used in isolation from the component fit measures, such as parameter estimates, asymptotic standard error (problem if it is greater than 2) and asymptotic correlation matrix of parameter estimates (Bollen, 1989). All the parameter estimates should be considerably larger (i.e., generally + or – 2) than their standard errors and high correlations sometimes between indicators are a symptom of severe collinearity. Usually a correlation over 0.7 can be considered large.

3.4.1.2. Structural equation model

The structural portion of the SEM allows for the testing of multiple equations with multiple dependent variables. This statistical method provides parameter values (i.e., path coefficients) for each of the research hypotheses and determines their respective significance. As recommended by Anderson and Gerbing (1988) for assessing the structural model in a two-step approach, a series of five nested structural models are first tested to identify the best structural model that fits the data. A nested model is one in which a simpler model is nested, within another (more complex) model. The first model

is the null structural sub-model (Mn) in which all parameters relating the constructs to one another are fixed at zero. The second model is the theoretical model (Mt) that estimates all parameters relating the constructs to one another. From a theoretical perspective, the constrained model (Mc) is the next most likely model. It is similar to the theoretical model (Mt) except that one or more parameters estimated in Mt are fixed zero.

The next most likely model, from a theoretical perspective, is the unconstrained alternative model (Mu) in which one or more parameters constrained in Mt are estimated. In the unconstrained model, all paths proposed in the theoretical model were estimated. A saturated structural sub-model (Ms) can be defined as one in which all parameters relating the constructs to one another are estimated. Before testing all nested models, each structural model is assessed to see if it has an acceptable goodness of fit, as recommended by Anderson and Gerbing (1988) and Bentler and Bonett (1980). A pseudo chi-square test is utilized (Bentler & Bonett, 1980) in which a pseudo chi-square statistic is constructed from the chi-square value for any structural model (Ms) (the smallest chi-square value possible for any structural model) with the degrees of freedom from the null structural sub-model (Mn) (the largest number of degrees of freedom for any structural model). An insignificant pseudo chi-square test indicates that one or more structural models are likely to give acceptable fit. On the other hand, a significant pseudo chi-square test indicates that no structural model would give acceptable fit, because it would have a chi-square value greater than or equal to the value for the saturated model (Ms) with fewer degrees of freedom than for the null structured sub-model (Mn). However, one should remember that pseudo chi-square values tend to be large in large samples and complex models because the pseudo chi-square value is calculated based on the chi-square value. Therefore, caution is advised when assessing the fit of any model based on the results of the pseudo chi-square test, especially when the sample size exceeds 200 and when the model is complex. Researchers suggest that other fit indices should also be utilized in the present study to assess the fit of any model. As stated earlier, other fit indices are utilized to measure the fit of the tested models. These selected indices are the goodness-of-fit index (GFI), the adjusted goodness-of-fit (AGFI: Bentler, 1983), the standardized root-mean square residual (SRMR), the incremental fit index (IFI), the parsimonious normed-fit index (PNFI), the non-normed-fit index (NNFI), the

comparative fit index (CFI), and the root mean squared error of approximation (RMSEA). Each of the goodness of fit index is explained in Chapter IV in a detailed manner.

3.4.2. Phase II: Hierarchical multiple regression

The second phase focuses on examining the moderating effects of tourism development stages on the relationship between tourism impact dimensions and particular life domains. The basic premise of these moderating effects is that responses to variation in the satisfaction of the particular life domains resulting from the degree of the perceptions of the tourism impact depend on the tourism development stages of the area. Zedeck (1971) described the moderating effect by stating that Z is a moderator of the relationship between variable X and Y when the nature (i.e., magnitude) of this relationship varies across level of Z.

The most widely used statistical procedure to estimate moderating effects is hierarchical multiple regressions (HMR). HMR can detect the moderating effects for moderator variables that are measured on both continuous and dichotomous scales (Cohen & Cohen, 1983). HMR is favored by researchers over other statistical techniques, such as the comparison of sub-group based correlation coefficients for two or more sub-groups, and HMR analysis provides researchers with important information about slope differences for various sub-groups (Aguinis & Stone-Romero, 1997). Specially, an interaction, u x v = uv, where u is a dichotomy and v a quantitative variate, is interpretable as a slope difference between the groups in their Y on v regression lines (Cohen & Cohen, 1983, p. 317). Therefore, the study uses the HMR to examine the presence of moderating effects. Following the procedure articulated by Cohen and Cohen (1983), the dependent variables (i.e., material well-being) are regressed on the independent variable (i.e., economic impact of tourism) and moderator (tourism development stage). Next, the cross-product vector of the independent variable and the moderator are computed and added to the equations. A significant beta weight for the interaction term indicates that the moderator moderates the relationship between the independent variable and the dependent variable. A negative regression coefficient for the

interaction term signals that the relationship between the independent variable and the dependent variable is stronger at lower levels of the moderator than higher levels of the moderator.

3.5. RESEARCH DESIGN

3.5.1. Survey Instrument

The survey instrument consisted of three sections. The first two sections consist of items that utilize a 5-point Likert type scale. The anchors include: a) very dissatisfied to very satisfied and b) strongly disagree to strongly agree. The third part of the questionnaire gathered demographic information on residents in communities.

3.5.2. Data collection

A self-administered survey questionnaire was used to collect data. The questionnaire was stamped with sequential numbers and delivered via the U.S. Postal service to randomly stratified samples (explained in the next section) of Virginia residents. Several measures were employed in an effort to increase response rate. A cover letter that was signed individually in blue ink and contained the name and address of the respondent was attached to each questionnaire in an attempt to show personalization. A self-addressed, stamped envelope was included in the package being mailed. Two weeks after the survey was mailed, a reminder postcard was sent to those who have not returned their survey (Dillman, 1978). Last, another two weeks after the reminder postcard was mailed; the second survey questionnaire was mailed those who had not returned their survey.

3.5.3. Sample

The sample for study included residents in selected regions of Virginia who were at least 19 years of age or older. First, the areas for each tourism development stage was selected by using four secondary indicators, then a stratified sampling method was

utilized to determine the number of respondents required from each county and city of Virginia for each development stage. Afterwards, random sampling was used to select a predetermined number of respondents from each county and city of Virginia. The sample (mailing list) for this study was obtained from Reference USA data (http://www.referenceusa.com/) in the residential information section. Reference USA's residential information is compiled from more than 3,900 white page telephone directories. Each listing appears in the database exactly as it appears in the phone book. Reference USA data does not include unlisted phone numbers.

The selection procedure of areas for development stage and stratified random sampling

First, to select the area to fit each tourism development stage, four types of secondary data investigated by the Virginia Tourism Beaurue were used. These secondary data (indicators) were selected based on the review of tourism development research literature. According to the results of Perdue et al. s' (1991) study, four significant secondary indicators from 1990 to 2000 were chosen and adopted: Population Growth Rate (PGR), Traveler Spending Growth Rate (TSGR), Direct Travel Employment Growth Rate (DTEGR), and State Travel Tax Growth Rate (STTGR). Then a modified criterion from Toh, Khan, and Koh (2001) was used to select the best place for each development stage.

Toh et al. (2001) expanded Haywood's (1986) criteria into the indicator of international destination life cycle. By using the standard deviation of the country's travel balance, Toh et al. (2001) found that Singapore is about to enter the decline stage. They postulated that in the beginning stage, the primitive destination country earns a limited amount of receipts from adventurous tourists from developed countries. In the growth stage, a few residents from developing countries start to travel abroad, but the rate of growth of travel exports far exceeds that of travel imports, resulting in a positive and growing travel balance. In the maturity stage, the rate of growth of tourism imports is higher than that of tourism exports, thus lowering the still positive travel balance. Finally, in the decline stage, the wealthy travel abroad in large numbers so that the absolute

amount of tourism imports exceeds that of tourism exports, resulting in a negative travel balance for the country.

The criterion to select the tourism development stages adopted and modified from Toh, Khan, and Koh (2001) is presented in Table 3.1. First, the population growth rate (PGR) for each county and city (all 135 counties and cities) in Virginia was calculated using the equation: $(POP_{2000} - POP_{1990})/ POP_{1990}$ - the number in the population in 2000 minus the number in the population in 1990 and then divided by the number in the population in 1990. Then, the PGR for each county and city in Virginia was summed up and divided by 135 to get the mean of the PGR for all 135 counties and cities. The standard of deviation (SD) of the PGR for all counties and cities was calculated, and this SD of PGR was divided by two to get the 0.5SD of the PGR. After the value of the mean of PGR and 0.5SD of PGR was obtained, all counties and cities were sorted by PGR in ascending.

From the mean of minus 0.5 standard deviation (M-0.5SD) of the population growth rate during the available data periods (from 1990 to 2000) to mean population growth rate (Mean) was considered to be the beginning stage (**B**), and from the mean plus 0.5 standard deviation (M+0.5SD) of the population growth rate to the highest PGR (H) was considered to be the growth stage (**G**). From the mean population growth rate (Mean) to the mean plus 0.5 standard deviation (M + 0.5SD) of the population growth rate was considered to be the maturity stage (**M**). Lastly, from the lowest population growth rate (L) to the mean minus 0.5 standard deviation (M-0.5SD) of the population-growth rate was considered to be the decline stage (**D**). Three other indicators (tourist expenditure, direct tourism employment and state travel tax growth rate) are also evaluated by the same criterion of Koh et al. (2001).

Table 3.1. The criterion of the development stage

Beginning stage (B)	Growth stage (G)	Maturity stage (M)	Decline stage (D)
M - 0.5SD < **B** < Mean	M + 0.5SD < **G** < H	Mean < **M** < M + 0.5SD	L < **D** < M -0.5SD

SD: Standard deviation of the growth rate
M: Mean of the growth rate from 1990 to 2000

Using these criteria, the 95 counties and 40 cities (total 135 regions) in Virginia were first screened using the population growth rate (PGR) from 1990 to 2000. Loudoun County had the highest PGR, 96.8% during the last 11 years, and the city of Covington had the lowest PGR (-14.3%) during the same years. The mean of PGR for all 135 cities and counties is around 12.5%. Its standard deviation is 15.8% and the half standard deviation of PGR was 7.9%. Thirty-nine counties and cities ranging from 4.6% (Clarke County) to 11.6% (Amherst County) of the PGR, were identified as being in the beginning stage. The growth stage contained 33 counties and cities, ranging from 20.4% (Henrico County) to 96.8% (Loudoun County) of the PGR. The maturity stage contained 23 counties and cities, which fell in the range of 13.0% (Nelson County) to 20.3% (Augusta County). Lastly, the decline stage consisted of a total of 40 counties and cities ranging in population growth rate from 3.7% (Halifax County) to –14.3% (Covington City). This is summarized in Table 3.2.

Then for the second screening process, the traveler spending growth rate (TSGR) from 1990 to 2000 was used. This variable is a little bit different from that of the study of Perdue et al., which used the tourism expenditure per capita in 1991 as the development stage for all counties and cities. Rappahannock County had an increase of 325% (the highest) in tourist expenditure during the eleven-year period, and the TSGR of Manassas Park City declined by 48.3% (the lowest) during the same years. The average TSGR for all cities and counties was plus 82%. Its standard deviation was 71% and the half standard deviation of TSGR was 35.3%. Using the same criterion of standard deviation approach, in the second screening process, the beginning stage consisted of the 36 counties and cities ranging from 47.6% (Appomattox County) to 81.6% (Staunton City) of TSGR for eleven years. The growth stage contained 31 counties and cities ranging from 124% (Shenandoah County) to 325% (Rappahannock County) of TSGR. The maturity stage contained the 25 counties and cities, which fell in the range of 82.8% (Warren County) to 117% (Essex County) of TSGR. Lastly, the decline stage consisted of a total of 43 counties and cities ranging in TSGR from –48.3% (Manassas Park City) to 45.4% (Montgomery County).

The third screening process was done using the direct travel employment growth rate (DTEGR) for 11 years. The direct travel employment data from 1990 to 2000 used increasing tourism employment rate as the development stage for all counties and cities. Powhatan County increased 600% in DTEGR during eleven years, and the travel employment of Manassas Park City declined by 600% during the same years. The mean DTEGR for all cities and counties was 54%. Its standard deviation was 76.5% and the half standard deviation of DTEGR was 38.3%. The beginning stage consisted of the 43 counties and cities ranging from 15.7% (Botetourt County) to 51.9% (Bedford County) of DTEGR for eleven years. The growth stage contained 27 counties and cities ranging from 94% (Mecklenburg County) to 600% (Powhatan County). The maturity stage contained 24 counties and cities which fell in the range from 54.8% (Spotsylvania County) to 90% (Northumberland County) of DTEGR. Lastly, the decline stage consisted of a total of 41 counties and cities ranging in DTEGR from –60% (Manassas Park City) to 5.4% (Richmond City).

Table 3.2. The criterion of the development stage associated with indicators

	Beginning (**B**)	Growth (**G**)	Maturity (**M**)	Decline (**D**)
PGR (%)	4.6<**B**<12.5 (39)*	20.4<**G**<96.8 (33)	12.6<**M**<20.3 (23)	-14.3<**D**<4.6 (40)
TSGR (%)	46<**B**<82 (36)	118<**G**<325 (31)	82<**M**<117 (25)	-48.3<**D**<46 (43)
DTEGR (%)	15.7<**B**<53.9 (43)	92.4<**G**<600 (27)	54<**M**<92.1 (24)	-60<**D**<15.6 (41)
STTGR(%)	65.3<**B**<103 (30)	142<**G**<358 (32)	103<**M**<141 (25)	-44.3<**D**<65.2 (48)

* (-): The number of Counties and Cities in each tourism development stage.
PGR: Population growth rate from 1990 to 2000
TSGR: Traveler spending growth rate from 1990 to 2000
DTEGRG: Direct travel employment growth rate from 1990 to 2000
STTGR: State travel tax growth rate from 1990 to 2000

Lastly, the fourth screening process was done using the state travel tax growth rate (STTGR) data from 1990-2000 as selecting the place to fit each development stage for all counties and cities. Rappahannock County increased 358% in state travel tax

during the last eleven years, while the state travel tax rate of Manassas Park City declined by 44.3% during the same years. The mean STTGR for all cities and counties was 102.9%, and its standard deviation was 75.5%. The half standard deviation of STTGR was 37.8%. The beginning stage consisted of the 30 counties and cities ranging from 65.3% (Lancaster County) to 102% (Newport News City) of the STTGR for eleven years. The growth stage contained 32 counties and cities ranging from 137% (Charles City County) to 358% (Rappahannock County). The maturity stage contained the 25 counties and cities which fell in the range from 103% (Harrisonburg City) and 141% (Gloucester County) of STTGR. Lastly, the decline stage consisted of total of 48 counties and cities ranging in STTGR from –44.3% (Manassas Park City) to 64.1% (Arlington County).

Altogether, the counties and cities were screened and eliminated if a county or city did not have any indicator among the four indicators: PGR, TSGR, DTEGR, STTGR. Final selected counties and cities are presented in Table 3.3. The final areas selected for the beginning stage are Lancaster County, Newport News City, Westmoreland County, and Wythe County. The counties and cities in the beginning stage of tourism development increased around 7% of PGR during last eleven years. Also, these areas increased 68%, 34% and 84% in tourist expenditure, direct travel employment, and state travel tax for the same years, respectively. The areas selected for the growth stage are Chesapeake City, Fluvanna County, Greene County, Loudoun County, New Kent County, and Powhatan County. These areas increased around 52% in population growth for the last eleven years. Also, these areas increased 211%, 243%, and 215% in tourist expenditure growth, direct travel employment, and state travel tax for the same years, respectively. The areas selected for the maturity stage are Gloucester County, Nelson County, and Rockbridge County. These areas increased around 13.9%, 111%, 66%, and 133% in population growth, tourist expenditure growth, direct travel employment, and state travel tax during the last eleven years, respectively. According to all four indicators, 16 counties and cities were identified as the areas for the decline stage for the last eleven years. During the last eleven years, Buchanan County has decreased 13% in population, however, has increased 8% in traveler spending and 13.8% in direct tourism employment. It is very ambiguous if this county is categorized in the decline stage in the sense of tourism development. Therefore, any county and city that has an increasing rate in four

indicators in the last eleven years have been excluded. Among 16 counties and cities, only Covington City and Petersburg City have decreased in terms of population growth, tourist spending, and direct tourism employment for the last 11 years. These areas have declined around 11.7% in population growth during last eleven years, 9.9% in tourist expenditure, and 36.2% in direct travel employment; however, have increased a little bit, 5.6% in state travel tax for the same years.

After all areas for each stage were screened, according to the proportion of the population in each area, the number of subjects was stratified, and the random sampling method was then applied. The sample size for each destination is presented in Table 3.3.

Table 3.3. Counties and cities in each stage and the number of stratified sample

	PGR (%)	TSGR(%)	DTEGR(%)	STTGR(%)	POP		NOS
Beginning							
Lancaster County	6.2	55.0	21.2	65.34	11567	5%	29
Newport News City	5.1	67.7	31.2	101.99	180150	76%	458
Westmoreland County	8.0	74.6	36.8	84.38	16918	7%	43
Wythe County	8.4	76.3	44.7	82.29	27599	12%	70
	(6.93)	(68.40)	(33.48)	(83.50)		100%	600
Growth							
Chesapeake City	31.1	146.7	99.6	177.55	199184	45%	272
Fluvanna County	61.3	270.2	212.5	286.67	20047	5%	27
Greene County	48.0	161.6	177.5	172.50	15244	3%	21
Loudoun County	96.8	231.5	214.3	260.80	169599	39%	231
New Kent County	28.6	192.4	152.7	183.06	13462	3%	18
Powhatan County	46.0	265.0	600.0	270.00	22377	5%	31
	(51.97)	(211.23)	(242.77)	(225.10)		100%	600
Maturity							
Gloucester County	15.4	114.0	55.0	140.96	34780	50%	298
Nelson County	13.0	113.9	76.6	127.45	14445	21%	124
Rockbridge County	13.4	105.2	66.6	129.19	20803	30%	174
	(13.93)	(111.03)	(66.07)	(132.53)		100%	600
Decline							
Covington City	-14.3	-13.3	-46.3	7.50	6303	16%	94
Petersburg City	-9.0	-6.5	-21.1	3.70	33743	84%	506
	(-11.65)	(-9.90)	(-36.2)	(5.60)		100%	600

Note: PGR: Population growth rate from 1990 to 2000, TSGR: Traveler spending growth rate from 1990 to 2000, DTEGRG: Direct travel employment growth rate from 1990 to 2000, STTGR: State travel tax growth rate from 1990 to 2000, POP: Populations estimated in 2000, NOS: number of stratified samples, (-): mean value

In order to crosscheck for the level of tourism development stages in the destination selected by the secondary indicators, the survey instrument includes a question asking respondents to assess the perception of the level of tourism development stages in their own community.

Sample size

It is suggested that a minimum sample size should be at least 200 (or more) to ensure appropriate use of SEM and to minimize the chance of getting exaggerated goodness-of-fit indices due to small sample size (Anderson & Gerbing, 1988). The targeted usable sample size for this study was set at 480 (120 for each development stage). Previous tourism development studies reported a response rate between 67% (Allen et al., 1988) and 68% (Perdue et al., 1999). However, all of these studies used the survey method hand-delivered by trained surveyors to each occupied household that could be identified. This may explain the high response rate because respondents are more willing to answer when the surveyors ask them face to face. Response rates tend to be low with mail surveys, with a 30% response rate for general population surveys being common. Rates can be as low as 10%, depending on the questionnaire contents and design (Smith, 1995). This study adopts a conservative approach and assumed a response rate of 20% for each development stage. Assuming this response rate, 2,400 (120/0.20 for each stage) people should be surveyed to achieve the targeted sample size.

3.5.4. Measurement variables

The measurement variables in SEM represent the scale for each construct to be measured. Each construct in the proposed model (Figure 3.1) was designated as either an endogenous or an exogenous construct. An endogenous construct was one that receives a directional influence from some other construct in the model. That is, an endogenous construct is hypothesized to be affected by another construct in the model (MacCallum, 1995). For example, the material well-being domain is one of the five endogenous variables in the model. It is proposed as an endogenous construct because the well-being domains are hypothesized to be affected by residents' perception of tourism impacts. An endogenous construct may also emit directional influence to some other construct in the

model, but not necessarily (MacCallum, 1995). For example, well-being domains are hypothesized to affect life satisfaction in general. However, life satisfaction does not emit any directional influence to any of other constructs. An exogenous construct typically exerts directional influences on one or more endogenous constructs.

The theoretical model (Figure 3.1) for this study is represented by four exogenous constructs (economic, social, cultural and environmental impact dimensions) and five endogenous constructs (material well-being, community well-being, emotional well-being, health and safety well-being, and life satisfaction). Scales that were used previously in tourism impact studies (Andereck, 1995; Ap & Crompton, 1998; Crandall, 1994; Farrell & Runyan, 1991; Gunn, 1988; Liu & Var, 1986; Mathieson & Wall, 1984; Murphy, 1985; Tosun, 2002; Witt, 1990) and QOL studies (Andrew & Withey, 1976; Duncan 1969; Fisk, 1997; Liu & Var, 1986; Liu, Sheldon, & Var, 1987; Samli 1995; Sirgy, 2001) to assess the similar constructs were adopted to measure the constructs proposed in this study. However, the measurement scales available to measure a construct was refined and modified to assess the construct proposed in this study. Therefore, validity and reliability of measurement scales that were developed for this study were assessed through a pretest. The pretest procedure was discussed after the explanation of measurement scales. This section of the chapter details the scales and scale items that were employed in the measurement of all the constructs.

3.5.4.1. Exogenous variables

The four exogenous constructs presented in the theoretical model (Figure 3.1) are tourism impact dimensions. The constructs (economic, social, cultural and environmental impact) and their measurement are discussed. Items for each dimension were selected to measure residents' perception of tourism impacts. These items were adopted from Ap and Crompton (1998), Lankford and Howard (1994), Liu and Var (1986), Tosun (2002), and Weaver and Lawton (2001). Items are most frequently used to measure residents' perception of tourism impacts upon the community and are considered as reflecting residents' direct and indirect self-assessed knowledge of perceptions about tourism impacts. The negative statements of the tourism impacts were coded in a reverse way.

Economic impact variables

The items to measure (metrics for) economic impacts of tourism can be categorized into four different sub-dimensions: employment opportunity, revenue from tourists for local business and government, standard of living, and cost of living. For the purpose of this study, all four sub-dimensions of economic impacts of tourism were measured. Items that were used to measure each sub-dimension were summated, and summated scales were used to assess economic impact of tourism. Three items for employment opportunity, revenue from tourism for local business, cost of living, and standard of living were used to measure residents' perceptions of each economic sub-dimension. A five-point Likert type (strongly disagree equals one and strongly agree equals five) was used to measure these items.

Employment opportunity

- Tourism creates employment opportunities for residents in the community.
- Tourism provides highly desirable jobs in the community.
- One of the most important aspects of tourism is that it has created a variety of jobs for the residents in the community.

Revenue from tourists for local business and government

- Local businesses benefit the most from tourists.
- Tourism brings more investment to the community's economy.
- Tourism helps national governments generate foreign exchange earnings.
- Tourism generates tax revenues for local governments.

Standard of living

- Our standard of living has increased due to tourist spending in the community.
- Tax revenues from tourism are used to improve roads, highways, and public services for residents.

- Tourism helps improve the economic situation for many residents in this community.

Cost of living

- The price of many goods and services in the community has increased significantly because of tourism.
- Real estate prices in the community have increased because of tourism.
- The cost of living in the community has increased because of tourism.

Social impact variables

The items to measure social impacts of tourism can be categorized into two different sub-dimensions: social problem and local service. Also, for the purpose of this study, all social sub-dimensions of tourism impacts were measured. Items that were used to measure each sub-dimension were summated, and summated scales were used to assess social impacts of tourism. Three items for social problems and three items for local service were used to measure residents' perceptions of each sub-dimension of social impact. A five-point Likert type (strongly disagree equals one and strongly agree equals five) was used to measure these items.

Social problems

- During the peak tourist season, it is harder to get tickets for the theater, movies, concerts and athletic events.
- Tourism has resulted in unpleasantly overcrowded hiking trails, parks, shopping place, and other outdoor places for local people.
- Tourism contributes social problems such as crime, drug, prostitution, and so forth in the community.

Local service

- Increased tourism provides more recreational opportunities for local residents.
- Because of tourism, roads and other local services are well maintained.

- Tourism is a major reason for the variety of entertainment in the community.

Cultural impact variables

The items to measure cultural impacts of tourism can be categorized into three different sub-dimensions: preservation of the local culture, deterioration of the local culture, and cultural exchange between residents and tourists. Three cultural sub-dimensions of tourism impacts were measured. Items that were used to measure each sub-dimension were summated, and summated scales were used to assess cultural impact of tourism. Three items for preservation of local culture, three items for deterioration of the local culture, and three items for cultural exchange between residents and tourists were used to measure residents' perceptions of each sub-dimension of cultural impact. A five-point Likert scale (strongly disagree equals one and strongly agree equals five) was used to measure these items.

Preservation of local culture

- Tourism has increased residents' pride in the local culture in the community.
- Tourism helps keep local culture alive and maintain cultural identity.
- Tourism encourages a variety of cultural activities for local residents.

Deterioration of local culture

- The commercial demand of tourists causes change in the style and forms of traditional arts and crafts.
- Tourism encourages residents to imitate the behavior of the tourists and relinquish cultural traditions.
- Tourism causes the disruption of traditional cultural behavior patterns in local residents.

Cultural exchange between residents and tourists

- Meeting tourists from all over the world is definitely a life enriching experience.
- The cultural exchange between residents and tourists is valuable and pleasant for the residents.

- I would like to meet tourists from as many countries as possible in order to learn about their culture

Environmental impact variables

The items to measure environmental impacts of tourism can be categorized into three different sub-dimensions: pollution, solid waste, and wild life and ecology. These three environmental sub-dimensions of tourism impacts were measured. Items that are used to measure each sub-dimension were summated, and summated scales were used to assess environmental impact of tourism. Three items for pollution, three items for solid waste, and three items for wildlife and ecology were used to measure residents' perceptions of each sub-dimension of environmental impact of tourism. A five-point Likert type (strongly disagree equals one and strongly agree equals five) was used to measure these items.

Pollution

- Tourism brings environmental pollution
- Tourism produces noise, littering, and congestion.
- Tourist activities like boating produce serious water pollution in lakes, bays, or the ocean.

Solid waste

- Tourism produces large quintiles of waste products
- Hotels, airlines, attractions, and other related tourism businesses that serve tourists throw away tons of garbage a year.
- Tourists' littering destroys the beauty of the landscape.

Preservation of wildlife and ecology

- Tourism has contributed to preservation of the natural environment and protection of the wildlife in the community.
- Tourism has improved the ecological environment in the community in many ways.

- Tourism does not contribute to the negative effect of vegetation and loss of meadows and green space.

3.5.4.2. Endogenous variables

Five endogenous constructs that are presented in the theoretical model (Figure 3.1) are material well-being, community well-being, emotional well-being, health and safety well-being, other well-being (these are used as covariate variables) and life satisfaction in general. The items were adopted from Andrew and Withey (1976), Cicerchia (1996), Cummins (1996), and Sirgy (2001). In the next section, these five constructs and the measurement items used to assess these constructs are discussed.

Material well-being variables

The satisfaction of material well-being can be shared in the form of cost of living and income and employment. These two material sub-domains were measured. Items that were used to measure each sub-dimension were summated, and summated scales were used to assess material well-being domains. Three items for cost of living and four items for income and employment were used to measure residents' satisfaction of material well-being. The items were adopted from Andrew and Withey (1976), Cicerchia (1996), Cummins (1996) and Sirgy (2001). These items were measured on a five-point Likert-type with classifications of very dissatisfied, dissatisfied, mixed feeling, satisfied, very satisfied.

Cost of living

- How satisfied are you with real estate taxes?
- How satisfied are you with the cost of living in your community?
- How satisfied are you with the cost of basic necessities such as food, housing and clothing?

Income and employment

- How satisfied are your income at your current job?

- How satisfied are you with the economic security of your job?
- How satisfied are you with your family income?
- How satisfied are you with the pay and fringe benefits you get?

Community well-being variable

There are many aspects of community life and setting that make up people's appreciation or dissatisfaction with the greater than neighborhood area where they live. Four items were used to measure the community well-being domain. The items came from the studies of Andrew and Withey (1978), Cummins (1996), Norman et al. (1997), and O'Brian and Lange (1986). These items were also measured on a five-point Likert-type scale with classifications of very dissatisfied, dissatisfied, mixed feeling, satisfied, very satisfied.

- How satisfied are you with the conditions of the community environment (air, water, land)?
- How satisfied are you with the people who live in this community?
- How satisfied are you with the service and facilities you get in this community?
- How satisfied are you with your community life?

Emotional well-being variables

Emotional well-being can be satisfied in the form of leisure well-being and spiritual well-being (Cummins, 1997). These two emotional well-being sub-domains were measured. Items that were used to measure each sub-dimension were summated, and summated scales were used to assess emotional well-being domains. Four items for leisure well-being and five items for spiritual well-being were proposed to measure residents' satisfaction of the emotional well-being. The items were adopted from Andrew and Withey (1976), Cicerchia (1996), Cummins (1996), Neal et al. (1995, 1999), Norman et al. (1997) and Sirgy (2001). The items for leisure activity were measured on a five-point Likert-type scale with classifications of very dissatisfied, dissatisfied, mixed feeling, satisfied, very satisfied. The items for spiritual activity were measured on a five-point Likert-type scale with strongly disagree, disagree neutral, agree, and strongly agree.

Leisure activity

- How satisfied are you with spare time?
- How satisfied are you with your leisure activity in your community?
- How satisfied are you with the influx of tourists from all over the world you're your community?
- How satisfied are you with leisure life?

Spiritual activity

- I am very satisfied with the availabilities of religious services in my community?
- I am particularly happy with the way we preserve culture in my community.
- I feel I extend my cultural outlook when I talk with tourists.
- I am very satisfied with the leisure life in the community.
- I am very satisfied with the spiritual life in the community.

Health and Safety well-being variables

The satisfaction of health and safety well-being consists of health well-being and safety well-being. These two well-being domains were measured. Items that were used to measure each domain were summated, and summated scales were used to assess the health and safety well-being domain.

Health well-being

Six items for health well-being were proposed to measure satisfaction of health well-being domain. Three items were measured on a five-point Likert-type scale with classifications of very dissatisfied, dissatisfied, mixed feeling, satisfied, very satisfied.

- How satisfied are you with your health?
- How satisfied are you with water quality in your area?
- How satisfied are you with air quality in your area?

Three items were measured on a five-point Likert-type scale with classifications of strongly disagree, disagree, neutral, agree, and strongly agree.

- I always drink bottled or filtered water because I think the water is not clean.
- When I see garbage left on the ground from the tourists, I do not feel good about tourism.
- Environmental pollution threatens public safety and causes health hazards.

Safety well-being

The domain of safety is intended to be inclusive of such constructs as security, personal control, privacy, and residence stability (Cummins, 1997). Three items were used to measure the safety well-being domain. The first item was measured on a five-point Likert-type scale from strongly disagree to strongly agree. The second and third were measured on a five-point Likert-type scale with classifications of very dissatisfied, dissatisfied, mixed feeling, satisfied, very satisfied.

- How satisfied are you with the environmental cleanness in your area? (Environmental pollution can threaten public safety and causes health hazards.)
- How satisfied are you with the community's safety and security?
- How satisfied are you with the community's accident rate or crime rate?

QOL in general

Three items were used to measure QOL in general. The items were adopted from Andrew and Withey (1978), Sirgy et al. (2001), and Walker et al. (1990). The first and the second items were measured on a five-point Likert-type scale with classifications of very dissatisfied, dissatisfied, mixed feeling, satisfied, very satisfied. The third item was measured with five different semantic statements.

- How satisfied are you with your life as a whole?
- How satisfied are you with the way you are spending your life in general?
- Which of the following statements best fits how you feel?
  a. My life is much worse than most other people's.
  b. My life is somewhat worse than most other people's.
  c. My life is about the same as most other people's.

d. My life is somewhat better than most other people's.

e. My life is much better than most other people's.

3.5.5 Pretest of the measurement instrument

Since some of the measurement items were developed and modified for the purpose of this study, pretest of the measurement instrument was necessary to validate the items in the scales. A pretest of the measurement instrument was conducted in several stages. First, the survey questionnaire was circulated to several faculty and graduate students in the Department of Hospitality and Tourism Management at Virginia Polytechnic Institute and State University. Participants were asked to provide feedback regarding the layout, wording, and ease of understanding of the measurement items. The feedback was then taken into account in the revision of the questionnaire. The revised questionnaire was pre-tested using a convenience sample of undergraduate and graduate students, faculty, and residents of Blacksburg, Virginia. The responses from the pretest were analyzed to test reliability and validity of the measurement items. The questionnaire was revised based on the reliability and validity tests and the final version of the questionnaire was developed. The final questionnaire was produced in a booklet form.

3.6 RELIABILITY AND VALIDITY

Reliability deals with how consistently similar measures produce similar results (Rosenthal & Rosnow, 1984). Reliability has two dimensions: repeatability and internal consistency (Zigmund, 1995). The dimension of internal consistency refers to the ability of a scale item to correlate with other items of the sample scale that are intended to measure the same construct. The adequacy of the individual items and the composites were assessed by measures of reliability and validity. The reliability of the measurement instrument was assessed by Cronbach's alpha. A Cronbach's alpha and composite reliability estimate of 0.70 or higher indicate that the measurement scale that is used to measure a construct is moderately reliable. If the composite reliability was not high enough to be accepted, the scales were revised by deleting items as a result of the

reliability analysis. The composite reliability, as calculated with LISREL estimates, is analogous to coefficient alpha and was calculated by the formula by Fornell and Larcker (1981).

Validity refers to how well the measurement captures what it is designed to measure (Rosenthal & Rosnow, 1984). There are several different types of validity about which to be concerned: face/content validity (i.e., the agreement among professionals that the scale is measuring what it is supposed to measure), criterion validity (e.g., the degree of correspondence between a measure and a criterion variable, usually measured by their correlation), and construct validity (i.e., the ability of a measure to confirm a network of related hypotheses generated from a theory based on constructs) (Bollen, 1989; Zigmund, 1995).

Face validity of the measurement instrument was assessed by allowing four professionals to examine it and provide feedback for revision. Afterwards, the survey instrument was given to fourteen graduate students majoring in hospitality and tourism management to solicit feedback as well as to check for readability of the questions and estimated time to complete the survey questionnaire. Additionally, a formal pretest was conducted on a convenience sample.

Convergent validity was assessed from the measurement model by deleting each indicator's estimated pattern coefficient on its posited underlying construct factor and determining if a chi-square difference test between a model with and without the estimated parameter is significant (greater than twice its standard error, Anderson & Gerbing, 1988).

Discriminant validity was assessed for every possible pair of constructs by constraining the estimated correlation parameter between them to 1.0 and then performing a chi-square difference test on the values obtained for the constrained and unconstrained model (Anderson & Gerbing, 1988). A significantly lower chi-square value for the model in which the trait correlations are not constrained to unity indicates that the traits are not perfectly correlated and that discriminant validity is achieved.

3.7 CHAPTER SUMMARY

This chapter outlines the research design for the study. It includes the description of the survey population, the method of the data collection, and the statistical methods that were employed to analyze the data. Special attention was given to the selecting procedure of the tourism destination area to fit each tourism development stage. The results of data gathering and its analysis are presented in the next section.

CHAPTER IV

ANALYSIS AND RESULTS

4.1 INTRODUCTION

This chapter presents the results of the data analysis and hypothesis testing. In the first section of this chapter, the pretest of the scale items used in the study is presented, including a description of the samples. This is followed by a section that provides a description of the survey methods employed in this study and the demographic profiles of the survey respondents. The third section of the chapter presents the results of the confirmatory factor analysis conducted to confirm the factor structure of the nine constructs. The fourth section of the chapter presents a discussion of the data analysis steps. This is followed by a section that presents a discussion of the procedures for the validity checks in detail and the results of the hypothesis testing.

4.2 PRETEST

As stated in Chapter III, before the final survey instrument could be prepared, it was necessary to conduct a pretest of scale items. The purpose of the pretest was to validate the scale items to be used in the study that were either developed specifically for this study or modified from previous studies.

The development of the measurement scales for this study followed the procedures recommended by Churchill (1979) and DeVellis (1991) for developing a standardized survey instrument. The initial task in developing a scale is to devise an item pool (Lankford & Howard 1994; Liu, Sheldon, & Var, 1987). A total of 37 items were used to measure tourism impacts (thirteen items to measure economic impacts: six items to measure social impacts; nine items for cultural impacts; and nine items to assess environmental impacts), and 30 items for assessing residents' satisfaction with various

life domains (nine items for material life domains; four items for the community life domain; eight items for the emotional life domain; and nine items to measure the health and safety life domain); three items were used to measure residents' overall life satisfaction.

Four professors first assessed the content adequacy of the items. The professors were asked to provide comments on content and understandability. They were then asked to edit and improve the items to enhance their clarity, readability, and content adequacy. They were also asked to identify any of the scale items that were redundant with other scale items, and to offer suggestions for improving the proposed scale. Afterwards, the measurement items were distributed to 14 graduate students. They were also asked to comment on content and provide additional questions that might improve the scale and understandability, and asked to identify any of the scale items that were redundant with other scale items. Three professors commented that the questionnaire had confounded problems. To remove the confound problems, two additional questions were added to the measurement scale that measures the social impacts of tourism, another item was added to the items that measure the cultural impact of tourism, two other items were added that measure the environmental impacts of tourism, and one more item was added to the items that measure community well-being. Thus, the total number of items was increased to 76. Then, the newly developed and modified scale items that had been drawn from previous studies were tested empirically. This step in the pretest is discussed in detail in this section of the chapter.

4.2.1. Pretest Survey method

The pretest survey was distributed by several methods. One method was to send it as an e-mail attachment in Word 2000 format. This method allowed the respondent to take the survey on his or her computer, save the file in Microsoft Word format and then send it back to a designated email-address as an attachment. The respondent could also print out the survey, take it by hand and fax it back to a specified fax number or mail it to a specified mailing address. Another method used was to distribute the printed questionnaires in a classroom and in an apartment complex. This method allowed respondents to complete the survey and drop it in a designated mailbox.

4.2.2. Pretest sample

A convenient sample was used to conduct the pretest. The sample consisted of faculty, graduate students, and undergraduate students of Virginia Tech, and residents in Blacksburg, Virginia. A total of 133 responses was received from the various places and methods: 14 responses from the apartment complex, 34 from the classroom, 20 handed in, 1 by mail, and 64 responses through email. The final pretest sample size was 133. Table 4.1 presents the demographics of the pretest sample.

The demographics of the sample indicate that 59.5 percent of the respondents were male and 40.5 percent were female (Table 4.1). Average age of the respondents was 29.84. The youngest respondent was 19 years old; the oldest was 81 years of age. The standard deviation of the age was 15 years old. A majority of respondents (55%) were Caucasian; 46.8% of respondents had a masters degree. The majority of respondents (52.5%) had a household income of less than $20,000.

Table 4.1. Demographic Profile of the pretest sample

Category	Frequencies	Percentages
Gender (N=131)		
Male	78	59.5
Female	53	40.5
Age (N=131, m=29.84)		
Under 25	45	35.2
25-34	57	44.5
35-44	14	10.9
45-54	9	7.0
55-64	2	1.6
Over 65	1	.8
Ethnic group (N=131)		
Caucasian	72	55.0
Hispanic	2	1.5
African-American	2	1.5
Asian	48	36.6
Other	7	5.3
Education (N=126)		
Freshman	7	5.6
Sophomore	13	10.3
Junior	13	10.3
Senior	22	17.5
Master	59	46.8
Ph.D.	11	8.7
Professional	1	.8
Household income (N=118)		
Less than $20,000	62	52.5
$20,001 - $40,000	21	17.8
$40,001 - $60,000	10	8.5
$60,001 - $80,000	11	9.3
$80,001 - $100,000	6	5.1
Over $100,001	8	6.8

4.2.3. Results from the pretest

The results of the pretest provided the necessary validation in order to finalize the scale items to be used in the final survey. This section of Chapter IV will provide a discussion of which items were chosen and how they were determined to be valid.

One of the objectives of a pretest is to establish a unidimensional scale for the measurement of construct. Unidimensionality refers to the existence of a single construct

explaining a set of indicators. To detect scale dimensionality, an exploratory factor analysis (EFA) with a principal component method was conducted for each construct and sub-construct. A separate principal component analysis was conducted for each sub-construct because the items of each sub-construct were pre-determined. First of all, to determine the appropriateness of factor analysis, the Kaiser-Meyer-Olkin measure of sampling adequacy and the Bartlett's test of sphericity were examined. A value of .60 or above from the Kaiser-Meyer-Olkin measure of sampling adequacy test indicates that the data are adequate for exploratory factor analysis and that a significant Bartlett's test of sphericity is required (Tabachnick & Fidel, 1989). In order to make sure that each factor identified by EFA has only one dimension and that each attribute loads on only one factor, attributes that had factor loadings of lower than 0.4 and attributes loading on more than one factor with a loading score of equal to or greater .40 on each factor were eliminated from the analysis (Chen & Hsu, 2001).

4.2.3.1. Economic impact variable

As stated in Chapter II and III, the economic impact of tourism was examined as having four dimensions: employment opportunity, revenue from tourists for local business and government, standard of living, and cost of living. Measurement scale properties of each dimension of economic impact of tourism are discussed next. Since the factor structure of each dimension was pre-determined, a separate factor analysis was conducted for each sub-dimension.

Employment opportunity: three items were proposed to measure employment opportunity from the literature, as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.657) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.2.). The principal component factor analysis indicated that one factor represented 68.56% of the explained variance of the scale (Table 4.2). All factor loadings were greater than .70 and loaded on the only one factor. The reliability for three items measuring employment opportunity was 0.769 using Cronbach's Alpha reliability estimate, which exceeds the recommended reliability estimate of .70.

Therefore, it was concluded that the employment opportunity sub-construct could be measured by three items.

Revenue from tourists for local business and government: four items were proposed to measure revenue from tourists for local business and government from literature as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.664) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.2.). The principal component analysis indicated that one factor explained 57.7% variance of explained, and all four items loaded on greater than .70. The Cronbach's reliability estimate indicated that the reliability score was 0.74.

Standard of living: three items were proposed to measure standard of living from literature as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.680) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.2.). All factor loadings were greater than .70 and loaded on only one factor. The reliability estimate was 0.72; three items explained 64% of the variance of standard of living.

Cost of living: three items were proposed to measure the cost of living from literature as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.722) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.2.). All factor loadings were greater than .70 and loaded on only one factor. The reliability of the three items meaning cost of living was 0.87 and the variance explained was 80%.

Table 4.2 clearly showed that the Cronbach's reliability estimate for all four sub-dimensions of the economic impacts of the tourism was greater than .70 and exceeded the requirement of acceptable level. Also, the variance explained for all four sub-dimensions of the economic impacts of tourism was above .50, indicating that variance due to measurement error is smaller than the variance captured by the factor. Therefore, it was concluded that employment opportunity can be measured by three items, revenue from tourist for local business and government can be measured by four items, standard of

living can be measured by three items, and cost of living can be measured by three items. It was also concluded that all items are valid and reliable.

Table 4.2. Factor analysis result of the economic impact of tourism construct

Constructs and scales	Loading	Eigenvalues	Variance Explained
Employment opportunity	**.77***	2.057	68.56%
Provides desirable jobs	.881		
Creates variety of jobs	.838		
Creates employment opportunity	.760		
Kaiser-Meyer-Olkin MSA	.657		
Bartlett's Test of Sphericity	.000		
Revenue from tourist for local business and government	**.74***	2.308	57.71%
Brings more investment and spending	.861		
Local government generates foreign exchange	.752		
Generates tax revenues for local governments	.715		
Local business benefits from tourism	.701		
Kaiser-Meyer-Olkin MSA	.664		
Bartlett's Test of Sphericity	.000		
Standard of living	**.72***	1.923	64.10%
Standard of living increases	.808		
Improve economic situation	.806		
To improve roads, highways, and public services	.788		
Kaiser-Meyer-Olkin MSA	.680		
Bartlett's Test of Sphericity	.000		
Cost of living	**.87***	2.389	79.65%
The cost of living in the community	.920		
The price of goods and service increases	.883		
Real estate prices in the community	.874		
Kaiser-Meyer-Olkin MSA	.722		
Bartlett's Test of Sphericity	.000		

Note: A separate factor analysis was conducted for each sub-dimension but reported in a table.
* Reliability coefficient (Cronbach's Alpha)

4.2.3.2. Social impact variables

As stated in Chapters II and III, the social impact of tourism was examined as having two dimensions: social problem and local service. Measurement scale properties of each dimension of social impact of tourism are discussed next. Since the factor structure of each dimension was pre-determined, a separate factor analysis was conducted for each sub-dimension.

Social problem: three items were proposed to measure social problem from literature as noted in Chapter III. The items were: "during peak tourist season, I find it harder to get tickets for the theater, movies, concerts, or athletic events"; "Tourism has resulted in unpleasantly overcrowded hiking trails, parks, shopping places, or other outdoor facilities for local residents"; and "tourism increases social problems such as crime, drug, prostitution and so forth in the community." From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.634) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.3.). The principal component analysis indicated that there was only one factor and represented 62% of the explained variance of the scale. The factor was composed of three items with factor loadings greater than 0.70. Cronbach's alpha reliability was 0.69, which is below the guideline established in Chapter III. However, it was determined to keep this factor because reliability estimates between 0.6 and 0.7 represent the lower limit of acceptability (Hair et al., 1998). However, the second item was divided into three items in response to an expert's advice that the item might have a possibility to evoke confounding error.

Local service: three items were proposed to measure local service from literature, as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.644) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.3). All factor loadings were greater than .70 and loaded on only one factor with the explained 63% of variance. The reliability of three items measuring the local service was 0.71 using Cronbach's alpha, which exceeds the recommended reliability estimate of 0.70.

Table 4.3. Factor analysis result of the social impact of tourism construct

Constructs and scales	Loading	Eigenvalues	Variance Explained
Social problem	**.685***	1.84	61.57%
Results in unpleasantly overcrowded.	.844		
For peak season, harder to get ticket.	.768		
Contributes social problems such as crime.	.738		
Kaiser-Meyer-Olkin MSA	.634		
Bartlett's Test of Sphericity	.000		
Local Service	**.71***	1.90	63.33%
Tourism is a major reason for the variety of entertainment in the community	.847		
Because of tourism, roads and other local services are well maintained	.812		
Increased tourism provides more recreational opportunities for local residents	.723		
Kaiser-Meyer-Olkin MSA	.644		
Bartlett's Test of Sphericity	.000		

Note: A separate factor analysis was conducted for each sub-dimension but reported in a table.
* Reliability coefficient (Cronbach's Alpha)

Table 4.3 clearly shows that social problem can be measured by three items. However, to resolve a confounding error, the item "tourism has resulted in unpleasantly overcrowded hiking trails, parks, shopping place, and other outdoor places for local people" was divided into three items: "tourism has resulted in unpleasantly overcrowded hiking trails for local people"; "tourism has resulted in unpleasantly overcrowded parks for local people"; and "tourism has resulted in unpleasantly overcrowded shopping place for local people." Therefore, items to measure social problem were extended to six items. Local service can be measured by three items. All items were valid and reliable.

4.2.3.3. Cultural impact of tourism variables

As stated in Chapters II and III, the cultural impact of tourism was examined as having three dimensions: preservation of the local culture, deterioration of the local culture, and cultural exchange between residents and tourists. Measurement scale properties of each dimension of cultural impact of tourism are discussed next. Since the factor structure of each dimension was pre-determined, a separate factor analysis was conducted for each sub-dimension.

Preservation of the local culture: three items were proposed to measure prevention of the local culture, as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.634) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.4). All factor loadings were greater than .80 and loaded on only one factor. Examination of the Cronbach's alpha reliability was 0.83 and the factor explained 75% of the variance.

Deterioration of the local culture: three items were proposed to measure deterioration of the local culture, as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.684) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.4). Three factor loadings were greater than .70 and loaded on only one factor. For the composite reliability, Cronbach's alpha was estimated and the coefficient was 0.78.

Cultural exchange between residents and tourists: three items were proposed to measure cultural exchange between residents and tourists from literature, as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.698) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.4). All factor loadings were greater than .80 and loaded on only one factor. Reliability was 0.77 and the factor explained 68% of the variance.

Table 4.4 clearly shows that the Cronbach's alpha reliability estimate for all sub-dimensions of the cultural impacts of the tourism was greater than .77 and exceeded the requirement of acceptable level. Therefore, it was concluded that preservation of local

culture can be measured by three items, deterioration of local service can be measured by three items, and the cultural exchange dimension can be measured by three items. All items were deemed valid and reliable.

Table 4.4. Factor analysis result of the cultural impact of tourism construct

Constructs and scales	Loading	Eigenvalues	Variance Explained
Preservation of local service	**.83***	2.239	74.64%
Tourism encourages a variety of cultural activities for local residents.	.894		
Tourism helps keep local culture alive and maintain cultural identity.	.859		
Tourism has increased residents' pride in the local culture in the community	.838		
Kaiser-Meyer-Olkin MSA	.707		
Bartlett's Test of Sphericity	.000		
Deterioration of local service	**.78***	2.086	69.55%
Tourism encourages residents to imitate the behavior of the tourists and relinquish cultural traditions.	.868		
The commercial demand of tourists causes change in the style and forms of traditional arts and crafts.	.843		
Tourism causes the disruption of traditional cultural behavior patterns in local residents.	.788		
Kaiser-Meyer-Olkin MSA	.684		
Bartlett's Test of Sphericity	.000		
Cultural exchange	**.77***	2.049	68.29%
Meeting tourists from all over the world is definitely a life-enriching experience.	.835		
I would like to meet tourists from as many countries as possible in order to learn about their culture.	.829		
The cultural exchange between residents and tourists is valuable and pleasant for the residents.	.814		
Kaiser-Meyer-Olkin MSA	.698		
Bartlett's Test of Sphericity	.000		

Note: A separate factor analysis was conducted for each sub-dimension but reported in a table.
* Reliability coefficient (Cronbach's Alpha)

4.2.3.4. Environmental impact of tourism variables

As stated in Chapters II and III, the environmental impact of tourism was examined as having three dimensions: pollution, solid waste, and preservation wild life and ecology. Measurement scale properties of each dimension of environmental impact of tourism are discussed next. Since the factor structure of each dimension was pre-determined, a separate factor analysis was conducted for each sub-dimension.

Pollution: three items were proposed to measure pollution from literature, as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.707) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.5). All factor loadings were greater than .80 and loaded on only one factor. The factor reliability estimate was 0.89 and the factor represented 81% of the variance.

Solid waste: three items were proposed to measure deterioration of solid waste of environmental impacts of tourism from literature, as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.704) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.5). Three factor loadings were greater than .80 and loaded on only one factor. Cronbach alpha's reliability was 0.82 and the factor explained 74% of the variance.

Preservation of wild life and ecology: three items were proposed to measure preservation of wild life and ecology from the literature, as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.568) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.5). Even though the loading value (.558) of the item "tourism does not contribute to the negative effect of vegetation and loss of meadows and green space" was not high compared to other two items (two other loadings were greater than .80), it was still over .40, and all three items loaded on only one factor. Therefore, all three items were kept to measure preservation of wild life and ecology. Cronbach alpha reliability was 0.70 and the factor represented 64% of the variance.

Table 4.5. Factor analysis result of the environmental impact of tourism construct

Constructs and scales	Loading	Eigenvalues	Variance Explained
Pollution	**.89***	2.424	80.79%
Tourism brings environmental pollution.	.937		
Tourism produces noise, littering, and congestion.	.891		
Tourist activities like boating produce serious water pollution in lakes, bays, or the ocean.	.868		
Kaiser-Meyer-Olkin MSA	.707		
Bartlett's Test of Sphericity	.000		
Solid waste	**.82***	2.207	73.56%
Tourism produces large quantities of waste products.	.880		
Tourism businesses that serve tourists throw away tons of garbage a year.	.873		
Tourists' littering destroys the beauty of the landscape.	.818		
	.704		
Kaiser-Meyer-Olkin MSA	.000		
Bartlett's Test of Sphericity			
	.70*	1.919	63.96%
Preservation of wildlife and ecology			
Tourism has improved the ecological environment in the community in many ways.	.898		
Tourism has contributed to preservation of the natural environment and protection of the wildlife in the community.	.894		
Tourism does not contribute to the negative effect of vegetation and loss of meadows and green space.	.558		
	.568		
Kaiser-Meyer-Olkin MSA	.000		
Bartlett's Test of Sphericity			

Note: A separate factor analysis was conducted for each sub-dimension but reported in a table.
* Reliability coefficient (Cronbach's Alpha)

4.2.3.5. Material well-being domain

As stated in Chapters II and III, the life satisfaction of the material domain was examined as having two dimensions: income and employment and cost of living. Measurement scale properties of each dimension of material well-being are discussed

next. Since the factor structure of each dimension was pre-determined, a separate factor analysis was conducted for each sub-dimension.

Income and employment: four items were proposed to measure income and employment from literature, as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.809) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.6). All factor loadings were greater than .80 and loaded on only one factor. The reliability estimate was 0.85 and the factor represented 69% of the variance.

Cost of living: three items were proposed to measure cost of living from literature, as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.598) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.6). All factor loadings were greater than .60 and loaded on only one factor. The reliability estimate was 0.72 and the factor represented 65% of the variance.

Table 4.6 Factor analysis result of material well-being construct

Constructs and scales	Loading	Eigenvalues	Variance Explained
Income and employment	**.85***	2.755	68.88%
Your income at your current job	.857		
Pay and fringe benefits you get	.848		
Family income	.820		
Economic security of your job	.793		
Kaiser-Meyer-Olkin MSA	.809		
Bartlett's Test of Sphericity	.000		
Cost of living	**.72***	1.945	64.83%
Cost of living in your community	.888		
Cost of basic necessities such as food, housing and clothing	.858		
Real estate taxes	.649		
Kaiser-Meyer-Olkin MSA	.598		
Bartlett's Test of Sphericity	.000		

Note: A separate factor analysis was conducted for each sub-dimension but reported in a table.
* Reliability coefficient (Cronbach's Alpha)

Table 4.6 clearly shows that the Cronbach's reliability estimate for all two sub-dimensions of material well-being was 0.80 and 0.72, respectively, which exceed an acceptable level. Therefore, it was concluded that income and employment can be measured by four items and cost of living can be measured by three, and that all items are valid and reliable.

4.2.3.6. Community well-being domain

As stated in Chapters II and III, the community well-being was examined by four items. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.621) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4. 7). All factor loadings were greater than .70 except the item, the condition of the community environment (air, water, land), and the factor represented 53% of the variance. The Cronbach's alpha reliability was 0.70, which is marginally acceptable. Therefore, it was concluded that the community well-being domain can be measured by four items such as satisfaction of people who live in this community, satisfaction of the service and facilities you get in this community, the satisfaction of your community life, and satisfaction of the conditions of the community environment (air, water, land). All items were deemed valid and reliable.

Table 4.7 Factor analysis result of community well-being construct

Constructs and scales	Loading	Eigenvalues	Variance Explained
	.70*	2.131	53.29%
People who live in this community	.826		
Service and facilities you get in this community	.784		
Your community life	.705		
Conditions of the community environment (air, water, land)	.581		
Kaiser-Meyer-Olkin MSA	.621		
Bartlett's Test of Sphericity	.000		

* Reliability coefficient (Cronbach's Alpha)

4.2.3.7. Emotional well-being domain

As stated in Chapter II and III, the emotional well-being domain was examined as having two dimensions: leisure well-being and spiritual well-being domain. Measurement scale properties of each dimension of the emotional well-being domain was discussed next. Since the factor structure of each dimension was pre-determined, a separate factor analysis was conducted for each sub-dimension.

Leisure well-being domain: four items were proposed to measure the leisure well-being domain from literature, as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.673) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.8). All factor loadings were greater than .68 and loaded on only one factor. The Cronbach's alpha reliability was 0.82 and the factor represented 65% of the variance.

Spiritual well-being domain: five items were proposed to measure the spiritual well-being domain from literature, as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.677) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.8). The principal component analysis indicated that there were two factors. However, only one item loaded on the second factor (Table 4.8). The first factor represented 55% of the explained variance of the scale. The first factor was comprised of four items with factor loadings greater than .60. Those items were: (1) I am particularly happy with the way we preserve culture in my community, (2) Satisfaction with cultural life, (3) I am very satisfied with the availabilities of religious services in my community, (4) I feel I extend my cultural outlook when I talk with tourists (factor loading of .791, .755, .648, and .634, respectively). The second factor could have contributed an additional 21.35% to the explained variance of scales; however, the objective of the pretest was to establish a unidimensional scale for the measurement of the construct. Therefore, only items that loaded on the first factor were selected. The Cronbach's alpha reliability indicated that the coefficient was 0.66, which is marginally acceptable.

Table 4.8 Factor analysis result of emotional well-being construct

Constructs and scales	Loading	Eigenvalues	Variance Explained
Leisure well-being	**.82***	2.161	65.34%
Leisure activity in your community	.856		
Spare time and leisure activity	.846		
Your leisure life	.833		
The influx of tourists from all over the world you're your community.	.686		
	.673		
Kaiser-Meyer-Olkin MSA	.000		
Bartlett's Test of Sphericity			
Spiritual well-being (Factor 1)	**.66***	1.642	54.73%
I am particularly happy with the way we preserve culture in my community	.791		
Satisfaction with cultural life	.755		
I am very satisfied with the availabilities of religious services in my community.	.648		
I feel that I extend my cultural outlook when I talk with tourists	.634		
(Factor 2)	.947	1.068	21.353
The satisfaction of the spiritual life			
	.677		
Kaiser-Meyer-Olkin MSA	.000		
Bartlett's Test of Sphericity			

Note: A separate factor analysis was conducted for each sub-dimension but reported in a table.
* Reliability coefficient (Cronbach's Alpha)

4.2.3.8. Health and safety well-being domain

As stated in Chapters II and III, the health and safety well-being domain was examined as having two dimensions: Health well-being domain and safety well-being domain. Measurement scale properties of each dimension of health and safety well-being domain were discussed next. Since the factor structure of each dimension was pre-determined, a separate factor analysis was conducted for each sub-dimension.

Health well-being: six items were proposed to measure the health well-being domain from literature, as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.585) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.9). The principal component factor analysis with Varimax rotation indicated that there were two factors. Three items loaded on the first factor and three items loaded on the second factor. The first factor represented 29% of the explained variance, and the second factor explained 30% of the variance. The total explained variance of the scale was 59%. The Cronbach's alpha reliability estimate for the first factor was 0.59, and the Cronbach's alpha reliability estimate for the second factor were 0.53. Both reliability score was below than the .70 guidelines established in Chapter III. However, both factors were kept with the lower limit of acceptability. Therefore, it was concluded that the health well-being domain can be measured by six items with two sub-latent constructs.

Safety well-being: three items were proposed to measure the satisfaction of the safety well-being domain from literature as noted in Chapter III. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.605) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.9). All factor loadings were greater than .70 and loaded on only one factor. The Cronbach's alpha reliability was 0.81, and that factor represented 73% of the explained variance of the scale (Table 4.9).

Table 4.9 showed that it was concluded that health well-being domain can be measured six items with two-sub construct and safety well-being domain can be measured by three items.

Table 4.9 Factor analysis result of health and safety well-being construct

Constructs and scales	Loading		Eigenvalues	Variance Explained
	F1	**F2**		
Health well-being	**.59***		1.766	29.436
The water quality in your area	.766			
Satisfaction with the air quality in your area	.681			
Satisfaction of your Health	.677		1.664	29.741
		.53*		
I always drink bottled or filtered water because I think the water is not clean.**		.742		
When I see garbage left on the ground from tourists, I do not feel good about tourism.**		.742		
Environmental pollution threatens public safety and causes health hazards.**		.620		
	.585			
Kaiser-Meyer-Olkin MSA	.000			
Bartlett's Test of Sphericity				
	.81*		2.196	73.197
Safety well-being	.935			
The community's accident rate or crime rate.	.904			
The community's safety and security.	.711			
The environmental cleanness in your area.				
	.605			
Kaiser-Meyer-Olkin MSA	.000			
Bartlett's Test of Sphericity				

Note: * Reliability coefficient (Cronbach's Alpha), ** Reverse coded

- Only factor loadings >.40 are shown, only those items that loaded on the only factors with eigenvalues greater than 1 are shown., F1: Factor 1, F2: Factor 2
- A separate factor analysis was conducted for each sub-dimension but reported in a table.

4.2.3.9. Quality of life (QOL) in general

As stated in Chapters II and III, the QOL in general was measured by three items. From a principal component factor analysis, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (.625) and the Bartlett's test of sphericity ($p<0.001$) indicated that data were acceptable for factor analysis (Table 4.10.). All factor loadings were greater than .70 and loaded on only one factor. Table 4.10 clearly showed that the Cronbach's alpha reliability for QOL in general was 0.76, and that the factor represented

68% of the explained variance of the scale. Therefore, it was concluded that quality of life in general can be measured three items, and that all items are valid and reliable.

Table 4.10 Factor analysis result of the quality of life in general

Constructs and scales	Loading	Eigenvalues	Variance Explained
	.76*	2.042	68.076
Your life as a whole	.894		
The way you are spending your life	.863		
How you feel about your life***	.705		
	.625		
Kaiser-Meyer-Olkin MSA	.000		
Bartlett's Test of Sphericity			

Note: * Reliability coefficient (Cronbach's Alpha)

Through the pretest, all items to measure the tourism impact contracts, the satisfaction of well-being domains, and quality of life in general were considered to be reliable and valid.

4.3. FINAL SURVEY

This section of the chapter will discuss the final survey method, the sample, the response rate, and the demographic characteristics of the final sample.

4.3.1. Survey method

A self-administered survey questionnaire was used to collect data. The questionnaire was delivered via the U.S. Postal Service to a stratified random sample in the different tourism development stages. The mailed package included a cover letter pre-printed in the questionnaire booklet, a self-addressed and stamped envelope, and the questionnaire (Appendix A). Two weeks after the first survey was mailed, a reminder postcard was sent to the sample (Appendix B). Then, two weeks after the postcard was sent, the second survey questionnaire was mailed.

4.3.2. Sample

The sample population consisted of individuals who reside in the pre-selected destination in different developmental tourism stages in the State of Virginia. A survey questionnaire with a pre-written cover letter was mailed to 2,400 residents in the pre-selected destination of different developmental tourism stages. In order to make sure that the sample represented the population distribution in the pre-selected destination in different developmental tourism stages, a stratified sampling approach was used. First, the total population of the pre-selected counties and cities of different developmental tourism stages in Virginia was obtained from the U.S. Census Bureau (2002). Afterwards, the number of respondents needed from each county and city to obtain a total sample of 2,400 was calculated. Once the number of respondents was identified, a random sampling method was used to select the appropriate number of respondents from each pre-selected county and city. The sample (mailing list) for this study was downloaded from the Reference USA database (http://www.referenceusa.com/) residential information section. Appendix C presents the population of pre-selected counties and cities and the number of respondents from each county and city.

The overall response rate was 13.76% (327 respondents) (See Table 4.11). Six of the returned questionnaires were eliminated as the data were being coded because they were returned blank or were only partially completed. After eliminating the unusable responses, 321 responses were coded and used for data analysis.

Table 4.11 Response Rate

	Number	Percent
Total target population	2,400	100.00%
Undeliverable	24	1.00%
Total survey population	2376	99.00%
Total survey population from above	2376	100.00%
Total responses	327	13.76%
Unusable	6	0.25%
Total usable responses	321	13.51%
Description of unusable surveys		
Returned without any completion	4	
Incomplete surveys	2	

A general overview of the respondents follows. For more specific details regarding the age, income, ethnic group, gender and the type of occupation, household status, and the number of people in the household, please refer to the profile of the respondents shown in Appendix D.

4.3.3. Profile of the respondents

The demographic characteristics of age, education, gender, ethnic group, and income were included in this chapter in an effort to provide a descriptive profile of the survey respondents. A discussion of the demographic characteristics ensues.

Age

Survey respondents were asked their age in an open-ended question, and were provided a blank in which to supply the answer. Most the people who returned completed questionnaires (48.1%) were 55 or older; around 41.4% of the respondents were between the ages of 35 and 54. The average age of the respondents was 53.6 years old. The standard deviation of age was 15 years old.

Gender

Survey respondents were asked to circle if they were male (M) or female (F). More than half of the respondents were men. Of the three hundred nineteen individuals who provided gender information, 170 (53.3%) were male, whereas 149 (46.7%) were female.

Ethnic origin

Respondents were asked to provide information regarding their ethnic origin by circling one of the following choices: Caucasian, Hispanic, African-American, Asian, and others. The vast majority of the survey participants were white (82.1%), with only 13.8% being African-American, 1% indicating Hispanic and Asian, and 2.2% presenting others.

Income

Respondents were asked to circle their approximate household income. More of the survey population left this question blank than any other question on the survey, with only 292 of the 321 respondents providing information regarding their annual income. Of those who did answer the question, 12.3% reported income less than $20,000, whereas 11.3% reported incomes in excess of $100,000. Most of the reported incomes fell between $20,001 to $60,000, with 21.9% of the respondents reporting incomes between $20,001 and $40,000, and 19.2% indicating that they earned between $40,001 and $60,000. 22.6% of survey respondents indicated that they earned between $60,001 and $80,000 annually. Surprisingly, 24% of the respondents reported incomes in excess of $80,001, with 12.7% declaring incomes between $80,000 and $100,000 and 11.3 reporting incomes in excess of $100,001.

Years of residency in community

Length of residency in the study area averaged 22.34 years for the respondents. The majority of the respondents (44.6%) have lived in their present community for over 20 years. Another 19.3% had resided in the same locality for 11 to 20 years. 19.9% reported a length of residency of 10 years or less.

Subjective perception of tourism development

To crosscheck the selected area for the objective tourism development stage by using the secondary indicators, the respondents were asked to present their subjective feeling of tourism development stages in their community. Among 286 respondents, 50% of the respondents answered that they felt their community falls in the growth stages; the rest of the respondents answered that they felt their community falls either in the maturity stage (22%), beginning stage (20.6%), or decline stage (7.3%). Table 4. 12 showed the frequencies comparing the subjective development stage and objective development stages. The chi-square test was statistically significant at $\alpha=0.05$ levels, but most residents from the objectively assigned tourism development stage areas felt that their community falls in the maturity stage of tourism development. Only 52.4% of the respondents from decline stage areas felt that their community falls in the decline stage.

Table 4.12 The result of the χ^2 test for objective and subjective development stage

Frequency objective	Q3-subjective development stage				
	Beginning	Growth	Maturity	Decline	Total
Beginning	7	34	17	4	62
Growth	19	32	17	4	72
Maturity	20	43	20	2	85
Decline	13	34	9	11	67
Total	59	143	63	21	286
Pearson chi-square= 18.932, df=9, p=0.026					

Household

The largest percentage of households reported (44.3%) fell into the category "married couple living without children." Around thirty-two percent were married with children living at home. Only 5.4% of the respondents described their household make up a single parent with children, while 18.5% of the respondents reported that they live alone or other single adults.

Occupation and Job Status

Some 30.4% of the respondents reported their job status as retired, while 15.7% hold professional and technical position, 5.8% were self-employed or a business owner. Another 6.1% worked in as an educator and 6.4% in others.

4.3.4. Late-response Bias Tests

The answer of the late respondents (those who returned completed surveys after the second survey questionnaire was mailed out) were compared with those of the early respondents (those who returned the completed survey before the second survey questionnaire was mailed out) to test for late response bias. The results from those tests are reported in Appendix E. χ^2 tests performed on these two groups indicated that no significant differences exist between the early and late responses among the demographic characteristics of respondents except employed status. The χ^2 tests for the employed

status showed the significant difference between early and late respondent group at α=0.05 levels.

4.3.5 Descriptive Statistics, Skewness, and Kurtosis

Since all of the data had been keyed into SPSS by hand, before any tests were conducted using the data set, frequency distributions for each variable in the study were run and examined to ensure that the data were "clean." As could be expected, a few keying errors were evident, and the actual survey questionnaires corresponding with the survey coding number for the surveys that contained coding errors were pulled. The errors were corrected and frequencies were run a second time to ensure that all of the keying errors had been corrected. Next, measures of central tendency were run for each of the variables in the study. The mean scores and standard deviations in addition to the skewness and kurtosis of each of the variables in the study are shown in Appendix F.

To assess the normality of the distribution of the data, the skewness and kurtosis of each variable were examined. The critical value for both of these measures of normality is drawn from a z distribution. The SPSS software package was used to generate the skewness and kurtosis values for each of the variables in the model. Therefore, for the calculated skewness and kurtosis values, zero assumes perfect normality in the data distribution (which is seldom achieved), ± 2.58 indicating rejecting the normality assumption at the 0.01 probability level, and ± 1.96 signifies a 0.05 error level (Hair et al. 1998). By applying the above criteria to the skewness values for each of the variables listed in Appendix F, it is clear that no variable fell outside the ±1.96 range for skewness. Therefore, it can be assumed that all of the variables for the study are reasonably free from skewness.

Another data characteristic that was considered is the kurtosis: how observations "cluster around a central point" for a given standard distribution (Norusis, 1990, p.82). Distributions that are more peaked than normal are called "leptokurtic," whereas those that are flatter than normal are referred to as "platykurtic." Positive values for kurtosis show that a distribution has a higher than normal peak. Looking again at Appendix F, none of the variables fell outside ±2.56 range for kurtosis. Therefore, the study can conclude that none of variables was leptokurtic or platykurtic.

4.4 DATA ANALYSIS

This section of the chapter will present the results of the statistical analysis of the data collected. First, the results of the confirmatory analysis of the constructs which have sub-dimensions is presented. After confirming the each sub-dimension of the constructs, a summated scale is constructed for each construct. For example, the economic impact of tourism has four sub-dimensions. After confirming four sub-dimensions of the economic impact construct, the economic impact of tourism was examined as one construct by using each summated scale as a measurement item of the economic impact of tourism construct as discussed in Chapter III. Next, the result of the measurement model, including all constructs, is presented. Afterwards, the results of the structural equation modeling will be presented to test the proposed hypotheses.

4.4.1 Confirmatory factor analysis

The preceding section of Chapter IV presented the pretest results of the proposed measurement scale for each dimension of economic impact of tourism and for other scales that were proposed other constructs. The next step in the analysis was to perform a confirmatory factor analysis to confirm the measurement scale properties. As stated earlier and in Chapter III, a summated scale is used to measure the economic impact of tourism construct. The indicators of each sub-dimension of economic impact of tourism were summated, and the resulting four summated scales were used to measure the economic impact of tourism. However, before testing the measurement model properties of the whole proposed measurement model, a separate confirmatory factor analysis is required to perform on each sub-dimension of the nine constructs to check the reliability and validity of the indicators. The observed variables that were grouped together in the component factor analysis (in pretest) were utilized to perform the confirmatory factor analysis.

The reliability of the variables is defined as the square of the correlation between a latent factor and the indicators. In other words, the reliability indicates the percent of variation in the indicator that is explained by the factor that it is supposed to measure (Long, 1983a). On the other hand, the validity refers to whether an instrument measures

what it is intended to measure. If, for example, three items designed to measure employment opportunity, and scores on the scales do in fact reflect a subject's underlying levels of employment opportunity, then the scale is valid. The standardized loading (Li) for each indicator can be obtained from a confirmatory factor analysis. Then, the reliability of an indicator (Li^2) can be computed in a very straightforward way by simply squaring the standized factor loadings obtained in the analysis, and error variance (Ei) is calculated by 1-squared loadings of the indicators. Along with individual indicator reliability, the composite reliability was calculated using the formula (Fornell & Larcker, 1981):

$$\text{Composite reliability} = (\Sigma Li)^2/((\Sigma Li)^2 + \Sigma Var(Ei)) \quad (1)$$

Coefficient alpha is an index of internal consistency reliability; with other factors equal, alpha will be high if the various items that constitute the scale are strongly correlated with one another, and is interpreted conceptually as an estimate of the correlation between a given scale and an alternative form of the scale that includes the same number of items. At least .60 or .70 is considered as being the minimally acceptable level of reliability for instruments used in research (.70 is preferable). Fornell and Larcker (1981) discuss an index called the variance extracted estimate, which assesses the amount of variance that is captured by an underlying factor in relation to the amount of variance due to measurement error. The formula is as follows:

$$\text{Variance extracted} = \Sigma Li^2/(\Sigma Li^2 + \Sigma Var(Ei)) \quad (2)$$

Each factor loading is squared first; these squared factor loadings are then summed. Because a squared factor loading for an indicator is equivalent to that individual's reliability, this is equivalent to simply summing the reliabilities for a given factor's indicators. Fornell and Larcker (1981) suggest that it is desirable that constructs exhibit estimates of .50 or larger, because estimates less than .50 indicate that variance due to measurement error is larger than variance captured by the factor. This may call into question the validity of the latent construct as well as its indicators.

4.4.1.1 Confirmatory factor analysis of economic impact of tourism constructs

Before testing the overall confirmatory measurement model, the measurement unidimensionality of each sub-dimension of the economic impact of tourism and other constructs was assessed individually. First, four dimensions of the economic impact of tourism were discussed in detail in Chapter II. A measurement scale was proposed to assess each dimension in Chapter III. The confirmatory factor analysis was performed by specifying the posited relationships of the observed variables to the underlying four dimensions of economic impact of tourism, with the dimensions allowed to intercorrelate freely. The covariance matrix was used as the input data for the confirmatory factor analysis procedure available in LISREL 8.3 (Jöreskog & Sorbom, 1989).

The confirmatory measurement model to be tested postulates a priori that the economic impact of tourism is a four-factor structure composed of (1) employment opportunity, (2) revenue from tourists for local business and government, (3) standard of living, and (4) cost of living. Further dissection of the model indicates that these four factors are correlated and that there were 13 observed variables. As shown in the pretest, three observed variables loaded onto employment opportunity, standard of living, and cost of living, and four observed variables loaded onto the building revenue from tourists for local business and government. In addition, errors of measurement associated with each observed variable were uncorrelated. Before testing the overall confirmatory measurement for the economic impact of tourism model, the measurement of each sub-construct was assessed individually.

A separate confirmatory factor analysis was performed for each sub-construct with three or more observed variables. If a construct had three observed variables, it was combined with another construct and a confirmatory factor analysis was performed for both constructs. If model fit was unacceptable, the modification indices and residuals were examined. Based on the suggestions of the modification indices and the size of residuals, constructs with acceptable fit were respecified to increase model fit by deleting the indicators that had large residuals (over 2.56, Hair et al., 1998) and/or wanted to load on other constructs (greater than 3.89, Hair et al, 1998). Assessing each sub-dimension of economic impact of tourism construct individually resulted in no change to the indicators

in the sub-dimensions, and results indicated that all four sub-dimensions had measurement unidimensionality. After assessing the unidimensionality of each sub-dimension individually, a measurement model for each pair of constructs was estimated, combining them two by two. Afterwards, the overall measurement fit of the economic impact of the tourism construct was tested by a confirmatory factor analysis. The items and the result of the confirmatory factor analysis of sub-dimension of the economic impact of tourism are presented in Table 4.13. Table 4.13 presents the completely standized coefficients (i.e., both the latent and observed variables are standized), the indicator reliabilities (i.e., the squared multiple correlation for X-variables), and the error variances for each indicator. The composite indicator reliabilities and variance extracted estimates were calculated using the formula recommended by Fornell and Larcker (1981). As presented in table 4.13, all of the composite reliabilities were above .7 and all variance extracted estimates were above.5. The overall fit of this final measurement model of the economic impact of tourism construct was $\chi^2_{(59)}$= 125.98 (p=0.00); GFI=0.94; AGFI=0.91; PGFI=0.61; IFI=0.97; NNFI=0.95; CFI=0.97; RFI=0.92; AND Critical N=211.4. Further, the indicators of residuals, standized RMR (SRMR) and root mean squared error of approximation (RMSEA) were 0.033 and 0.066, respectively.

Table 4.13 Composite Reliability and validity of the economic impact variables (n=321)

Constructs and indicators	Standardized loading (Li)	Reliability $(Li)^2$	Error variance
Employment opportunity		**.89***	**.73****
Provides desirable jobs	.79	.65	.28
Creates a variety of jobs	.88	.78	.24
Creates employment opportunity	.85	.71	.28
Revenue from tourist for local business and government		**.81***	**.53****
Tourism brings more investment and spending	.57	.32	.60
Local business benefits from tourism	.79	.58	.30
Generates tax revenues for local governments	.63	.44	.41
Local government generates foreign exchange	.71	.53	.36
Standard of living		**.83***	**.61****
Standard of living increases	.79	.61	.42
Improve economic situation			
To improve roads, highways, and	.74	.58	.44
public services	.84	.69	.33
Cost of living		**.85***	**.65****
The cost of living in the community	.76	.58	.41
The price of goods and service increases	.75	.56	.47
Real estate prices in the community	.91	.83	.17

* Composite reliability
** Variance extracted estimate

4.4.1.2 Confirmatory factor analysis of social impact of tourism constructs

Two dimensions of social impact of tourism were discussed in detail in Chapter II. A measurement scale was proposed to assess each dimension in Chapter III. The confirmatory factor analysis was performed by specifying the posited relationships of the

observed variables to the underlying two dimensions of social impact of tourism, with the dimensions allowed to intercorrelate freely. The covariance matrix was used as the input data for the confirmatory factor analysis; the confirmatory measurement model to be tested postulates a priori that social impact of tourism is a two-factor structure composed of (1) social problem (5 indicators) (2) local service (3 indicators). Further dissection of the model indicates that these two factors are correlated and there were 8 observed variables. As shown in the pretest, five observed variables loaded onto social problem and three indicators loaded onto local service. Assessing each sub-dimension of social impact of tourism construct individually resulted in no change of the indicators in the sub-dimensions, and results indicated that two sub-dimensions had measurement unidimensionality. After assessing the unidimensionality of each sub-dimension individually, the overall measurement fit of the social impact of the tourism construct was tested by a confirmatory factor analysis. The items and the result of the confirmatory factor analysis of sub-dimension of the social impact of tourism are presented in Table 4.14. As presented in table 4.14, all of the composite reliabilities were above .7 and all variance-extracted estimates were above.5. The overall fit of this final measurement model of the social impact of tourism construct was $\chi^2_{(19)}$= 41.74 (p=0.0019); GFI=0.95; AGFI=0.91; PGFI=0.50; IFI=0.97; NNFI=0.96; CFI=0.97; RFI=0.92; and Critical N=170.84. The indicators of residuals, Standardized RMR (SRMR) and root mean squared error of approximation (RMSEA) were 0.056 and 0.078, respectively. Therefore, the summated scale for each sub-construct was calculated to measure the social impact of tourism construct.

4.4.1.3 Confirmatory factor analysis of cultural impact of tourism constructs

Three dimensions of the cultural impact of tourism were discussed in detail in Chapter II. A measurement scale was proposed to assess each dimension in Chapter III. The confirmatory factor analysis was performed by specifying the posited relationships of the observed variables to the underlying three dimensions of cultural impact of tourism, with the dimensions allowed to intercorrelate freely.

Table 4.14. Composite Reliability and validity of the social impact variables

Constructs and indicators	Standardized loading (Li)	Reliability $(Li)^2$	Error variance
Social problem		**.89***	**.63****
For peak season, harder to get ticket.	.67	.45	.55
Resulted in unpleasantly overcrowded hike trail	.91	.83	.17
Resulted in unpleasantly overcrowded park	.91	.82	.18
Resulted in unpleasantly overcrowded shopping place	.82	.68	.32
Contributes social problem such as crime.	.57	.32	.68
Local Service			
Increased tourism provides more recreational opportunities for local residents	.67	**.79*** .45	**.56**** .55
Because of tourism, roads and other local services are well maintained	.78	.61	.39
Tourism is a major reason for the variety of entertainment in the community	.79	.62	.38

* Composite reliability
** Variance extracted estimate

The covariance matrix was used as the input data, and the confirmatory measurement model to be tested postulates a priori that the cultural impact of tourism is a three-factor structure composed of (1) preservation of local service (3 indicators), (2) deterioration of local service with 3 indicators, and (3) cultural exchange (4 items). Unlike the results in the pretest, the occurrence of a loading for deterioration of local service (X6; tourism causes the disruption of traditional cultural behavior patterns in local residents) was greater than 1.0. Therefore, it was deleted before the goodness-of-fit was assessed. After this procedure was repeated several times, the four observed indicators were selected to measure the cultural impact of tourism. The overall fit of this final measurement model of the cultural impact of tourism construct was $\chi^2_{(2)}$= 7.85 (p=0.020); GFI=0.99;

AGFI=0.94; PGFI=0.20; IFI=0.99; NNFI=0.97; CFI=0.99; RFI=0.96; AND Critical N=350.36. The indicators of residuals, SRMR and RMSEA were 0.018 and 0.096 (that is higher than suggested acceptable fit but it was kept), respectively. The result of the composite reliability and variance-extracted estimate for the cultural impact construct is presented in Table 4.15.

Table 4.15.Composite Reliability and validity of the cultural impact variables

Constructs and indicators	Standardized loading (Li)	Reliability $(Li)^2$	Error variance
Meeting tourists from all over the world is definitely a life-enriching experience.	.78	**.88*** .61	**.64**** .39
The cultural exchange between residents and tourists is valuable for the residents.	.91	.83	.17
The cultural exchange between residents and tourists is pleasant for the residents.	.80	.65	.35
I would like to meet tourists from as many countries as possible in order to learn about their culture.	.70	.48	.52

* Composite reliability
** Variance extracted estimate

4.4.1.4 Confirmatory factor analysis of the environmental impact of tourism construct

Three dimensions of the environmental impact of tourism were discussed in detail in Chapter II. A measurement scale was proposed to assess each dimension in Chapter III. The confirmatory factor analysis was performed by specifying the posited relationships of the observed variables to the underlying three dimensions of the environmental impact of tourism, with the dimensions allowed to intercorrelate freely. The covariance matrix was used as the input data for the confirmatory factor analysis and the confirmatory measurement model to be tested postulates a priori that social impact of

tourism is a three-factor structure composed of (1) pollution (5 indicators), (2) solid waste (3 indicators), and preservation of wildlife and ecology (3 indicators). Assessing each sub-dimension of the environmental impact of tourism construct individually, and deleting indicators that had large residuals or wanted to load on other constructs, resulted in decreases in the number of indicator in three constructs. The number of indicators used to measure pollution decreased to three observed variables from five. The number of indicators used to measure preservation of wildlife and ecology decreased to two observed indicators from three. After assessing the unidimensionality of each sub-dimension individually, the overall measurement fit of the environmental impact of the tourism construct was tested by a confirmatory factor analysis. The items and the result of the confirmatory factor analysis of sub-dimension of the environmental impact of tourism are presented in Table 4.16. Table 4.16 presents the completely standardized coefficients, the indicator reliability, error variance, the composite reliability and variance-extracted estimate were calculated by using the formulary recommended by Fornell and Larcker (1981). As presented in table 4.16, all of the composite reliabilities were above .7 and all variance-extracted estimates were above.5. The overall fit of this final measurement model of the social impact of tourism construct was $\chi^2_{(17)}$= 36.47 (p=0.0040); GFI=0.96; AGFI=0.91; PGFI=0.45; IFI=0.97; NNFI=0.95; CFI=0.97; RFI=0.93; AND Critical N=150.03. The indicators of residuals, standardized RMR (SRMR) and root mean squared error of approximation (RMSEA) were 0.030 and 0.076, respectively. Therefore, the summated scale for each sub-construct was calculated to measure the environmental impact of tourism construct.

4.4.1.5 Confirmatory factor analysis of the material well-being construct

Two dimensions of the material well-being domain construct were discussed in detail in Chapter II. A measurement scale was proposed to assess each dimension in Chapter III. The confirmatory factor analysis was performed by specifying the posited relationships of the observed variables to the underlying two dimensions of the material well-being construct, with the dimensions allowed to intercorrelate freely.

Table 4.16.Composite Reliability and validity of the environmental impact variables

Constructs and indicators	Standardized loading (Li)	Reliability $(Li)^2$	Error variance
Pollution			
Tourism brings environmental pollution.	.88	**.91*** .78	**.78**** .22
Tourism produces noise.	.92	.84	.16
Tourism produce littering.	.85	.72	.28
Solid waste		**.81***	**.59****
Tourism produces large quintiles of waste products.	.88	.78	.22
Tourism businesses that serve tourists throw away tons of garbage a year.	.77	.59	.41
Tourists' littering destroys the beauty of the landscape.	.62	.39	.61
Preservation of wildlife and ecology		**.85***	**.74****
Tourism has contributed to preservation of the natural environment and protection of the wildlife in the community.	.84	.70	.30
Tourism has improved the ecological environment in the community in many ways.	.89	.78	.22

* Composite reliability
** Variance extracted estimate

The covariance matrix was used as the input data for the confirmatory factor analysis. The confirmatory measurement model to be tested postulates a priori that material well-being is a two-factor structure composed of (1) income and employment (4 indicators), and (2) cost of living (3 indicators). Assessing each sub-dimension of the material well-being domain construct individually resulted in no change in the number of indicators. After assessing the unidimensionality of each sub-dimension individually, the overall measurement fit of the environmental impact of the tourism construct was tested by a confirmatory factor analysis. The items and the result of the confirmatory factor analysis

of sub-dimension of the material well-being are presented in Table 4.17. Table 4.17 presents the completely standardized coefficients, the indicator reliability, error variance, the composite reliability and variance-extracted estimate were calculated by using the formulary recommended by Fornell and Larcker (1981). As presented in table 4.17, all of the composite reliabilities were above .7 and all variance-extracted estimates were above.5. The overall fit of this final measurement model of the material well-being construct was $\chi^2_{(13)}$= 14.07 (p=0.37); GFI=0.98; AGFI=0.96; PGFI=0.46; IFI=1.00; NNFI=1.00; CFI=1.00; RFI=0.97; AND Critical N=377.14. The indicators of residuals, standardized RMR (SRMR) and root mean squared error of approximation (RMSEA) were 0.040 and 0.020, respectively. Therefore, the summated scale for each sub-construct was calculated to measure the material well-being construct.

Table 4. 17. Composite Reliability and validity of material well-being variables

Constructs and indicators	Standardized loading (Li)	Reliability $(Li)^2$	Error variance
Income and employment		**.87***	**.63****
Your income at your current job	.84	.71	.29
Economic security of your job	.64	.41	.59
Your family income	.85	.72	.28
Pay and fringe benefits you get	.89	.63	.37
		.84*	**.65****
Cost of living			
Your real estate taxes	.63	.40	.60
Cost of living in your community	.84	.90	.10
Cost of basic necessities such as food, housing and clothing	.82	.68	.32

* Composite reliability
** Variance extracted estimate

4.4.1.6 Confirmatory factor analysis of the community well-being construct

Five observed variables were proposed to assess the community well-being construct in Chapter III. The covariance matrix was used as the input data for the

confirmatory factor analysis, and the confirmatory measurement model to be tested postulates a priori that community well-being construct is measured by five observed indicators. The overall measurement fit of the community well-being construct was tested by a confirmatory factor analysis. The deleting indicator that had a large residual resulted in decrease the number of indicators to four from five. The items and the result of the confirmatory factor analysis of the community well-being construct, with the completely standized coefficients, the indicator reliability, error variance, the composite reliability and variance-extracted estimate, are presented in Table 18. The overall fit of this final measurement model of the community well-being construct was $\chi^2_{(2)}$= 9.25 (p=0.0098); GFI=0.98; AGFI=0.89; PGFI=0.20; IFI=0.97; NNFI=0.92; CFI=0.97; RFI=0.91; AND Critical N=193.16. The indicators of residuals, standardized RMR (SRMR) and root mean squared error of approximation (RMSEA) were 0.13 and 0.038, respectively.

Table 4.18.Composite Reliability and validity of the community well-being variables

Constructs and indicators	Standardized loading (Li)	Reliability $(Li)^2$	Error variance
		.82*	**.54****
Conditions of the community environment (air, water, land)	.63	.40	.60
Service you get in this community	.89	.80	.20
Facilities you get in this community	.80	.64	.37
People who live in this community	.59	.38	.66

* Composite reliability
** Variance extracted estimate

4.4.1.7 Confirmatory factor analysis of the emotional well-being constructs

Two dimensions of the emotional well-being domain were discussed in detail in Chapter II. A measurement scale was proposed to assess each dimension in Chapter III. The confirmatory factor analysis was performed by specifying the posited relationships of the observed variables to the underlying three dimensions of emotional well-being

construct, with the dimensions allowed to intercorrelate freely. The covariance matrix was used as the input data; the confirmatory measurement model to be tested postulates a priori that the emotional well-being construct is a two-factor structure composed of (1) leisure well-being (4 indicators), and (2) spiritual well-being (4 indicators). Unlike the situation in the pretest, the occurrence of a correlation between leisure well-being and spiritual well-being was greater than 1.0. Therefore, after two dimensions were combined into one dimension, several indicators were deleted to get an acceptable goodness-of-fit. After this procedure was repeated several times, the four observed indicators were selected to measure the emotional well-being construct. The overall fit of this final measurement model of the emotional well-being construct was $\chi^2_{(2)}$= 1.60 (p=0.45); GFI=1.00; AGFI=0.98; PGFI=0.20; IFI=1.00; NNFI=1.00; CFI=1.00; RFI=0.96; and Critical N=1158.93. The indicators of residuals, standardized RMR (SRMR) and root mean squared error of approximation (RMSEA) were 0.020 and 0.00, respectively. The result of the composite reliability and variance-extracted estimate for the emotional well-being construct is presented in Table 4.19.

Table 4.19.Composite Reliability and validity of the emotional well-being variables

Constructs and indicators	Standardized loading (Li)	Reliability $(Li)^2$	Error variance
		.67*	**.34****
Spare time	.77	.40	.41
Leisure activity in your community	.56	.80	.69
Your leisure life	.53	.64	.72
Your cultural life	.43	.38	.82

* Composite reliability
** Variance extracted estimate

4.4.1.8 Confirmatory factor analysis of the health and safety well-being construct

Three dimensions of the health and safety well-being domain construct were postulated in the pretest, unlike the discussion in detail in Chapter II and Chapter III. The confirmatory factor analysis was performed by specifying the posited relationships of the

observed variables to the underlying three dimensions of the health and safety well-being construct, with the dimensions allowed to intercorrelate freely. The covariance matrix was used as the input data for the confirmatory factor analysis, and the confirmatory measurement model to be tested postulates a priori that health and safety well-being is a three-factor structure composed of (1) health well-being (3 indicators), (2) health concern (3 indicators), and safety well-being (3indicators). Assessing each sub-dimension of the health and safety and deleting indicators that had large error variance or/and large residuals, and that wanted to load on other constructs, resulted in a decrease in the number of indicators in the sub-dimensions. The number of sub-dimension was decreased to two from three, and also, the number of indicators used to measure safety well-being decreased to two from three. After assessing unidimensionality of each sub-dimension individually, the overall measurement fit of the environmental impact of the tourism construct was tested by a confirmatory factor analysis. The items and the result of the confirmatory factor analysis of sub-dimension of the health and safety well-being construct are presented in Table 4.20. Table 4.20 presents the completely standardized a coefficient loading, the indicator reliability, error variance, the composite reliability and variance-extracted estimate were calculated by using the formula recommended by Fornell and Larcker (1981). Table 4.20 shows that the composite reliability for two sub-dimension of the health and safety well-being construct had greater than .70 and exceeded the requirement of acceptable level. Also, variance extracted estimate for all sub-dimensions of the health and safety well-being was above .50, indicating that variance due to measurement error is smaller than the variance captured by the factor. Therefore, it was concluded that health well-being can be measured three items, and safety well-being can be measured by two items. All items were deemed valid and reliable. The overall fit of this final measurement model of the health and safety well-being construct was $\chi^2_{(4)}$= 6.62 (p=0.16); GFI=0.99; AGFI=0.95; PGFI=0.26; IFI=.99; NNFI=.98; CFI=.99; RFI=0.95; and Critical N=393.20. The indicators of residuals, standardized RMR (SRMR) and root mean squared error of approximation (RMSEA) were 0.045 and 0.057, respectively. Therefore, the summated scale for each sub-construct was calculated to measure the health and safety well-being construct.

Table 4.20. Composite Reliability and validity of the health and safety well-being

Constructs and indicators	Standardized loading (Li)	Reliability $(Li)^2$	Variance extracted estimate
Health well-being		**.77***	**.54****
Air quality in your area	.58	.34	.66
Water quality in your area	.97	.93	.07
I always drink bottled water or filter because I thing the water is not clean	.59	.35	.65
Safety well-being		**.87***	**.77****
The community's accident rate or crime rate.	.79	.69	.38
The community's safety and security.	.96	.92	.08
.			

* Composite reliability
** Variance extracted estimate

4.4.2. Testing the proposed model

Over the last two decades, the use of structural equation modeling has become increasingly popular in the social and behavioral sciences. One reason for this popularity is that these confirmatory methods provide researchers with a comprehensive means for assessing and modifying theoretical models (Anderson & Gerbing, 1988). Since most theories in social and behavioral sciences are formulated in terms of hypothetical constructs, which are theoretical creation that can not observed or measured indirectly, researchers need to define the hypothetical constructs by specifying the dimensions of each construct. Therefore, the measurement of the hypothetical construct is done indirectly through one or more observable indicators, such as responses to questionnaire items that are assumed to represent the construct adequately. Once the theoretical constructs are defined by observable indicators, the theory further defines how the constructs are interrelated by hypotheses. This includes the classification of the constructs into dependent (endogenous) and independent (exogenous) constructs. The

relationship between observable indicators and the theoretical constructs constitutes the measurement part of the model, and the theoretical relationship between the constructs constitutes the structural part of the model (Jöreskog, 1993).

SEM is used to evaluate a substantive theory with empirical data through a hypothesized model. The structural equation model presents a series of hypotheses about how the variables are related. The parameters of the model are the regression coefficient variance and covariance of variables. The commonly-used approaches to estimate the parameters of structural equation models are maximum likelihood (ML) and normal theory generalized least squires (GLS). Both estimation techniques assume that the measured variables are continuous and have a multivariate normal distribution. However, maximum likelihood estimation has been the most commonly-used approach in structural equation modeling because ML estimations have been found to overcome the problems created by the violations of normality, which means that estimates are good estimates, even when the data are not normally distributed. However, all indicators that already checked the normality showed that they have fair normal distribution (Appendix F). Therefore, the properties of the items of nine constructs (four exogenous and five endogenous) in the proposed model and the hypotheses were tested using the LISREL 8 structural equation analysis package (Jöreskog & Sorbom, 1993) with maximum likelihood (ML) method of estimation (for recommendation for ML see Anderson & Gerbing, 1988; Bentler, 1983), in combination with the two stage process recommended by Sethi and King (1994) and Anderson and Gerbing (1988).

4.4.2.1. Measurement model

Maximum likelihood confirmatory factor analysis requires complete data for every subject in order to preserve the integrity of the data set. The majority of the variables had four or five missing cases. Therefore, cases with a missing value were replaced with the mean value of that variable. A confirmatory factor analysis conducted with a small sample size may result in inflated and spurious results. Monte Carlo studies suggest that for relatively simple models (i.e., one, two, or three factors), a minimum of 100 subjects is required (Bearden, Sharma, & Teel, 1982). For more complex models, substantially larger sample sizes are needed. With cases replaced by the mean value of

the variables, the total of 321 samples was kept and this sample size was considered large enough to satisfy the sample size requirements of confirmatory factor analysis. Another criterion requires that the correlation (or covariance) matrix include multiple measures of each underlying constructs. In a single-factor model, at least three (ideally more) observed measures (indicators) of the factor are required. In more complex (multiple-factor) models, two measures per factor may be sufficient (Bryne, 1998; Hoyle, 1995). All of the factors included in this study have at least two or three observed measures (indicators).

Before testing the overall measurement model, measurement unidimensionality of each construct was assessed individually (Sethi & King, 1994) because it is important to make sure that the measures that are posited as alternate indicators of each construct are acceptably unidimensional. Unidimensionality of constructs that are measured by at least four observed indicators were tested individually. Unidimensionality of constructs that are measured by less than four observed indicators was tested by pairing the construct with another construct that also has less then four observed indicators. Constructs with unacceptable fit were respecified by deleting the indicators. (Anderson & Gerbing, 1988).

First, the unidimensionality of exogenous variables was tested. The term exogenous latent variable is synonymous with independent variables; they "cause" fluctuations in the values of other latent variables in the model. Changes in values of exogenous variables are not explained by the model. Rather, they are considered to be influenced by other factors external to the model (Byrne, 1989). Second, the unidimensionality of endogenous latent variables was tested. Endogenous latent variables are synonymous with dependent variables; they are influenced by the exogenous variables in the model, either directly, or indirectly. Fluctuation in the values of endogenous variables is explained by the model because all latent variables that influence them are included in the model specification (Byrne, 1989). Four exogenous variables are: economic impact, social impact, cultural impact, and environmental impact, and five endogenous variables are material well-being, community well-being, emotional well-being, health and safety well-being, and overall QOL.

Economic impact of tourism, one of the exogenous variables, consisted of four sub-dimensions (employment opportunity, revenue for local business and government,

standard of living, and cost of living), and each sub-dimension was measured by at least three or four observed variables. The unidimensionality of each sub-dimension was verified in the previous section. In this section, to prove the unidimensionality of the economic impact construct, the indicators of the sub-dimension were summated, as discussed in Chapter 3. For example, the employment opportunity sub-dimension in the economic construct had three observed indicators such as "Tourism provides desirable jobs;" " Tourism creates variety of jobs in the community," and "Tourism creates employment opportunity for the residents." All three indicators were summated; the summated indicator was considered as an observed indicator for the employment opportunity variable. In that sense, the economic impact construct was considered to be measured by four indicators such as employment opportunity, revenue for local business and government, standard of living, and cost of living. All other exogenous and endogenous variables had the same procedure and used summated scales if they had sub-dimensions.

Assessing each construct's unidimensionality individually, and deleting indicators that have not worked out as planned, resulted in a decrease in the number of indicators in the constructs. The number of summated indicators used to measure the economic impact of tourism construct decreased to three indicators from four after eliminating "cost of living" (it had too low loading, .10). The summated indicator "social problem," used to measure the social impact of tourism construct, did not work out to measure the social impact of tourism. After eliminating the social problem variable, the social impact of tourism was measured by three observed variables represented by local service sub-dimension. The summated indicators for "pollution and preservation of wildlife and ecology" used to measure environmental impact of tourism construct also did not work out to measure the environmental impact of tourism. Even though the value of indicators to measure pollution and preservation of wildlife and ecology was reverse coded, the composite reliability and variance extracted estimate could not be produced because some of the constructs had not converged or had too low reliabilities. After eliminating the two summated variables that did not work out, the environmental impact of tourism was considered to be measured by three observed variables represented by solid waste. The number of indicators used to measure community well-being decreased to two

indicators from four; the number of indicators used to measure emotional well-being decreased to three indicators from four.

After making sure that each construct was unidimensional, (Sethi & King, 1994), the overall measurement model fit was tested (Anderson & Gerbing, 1988; Jöreskog, 1993; Sethi & King, 1994). The correlation matrix was used as the input data for the examination of the measurement model available in LISREL 8 (Jöreskog & Sorbom, 1988). The proposed measurement model to be tested postulates a priori that the measurement model is a nine-factor structure composed of (1) economic impact, (2) social impact, (3) cultural impact, (4) environmental impact, (5) material well-being, (6) community well-being, (7) emotional well-being, (8) health and safety well-being, and (9) overall QOL. Further dissection of the model indicates these nine factors are correlated and there are 25 observed variables. As shown in Table 4.21, four observed variables loaded onto cultural impact of tourism, three observed variables loaded onto economic impact of tourism, social impact of tourism, environmental impact of tourism, emotional well-being domain, and overall QOL, and two onto material well-being, community, and health and safety well-being domains. Even though the final measurement model was not different from the originally proposed measurement model, the number indicators of sub-dimensions that were proposed to each construct decreased to three from four, or two from three, in the final measurement model.

Next, the fit of the measurement model was tested using the LISREL 8 structural equation package with the maximum likelihood (ML) method of estimation. The primary interest in this section is to test whether the measurement model has acceptable fit (i.e., how well the model describes the sample data) or not. Before evaluating the model as a whole, it is necessary to evaluate the individual parameter estimates. First, it is necessary to determine the viability of the individual parameters' estimated values. Parameter estimates should exhibit the correct sign and size and be consistent with the underlying theory. A second criterion relates to the statistical significance of parameter estimates. The test statistic used is the t-statistic, which represents the parameter estimate divided by its standard error. The t-statistic tests whether the estimate is statistically significant from zero. A t-test statistic that is larger than ±1.96 indicates that the parameter estimate is significant at .05 probability level.

Table 4.21 presents the unstandardized parameter estimates for the proposed nine-factor measurement model produced by LISREL. There are three lines of information for each observed indicator. The first line represents the estimate, the parentheses value of the second line denotes the standard error, and the third line represents the t-value. An examination of the unstandardized parameter estimation in Table 4.21 reveals all estimates to be both reasonable and statistically significant.

Table 4.21 parameter estimates for the proposed nine-factor measurement model (n=321)

LAMDA X		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9
X1	E	0.81								
	SD	(0.05)								
	T	16.90								
X2	E	0.80								
	SD	(0.05)								
	T	16.65								
X3	E	0.83								
	SD	(0.05)								
	T	17.36								
X4	E		0.71							
	SD		(0.05)							
	T		13.44							
X5	E		0.77							
	SD		(0.05)							
	T		15.02							
X6	E		0.76							
	SD		(0.05)							
	T		14.73							
X7	E			0.78						
	SD			(0.05)						
	T			16.10						
X8	E			0.89						
	SD			(0.05)						
	T			19.59						
X9	E			0.82						
	SD			(0.05)						
	T			17.28						
X10	E			0.71						
	SD			(0.05)						
	T			13.95						

Table 4.21 parameter estimates for the proposed nine-factor measurement model (n=321)

LAMDA X		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9
X11	E				0.86					
	SD				(0.05)					
	T				16.30					
X12	E				0.78					
	SD				(0.05)					
	T				14.48					
X13	E				0.64					
	SD				(0.05)					
	T				11.59					
X14	E					0.69				
	SD					(0.06)				
	T					11.31				
X15	E					0.63				
	SD					(0.06)				
	T					10.52				
X16	E						0.84			
	SD						(0.05)			
	T						16.07			
X17	E						0.86			
	SD						(0.05)			
	T						16.37			
X18	E							0.65		
	SD							(0.05)		
	T							12.34		
X19	E							0.92		
	SD							(0.05)		
	T							19.52		
X20	E							0.74		
	SD							(0.05)		
	T							14.56		
X21	E								0.55	
	SD								(0.07)	
	T								7.88	
X22	E								0.57	
	SD								(0.07)	
	T								8.12	
X23	E									0.84
	SD									(0.05)
	T									16.68
X24	E									0.86
	SD									(0.05)
	T									17.26

Table 4.21 parameter estimates for the proposed nine-factor measurement model (n=321)

LAMDA X		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9
X25	E									0.46
	SD									(0.06)
	T									8.05

Note: E- estimate, T- t-value, SD-standard deviation, X1-Employment opportunity, X2-Revenue from tourist for local business and government, X3-Standard of living, X4-Tourism is a major reason for the variety of entertainment in the community, X5-Because of tourism, roads and other local services are well maintained, X6-Increased tourism provides more recreational opportunities for local residents, X7-Meeting tourists from all over the world is definitely a life-enriching experience, X8-The cultural exchange between residents and tourists is valuable for residents, X9-The cultural exchange between residents and tourists is pleasant for residents, X10-I would like to meet tourists from as many countries as possible in order to learn about their culture, X11-Tourism produces large quintiles of waste products, X12-Tourism businesses that serve tourists throw away tons of garbage a year, X13-Tourists' littering destroys the beauty of the landscape, X14-Income and employment of material well-being, X15-cost of living of material well-being, X16-Facilities you get in this community, X17-people who live in this community, X18-spare time, X19-your leisure life, X20-your cultural like, X21-health well-being, X22-safety well-being, X23-Your life as a whole, X24-The way you spend your life, X22-The feeling about life compared to others, Factor 1-economic impact of tourism, Factor2-social impact of tourism, Factor3-cultural impact of tourism, Factor 4-environmental impact of tourism, Factor 5-material well-being domain, Factor 6-community well-being domain, Factor 7-emotional well-being domain, Factor 8-health and safety well-being domain, Factor 9-overall quality of life.

The next step in assessing model fit is to examine the extent to which the measurement model is adequately represented by the observed variables. The squared multiple correlation (R^2) values generated by the LISREL 8 were used to determine whether the measurement model is adequately represented by the observed variables. The squared multiple correlation also represents the indicator reliability. The values of the squared multiple correlations can range from 0.00 to 1.00, and serve as reliability indicators (Bollen, 1989). Examination of the R^2 values reported in Table 4.22 reveals that measures are moderately strong. Table 4.22 also indicates that the strongest indicators are three measures of the "economic impact of tourism," and three measures of the cultural impact of tourism constructs.

Table 4.22 Composite reliability and validity of overall measurement model

Constructs and indicators	Standardized loading (Li)	Reliability $(Li)^2$	Variance extracted estimate
Economic impact variable		**.85***	**.66****
X1	.81	.66	.34
X2	.80	.65	.35
X3	.83	.68	.32
Social impact variable		**.79***	**.56****
X4	.71	.50	.50
X5	.77	.60	.40
X6	.76	.58	.42
Cultural impact variable		**.88***	**.64****
X7	.78	.61	.39
X8	.89	.79	.21
X9	.82	.67	.33
X10	.71	.50	.50
Environmental impact variable		**.81***	**.58****
X11	.86	.75	.25
X12	.78	.60	.40
X13	.64	.40	.60
Material well-being		**.61***	**.43****
X14	.69	.47	.53
X15	.63	.40	.60
Community well-being		**.84***	**.72****
X16	.84	.71	.29
X17	.86	.73	.27
Emotional well-being		**.82***	**.61****
X18	.65	.42	.58
X19	.92	.86	.14
X20	.74	.55	.45
Health and safety well-being		**.63***	**.48***
X21	.65	.45	.55
X22	.70	.50	.50
Overall QOL		**.78**	**.55****
X23	.84	.70	.30
X24	.86	.74	.26
X25	.46	.21	.79

Note: * Composite reliability, ** Variance extracted estimate, X1-Employment opportunity, X2-Revenue from tourist for local business and government, X3-Standard of living, X4-Tourism is a major reason for the variety of entertainment in the community, X5-Because of tourism, roads and other local services are

well maintained, X6-Increased tourism provides more recreational opportunities for local residents, X7-Meeting tourists from all over the world is definitely a life-enriching experience, X8-The cultural exchange between residents and tourists is valuable for residents, X9-The cultural exchange between residents and tourists is pleasant for residents, X10-I would like to meet tourists from as many countries as possible in order to learn about their culture, X11- Tourism produces large quintiles of waste products, X12-Tourism businesses that serve tourists throw away tons of garbage a year, X13-Tourists' littering destroys the beauty of the landscape, X14-Income and employment of material well-being, X15-cost of living of material well-being, X16-Facilities you get in this community, X17-people who live in this community, X18-spare time, X19-your leisure life, X20-your cultural like, X21-health well-being, X22-safety well-being, X23-Your life as a whole, X24-The way you spend your life, X22-The feeling about life compared to others.

After measuring the adequacy of the individual items, the composite reliability score and variance extracted estimate for each latent factor was assessed. The composite reliability score and variance extracted estimate for each latent variable (construct) were generated from completely standardized LISREL estimates and calculated by the formula provided by Fornell and Larcker (1981). As shown in Table 4.22, most of the composite reliabilities were above .7, with the exception of the "material well-being" and "health and safety well-being" constructs. Most of the variance extracted estimates were also above .50 with the exception of the "material well-being" and "health and safety well-being" constructs. However, the composite reliability scores that are between .60 and .70 represent the lower limit of acceptability (Hair, Anderson, Tatham & Black, 1998). Therefore, these values were accepted as marginally reliable measurement scales.

Next, overall measurement fit was assessed. A model is said to fit the observed data to the extent that the covariance matrix it implies is equivalent to the observed covariance matrix (i.e., elements of the residual matrix are near zero) (Hoyle, 1995). The most common index of fit is the χ^2 goodness-of-fit test, which is derived directly from the value of the fitting function. Therefore, first the χ^2 goodness-of-fit test (and associated p values) was examined. However, according to the nature of χ^2, chi-square tends to be large in large samples (Jöreskog, 1993, p. 309). In a χ^2 test, only the central χ^2 distribution is used to test the hypothesis that the discrepancy between the sample covariance matrix and the implied covariance matrix is statistically equal to zero. However, even if the discrepancy between the estimated model and data is very small, if the sample size is large enough, almost any model will be rejected because the

discrepancy is not statistically equal to zero due to the excess power of the large sample size. In other words, the researcher is not likely to know everything about the data. In addition, the a χ^2 test offers only a dichotomous decision strategy implied by a statistical decision rule and can not be used to quantify the degree of fit along a continuum with some pre-specified boundary. In this case, the sample size was 321 and the χ^2 value for the saturated model was 452.23 (df 239, P=0.0). The critical N (CN) indicates that if the sample size was 203, the χ^2 goodness-of-fit test would result in a lower χ^2 value, and it would be insignificant, indicating an acceptable fit.

4.4.2.2. Fit indices

According to the problems associated with the χ^2 (and associated p values), various different types of fit indices were selected to measure the fit of the tested model based on the recommendations of several researchers from a number of different disciplines. These selected fit indices are absolute and incremental fit indexes. In addition, the residuals are evaluated.

GFI, AGFI, and PGFI Indices

An absolute fit index directly assesses how well an a priori model reproduces the sample data. It compares the hypothesized model with no model at all. However, an implicit or explicit comparison may be made to a saturated model that reproduces the exact observed covariance matrix. As a result, this type of fit index is analogous to R by comparing the goodness of fit to a component that is similar to a sum of squares (Hu & Bentler, 1995). Three absolute goodness-of-fit indices are reported in this study: the goodness of fit (GFI), the adjusted goodness of fit (AGFI), and the parsimony goodness of fit index (PGFI)

The GFI is a measure of the relative amount of variance and covariance in sample data that is jointly explained by sample data (Jöreskog & Sorbom, 1989). The problem with GFI is that it does not take into account the number of degrees of freedom in the specified model. On the other hand, AGFI adjusts for the number of degrees of freedom in the specified model. AGFI also addresses the issue of parsimony by incorporating a

penalty for the inclusion of additional parameters. Based on the GFI and AGFI values reported in Table 4.23 (0.90 and 0.86, respectively), it is concluded that the proposed measurement model fits the sample data marginally well.

Table 4.23 Fit indices the proposed measurement model (N=321)

Fit Index	Value
Chi-square with 239 degrees of freedom	452.23 (p=0.0)
Goodness-of-fit Index (GFI)	0.90
Adjusted Goodness-of-fit Index (AGFI)	0.86
Parsimony Goodness-of-fit Index (PGFI)	0.66
Normed Fit Index (NFI)	0.88
Non- Normed Fit Index (NNFI)	0.92
Parsimony Normed Fit Index (PNFI)	0.70
Comparative Fit Index (CFI)	0.94
Increment Fit Index (IFI)	0.94
Relative Fit Index (RFI)	0.85
Critical N	202.68
Root Mean Square Residual (RMR)	0.047
Standized Root Mean Square Residual (SRMR)	0.047
Root Mean Square Error of Approximation (RMSEA)	0.053

Parsimony goodness of fit (PGFI) addresses the issues of parsimony in SEM. It takes into account the complexity (i.e., the number of estimated parameters) of the proposed model in the assessment of overall model fit. The threshold level (value) of parsimony-based indices is lower than the threshold level of normed indices of fit (Mulaik et al, 1989). Mulaik et al. (1989) suggest that goodness-of-fit indices in the range of .90 accompanied by parsimonious-fit-index in the range of .50, are not unexpected. In the light of Mulaik et al.'s suggestion, the PGFI value of the hypothesized measurement model (.71) presented in Table 4.23 seems to be consistent with the previous fit statistics.

NFI, NNFI, PNFI, CFI, and IFI

An incremental fit index compares the target model with a baseline model in order to measure the proportionate improvement fit. The baseline model is usually a more restricted model than the hypothesized model. Typically, the independence or null model is used as the baseline model because in the independence or null model all observed

variables are uncorrelated, and that makes it the most restricted model. Five incremental goodness-of-fit indices are reported in the study: the Normed Fit Index (NFI), the Non-Normed Fit Index (NNFI), the Parsimony Normed Fit Index (PNFI), the Comparative Fit Index (CFI), and the Incremental Fit Index (IFI).

The NFI is an index of the fit between a saturated model and a null model (i.e., a restricted model against which other less-restricted models are compared in a nested sequence of models, Bentler & Bonett, 1980). The problem with NFI is that it does not take into account the sample size. NFI is not a good indicator for evaluating model fit when sample size is small because studies show that NFI has a tendency to underestimate fit in small samples (Hu & Bentler, 1995). The value of NFI ranges from zero to 1.00 with a value >.90 indicating an acceptable fit to the data (Bentler, 1992). As shown in Table 4.23 the NFI (0.88) was a little bit lower than the previously reported goodness-of-fit indices in suggesting the proposed measurement model represented an adequate fit to the data.

The NNFI takes the complexity of the model into account in the comparison of the hypothesized model with the independence model. Since the NNFI is not normed, its value can extend beyond the range of zero to 1.00. However, the NNFI has been found to be unaffected by sample size (Hu & Bentler, 1995). As shown in Table 4.23, the NNFI (0.92) indicated that the proposed measurement model represented an adequate fit to the data.

The PNFI addresses the issue of parsimony by taking the complexity of the model into account in its assessment of goodness-of-fit. The PNFI adjusts for the number of free parameters in the model; it also controls for the fact that better fit can be indicated by the other indices simply by freeing more parameters in the model (Mulaik et al., 1989). The PNFI is calculated by multiplying the NFI with the parsimony ratio (Byrne, 1989). Like PGFI, the PNFI usually has lower values than the threshold level generally perceived as acceptable for other normed indices of fit. Therefore, the PNFI (.70) indicates a good fit of the proposed measurement model to the data.

The CFI is the revised version of the NFI. Unlike NFI, it takes the sample into account in the comparison of the hypothesized model with the independence model (Bentler, 1990). In addition, unlike GFI, the CFI does not panelize for the

parsimoniousness of a model (Bentler, 1990). Given the differences in parsimony of a priori (theoretical) models and respecified models, the CFI can ensure that conclusions were not biased in favor of more saturated model. Values of CFI range from zero to one with a value >.95 indicating an acceptable fit to the data (Bentler, 1992). As shown in Table 4.23 the CFI (.94) indicated that the proposed model represented an adequate fit to the data.

The IFI addresses the issues of parsimony and sample size that are known to be associated with NFI. Like all the other normed fit indices, values of IFI range from zero to one with a value>.95 indicating an acceptable fit to the data. As shown in Table 4.23 the IFI (.94) suggested that the proposed measurement model represented an adequate fit to the data.

The last goodness-of-fit statistic reported in the study is the Hoelter's (1983) Critical N (CN). CN addresses the issue of sample size rather than the model fit. The CN statistic estimates the sample size that would make the obtained chi-squire statistically significant (Jöreskog & Sorbom, 1993). A cut-off of 200 or greater is suggested as an indication of adequate model fit for the critical N statistic (Bollen, 1989). As shown in Table 4.23, the CN value for the proposed model was 202.68, which the χ^2 would be significant.

Evaluation of Residuals

The Root Mean Square Residual (RMR) is a measure of the average of the fitted residuals and can only be interpreted in relation to the sizes of the observed variances and covariance in sample data (Jöreskog & Sorbom, 1993). It represents the average residual value derived from the fitting of the variance-covariance matrix for the proposed model to the variance-covariance of the sample data (Byrne, 1989). This measure works best if all of the observed variables are standardized. It is also a good idea to report the standardized RMR (SRMR) if the data are not standardized. The SRMR represents the average value across all standardized residuals, and ranges from zero to one. In a well-fitting model, the value of the SRMR should be close to .05 or less (Bryne 1989). The value of the RMR and SRMR (.047 for both) shown in Table 4.23 represents the average

discrepancy between the sample observed and proposed variance-covariance matrices and indicates a well fitting model.

Root Mean Square Error of Approximation (RMSEA) attempts to correct for the tendency of the chi-square statistic to reject any specified model with a sufficiently large sample. Similar to RMSR, the RMSEA is the discrepancy per degree of freedom. It differs from the RMSR, however, in that the discrepancy is measured in terms of the population, not just the sample used for estimation. The value is representative of the goodness-of-fit that could be expected if the model were estimated in the population, not just the sample drawn for the estimation. Values ranging from .05 to .08 are deemed acceptable. The value of the RMSEA (.053) shown in Table 4.23 represents the proposed model is acceptable.

4.4.2.3 Discriminality validity

Discriminality validity addresses the concept that "dissimilar constructs should differ" (Burns & Bush 1995, p. 275). Applying this concept to the study at hand, this means that the indicators used to measure the different constructs in the proposed model should yield different results. To ensure that the constructs are not measuring the same concept or ideas, the discriminality validity was assessed for each construct by examining the constructs in sets of two. For instance, the economic impact of tourism was tested against the social impact of tourism (in order to establish that these two constructs were not measuring the same thing). Separately, the social impact of tourism was tested against culture impact of tourism, and so forth until every possible pair of constructs was tested.

The discriminant validity tests were performed by constructing the estimated correlation parameter between each pair of constructs to 1.0. The χ^2 value was generated for the constrained model (i.e., the "fixed" model), where the correlation parameter was set to 1.0, indicating that the correlation between the two constructs is perfect, that is, they are measuring exactly the same thing. Similarly, the χ^2 value was generated for the unconstrained model (i.e., the free model), where the correlation parameter was not manipulated, but rather, the actual correlation value was calculated. A χ^2 difference test was performed on the two models. A significantly lower value χ^2 value for the "free" model demonstrates that discriminant validity has been achieved (Bagozzi & Phillips,

1982). Table 4.24 indicates that all of the constructs possess discriminant validity. A closer examination of the table reveals that many of the model's constructs are correlated. Correlation coefficients range between +1 and –1. Most experts consider correlation coefficients between +1 and +0.8 or –1 and –0.8 to be highly correlated; between +0.8 and +0.6 or between –0.8 and –0.6 to be moderately correlated; between +0.6 and +0.4 or between –0.6 and –0.4 to have a weak correlation; between +0.4 and +0.2 or between –0.4 and –0.2 to posses very weak or low correlation; and between +0.2 and –0.2 to exhibit little or no correlation (Burns & Bush, 1995).

Most of the relationships in the proposed model show promise that they are correlated (having already established statistical significance). For instance, the correlation between the economic impact of tourism construct and the cultural impact of tourism construct (i.e., 1-3) falls in the moderately correlated category (.70) whereas the correlation between the economic impact of tourism construct and the material well-being construct (i.e., 1-5) shows some correlation with coefficient of 0.39. It is important to keep in mind that as the discriminant validity tests are being conducted, the indirect and direct paths are not defined, but rather the relationships are being examined two by two, so the correlations of the relationships during the discriminality validity testing will most probably differ greatly from the correlations generated from the run of the actual model. Nonetheless, having some indication of correlation at this level is a good sign that relationships do exist among the model's variables, although all possess discriminant validity except the correlations between economic impact and environmental impact, and social impact and environmental impact.

Table 4.24 Results of Discriminant Validity Tests

	Correlation Value	χ^2 w/Corr. Fixed	d.f.	χ^2 w/Corr. Free	d.f.	Change in χ^2	Change in d.f.	Sig. Level
1-2	0.81	169.10	9	70.74	8	98.36	1	0.00
1-3	0.70	134.59	14	19.42	13	115.17	1	0.00
1-4	-0.03	8.84	9	8.61	8	0.23	1	>0.05
1-5	0.39	17.34	5	3.08	4	14.26	1	0.00
1-6	0.32	20.82	5	10.47	4	10.35	1	0.00
1-7	0.22	12.63	9	5.27	8	7.36	1	0.00
1-8	0.24	8.91	5	3.64	4	5.27	1	0.00
1-9	0.19	10.82	9	5.50	5	5.32	1	0.00
2-3	0.47	46.26	14	17.56	13	28.7	1	0.00
2-4	-0.05	11.06	9	10.77	8	0.29	1	>0.05
2-5	0.28	18.01	5	10.52	4	7.49	1	0.00
2-6	0.39	19.57	5	2.13	4	17.44	1	0.00
2-7	0.16	6.4	9	2.72	8	3.68	1	0.00
2-8	0.25	9.88	5	3.44	4	6.44	1	0.00
2-9	0.12	8.27	9	6.15	8	2.12	1	0.00
3-4	-0.15	18.52	14	15.36	13	3.16	1	0.00
3-5	0.31	30.83	9	11.41	8	19.42	1	0.00
3-6	0.28	36.02	9	21.04	8	14.98	1	0.00
3-7	0.14	35.73	14	30.95	13	4.78	1	0.00
3-8	0.21	20.29	9	9.65	8	10.64	1	0.00
3-9	0.17	20.54	14	13.26	13	7.28	1	0.00
4-5	-0.27	32.66	5	14.34	4	18.32	1	0.00
4-6	-0.23	20.13	5	8.26	4	11.87	1	0.00
4-7	-0.14	14.55	9	9.86	8	4.69	1	0.00
4-8	-0.24	9.64	5	2.59	4	7.05	1	0.00
4-9	-0.04	7.59	9	7.26	8	0.33	1	>0.05
5-6	0.76	78.54	2	1.22	1	77.32	1	0.00
5-7	0.49	55.50	5	14.40	4	41.1	1	0.00
5-8	0.66	45.31	2	0.57	1	44.74	1	0.00
5-9	0.49	74.16	5	22.92	4	51.24	1	0.00
6-7	0.43	49.86	5	17.17	4	32.69	1	0.00
6-8	0.89	99.31	2	1.39	1	97.92	1	0.00
6-9	0.31	36.59	5	8.65	4	27.94	1	0.00
7-8	0.92	315.73	5	24.54	4	291.19	1	0.00
7-9	0.65	124.46	9	21.90	8	102.56	1	0.00
8-9	0.45	34.01	5	8.71	4	25.3	1	0.00

Note: Corr.-correlation, 1-economic impact of tourism, 2-social impact of tourism, 3-cultural impact of tourism, 4-environmental impact of tourism, 5-material well-being domain, 6-community well-being domain, 7-emotional well-being domain, 8-health and safety well-being domain, 9-overall quality of life.

4.4.2.4 Convergent validity

Convergent validity is overlaps between alternative measures that are intended to measure the same construct but that have different sources of undesired variation (Judd, Smith, & Kidder, 1991). In other words, if several observed indicators are used to measure a theoretical construct (i.e., latent variable), those observed indicators should share a good deal of variance (converge together). However, too much overlap could indicate that discriminant validity is violated. Since the evidence presented an earlier indication that discriminant validity has been achieved in this study, this is not a concern at this point.

In estimating convergent validity for structural equation modeling studies, examining the standardized confirmatory factor analysis (CFA) parameters' estimated pattern coefficient is one method often used (Marsh & Grayson, 1995). Convergent validity can be assessed from the measurement model by determining whether each indicator's estimated pattern coefficient on its posited underlying construct factor is significant (Anderson & Gerbing, 1988). Statistically significant large factor loadings indicate convergent validity. That is, if the values in the off diagonal are large, convergent validity is achieved.

As shown in Table 4.21, all of the estimated pattern coefficients on their posited underlying construct factors were significant at 0.05 significant levels (i.e., each had a t-value $>\pm 1.96$). In fact, the smallest t-value was 7.88. Therefore, convergent validity was achieved for all the variables in the study.

4.4.2.5 Testing the proposed model and hypotheses

The primary purpose of this study is to examine the effects of tourism impact on residents' quality of life in the community. More specifically, the intention is to investigate: (1) the effect of tourism impact on the quality of life of the residents in the community, (2) the effects of tourism impact on a particular life domain, and (3) the effects of particular life domain on the quality of life of residents in the community.

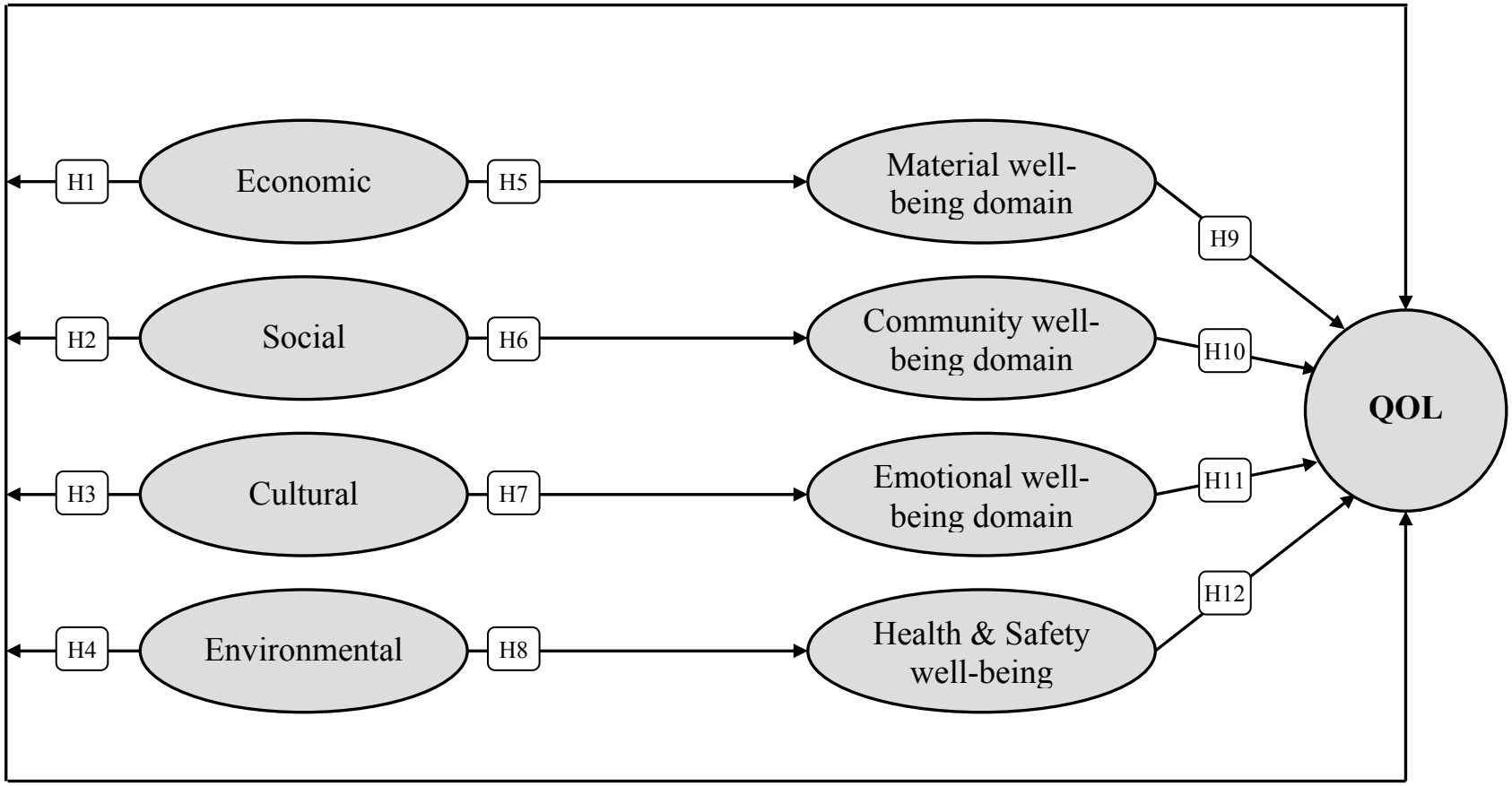
Previous chapters have described and explained the logic behind the basic theoretical model and hypotheses guiding the current study. Structural equation modeling (i.e., LISREL 8) was used to test the goodness-of-fit of the proposed model.

Structural equation modeling is a comprehensive statistical approach to testing hypotheses about relationships among observed and latent variables. Structural equation modeling, resulting from an evaluation of multi-equation modeling, developed principally in econometrics; it merged with the principles of measurement from psychology and sociology. Structural equation modeling has emerged as an integral tool in both managerial and academic research (Austin & Calderon, 1996).

Structural equation modeling is a multivariate statistical technique that takes a confirmatory (i.e., hypothesis testing) approach to the multivariate analysis of a structural theory. The most obvious difference between structural equation modeling and other techniques is the use of separate relationships for each of a set of dependent latent variables. Structural equation modeling estimates a series of separate, but interdependent, multiple regression equations simultaneously by specifying the causal relationship proposed based on the hypothesized structural model. The structural model defines the pattern of relations among the constructs and is typically identified in schematic diagrams by the presence of interrelated ellipses, each of which represents a hypothetical construct (or factor). First, in this hypothesized structural model, the relationships among the constructs are specified. Then, the hypothesized structural model is tested statistically in a simultaneous analysis of the entire system of variables to determine the extent to which it is consistent with the data.

Figure 4.1 presents the hypothesized tourism impact on the quality of life model that is assessed. The model proposes that overall quality of life is influenced by the tourism impact dimensions and particular life domains; the model also suggests that tourism impact dimensions influence the particular life domains. The details of each construct were discussed, and the validity and reliability of measurement scales were confirmed earlier. In this section, the proposed structural model for phase I is assessed.

Figure 4.1. Empirical model and the hypotheses for Phase I



The final approach to model assessment is to compare the proposed model with a series of competing models, which act as alternative explanations to the proposed model. In this way, the proposed model can be determined, regardless of overall fit, to be acceptable unless other similarly formulated model can achieve a higher level of fit. This step is particularly important when the chi-square statistic indicates no significant difference in overall model fit, because there may be better-fitting model, even in the case of no significant differences. For the purpose of this, and as Anderson and Gerbing (1988) recommended a series of five nested structural models to compare, five alternative models are proposed. The first model was a saturated structural sub-model (Ms), which can be defined as one all parameters relating the construct to one another are estimated. This model is formally equivalent to a confirmatory measurement model. Obviously, for the second model, a null structural sub-model (Mn), was defined as one in which all parameters relating the constructs to one another are fixed at zero. A third structural sub-model (Mt) represented the proposed theoretical model. Finally, the structural sub-model Mc and Mu were represented, respectively; the next most likely constrained and unconstrained alternatives from a theoretical perspective model of interest. That is, in Mc, four more parameter (four direct effects from tourism impact dimensions to quality of life) constrained in Mt, where as in Mu, two more parameter unconstrained in Mt (a direct effects path from environmental tourism impacts to material well-being domain and a direct effect from the material well-being domain to community well-being domain) were estimated. Given their definitions, this set of five structural sub-models was nested in a sequence such that Mn<Mc<Mt<Mu<Ms. Table 4.25 compares the five models on all three types of fit measures such as absolute fit measures, increment fit measures, and parsimonious fit measures.

Before all five-nested model were tested, the possibility that any structural model that would have acceptable goodness of fit existed was assessed as recommended by Anderson and Gerbing (1988). To assess whether any structural model has acceptable goodness-of-fit, a pseudo chi-square test was utilized (Bentler & Bonett, 1980). In a pseudo chi-square test, a pseudo chi-square statistic is constructed from the chi-square value for the saturated model (Ms) (the smallest value possible for any structural model) with the degrees of freedom for the null structural sub-model (Mn) (the largest number of

degrees of freedom for any structural model). The pseudo chi-squire test result in this study was found to be significant (pseudo $\chi^2_{(269)}$=487.70, p<.05). The significant pseudo chi-squire test indicates that no structural model would give acceptable fit, because it would have a chi-squire value greater than or equal to the value for the saturated model (Ms) with fewer degrees of freedom than for the null structural sub-model (Mn).

Table 4.25 Fit indices for five sub-models

Fit Index		Mn	Mc	Mt	Mu	Ms
Absolute Fit Measures	χ^2	1083.56	745.95	739.51	632.83	487.70
	DF	269	261	257	255	239
	Sig (p)	p<.05	p<.05	p<.05	p<.05	p<.05
	GFI	0.79	0.84	0.84	0.86	0.89
	RMR	0.16	0.11	0.11	0.097	0.049
	RMSEA	0.097	0.076	0.077	0.068	0.057
Incremental Fit Measures	AGFI	0.74	0.80	0.80	0.83	0.85
	NNFI	0.78	0.84	0.84	0.87	0.91
	NFI	0.75	0.81	0.81	0.83	0.87
	IFI	0.81	0.86	0.87	0.89	0.93
	CFI	0.80	0.86	0.86	0.89	0.93
	RFI	0.72	0.78	0.77	0.80	0.84
Parsimonious Fit Measures	PNFI	0.67	0.70	0.69	0.70	0.69
	PGFI	0.65	0.68	0.67	0.68	0.66
Critical N		109.40	137.75	136.57	152.80	189.98

Note: χ2-chi-square, DF-degree of freedom, GFI-goodness of fit, RMR- Root mean square residual, RMSEA- Root mean square error of approximation, AGFI-Adjusted goodness of fit, NNFI-Non normed fit index, NFI-Normed fit index, IFI-Increment fit index, CFI-Comparative fit index, RFI-Relative fit index, PNFI-parsimony normed fit index, PGFI-parsimonious goodness of fit, Mn-null model, Mc-next mostly like constrained model, Mt-theoretical model, Mu-next most likely unconstrained model, Ms-saturated model.

However, one should remember that, like the chi-square value, a pseudo chi-squire value tends to be large samples. The sample size was 321 for this study. If the sample size was decreased to 180, the pseudo chi-square test would become insignificant (pseudo $\chi^2_{(239)}$=272.81, p=.065). Therefore, one should be very careful when assessing the fit of any model based on the results of the pseudo chi-square test and one should pay special attention to the sample size of the study because large sample sizes produce significant pseudo chi-squares values, as shown above.

Next, according to Anderson and Gerbing's (1988) decision-tree framework, sequential chi-square test (SCDT) for Mc, Mt, and Mu was provided. First, the SCDT comparison of Mt-Ms was done, and the null hypothesis that Mt-Ms=0 was rejected. Then, the comparison of Mc-Mt was not significant. However, the difference between Mc and Ms was significant, and the difference between Mt and Mu was significant. The final SCDT comparison of Mu-Ms was performed and this SCDT value was significant. Therefore, new $Mu_{1,}$ with more relaxed parameters than in Mu, was produced and the SCDT comparison of Mu_1- Ms was done until no significant difference was found. The calculation of SCDT and its results are presented in Table 4.26.

Table 4.26 The results of SCDT

Fit Index	χ^2 change	Df change	t		
Mt-Ms	251.71	18	13.98	P<0.05	Sig.
Mc-Mt	6.440	4	1.61	P>0.05	Non sig.
Mc-Ms	258.250	22	11.7	P<0.05	Sig.
Mt-Mu	106.80	2	53.4	P<0.05	Sig.
Mu-Ms	145.13	16	9.070	P<0.05	Sig.
Mu_1-Ms	73.3	12	6.1	P<0.05	Sig.

Note: Mn-null model, Mc-next mostly like constrained model, Mt-theoretical model, Mu-next most likely unconstrained model, Ms-saturated model.

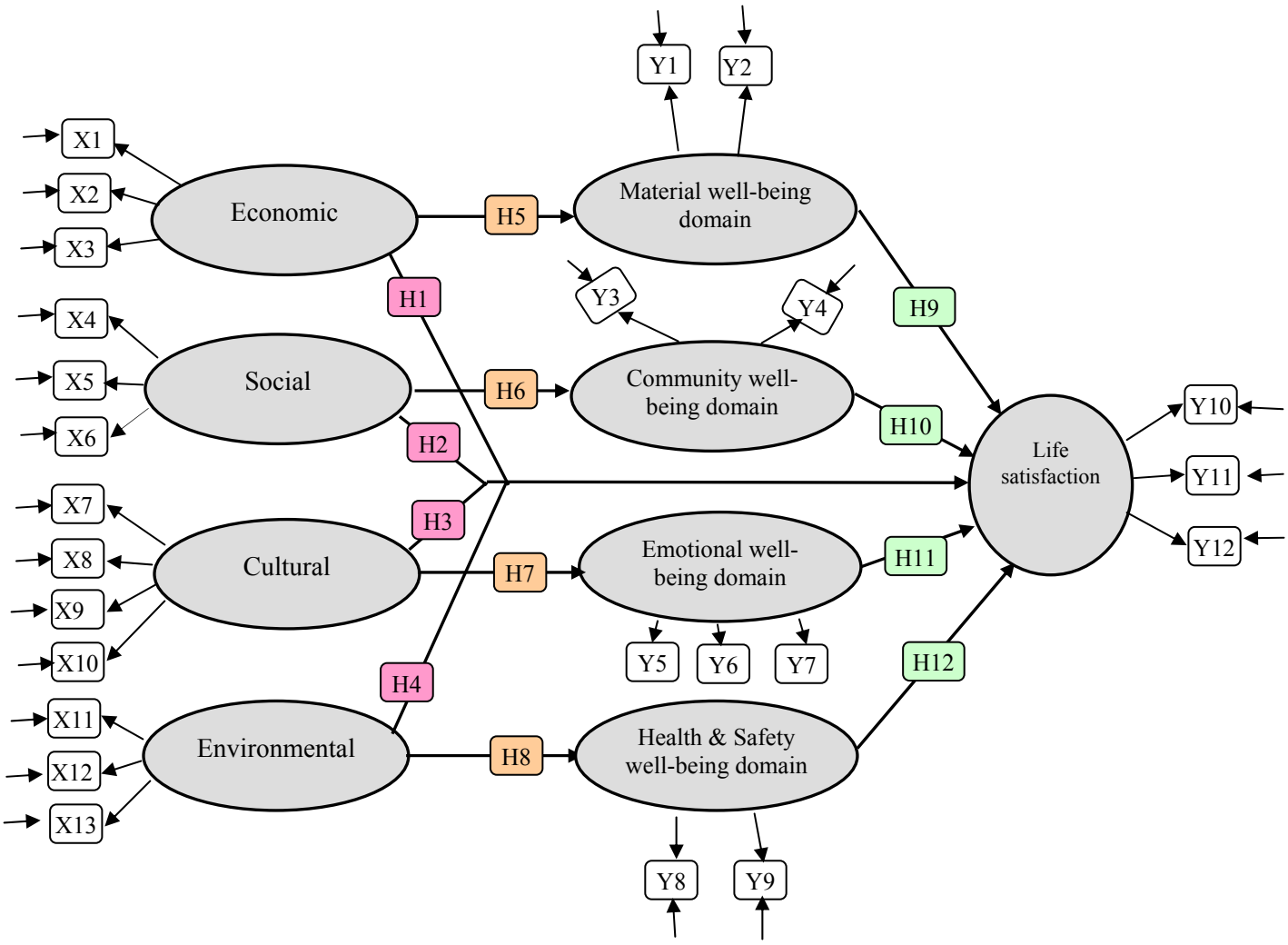
Adding more paths will likely improve goodness of fit, but it correspondingly compromises the ability to make meaningful, causal inferences about the relations of the constructs to one another. However, like the value of chi-square a likelihood ratio statistic is directly dependent on sample size, with large sample sizes, a significant value for an SCDT may be obtained (Anderson & Gerbing, 1988). Therefore, an indication of goodness of fit from a practical sense is useful in conjunction with formal statistical tests. All types of fit measures for three sub-models (Mt, Mu, and Ms) in Table 4.25 were compared. Ms has the lowest RMSR value and the estimated model (Mt) did not achieve the best fit on any of these measures. All the incremental fit measures also favored the Ms. In the parsimonious fit measures, the estimated model (Mt) had better fit than Ms, however, Mu had the best fit as measured by the PNFI and PGFI. The results across all

three types of measures showed mixed results, sometimes favoring the Ms or Mu. Thus, although the fit of the proposed model did not exceed the recommended guidelines in many instances, the proposed model was accepted with a reservation until additional constructs can be added, measures refined, or causal relationship respecified.

4.4.2.5.1. Testing the hypothesized structural model

Figure 4.2 presents the hypothesized tourism impact on quality of life model that is assessed. A close examination of the Figure 4.2 reveals the structural part of the model has nine constructs (latent variables) and four of these latent variables are the independent variables and the other five are dependent variables. As shown in Figure 4.2, the independent measurement model comprises three observed indicator variables (X1, X2 and X3) for economic impact construct, three observed indicators (X4, X5, and X6) for social impact of tourism construct, four observed indicators (X7, X8, X9 and X10) for cultural impact of tourism construct, and three observed indicators (X11, X12, and X13) for environmental impact of tourism construct along with their related measurement error terms. The dependent variables are material well-being (Y1 and Y2), community well-being (Y3 and Y4), emotional well-being (Y5, Y6 and Y7), health and safety well-being (Y8 and Y9), and overall quality of life (Y10, Y11, and Y12) constructs. The dependent measurement model comprised of 12 observed indicator variables (Y1-Y12) accompanied by their associated error terms.

Figure 4.2. Tested tourism impact on quality of life model



X1-Employment opportunity, X2-Revenue from tourist for local business and government, X3-Standard of living, X4-Tourism is a major reason for the variety of entertainment in the community, X5-Because of tourism, roads and other local services are well maintained, X6-Increased tourism provides more recreational opportunities for local residents, X7-Meeting tourists from all over the world is definitely a life enriching experience, X8-The cultural exchange between residents and tourists is valuable for the residents, X9-The cultural exchange between residents and tourists is pleasant for the residents, X10-I would like to meet tourists from as many countries as possible in order to learn about their culture, X11- Tourism produces large quintiles of waste products, X12-Tourism businesses that serve tourists throw away tons of garbage a year, X13-Tourists' littering destroys the beauty of the landscape, Y1-Income and employment of material well-being, Y2-cost of living of material well-being, Y3-Facilities you get in this community, Y4-people who live in this community, Y5-spare time, Y6-your leisure life, Y7-your cultural like, Y8-health well-being, Y9-safety well-being, Y10-Your life as a whole, Y11-The way spending your life, Y12-The feeling about the life compared to others.

In structural equation modeling, two types of matrices are examined: a Gamma matrix and a Beta matrix. The Gamma matrix specifies the regression coefficients that link dependent and independent constructs while the beta matrix specifies the regression coefficients that link dependent constructs. A close examination of the structural paths of the hypothesized model reveals that there are eight parameters to be estimated in the Gamma matrix, and four parameters to be estimated in the Beta matrix. Each of these matrices represents one of the hypotheses proposed earlier. Both Gamma and Beta matrices are presented in Table 4.27. Subscripts numbers in Table 4.27 represents the hypothesized paths for both the Gamma (γ) and the Beta (β) matrices. For example, while γ_{11} in the Gamma matrix represents hypothesis 1 (H1) (residents' life satisfaction in general is a positive function of their perceptions of the benefits of the economic impact of tourism), β_{51} in the Beta matrix represents hypothesis 9 (residents' life satisfaction in general is a positive function of material well-being domain).

Table 4.27 Pattern of estimated parameters in the Gamma and Beta matrices

Gamma Matrix					
	Material well-being	Community well-being	Emotional well-being	Health and safety well-being	Overall QOL
Economic impact	γ_{11}	0	0	0	γ_{15}
Social impact	0	γ_{22}	0	0	γ_{25}
Cultural impact	0	0	γ_{33}	0	γ_{35}
Environmental impact	0	0	0	γ_{44}	γ_{45}
Beta Matrix					
Material well-being	0	0	0	0	0
Community well-being	0	0	0	0	0
Emotional well-being	0	0	0	0	0
Health and safety well-being	0	0	0	0	0
Overall QOL	β_{51}	β_{52}	β_{53}	β_{54}	0

Note: γ=Gamma; β=Beta
First subscript number represents the row number and the second subscript number represents the column number.

The results were first examined for nonsensical or theoretically inconsistent estimates. The three common offending estimates are negative error variance, standardized coefficients exceeding or very close to 1.0, or very large error variances. The examination of the standardized results reveals no instances of any of these problems. Table 4.28 presents the selected goodness-of-fit statistics for the hypothesized tourism impacts on quality of life model. The χ^2 value with 257 degrees of freedom is 739.51 ($p<0.05$). This indicates that model fit is not good. Because the sensitivity of this measure is not overly affected by the sample size of 321, the use of the χ^2 test can provide evidence that a significant difference exists. However, it should be also noted that the chi-squire test becomes more sensitive as the number of indicators rises.

Table 4.28 Fit-indices the proposed theoretical model (N=321)

Fit Index	Value
Chi-square with 257 degrees of freedom	739.51 ($p<.05$)
Goodness-of-fit Index (GFI)	0.84
Adjusted Goodness-of-fit Index (AGFI)	0.80
Parsimony Goodness-of-fit Index (PGFI)	0.67
Normed Fit Index (NFI)	0.81
Non- Normed Fit Index (NNFI)	0.84
Parsimony Normed Fit Index (PNFI)	0.69
Comparative Fit Index (CFI)	0.86
Increment Fit Index (IFI)	0.87
Relative Fit Index (RFI)	0.77
Critical N	136.57
Root Mean Square Residual (RMR)	0.11
Standized Root Mean Square Residual (SRMR)	0.11
Root Mean Square Error of Approximation (RMSEA)	0.077

Therefore, it is more beneficial to check a number of other measures. The GFI value of 0.84 is at a marginal acceptance level (Hair et al., 1998), as is the RMSR value of 0.11, which is not acceptable. The RMSEA has a value of 0.077, which falls in the acceptable range of 0.08 or less. A few of the absolute fit measures indicated that the model is marginally acceptable at best, but most of the absolute fit measures indicated the model is hardly acceptable. In addition to overall measures of fit, the AGFI , NFI, NNFI, CFI, and

IFI all fall slightly below the desired threshold of 0.95. However, all increment fit measures exceeded .80, therefore, only marginal support for this model was provided.

The estimated standardized path coefficients for the hypothesized model are presented in Table 4. 29. As shown in Table 4. 29, not all of the hypothesized paths in the model were significant at a 0.05 probability levels. The estimated standardized path coefficients for the path from economic impact of tourism to material well-being domain is 0.37 ($p<0.01$), from social impact of tourism to community well-being domain is 0.40 ($p<0.01$), from cultural impact of tourism to emotional well-being domain is 0.17 ($p<0.01$), and from environment impact of tourism to health and safety well-being is -0.24 ($p<0.01$). The estimated standardized path coefficients from economic impact of tourism to overall QOL (–0.12), from social impact of tourism to QOL (0.01), from the cultural impact of tourism to QOL (0.10), and from environmental impact of tourism to QOL (0.11) are not significant at the 0.05 probability levels.

Table 4.29 Estimated standardized coefficients for the hypothesized model

	Material well-being	Community well-being	Emotional well-being	Health and safety well-being	Overall QOL
Economic impact	0.37** (4.60)				-0.12 (-0.71)
Social impact		0.40** (4.85)			0.01 (0.07)
Cultural impact			0.17** (2.66)		0.10 (1.04)
Environmental impact				-0.24** (-2.63)	0.11 (1.76)
Material well-being					
Community well-being					
Emotional well-being					
Health and safety well-being					
Overall QOL	0.36** (4.35)	-0.08 (-1.17)	0.58** (7.85)	0.12 (1.55)	
R^2	**0.13**	**0.16**	**0.03**	**0.06**	**0.49**

Note: t-value in parentheses, **significant at 0.01 probability level.

4.4.2.5.2. Analysis of the Hypotheses

The hypothesized theoretical model and proposed hypotheses tested using LISREL 8 indicated that half of the proposed paths were significant. Therefore, the results only supported five of the proposed twelve main hypotheses. This section of the chapter provides a detailed discussion analysis of the hypotheses.

Hypothesis 1: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the economic impact of tourism.

Hypothesis 2: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the social impact of tourism.

Hypothesis 3: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the cultural impact of tourism.

Hypothesis 4: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the environmental impact of tourism.

In hypotheses one to four, there were postulated that there are direct positive relationships between various dimensions of tourism impacts and overall life satisfaction. However, the result of the LISREL analysis did not support these hypotheses. Altogether (four tourism dimensions), the tourism impacts significantly explained 3.6% of the total variance of overall life satisfaction. However, individually, the residents' perceptions of the benefits of the economic impact of tourism (H1: gamma=-0.12, $p>0.05$), the benefits of the social impact of tourism (H2: gamma= 0.01, $p>0.05$), the benefits of the cultural impact of tourism (H3: gamma= 0.10, $p>0.05$), and the benefits of the environmental impact of tourism (H4: gamma= 0.11, $p>0.05$) were not significantly related to their overall life satisfaction.

The result reported here is consistent with previous research findings. Even though there was no study to test the direct effects from the dimension of the tourism

impact to overall life satisfaction of the residents in the community, in terms of tourism sense, because once a community becomes destination, the lives of residents in the community are affected by the tourism (Jurowski, 1994). The development of tourism results in life conditions of the residents in a better or worse ways. These life conditions make up the life domains in general. Usually, the perceptions of the tourism impact influence these life conditions. Therefore, the satisfactions or dissatisfactions with living condition (e.g., employments and income) influenced by the perception of the tourism impacts spill over vertically to satisfactions of the life domains. Consequently, the satisfaction of the particular life condition influences the overall life satisfaction of the residents. In addition, it should be noted that even though the effect of the tourism impacts on overall life satisfaction did not show statistical significance, some sense of direct effects of the tourism impacts on overall life satisfaction still existed.

Hypothesis 5: Material well-being domain is a positive function of the perception of the economic impact of tourism.

Hypothesis 9: Residents' life satisfaction in general is a positive function of material well-being domain.

In hypothesis five, it was postulated that residents' perception of economic impact of tourism influences positively their life satisfaction of the material well-being domain. Consequently, in hypothesis nine, the material well-being domain influenced by the economic tourism impact affects the overall quality of life of the residents. These hypotheses were supported by LISEREL analysis. The perception of the economic impact of tourism significantly influenced the satisfaction of the material well-being in one of the particular life domains (gamma = 0.37, $p<0.01$). Then, the satisfaction of the material well-being domain significantly influenced the satisfaction of the overall life of the residents in the community (beta=0.36, $p<0.01$). Results indicate that as the residents' perception of the benefits of the economic impacts of tourism increases, they are more likely to have satisfaction with their life condition related to materials. Consequently, as

the life satisfaction in material well-being domain increases, the overall life satisfaction of the residents will increase.

Findings of this study are consistent with findings of the previous quality of life study. Abrams (1973) found the four domains were health, intimacy, material well being, and productivity when he asked respondents to indicate how various domains of life are important to them. Then Campbell, Converse, and Rodgers (1976) asked people to rate domain importance on a five point scale, and found four domains were scored 91%, 89%, 73%, and 70% for health, intimacy, material well being, and productivity, respectively. Flanagan (1978) and Krupinski (1980) also found that the five domains were regarded as very important aspects of their lives by a large majority of people, and scored health, 97%; intimacy, 81%; emotional, 86%; material well being, 83%; and productivity, 78%. Like this, the positive perception of the economic impact of tourism effects on the satisfaction of the material well-being domain of the residents in the community, this satisfaction of the material well being domain influenced the overall life satisfaction of the residents. Economic impact of tourism accounted for 13% of the variance in the satisfaction of the material well-being.

Hypothesis 6: Community well-being domain is a positive function of the perception of social impact of tourism.

Hypothesis 10: Residents' life satisfaction in general is a positive function of community well-being domain.

In hypothesis six, it was postulated that residents' perception of social impact of tourism influences positively in their life satisfaction of the community well-being domain. Consequently, in hypothesis ten, the community well-being domain influenced by the social tourism impact affects the satisfaction of the overall quality of life of the residents. Hypothesis 6 was supported by LISREL analysis. The perception of the social impact of tourism significantly influenced the satisfaction of the community well-being domain (gamma = 0.40, $p<0.01$). Result indicates that as the residents' perception of the

benefits of the social impacts of tourism (because of tourism, roads and other local services are well maintained, tourism is a major reason for the variety of entertainment in the community, and increased tourism provides recreational opportunities for local residents) increases, they are more likely to satisfy with their life condition related to community. However, the satisfaction of the community well-being domain did not significantly influence the satisfaction of the overall life of the residents in the community (beta=-0.08, $p<0.01$). In addition, the result indicated that the satisfaction of the community well being slightly influenced the overall life satisfaction in a negative way. However, even though the 16% of the total variance of the satisfaction of the community well being was accounted by social impact of tourism, the satisfaction of the community well being domain did not influence the overall life satisfaction,.

In that sense, its result was consistant with the findings of the previous quality of life studies. Cummins, McCabe, Romeo, and Gullone (1994) have provided both empirical and theoretical arguments for use of community well being as one of important seven domains. And also, Cummins (1996) reviewed 32 studies and found the community well being as one of the majorities supported life satisfaction domains. Also, in the perception of tourism impact studies, it was a little bit consistent with the previous studies. In Perdue, Long and Kang's (1999) study about residents' perception of community safety, community involvement, local political influence, changes in job opportunities, social environment, and community congestion influenced their quality of life in the community, their findings showed that the key community characteristics affecting residents' QOL were community safety, social environment, and community involvement. In that sense, the satisfaction of the community well being comes not only community service like maintaining good road condition or increasing entertainment, but also community safety or social environment which is spilled over from the other life domains.

Hypothesis 7: Emotional well-being domain is a positive function of the perception of cultural impact of tourism.

Hypothesis 11: Residents' life satisfaction in general is a positive function of emotional well-being domain.

A hypothesis 7 proposes that as residents' perception of cultural impact of tourism increases their emotional life satisfaction are likely to increase. And consequently, hypothesis 11 proposes that the emotional well being affected by the perception of the cultural impact of tourism is like to influence the overall life satisfaction. Both of the hypotheses were supported by LISREL analysis. The positive perception of the cultural impact of tourism, such as the cultural exchange between residents and tourists is valuable and pleasant for the residents in the community, influenced statistically significantly the satisfaction of the emotional well being like the satisfaction of the leisure life or cultural life (gamma=0.17, $p<0.05$). Consequently, the emotional well-being affected by the cultural impact of the tourism was related significantly to the overall life satisfaction (beta=0.58, $p<0.01$). However, the cultural impact of tourism explained only 3% of the total variance of the satisfaction of the emotional well-being. The results indicate that as the residents' positive perception of the cultural impact of tourism increases, their emotional satisfaction is likely to increases. These finding are also supported by previous research. McCabe, Romeo, and Gullone (1994) and Cummins (1996) have provided that emotional well being was the one of the major life satisfaction domains.

Hypothesis 8: Health and Safety well-being domain is a positive function of the perception of environmental impact of tourism.

Hypothesis 12: Residents' life satisfaction in general is a positive function of health and safety well-being domain.

In hypothesis 8, it was postulated that as the residents' positive perception of the environmental impact of tourism increases the satisfaction of the health and safety well being is likely to increases, and consequently, in hypothesis 12, it was postulated that as the satisfaction of the health and safety well being affected by the perception of the environmental impact of the tourism increases the overall life satisfaction is likely to increase. Only hypothesis 8 was supported by LISREL, but the hypothesis 12 was not supported. In hypothesis 8, the residents in the community significantly perceived the negative environmental impact of the tourism, and its result, the negative perception of the environmental of the tourism, such as tourism produce large quantities of waste products or tourists' littering destroys the beauty of the landscape affected in negative ways of the satisfaction of the health and safety well being (gamma=-0.24 $p<0.05$). The result indicated that as the negative perception of the environmental impact of the tourism increases, the overall life satisfaction decreases. The environmental impact of tourism explained 6% of the total variance of the satisfaction of the health and safety well being. However, even though the satisfaction of the health and safety well being did not affect statistically significant the overall life satisfaction (beta=0.12 $p>0.05$, t=1.55), the results of LISREL was close to be significant with t-value, 1.55. The results indicate that means that as the satisfaction of the health and safety well being increases, the overall life satisfaction is likely to increase. Altogether, tourism impact dimension and particular life domains (material, community, emotional, and health and safety well-being) explained 49% of the total variance of the overall life satisfaction.

4.4.2.6 Testing of the moderating effect

This stage of data analysis deals with the moderating effects of tourism development stages on the relationship between the impact of tourism and the particular life domains. The basic premise of these moderating effects is that responses to variations in the satisfaction of particular life domains depend on the level of tourism development. The study used the hierarchical multiple regression/correlation (HMRC) to examine these moderating effects.

The following procedures were articulated by Cohen and Cohen (1983). Each dependent variable (i.e., the particular well-being domain such as the material well-being, community well-being, emotional well-being, and health and safety well-being) was regressed on an independent variable (i.e., tourism impact dimensions such as economic, social, cultural and environmental impact of tourism) and a moderator, the tourism development stage recoded as dummy variables. Hypotheses 13 to 16 were examined using the Hierarchical MRC procedure in analyzing the data. For the purpose of examining that there is existing gabs between the moderating effects of the tourism development stages pre-selected and the moderating effects of residents' perceptions of the tourism development stages in their community, hypothesis 13 to 16 were tested twice using tourism development stages pre-selected as a moderating variable for the first time and using residents' perceived tourism development stages for the second time. The section below describes its procedure and hypothesis testing results.

Hypothesis 13: The relationship between economic impact of tourism and material well-being is strongest in relation to the beginning and growth stages of the tourism development cycle and weakest in relation to the maturity and decline stages.

For a sample of 321 responses, Y was the satisfaction of the material well being, the quantitative independent variables were the perception of the economic impact of tourism (represented by X1) and four groups were given different tourism development stages. By recoding the nominal scale (tourism development stages) to dummy variable coding, the decline stage was set as the reference group, with D1, D2, D3 (X2, X3, X4) coded as 0,0,0; beginning stage was coded, 1,0,0; growth stage was coded 0,1,0, maturity stage was coded 0,0,1. Next, interaction variables were formed by multiplying the independent variable of economic impact by three dummy variables of tourism development stages, resulting in the following three independent variables.

X5=X1X2=eco*D1, X6=X1X3=eco*D2, X7=X1X4=eco*D3.

Because the perception of the tourism impact assesses enduring traits and is antecedent to the tourism development stages, it was entered first as X1. Table 4.30 indicates and represents the results of the hierarchical MRC analysis.

The entry of E (economic impact of tourism) accounted linearly for 0.081 of Y variance, which was a statistically significant amount (F=28.03, df=1, 319). The regression line of Y on X1 has a slope of .28(=B1). This results can be looked upon as averaged over the entire 321 cases that were at this stage not differentiated as to tourism development stages. At the next level of the Hierarchy, the tourism development stage (three variables; X2, X3, and X4) was added and this brought the Y variance accounted for from 0.081 to 0.098, an increase of 0.017, a small and non-significant amount. The F test of this increment based on 2 df was accomplished by means of the general formula for the significance of the increase in R^2 of an added set B containing K_B variable to that of a set A containing K_A variables using Model I error. The formula is as follows;

F –statistics of the increment in R^2 =

$$((R^2_{AB} - R^2_A)/ (1- R^2_{AB})) * ((N-K_A-K_B-1)/ K_B) \quad (3)$$

which was not a significant increment in Y variance accounted for.

This indicated that when adjusted for E (economic impact of tourism) by the within-group regression, as in analysis of covariance (ACV), the Y means of the four groups were equal (the four groups do not differ substantially). The four means did not differ, even though the D set carried the development stages. However, the status of the separate null hypotheses carried by each stage could be interpreted by the partial coefficients for X2, X3, and X4 in the analysis for the first four independent variables (IVs). Table 4.30 gives the regression equation, hence B2, B3, and B4 together with their t ratios. In the absence of the interactions, this equation implies four parallel regression lines for the four groups, the line determined by averaged out within group values. On this basis, D1, D2, D3 were seen to be average, respectively, .08, .257, .117 adjusted Y units below D4 at all value of E, and highly significantly. B3 (growth stage) was found to be highly significant (t=2.399), B2 (beginning stage) and B4 (maturity stage) not at all

(t=.753 and 1.136, respectively). Thus, on the ACV assumption of equality of the four groups' Y on E slope, it can be said more specifically that the economic impact of

Table 4.30
Results of a Hierarchical MRC analysis for economic impact and development stages

Code D	Set	IVs added	Cum R^2	I of R^2	IF	df
D1,D2,D3	eco	E=X1	0.081	0.081	28.029**	1,319
X2,X3,X4	Di	D1=X2, D2=X3, D3=X4	0.098	0.017	1.484 (p>0.05)	4,316
	Eco*Di	Eco*D1=X5 Eco*D2=X6 Eco*D3=X7	0.115	0.017	0.847 (p>0.05)	7,313

Regression equation
For X1
(1) $\hat{Y}$= 2.312 + .276E
(t) (5.294)**

For X1, X2, X3 and X4
(2) $\hat{Y}$= 2.147 + .291E + 0.08D1 + .257D2 + .117D3
(t) (5.561)** (.753) (2.399)* (1.136)

For complete model
(3) $\hat{Y}$= 2.365 + .230E - .225D1 + .507D2 - .740D3 +0.087ED1 – 0.08ED2 + .243ED3
(t) (2.007)* (-.382) (.969) (-1.364) (.526) (-.540) (1.617)
(4) $\hat{Y}$= (2.365 + .225D1 + .507D2 - .740D3) +(.230 +0.087D1 – 0.08D2 + .243D3)E
A B_{D1} B_{D2} B_{D3} B_E B_{ED1} B_{ED2} B_{ED3}

Beginning stage, D1=1, D2=0, D3=0, so $\hat{Y}$= 2.14 + .317E
Growth stage, D1=0, D2=1, D3=0, so $\hat{Y}$= 2.87 + .150E
Maturity stage, D1=0, D2=0, D3=1, so $\hat{Y}$= 1.625 + .473E
Decline stage, D1=0, D2=0, D3=0, so $\hat{Y}$= 2.365 + .230E

Note: D1, D2, and D3-dummy coding, Eco-economic impact of tourism; I-increment of R2; IF-increment F statistic; df-degrees of freedom
*significant at 0.05; **-significant at 0.01 levels.

tourism based on the adjusted mean of the satisfaction of the material well-being of growth stage was significantly higher than the un-weighted mean of other stages. The final step in the hierarchical multiple regression/correlation (MRC) revealed; when the E x Di interaction set made up for X5, X6, and X7 was next added to the main effect IVs, R^2 increase to 0.115, and I=0.017, not significant increment (F= 0.85) indicating the

homogeneity of the slopes of best fitting lines between groups, and hence, validation of the covariance model. Even though there was no slope difference among four groups, the Y means were adjusted on the basis of a common slope. Although the insignificance of the interaction variables render the Analysis of Covariance (ACV) analysis valid, it would be a serious error to conclude from this that the research is un-interpretable. The MRC analysis provides a rich yield of information from the data that may materially increase the investigator's insight into the phenomena under study. To illustrate this, the complete regression equation with the composite coefficient for each stage was restated in Table 30 from equation (3). The first is a constant, and the second is a function of E (economic impact of tourism).

From this, it can be seen how each regression coefficient and the Y intercept A of the full equation can be interpreted in terms of the properties of the regression of, and differences in regressions between, the separate groups, according to the interpretation specific to dummy variables coded nominal scales.

1. A and B_E are the constants defining the regression for the reference group (in here decline stage). Because B_E is significant, the reference group's Y on E regression differs significantly from that of a horizontal straight line.

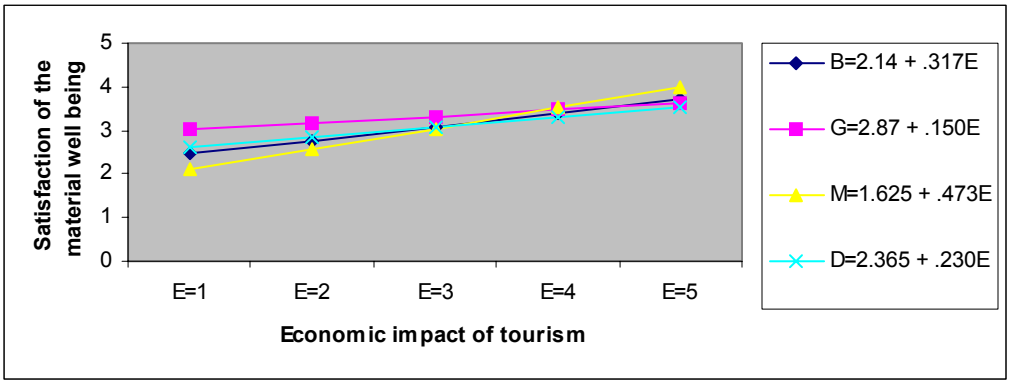
2. B_{ED1} is the amount by which the linear coefficient (slope) for D1 (Beginning stage) is larger than that for the reference group and B_{D1} is the amount by which the Y intercept of D1 is larger than that for the reference group. Neither its slope nor Y intercept differs significantly from those for the reference group.

3. Similarly, B_{ED2} and B_{D2} carry differences of the reference group (decline stage) from growth stage in regard to slope and intercept. Also, B_{ED3} and B_{D3} carry differences of the reference group (decline stage) from maturity stage in regard to slope and intercept. However, none of them is significant, indicating evidence that the shape of growth stages' population regression line does not differ from that of a reference group.

A graphic plot of the best fitting linear regression equation for each of the four groups was prepared by substituting a few values for economic impact of tourism in each

of four equations at the bottom Table 4.30. The results of this procedure are presented in Figure 4.3.

Figure 4.3 Best fitting line of the relationship between the economic impact of tourism and material well-being for each stage from the full model



The statement made above about the best fitting line of Y on E for decline stage (control group) and differences between the latter and each of the other three groups can be visualized directly from the lines in the figure. Even though the statistical analysis did not indicate markedly different relationships between level of the perception of the economic impact of tourism and the satisfaction of the material well-being, in practical sense, an interpretation can be an increase of one point of economic impact of tourism is associated with an average increase of 0.473 points in the satisfaction of the material well-being for the residents in tourism maturity development stage. This is three times as great as that for the residents in the growth stage.

Comparison with residents' perceived development stages

To find out any difference if it exists between the moderating effects of development stages selected by secondary indicators and the moderating effects of residents' actual perceived development stages, the same procedure was done by using the perceived development stage variable. For a sample of 286 responses, Y is the satisfaction of the material well being, the quantitative independent variables was the same as the perception of the economic impact of tourism (represented by X1) and four groups were given perceived tourism development stages. By recoding the perceived development stages to dummy variable coding, the decline stage was again set as the

reference group, with D1, D2, D3 (X2, X3, X4) coded as 0,0,0; beginning stage was coded, 1,0,0; growth stage was coded 0,1,0, maturity stage was coded 0,0,1. Also, interaction set was formed by multiplying the independent variable of economic impact by three dummy variables of tourism development stages, resulting in three independent variables (X5, X6 and X7).

Table 4.31 indicates and represents the results of the hierarchical MRC analysis. The entry of E (economic impact of tourism) accounted linearly for 0.081 of Y variance, statistically significant amount (F=28.03, df=1, 319). At the next level of the Hierarchy, the tourism development stage (three variables; X2, X3, and X4) was added and this brought the Y variance accounted for from 0.081 to 0.107, an increase of 0.026, a very close to significant amount (F=2.001, c.v.=2.37 for a=0.05). However, in a statistical sense, the four means do not differ, even though the D set carries the development stages.

Table 4.31 gives the regression equation, hence B2, B3, and B4 together with their t ratios. In the absence of the interactions, the partial coefficients for X2, X3, and X4of this equation implies four parallel regression lines for the four groups, the line determined by averaged out within group values. On this basis, D1, D2, D3 are seen to be average, respectively, .502, .497, .445 adjusted Y units above D4 at all value of E, and highly significantly. B2, B3 and B4 are found to be highly significant (t=2.997, t=3.20, t=2.659, respectively).

Thus, on the ACV assumption of equality of the four groups' Y on E slope, it can be said more specifically that the economic impact of tourism adjusted the mean of the satisfaction of material well-being of beginning, growth, and maturity stage is significantly higher than the mean of decline stage. The final step in the hierarchical MRC revealed; when the E x Di interaction set made up for X5, X6, and X7 was next added to the main effect IVs, R^2 increased to 0.112, and increment R^2=0.005, not significant increment (F= 0.22) indicating the homogeneity of the slopes of best fitting lines between groups. Therefore, it was concluded that there was no difference between the moderating effects of the development stages pre-selected and the moderating effects of residents' perceived development stages.

Table 4.31
Results of a HMR analysis for economic impact and perceived development stages

Code D	Set	IVs added	Cum R^2	I of R^2	IF	df
D1,D2,D3	Eco	E=X1	0.081	0.081	28.029**	1,319
X2,X3,X4	Di	D1=X2, D2=X3, D3=X4	0.107	0.026	2.002 (p>0.05) c.v.=2.37	4,281
	Eco*Di	Eco*D1=X5 Eco*D2=X6 Eco*D3=X7	0.112	0.005	0.22 (p>0.05)	7,278

Regression equation

For X1

(1) $\hat{Y}$= 2.312 + .276E

(t) (5.294)**

For X1, X2, X3 and X4

(2) $\hat{Y}$=2.020 +.236E +.502D1 +.497D2 +.445D3

(t) (4.268)** (2.997)**(3.20)**(2.659)**

For complete model

(3) $\hat{Y}$= 1.742 +.325E +1.104D1 + .610D2 + .887D3 -.185ED1 –0.043ED2 -.135ED3

(t) (2.337)* (1.830) (1.100) (1.404) (-1.028) (-.261) (-.736)

(4) $\hat{Y}$= (1.742 +1.104D1 + .610D2 + .887D3)+(.325-.185D1 –0.043D2 -.135D3)E

A B_{D1} B_{D2} B_{D3} B_E B_{ED1} B_{ED2} B_{ED3}

Beginning stage, D1=1, D2=0, D3=0, so $\hat{Y}$= 2.846 + .14E

Growth stage, D1=0, D2=1, D3=0, so $\hat{Y}$= 2.352 + .285E

Maturity stage, D1=0, D2=0, D3=1, so $\hat{Y}$= 2.629 + .19E

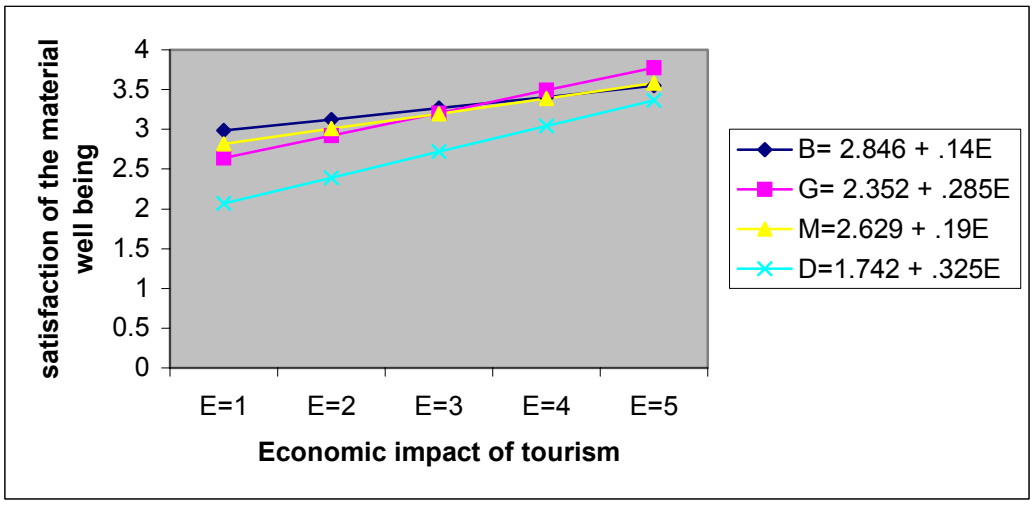
Decline stage, D1=0, D2=0, D3=0, so $\hat{Y}$= 1.742 + .325E

Note: D1, D2, and D3-dummy coding, Eco-economic impact of tourism; I-increment of R2; IF-increment F statistic; df-degrees of freedom

*significant at 0.05; **-significant at 0.01 levels.

A graphic plot of the best fitting linear regression equation for each of the four groups was also prepared by substituting a few values for economic impact of tourism in each of four equations at the bottom Table 4.31. The results of this procedure are presented in Figure 4.4.

Figure 4.4 Best fitting line for the economic impact of tourism and perceived tourism development stages



Even though the statistical analysis did not indicate markedly different relationships between level of the perception of the economic impact of tourism and the satisfaction of the material well-being tourism, in practical sense, an interpretation can be an increase of one point of economic impact of tourism is associated with an average increase of 0.285 points in the satisfaction of the material well-being for the residents in tourism growth development stage. This is twice as great as that for the residents in the beginning stage.

Hypothesis 14: The relationship between social impact of tourism and community well-being is strongest in relation to the maturity and decline stages of the tourism development cycle and weakest in relation to the beginning and growth stages.

For a sample of 321 responses, Y is the satisfaction of the community well being, the quantitative independent variables is the perception of the social impact of tourism (represented by X1) and four groups are given different tourism development stages. Table 4.32 indicates and represents the results of the hierarchical MRC analysis. The entry of S (social impact of tourism) accounted linearly for 0.084 of the satisfaction of

Table 4.32
Results of a Hierarchical MRC analysis for social impact and development stages

Code D	Set	IVs added	Cum R^2	I of R^2	IF	df
D1,D2,D3	Soc	E=X1	0.084	0.084	29.083**	1,319
X2,X3,X4	Di	D1=X2, D2=X3, D3=X4	0.098	0.017	1.49 (p>0.05)	4,316
	Soc*Di	Soc*D1=X5 Soc*D2=X6 Soc*D3=X7	0.116	0.018	0.90 (p>0.05)	7,313

Regression equation

For X1

(1) $\hat{Y}$= 2.679 + .263S

(t) (5.402)**

For X1, X2, X3 and X4

(2) $\hat{Y}$= 2.552 +.257S +.164D1 +.158D2 +.246D3

(t) (5.270)** (1.391) (1.362) (2.193)*

For complete model

(3) $\hat{Y}$= 2.850 +.157S -.195D1 +.226D2 -.572D3 +.120SD1 –0.024SD2 +.268SD3

(t) (1.590) (-.428) (.529) (-1.372) (.832) (-.173) (2.023)*

(4) $\hat{Y}$= (2.850 -.195D1 +.226D2 -.572D3) + (.157+ .120D1 –0.024D2 +.268D3)S

A B_{D1} B_{D2} B_{D3} B_S B_{SD1} B_{SD2} B_{SD3}

Beginning stage, D1=1, D2=0, D3=0, so $\hat{Y}$= 2.655 + .277S

Growth stage, D1=0, D2=1, D3=0, so $\hat{Y}$= 3.076 + .133S

Maturity stage, D1=0, D2=0, D3=1, so $\hat{Y}$= 2.278 + .425S

Decline stage, D1=0, D2=0, D3=0, so $\hat{Y}$= 2.850 + .157S

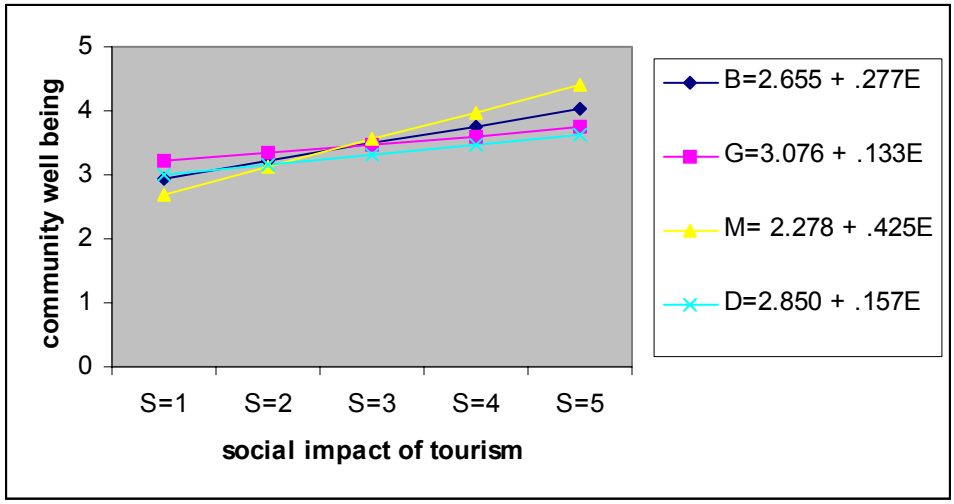
Note: D1, D2, and D3-dummy coding, Soc-social impact of tourism; I-increment of R2; IF-increment F statistic; df-degrees of freedom

*significant at 0.05; **-significant at 0.01 levels.

community well being (Y) variance, statistically significant amount (F=29.08, df=1, 319). At the next level of the Hierarchy, the tourism development stage was added and this brought the Y variance accounted for from 0.081 to 0.98, an increase of 0.017, a trivial, non-significant amount (F=1.37, p>0.05). This indicated that the Y means of the four groups are equal (the four groups do not differ substantially). However, the status of the

separate null hypotheses carried by each stage showed that the coefficient of maturity stage was found to be highly significant (t=2.193), others not at all. Thus, on the ACV assumption of equality of the four groups' Y on S slope, it can be said more specifically that the social impact of tourism adjusted the mean of the satisfaction of the community well-being of the maturity stage was significantly higher than the un-weighted mean of other stages. The final step in the hierarchical MRC reveals; when the interaction terms added into equation, R^2 increase to 0.116, and increment R^2=0.017, not significant increment (F= 1.49), indicating the homogeneity of the slopes of best fitting lines between groups, and hence, no support for hypothesis 14. Even though there was no statistically significant slope difference among four groups, the complete regression equation with the composite coefficient for each stage was restated, and a graphic plot of the best fitting linear regression equation for each of the four groups was prepared by substituting a few values for S in each of four equations at the bottom of Table 4.32 and Figure 4.5.

Figure 4.5 Best fitting line of the relationship between the social impact of tourism and community well-being for each stage from the full model



Even though the statistical analysis does not indicate markedly different relationships between level of the perception of the social impact of tourism and the satisfaction of the community well-being, in a practical sense, an interpretation can be an

increase of one point of social impact of tourism is associated with an average increase of 0.425 points in the satisfaction of the community well-being for the residents in tourism maturity development stage. This is three times as great as that for the residents in the growth stage.

Comparison with the perceived development stages

To find out existing gabs between the moderating effects of development stages selected by secondary indicators and the moderating effects of residents' actual perceived development stages on the relationship between social impact of tourism and community well being, HMRC was done by using the perceived development stage variable. A sample of 286 responses, Y is the satisfaction of the community well being, the quantitative independent variable is the perception of the social impact of tourism (represented by X1) and four groups are given residents' perceived tourism development stages. By recoding the perceived development stages to dummy variable coding, the decline stage is again set the control group, as the reference group, with D1, D2, D3 (X2, X3, X4) coded as 0,0,0; beginning stage is coded, 1,0,0; growth stage is coded 0,1,0, maturity stage is coded 0,0,1. Also, interaction set was formed by multiplying the independent variable of social impact by three dummy variables of tourism development stages, resulting in three independent variables (X5, X6, and X7).

Table 4.33 indicates and represents the results of the hierarchical MRC analysis. The entry of S (social impact of tourism) accounted linearly for 0.084 of Y variance, statistically significant amount (F=29.08, df=1, 319). At the next level of the Hierarchy, the perceived tourism development stage (three variables; X2, X3, and X4) was added and this brought the Y variance accounted for from 0.083 to 0.115, an increase of 0.031, to a significant increase of the amount (F=2.45, c.v.=2.37 for a=0.05).

Table 4.33
Results of a HMRC analysis for social impact and perception of development stages

Code D	Set	IVs added	Cum R^2	I of R^2	IF	df
D1,D2,D3	soc	E=X1	0.084	0.084	29.083**	1,319
X2,X3,X4	Di	D1=X2, D2=X3, D3=X4	0.115	0.031	2.45* (p<0.05)	4,281
	Soc*Di	Soc*D1=X5 Soc*D2=X6 Soc*D3=X7	0.127	0.012	0.54 (p>0.05)	7,278

Regression equation
For X1
(1) $\hat{Y}$= 2.679 + .263S
(t) (5.402)**

For X1, X2, X3 and X4
(2) $\hat{Y}$= 2.401+.216S +.378D1 +.486D2 +.575D3
(t) (4.276)**(2.128)*(2.939)**(3.235)**

For complete model
(3) $\hat{Y}$= 1.868 +.416S +1.229D1 +1.149D2 +.982D3 -.313SD1-.241SD2-.160SD3
(t) (3.335)**(2.476)* (2.613)* (1.876) (-1.845) (-1.658) (-.944)

(4) $\hat{Y}$= (1.868 +1.229D1 +1.149D2 +.982D3) +(.416-.313D1-.241D2-.160D3)S
A B_{D1} B_{D2} B_{D3} B_S B_{SD1} B_{SD2} B_{SD3}

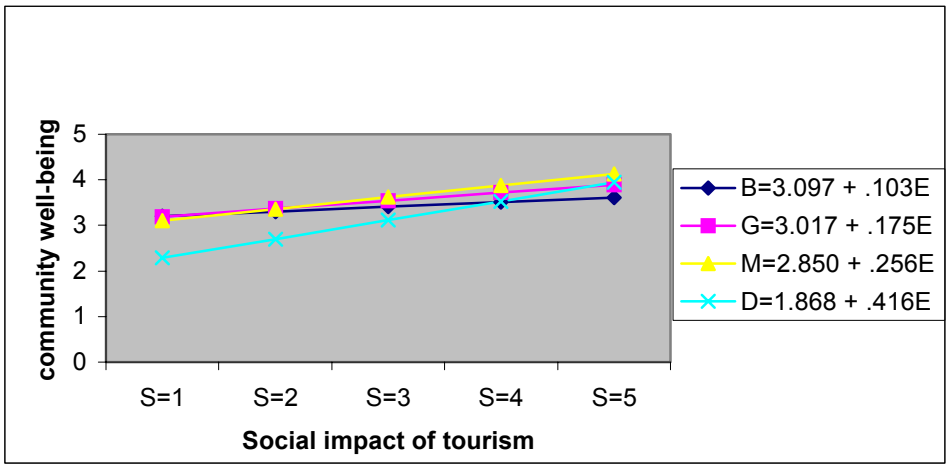
Beginning stage, D1=1, D2=0, D3=0, so $\hat{Y}$= 3.097 + .103S
Growth stage, D1=0, D2=1, D3=0, so $\hat{Y}$= 3.017 + .175S
Maturity stage, D1=0, D2=0, D3=1, so $\hat{Y}$= 2.850 + .256S
Decline stage, D1=0, D2=0, D3=0, so $\hat{Y}$= 1.868 + .416S

Note: D1, D2, and D3-dummy coding, Soc-social impact of tourism; I-increment of R2; IF-increment F statistic; df-degrees of freedom
*significant at 0.05; **-significant at 0.01 levels.

Table 4.33 gives the regression equation, hence B2, B3, and B4 together with their t ratios. In the absence of the interactions, this equation implies four parallel regression lines for the four groups, the line determined by averaged out within group values. On this basis, D1, D2, D3 are seen to be average, respectively, .378, .486, .575 adjusted Y units above D4 at all value of S, and highly significantly. B2, B3 and B4 are

found to be highly significant (t=2.997, t=3.20, t=2.659, respectively). Thus, on the ACV assumption of equality of the four groups' Y on S slope, it can be said more specifically that the social impact of tourism adjusted the mean of the satisfaction of the community well-being of beginning, growth, and maturity stage is significantly higher than the mean of decline stage. The final step in the hierarchical MRC reveals; when the S x Di interaction set made up for X5, X6, and X7 was next added to the main effect IVs, R^2 increase to 0.127, and I=0.012, not significant increment (F= 0.54) indicating the homogeneity of the slopes of best fitting lines between groups. Therefore, it can be concluded that the perceived tourism development stages did not support statistically the hypothesis 14.

Figure 4.6 Best fitting line for the social impact of tourism and perceived tourism development stages



However, Figure 4.6 showed that even though the statistical analysis did not indicate markedly different relationships between level of the perception of the social impact of tourism and the satisfaction of the community well-being, in practical sense, an interpretation can be an increase of one point of social impact of tourism is associated with an average increase of 0.416 and .256 points in the satisfaction of the community well-being for the residents in tourism decline and maturity development stage, respectively. This is two or three times as great as that for the residents in the beginning and growth stage.

Hypothesis 15: The relationship between cultural impact of tourism and emotional well-being is strongest in relation to the maturity and decline stages of the tourism development cycle and weakest in relation to the beginning and growth stages.

For a sample of 321 responses, Y is the satisfaction of the emotional well being, the quantitative independent variables is the perception of the cultural impact of tourism (represented by X1) and four groups are given different tourism development stages. Table 4.34 indicates and represents the results of the hierarchical MRC analysis. The entry of C (cultural impact of tourism) accounted linearly for 0.023 of the satisfaction of the emotional well being (Y) variance, statistically significant amount ($F=7.39$, $df=1, 319$). At the next level of the Hierarchy, the tourism development stage was added and this brought the Y variance accounted for from 0.023 to 0.36, an increase of 0.013, a trivial, non-significant amount ($F=1.06$, $p>0.05$). This indicates that the Y means of the four groups are equal (the four groups do not differ substantially) presenting the coefficient of each stage was not significant at all. The final step in the hierarchical MRC revealed; when the interaction terms added into equation, R^2 increase to 0.046, and $I=0.010$, not significant increment ($F= 0.46$), indicating the homogeneity of the slopes of best fitting lines between groups, and hence, no support for hypothesis 15. Even though there is no statistically significant slope difference among four groups, the complete regression equation with the composite coefficient for each stage was restated, and a graphic plot of the best fitting linear regression equation for each of the four groups was prepared by substituting a few values for C in each of four equations at the bottom Table 4.34. The plot of the results is presented in Figure 4.7.

Table 4.34
Results of a Hierarchical MRC analysis for cultural impact and development stages

Code D	Set	IVs added	Cum R^2	I of R^2	IF	df
D1,D2,D3	Cul	E=X1	0.023	0.023	7.395**	1,319
X2,X3,X4	Di	D1=X2, D2=X3, D3=X4	0.036	0.013	1.06 (p>0.05)	4,316
	Cul*Di	Soc*D1=X5 Soc*D2=X6 Soc*D3=X7	0.046	0.010	0.46 (p>0.05)	7,313

Regression equation

For X1

(1) $\hat{Y}$= 3.147 +.145C

(t) (2.739) p=0.07

For X1, X2, X3 and X4

(2) $\hat{Y}$= 3.036 +.151C +0.09D1 +0.034D2 +.215D3

(t) (2.816)* (.790) (.291) (1.898) p=0.059

For complete model

(3) $\hat{Y}$= 2.674 +.245C +.161D1 +1.003D2 +.663D3 –0.014CD1-.268CD2 -.118CD3

(t) (2.331)* (.266) (1.663) (1.245) (-.086) (-1.649) (-.850)

(4) $\hat{Y}$= (2.674 +.161D1 +1.003D2 +.663D3) +(.245 –0.014D1-.268D2 -.118D3)C

A B_{D1} B_{D2} B_{D3} B_C B_{CD1} B_{CD2} B_{CD3}

Beginning stage, D1=1, D2=0, D3=0, so $\hat{Y}$= 2.835 + .231C

Growth stage, D1=0, D2=1, D3=0, so $\hat{Y}$= 3.677 –0.023C

Maturity stage, D1=0, D2=0, D3=1, so $\hat{Y}$= 3.337 + .127C

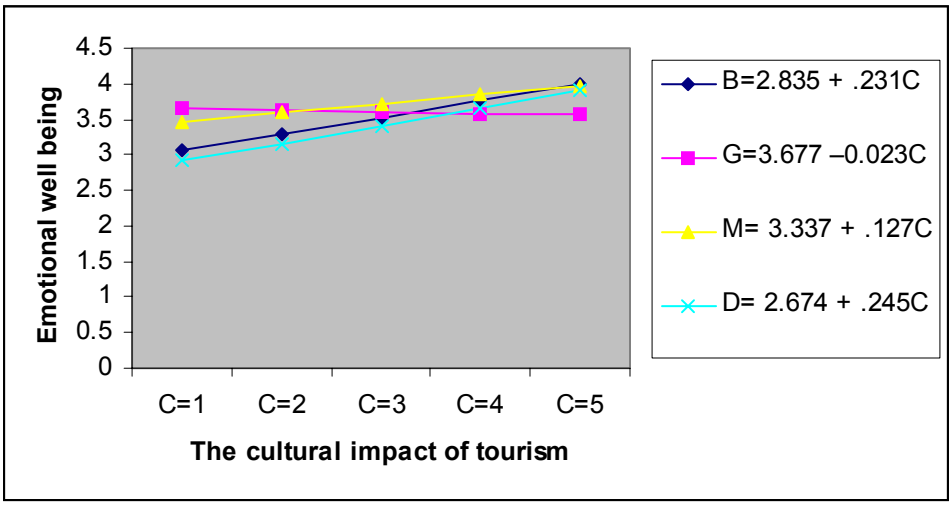
Decline stage, D1=0, D2=0, D3=0, so $\hat{Y}$= 2.674 + .245C□

Note: D1, D2, and D3-dummy coding, Cul,-cultural impact of tourism; I-increment of R^2; IF-increment F statistic; df-degrees of freedom

*significant at 0.05; **-significant at 0.01 levels.

Even though the statistical analysis does not indicate markedly different relationships between level of the perception of the cultural impact of tourism and the satisfaction of the emotional well-being, in practical sense, an interpretation can be an increase of one point of cultural impact of tourism is associated with an average increase of 0.245 points in the satisfaction of the emotional well-being for the residents in tourism decline development stage. And also this is the biggest slope among four groups. Therefore, in practical sense, hypothesis 15 was partly supported.

Figure 4.7 Best fitting line of the relationship between the cultural impact of tourism and community well being for each stage from the full model



Comparison with the perceived development stages

To find out the perceptual gabs between the moderating effect of the development stages selected by secondary indicators and the moderating effects of residents' actual perceived development stages for the relationship between the cultural impact of tourism and the satisfaction of the emotional well being, HMRC was done by using the perceived development stage variable. For a sample of 286 responses, Y is the satisfaction of the emotional well being, the quantitative independent variables is the perception of the cultural impact of tourism (represented by X1) and four groups are given perceived tourism development stages. By recoding the perceived development stages to dummy variable coding, the decline stage is again set the control group, as the reference group, with D1, D2, D3 (X2, X3, X4) coded as 0,0,0; beginning stage is coded, 1,0,0; growth stage is coded 0,1,0, maturity stage is coded 0,0,1. Also, interaction set was formed by multiplying the independent variable of the cultural impact by three dummy variables of tourism development stages, resulting in three independent variables (X5, X6, and X7).

Table 4.35 indicates and represents the results of the hierarchical MRC analysis. The entry of C (cultural impact of tourism) accounted linearly for 0.023 of Y variance, statistically significant amount (F=7.39, df=1, 319). At the next level of the Hierarchy,

the perceived tourism development stage (three variables; X2, X3, and X4) was added and this brought the Y variance accounted for from 0.023 to 0.039, an increase of 0.016, a not significant increase of the amount (F=1.17, c.v.=2.37 for a=0.05).

Table 4.35
Results of a HMRC analysis for cultural impact and the perceived development stages

Code D	Set	IVs added	Cum R^2	I of R^2	IF	df
D1,D2,D3	Cul	E=X1	0.023	0.023	7.395**	1,319
X2,X3,X4	Di	D1=X2, D2=X3, D3=X4	0.039	0.016	1.17 (p>0.05)	4,281
	Cul*Di	Cul*D1=X5 Cul*D2=X6 Cul*D3=X7	0.076	0.037	3.71* (p<0.05)	7,278

Regression equation
For X1
(1) $\hat{Y}$= 3.147 +.145C
(t) (2.739) p=0.07

For X1, X2, X3 and X4
(2) $\hat{Y}$= 3.050 +.131C +0.056D1 +.267D2 +.170D3
(t) (2.339)* (.310) (1.592) (.941)

For complete model
(3) $\hat{Y}$= 1.545 +.576C +1.727D1 +2.033D2 +2.099D3 -.490CD1 -.516CD2 -.558CD3
(t) (3.982)** (2.489)* (3.390)**(3.069)** (-2.569)* (-3.095)** (-2.983)**

(4) $\hat{Y}$= (1.545 +1.727D1 +2.033D2 +2.099D3)+(.576 -.490CD1 -.516CD2 -.558CD3)C
A B_{D1} B_{D2} B_{D3} B_C B_{CD1} B_{CD2} B_{CD3}

Beginning stage, D1=1, D2=0, D3=0, so $\hat{Y}$= 3.272 + .086C
Growth stage, D1=0, D2=1, D3=0, so $\hat{Y}$= 3.578 + .060C
Maturity stage, D1=0, D2=0, D3=1, so $\hat{Y}$= 3.644 + .018C
Decline stage, D1=0, D2=0, D3=0, so $\hat{Y}$= 1.545 + .576C

Note: D1, D2, and D3-dummy coding, Cul,-cultural impact of tourism; I-increment of R^2; IF-increment F statistic; df-degrees of freedom
*significant at 0.05; **-significant at 0.01 levels

Table 4.35 gives the regression equation, hence B2, B3, and B4 together with their t ratios. In the absence of the interactions, B2, B3 and B4 were not found to be statistically significant. The final step in the hierarchical MRC reveals; when the C x Di interaction

set made up for X5, X6, and X7 was next added to the main effect IVs, R^2 increase to 0.076, and I=0.037, significant increment (F= 3.71) indicating the heterogeneity of the slopes of best fitting lines between groups. Therefore, it can be concluded that the moderating effect of residents' perceived tourism development stages (hypothesis 15) was supported.

Figure 4.8 Best fitting line for the cultural impact of tourism and perceived tourism development stages

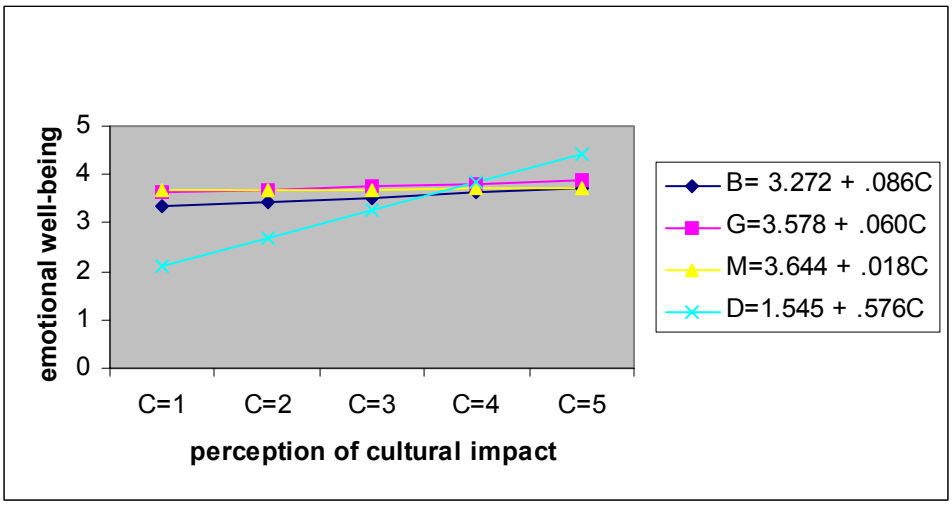


Figure 4.8 clearly showed that the statistical analysis does indicate markedly different relationships between level of the perception of the cultural impact of tourism and the satisfaction of the emotional well-being, in practical sense, an interpretation can be an increase of one point of cultural impact of tourism is associated with an average increase of 0.576 points in the satisfaction of the emotional well-being for the residents in tourism decline development stage. This is almost ten times as great as that for the residents in the beginning and growth stage. Therefore, the hypothesis 15 was supported in here.

Hypothesis 16: The relationship between environmental impact of tourism and health and safety well-being is strongest in relation to the maturity and decline stages of the tourism development cycle and weakest in relation to the beginning and growth stages.

In sample of 321 responses, Y is the satisfaction of the health and safety well being, the quantitative independent variables is the perception of the environmental impact of tourism (represented by X1) and four groups are given different tourism development stages. Table 4.36 indicates and represents the results of the hierarchical MRC analysis. The entry of EN (environmental impact of tourism) accounted linearly for 0.023 of the satisfaction of the emotional well-being (Y) variance, statistically significant amount ($F=7.19$, $df=1, 319$). At the next level of the Hierarchy, the tourism development stage was added and this brought the Y variance accounted for from 0.023 to 0.091, an increase of 0.068, a significant amount ($F=5.89$, $p<0.01$). This indicates that the Y means of the four groups do differ substantially presenting the coefficient of each stage was significant. In the absence of the interactions, this equation implies four parallel regression lines for the four groups, the line determined by averaged out within group values. On this basis, D1, D2, D3 were seen to be average, respectively, .197, .290, .504 adjusted Y units above D4 at all value of EN, and highly significantly. B3 (growth stage) and B4 (maturity stage) were found to be highly significant ($t=2.606$ and $t=4.731$, respectively), B2 (beginning stage) not at all ($t=1.746$). Thus, on the ACV assumption of equality of the four groups' Y on EN slope, it can be said more specifically that the environmental impact of tourism adjusted the mean of the satisfaction of the health and safety well-being of growth and maturity stage was significantly higher than the un-weighted mean of other stages. The final step in the hierarchical MRC reveals; when the interaction terms added into equation, R^2 increase to 0.105, and $I=0.014$, not significant increment ($F= 0.70$), indicating the homogeneity of the slopes of best fitting lines between groups, and hence, no support for hypothesis 16. Even though there is no statistically significant slope difference among four groups, the complete regression equation with the composite coefficient for each stage was restated, and a graphic plot of the best fitting linear regression equation for each of the four groups was visualized by

substituting a few values for EN in each of four equations at the bottom Table 4.36. The plot of this result is presented in Figure 4.9.

Table 4.36
Results of a HMRC analysis for environmental impact and development stages

Code D	Set	IVs added	Cum R^2	I of R^2	IF	df
D1,D2,D3	Env	E=X1	0.023	0.023	7.186**	1,319
X2,X3,X4	Di	D1=X2, D2=X3, D3=X4	0.091	0.068	5.89**	4,316
	Env*Di	Soc*D1=X5 Soc*D2=X6 Soc*D3=X7	0.105	0.014	.70 (p>0.05)	7,313

Regression equation

For X1

(1) $\hat{Y}$= 3.898 -.127EN

(t) (-2.68) p=0.08

For X1, X2, X3 and X4

(2) $\hat{Y}$= 3.655 -.132EN +.197D1 +.290D2 +.504D3

(t) (-2.830)* (1.746) (2.606)** (4.731)**

For complete model

(3) $\hat{Y}$= 4.121-.280EN -.337D1 -0.055D2 -.374D3 +.167END1 +.113END2 +.275END3

(t) (-2.954) * (-.702) (-.120) (-.902) (1.195) (.840) (2.187)

)

(4) $\hat{Y}$= (4.121 -.337D1 -0.055D2 -.374D3) +(-.280+.167D1 +.113D2 +.275D3)EN

A B_{D1} B_{D2} B_{D3} B_{EN} B_{END1} B_{END2} B_{END3}

Beginning stage, D1=1, D2=0, D3=0, so $\hat{Y}$= 3.784 - .113EN

Growth stage, D1=0, D2=1, D3=0, so $\hat{Y}$= 4.066 –.167EN

Maturity stage, D1=0, D2=0, D3=1, so $\hat{Y}$= 3.747 -.005EN

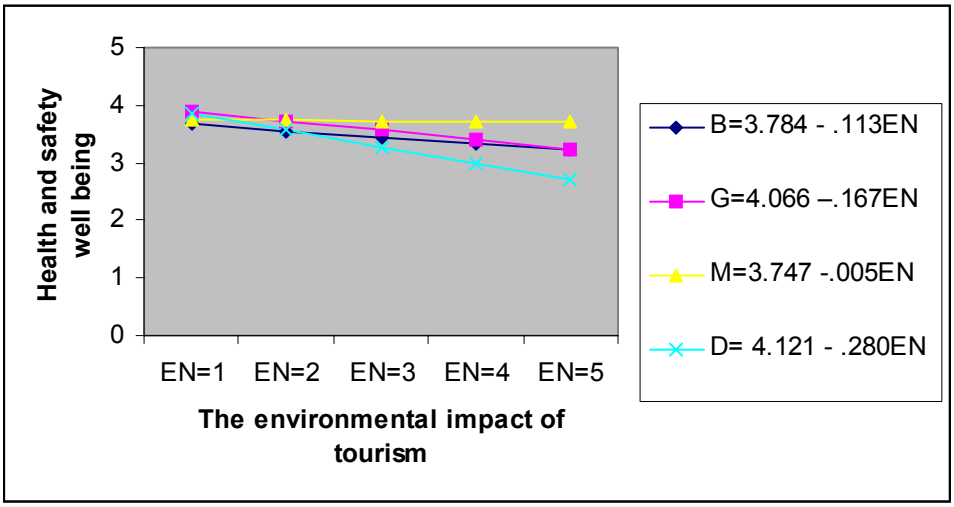
Decline stage, D1=0, D2=0, D3=0, so $\hat{Y}$= 4.121 - .280EN

Note: D1, D2, and D3-dummy coding, EN,-environmental impact of tourism; I-increment of R^2; IF-increment F statistic; df-degrees of freedom; *significant at 0.05; **-significant at 0.01 levels

Even though the statistical analysis does not indicate markedly different relationships between level of the perception of the environmental impact of tourism and the satisfaction of the health and safety well-being, in practical sense, an interpretation can be an increase of one point of environmental impact of tourism is associated with an average decrease of 0.280 points in the satisfaction of the health and safety well-being for

the residents in tourism decline development stage. And also this is the biggest slope among four groups. Therefore, in practical sense, hypothesis 16 was partly supported.

Figure 4.9 Best fitting line of the relationship between the environmental impact of tourism and health and safety well being for each stage from the full model



Comparison with the perceived development stages

To find out the perceptual gabs between the moderating effect of the development stages selected by secondary indicators and the moderating effect of residents' actual perceived development stages on the relationship between the environmental impact of tourism and the satisfaction of the health and safety well being, HMRC was done by using the perceived development stage variable. For a sample of 286 responses, Y is the satisfaction of the health and safety well being, the quantitative independent variables is the perception of the environmental impact of tourism (represented by X1) and four groups are given perceived tourism development stages. By recoding the perceived development stages to dummy variable coding, the decline stage is again set the control group, as the reference group, with D1, D2, D3 (X2, X3, X4) coded as 0,0,0; beginning stage is coded, 1,0,0; growth stage is coded 0,1,0, maturity stage is coded 0,0,1. Also, interaction set was formed by multiplying the independent variable of the environmental

impact by three dummy variables of tourism development stages, resulting in the three independent variables (X5, X6 and X7).

Table 4.37
Results of a HMRC analysis for environmental impact and perception of the development stages

Code D	Set	IVs added	Cum R^2	I of R^2	IF	df
D1,D2,D3	Env	E=X1	0.023	0.023	7.186**	1,312
X2,X3,X4	Di	D1=X2, D2=X3, D3=X4	0.038	0.015	1.46	4,279
	Env*Di	Soc*D1=X5 Soc*D2=X6 Soc*D3=X7	0.044	0.006	.43 (p>0.05)	7,276

Regression equation

For X1

(1) $\hat{Y}$= 3.898 -.127EN

(t) (-2.68) p=0.08

For X1, X2, X3 and X4

(2) $\hat{Y}$= 3.539 -.103EN +.424D1 +.306D2 +.303D3

(t) (-2.086)*(2.366)* (1.849) (1.703)

For complete model

(3) $\hat{Y}$= 3.446 -0.078EN+.101D1+.508D2+.593D3+0.097END1–0.059END2–0.085END3

(t) (-.502) (.143) (.799) (.816) (.514) (-.348) (-.429)

(4) $\hat{Y}$= (3.446+.101D1+.508D2+.593D3)+(-0.078+0.097D1–0.059D2–0.085D3)EN

A B_{D1} B_{D2} B_{D3} B_{EN} B_{END1} B_{END2} B_{END3}

Beginning stage, D1=1, D2=0, D3=0, so $\hat{Y}$= 3.547 + .019EN

Growth stage, D1=0, D2=1, D3=0, so $\hat{Y}$= 3.954 –.167EN

Maturity stage, D1=0, D2=0, D3=1, so $\hat{Y}$= 3.747 -.163EN

Decline stage, D1=0, D2=0, D3=0, so $\hat{Y}$= 3.446 - .078EN

Note: D1, D2, and D3-dummy coding, EN,-environmental impact of tourism; I-increment of R^2; IF-increment F statistic; df-degrees of freedom; *significant at 0.05; **-significant at 0.01 levels

Table 4.37 indicates and represents the results of the hierarchical MRC analysis. The entry of EN (environmental impact of tourism) accounted linearly for 0.023 of Y variance, statistically significant amount (F=7.39, df=1, 319). At the next level of the Hierarchy, the perceived tourism development stage (three variables; X2, X3, and X4)

was added and this brought the Y variance accounted for from 0.023 to 0.038, an increase of 0.015, a not significant increase of the amount (F=1.46, c.v.=2.37 for a=0.05). Table 4.37 gives the regression equation, hence B2, B3, and B4 together with their t ratios. In the absence of the interactions, B2 was found to be statistically significant, and other not at all. The final step in the hierarchical MRC revealed; when the EN x Di interaction set made up for X5, X6, and X7 was next added to the main effect IVs, R^2 increase to 0.044, and I=0.006, a not significant increment (F= .43) indicating the homogeneity of the slopes of best fitting lines between groups. Therefore, it can be concluded that the perceived tourism development stages did not support statistically the hypothesis 16.

Figure 4.10 Best fitting line for the environmental impact of tourism and perceived tourism development stage

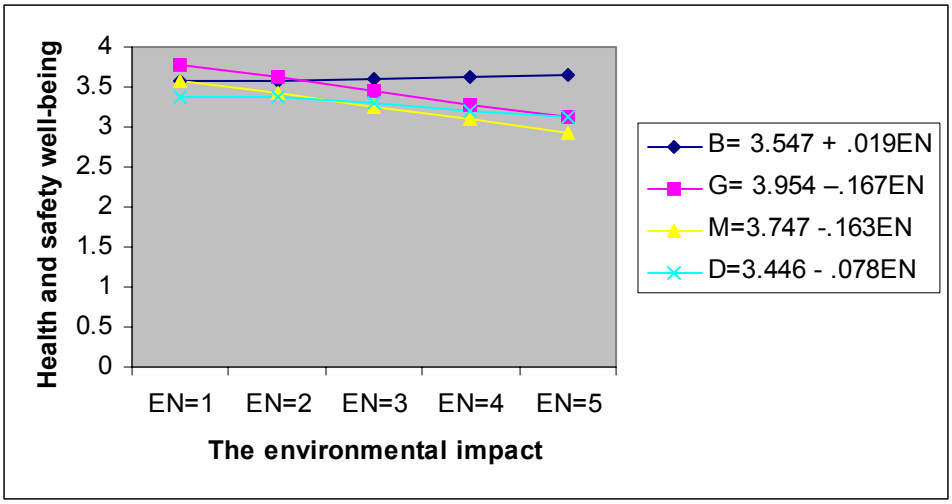


Figure 4.10 clearly showed that the statistical analysis did not indicate markedly different relationships between level of the perception of the environmental impact of tourism and the satisfaction of the health and safety well-being, however, in practical sense, an interpretation can be an increase of one point of environmental impact of tourism is associated with an average decrease of 0.167 points in the satisfaction of the health and safety well-being for the residents in growth stage of tourism development. This is almost two times as great as that for the residents in the decline stage.

4.5 CHAPTER SUMMARY

Chapter IV covered the data analysis from both the pretest of the scale items and the final study. First, the results of the pretest were presented. In this section of Chapter IV, the method of sampling and descriptive information of the pretest sample was discussed. Next section presented a description of the survey method employed in this study and the demographic profiles of the final study. The fourth section of the chapter presented the confirmatory factor analysis results and measurement model testing. This was followed by the test of the proposed structural equation model and hypotheses. Afterwards, the moderating effects for hypothesis 13 to 16 were tested using hierarchical multiple regression (HMR). HMR was used to test the moderating effect for both secondary indicator variables and perceptual tourism development variables. However, the difference was not significant, so only the results of moderating effects from variables from secondary indicators were reported in the next section. Table 4.38 and Figure 4.11 present a summary of the hypotheses testing results.

Table 4.38 The summary of hypotheses testing results

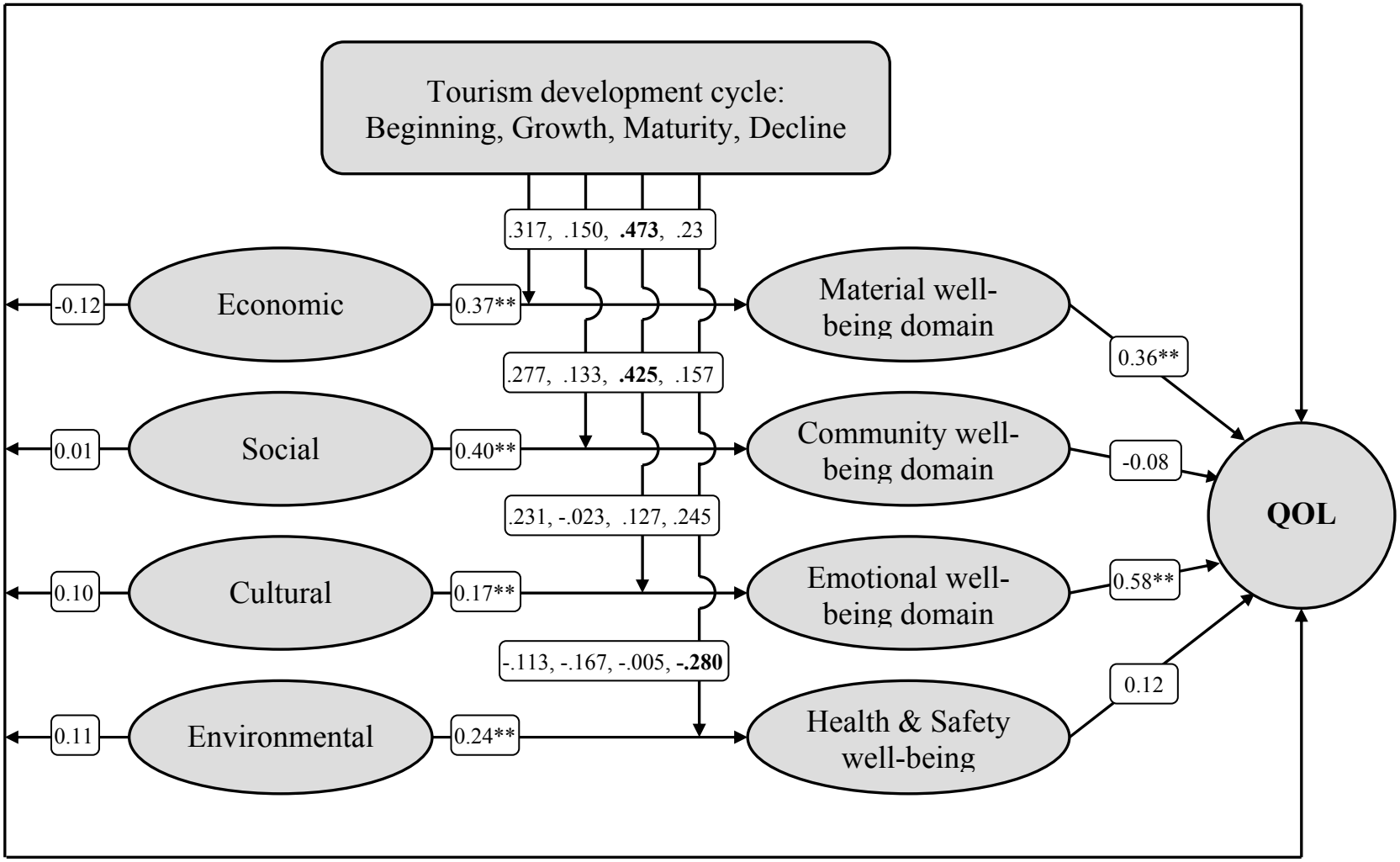
Hypotheses	Results
H1: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the economic impact of tourism.	Not supported
H2: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the social impact of tourism.	Not supported
H3: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the cultural impact of tourism.	Not supported
H4: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the environmental impact of tourism	Not supported
H5: Material well-being domain is a positive function of the perception of the economic impact of tourism	Supported
H6: Community well-being domain is a positive function of the perception of social impact of tourism	Supported

Hypotheses	Results
H7: Emotional well-being domain is a positive function of the perception of cultural impact of tourism	Supported
H8: Health and Safety well-being domain is a positive function of the perception of environmental impact of tourism	Supported
H9: Residents' life satisfaction in general is a positive function of material well-being domain.	Supported
H10: Residents' life satisfaction in general is a positive function of community well-being domain.	Not supported
H11: Residents' life satisfaction in general is a positive function of emotional well-being domain.	Supported
H12: Residents' life satisfaction in general is a positive function of health and safety well-being domain.	Not supported
H13: The relationship between economic impact of tourism and material well-being is strongest in relation to the beginning and growth stages of the tourism development cycle and weakest in relation to the maturity and decline stages	S: not supported P: not supported
H14: The relationship between social impact of tourism and community well-being is strongest in relation to the maturity and decline stages of the tourism development cycle and weakest in relation to the beginning and growth stages.	S: not supported P: partly supported
H15: The relationship between cultural impact of tourism and emotional well-being is strongest in relation to the maturity and decline stages of the tourism development cycle and weakest in relation to the beginning and growth stages	S: not supported P: partly supported
H16: The relationship between environmental impact of tourism and health and safety well-being is strongest in relation to the maturity and decline stages of the tourism development cycle and weakest in relation to the beginning and growth stages.	S: not supported P: partly supported

Note: S-statistical sense, P-practical sense

The next chapter will discuss the implications of the findings of this study in greater detail, as well as discuss the limitation of this study and what direction research should take along the line of the focus of this study.

Figure 4.11. The results of the empirical model and the hypotheses tests



** significant at a=0.01 levels, bold numbers show the most strongest relationship among tourism development stages.

CHAPTER V

DISCUSSION AND CONCLUSION

5.1 INTRODUCTION

This chapter presents the summary, discussion and implications of the findings of the study. In the first section of the chapter, a summary and discussion of the hypotheses testing are presented. The managerial and theoretical implications of the findings, followed by the limitation of the study, are discussed next. Finally, the chapter concludes with suggestions for future research.

5.2 SUMMARY OF THE FINDINGS

This study developed a "tourism impact on quality of life model" that investigates how tourism impact affects the quality of life of residents in tourism destinations. The proposed theoretical model addresses satisfaction with life in general, derived from satisfaction with a particular life domain. For example, overall life satisfaction is derived from the material well-being domain, which includes the consumer's sense of well-being as it is related to material possessions. The satisfaction of this particular life domain in formulating general life satisfaction is affected by various tourism impact dimensions, among them economic, social, cultural, and environmental impacts of tourism. Finally, the tourism development stage moderates the relationships between tourism impact dimensions and particular life domains. The proposed model in Figure 3.1 was empirically tested. This model analyzed (1) the effect of residents' perception of the economic, social, cultural, and environmental impact of tourism on overall life satisfaction; (2) the effects of residents' perception of four tourism impact dimensions on the satisfaction of particular life domains (material, community, emotional, and health

and safety well being); (3) the effect of the satisfaction of four particular life domains on overall life satisfaction; and (4) the effect of tourism development stages on the relationship between the perception of tourism impact and the satisfaction of particular life domains. Before conducting the actual study, a pretest was done to make sure that the proposed constructs and the items that are proposed to measure those constructs are valid and reliable.

The study specially focused on a population consisting of residents residing in Virginia. The sample for this study was proportionally stratified on the basis of the number of populations in the pre-selected regions in relation to tourism development stages that covered counties and cities in the state. The study addressed the effects of tourism on the quality of life of residents in the community. Respondents were asked to complete a survey based on their perception of tourism impact and their satisfaction of various life conditions. The result was a final usable sample size of 321 residents in the community. More than half of the respondents were male; the average age of the respondents was 53 years old. The demographic characteristics of respondents were consistent with the previous studies that survey in the similar areas. For example, Jurowski (1994) reported that the average age of the respondents was 48; Neal (2000) reported that the average age for the respondents was 56.6; and Gursoy (2001) reported that the average age of the respondents was 49.

This study developed and tested a measurement model for the sub-dimensions of each construct through a pretest and an actual test. Results confirmed that each construct consisted of more than 2 sub-dimensions. Each sub-dimension of the constructs was measured by at least three indicators. A score of items for each sub-dimension was summated and used to measure proposed constructs.

The results of the study found that the perception of tourism impact influenced the satisfaction of particular life domains, and that satisfaction of particular life domains did affect residents' overall life satisfaction. However, the perception of tourism impact did not directly influence overall life satisfaction. In addition, the moderating effects on the relationships between tourism impact dimensions and particular life domains were not statistically significant. These findings are discussed in detail in the following section.

5.3 DISCUSSION OF THE FINDINGS

The discussion section first addresses the development and testing of tourism impact dimensions and particular life domains. Four tourism dimensions, four particular life domains, and overall quality of life variables were discussed in detail in Chapter II in order to provide a better understanding of the impact of tourism on quality of life. The dimensions of tourism impact are economic, social, cultural, and environmental; particular life domains are material well-being, community well-being, emotional well-being, and health and safety well-being. Each construct consisted of two or three sub-dimensions. In Chapter III, a multiple indicator measurement scale was developed for each sub-dimension of constructs.

In Chapter IV, a pretest was first conducted on measurement scales for each sub-dimension. Examination of the Cronbach Alpha reliability estimate of each sub-dimension indicated that most sub-dimensions of tourism impact and particular life domain constructs have a Cronbach Alpha reliability estimate higher than 0.70 except for three dimensions, which are social problem (.69) in social impact of tourism, spiritual well-being (.66) in the emotional well-being domain, and health well-being (.60) in the health and safety well being domain. Since reliability estimates that are between .60 and .70 represent the lower limit of acceptability (Hair et al., 1998), those three dimensions were included in the final study.

Next a confirmatory factor analysis was conducted on the data collected from 321 respondents who reside in Virginia. Confirmatory factor analysis resulted in elimination of some indicators from the proposed model to preserve the unidimensionality of each scale. Items that remained after this step were presented in Appendix G. Assessing each sub-dimension of the economic and social impact of tourism construct individually resulted in no change of the indicators in sub-dimensions. Results indicated that all four sub-dimensions for the economic impact of tourism and two sub-dimensions for the social impact of tourism had measurement unidimensionality greater than 0.80 of the composite reliability estimate. However, the cultural impact of tourism, unlike that shown in the pretest, had an occurrence of a loading greater than 1.0 for deterioration of the local service sub-dimension. Therefore, it was deleted before goodness-of-fit was

assessed. After this procedure was repeated several times, the four observed indicators were selected to measure the cultural impact of tourism. The result of the composite reliability was .88. Assessing each sub-dimension of the environmental impact of tourism construct individually, and deleting indicators that had large residuals or wanted to load on other constructs, resulted in decreases in the number of indicators in three sub-dimensions.

Assessing two sub-dimensions of the material well-being domain individually resulted in no change in the number of indicators. Five observed variables proposed to assess the community well-being construct were decreased to four indicators from five. Two sub-dimensions for material well-being and community well-being had reliability scores of .87, 84,and 82, respectively. However, the confirmatory factor analysis of emotional well-being resulted in emotional well-being measured by four observed indicators with a composite reliability of .67. In addition, assessing each sub-dimension of health and safety, and deleting indicators that had large error variance or/and large residuals and wanted to load on other constructs, resulted in a decrease in the number of indicators in the sub-dimensions. Two decreased sub-dimensions from three of the health and safety well-being construct had greater than .70 and exceeded the requirement for an acceptable level.

Finally the overall measurement model for nine constructs was done to check the unidimensionality of the scales to measure each construct. The results showed that the summated indicators used to measure the economic impact of tourism decreased to three summated indicators from four after elimination of "cost of living," which did not work out (a loading value was 0.1). The summated indicator "social problem" used to measure the social impact of tourism construct also did not work out when measuring the social impact of tourism. After eliminating the social problem variable, the social impact of tourism was measured by three observed variables represented by a local service sub-dimension. The final indicators for nine constructs were three summated indicators for the economic impact of tourism, three observed indicators for the social impact of tourism, four observed indicators for the cultural impact of tourism, three observed indicators for the environmental impact of tourism, two summated indicators for material well-being, two observed indicators for community well-being, three observed indicators

for emotional well-being, two summated indicators for health and safety well-being, and three observed indicators for the overall quality of life measure.

Findings of this study are consistent with assumptions that the economic impact of tourism dimension may have sub-dimensions. However, other tourism impact dimensions did not reveal various sub-dimensions. Many previous researchers have reported that each tourism impact dimension has both positive and negative impacts (Andereck, 1995; Ap & Crompton, 1998; Crandall, 1994; Farrell & Runyan, 1991; Gunn, 1988; Mathieson & Wall, 1984; Murphy, 1985; Tosun, 2002; Weaver & Lawton, 2001; Witt, 1990). The results of this study indicated that when residents in the community were asked to reveal tourism impacts, they assessed the perception of tourism impact in both negative and positive ways (from the unidimensionality check for each individual sub-dimension, all sub-dimensions for each tourism impact were significant), but when their tourism impacts were perceived in relation to their life satisfaction, their positive perceptions were strong with regard to the economic, social, and cultural impact of tourism, but negative perceptions were strong regarding the environmental impact of tourism. For example, a previous study about cultural impact of tourism suggested that residents' perceptions of tourism destinations showed a negative effect on the evolution of cultural traditions (Belisle & Hoy, 1980; Liu et al., 1987), but Virgin Islanders exhibited consensus that tourists seem to respect local traditions and cultures and want to know more about the residents. However, the results of this study revealed that the overall measurement for the cultural impact of tourism was statistically significant only when it consisted of positive perception indicators, such as meeting tourists from all over the world or cultural exchange between residents and tourists, which was deemed valuable for the residents.

The findings about quality of life studies are a little bit different from the previous studies. The particular life domains have usually measured only one or several observed indicators without sub-dimensions. For example, Gerlach and Stephen (1997) concluded that unemployment plays a significant role in subjective well-being in their study of unemployment and subjective well-being between East and West Germans. Like these, work plays an important role in subjective well-being. Lane (1991) also argues that subjective well-being is affected by financial well-being. This is because those who feel

happy about life in general tend to work harder, and thus generate more income. Good management of financial resources paves the way for higher levels of satisfaction of economic well-being. Similarly, many quality of life researchers have measured subjective well-being as the sum of work well-being, financial well-being, employment well-being, and etc. However, in this study, material well-being was measured significantly by two sub-dimensions of income and employment well-being and cost of living well-being.

5.3.1. Research questions and hypotheses

Table 5.1 presents a summary of the hypotheses tested and the standardized coefficient for each hypothesis. As presented in table 5.1, the findings of this study supported six of the proposed sixteen hypotheses.

Table 5.1 Hypothesized relationships and results

Hypothesized relationship	Standized coefficients	Result
H1: Economic impact of tourism ? QOL	-0.12	Not supported
H2: Social impact of tourism ? QOL	0.01	Not supported
H3: Cultural impact of tourism ? QOL	0.10	Not supported
H4: Environmental impact of tourism ? QOL	0.11	Not supported
H5: Economic impact of tourism ? material WB	0.37	Supported
H6: Social impact of tourism ? community WB	0.40	Supported
H7: Cultural impact of tourism ? emotional WB	0.17	Supported
H8: Environmental impact of tourism ? health and safety WB	-0.24	Supported
H9: Material WB ? QOL	0.36	Supported
H10: Community WB ? QOL	-0.08	Not supported
H11: Emotional WB ? QOL	0.58	Supported
H12: Health and safety WB ? QOL	0.12	Not supported
H13: TDS ? relationship between EI and MW	.473 on M	Not sig., Not PS
H14: TDS ? relationship between SI and CW	.425 on M	Not sig., PS
H15: TDS ? relationship between CI and EW	.245 on D	Not sig., PS
H16: TDS ? relationship between ENI and HSW	-.280 on D	Not sig., PS

Note: WB-well-being, QOL-quality of life, TDS-tourism development stages, EI-economic impact of tourism, MW-material well-being, SI-social impact of tourism, CW-community well-being, CI-cultural impact of tourism, EW-emotional well-being, ENI-environmental impact of tourism, HSW-health and safety well-being, M-maturity stage, S-supported, PS-partially supported, D-decline stage

Hypothesis 14, 15 and 16 were not statistically significant, but they, in a practical sense, were partially supported. Seven of the sixteen hypotheses were not supported. Even though hypotheses 1 through 4 were not supported, the results indicated that the effect of tourism impacts altogether (four tourism dimensions) significantly explained 3.6% of the total variance of overall life satisfaction. The rest of the section addresses the research question and the hypotheses that were empirically tested.

Research question I

Does tourism affect the quality of life of residents in a community?

Research question I was addressed by four hypotheses: H1: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the economic impact of tourism; H2: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the social impact of tourism; H3: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the cultural impact of tourism; and H4: Residents' life satisfaction in general is a positive function of their perceptions of the benefits of the environmental impact of tourism. Findings of this study supported the research question (all tourism impacts significantly explained 3.6% of the total variance of overall life satisfaction) but did not support individually proposed hypotheses that there are direct, positive relationships between various dimensions of tourism impact and overall life satisfaction. However, it should be noted that even though the effect of each tourism impact dimension on overall life satisfaction did not show statistical significance, some sense of the direct effects of tourism impact on overall life satisfaction still existed. .

The result reported here is consistent with previous research findings. Even though there was no study to test the direct effects from various dimensions of tourism impact on overall life satisfaction of residents in the community, some of the previous study findings suggest: that residents perceived an improvement in income, standard of living, investments and business activities ensuing from tourism activities (Liu & Var, 1986); that cultural exchange between residents and tourists was valuable (Liu et al.,

1987; Belisle & Hoy, 1980); and that the negative effects of noise, litter, and air and water quality on the community are perceived (Pizam, 1978; Lankford & Howard, 1994). However, this study showed that residents' positive perception of each dimension of tourism impact did not have a statistically significant effect on their overall life satisfaction. In addition, the result of this study revealed that there was a negative relationship (even though this was not statistically significant) between the perception of the economic impact of tourism and overall life satisfaction (-0.12). Even though Perdue at al's study (1999) reported that changes in job opportunities had very little influence on perceived QOL, they did mention that economic benefits are not sufficient but clearly necessary condition. This result can be explained: in a sense, residents in a community may feel relative poorness when they perceive the positive economic impact of tourism. For example, when a resident who has a job unrelated to tourism perceives an improved economic situation, or an increment of employment opportunity (one positive economic impact) in the community, he or she may think that the positive economic impact of tourism affects others' lives who have tourism-related jobs but not his or her own. This study revealed that only 19% of the respondents answered that a small portion (an average of 12%) of their income comes from tourism. In addition, Crotts and Holland (1993) showed that tourism affects positively the quality of life of rural residents in terms of income, health, recreation, personal services and per capita sales, and negatively affects the level of poverty. Therefore, this study concludes that holistically, tourism impact did affect residents' life satisfaction in general; however, a specific dimension of tourism impact did not affect directly their overall life satisfaction.

Research Question 2:

Does tourism impact affect particular life domains?

The second research question addresses the influence of tourism impact on particular life domains. These relationships were examined through hypothesis 5, 6, 7, and 8 (H5: Material well-being domain is a positive function of the perception of the economic impact of tourism; H6: Community well-being domain is a positive function of

the perception of social impact of tourism; H7: Emotional well-being domain is a positive function of the perception of cultural impact of tourism; and H8: Health and Safety well-being domain is a positive function of the perception of environmental impact of tourism). All four hypotheses were supported; the examination of these hypotheses revealed the strength and direction of the relationships between four dimensions of tourism impact and particular life domains.

Once a community becomes a destination, the lives of residents in the community are affected by tourism (Jurowski, 1994). The development of tourism affects the lives of residents in better or worse ways. These life conditions make up the life domains in general. Usually, the perceptions of tourism impact influence these life conditions. Therefore, satisfaction or dissatisfaction with living condition (e.g., employment and income), influenced by the perception of the tourism, spill over vertically to satisfaction with life domains. Consequently, satisfaction of a particular life condition influences the overall life satisfaction of residents.

Like other studies, this study found a positive relationship between the economic impact of tourism and material well-being related to consumers' sense of well being as it is related to material possessions. As previous studies have reported, tourism increases the standard of living of host residents, helps generate employment, and increases revenues to local business (Backman & Backman, 1997; Krohn, 1992, 1995; Var & Kim, 1990). This study found that the residents' perception of these economic impacts of tourism positively affected their satisfaction of material well-being. This study also confirms that Cummins' (1996) study that the satisfaction of material well-being domain mostly comes from the economic situation, income, living situation, standard of living, housing, financial situation, and personal possessions, is valid.

This study finding was also consistent with previous studies in terms of the positive relationship between the social impact of tourism and community well-being (H6), meaning that as residents increasingly perceive the positive social impact of tourism, their satisfaction of the community well-being increase. In the study of Backman and Backman (1997), and Var and Kim (1990), residents in the community agreed that shopping facilities built to serve tourists also serve residents, that services of all kinds established and offered to tourists in turn serve local residents, and that tourism generates

the impetus to improve and further develop community infrastructure. Perdue, Long and Kang (1999) studied how residents' perception of community safety, community involvement, local political influence, and changes in job opportunities, social environment, and community congestion influenced their quality of life in the community. Their findings showed that the key community characteristics affecting residents' QOL were community safety, social environment, and community involvement. Cummins (1997) found that the satisfaction associated with the community well-being domain occurs when people achieve satisfaction with education, neighborhood, service and facilities, social life, and social relation. As the results of previous studies, this study finds that residents' perception of the positive social impact of tourism affects their satisfaction and sense of community well-being in the form of services and facilities related to residents' community life.

In addition, this study found that the relationship between the cultural impact of tourism and emotional well-being is significantly positive (H7), meaning that the positive perception of the cultural impact of tourism, such as "I would like to meet tourists from as many countries as possible in order to learn about their culture" and "the cultural exchange between residents and tourists is valuable for the residents," increases residents' satisfaction of emotional well-being related to spare time, leisure life, and cultural life. This result is also consistent with the findings of previous studies. Var and Kim (1990) reported that tourism contributes to the renaissance of traditional arts and crafts, and helps promote understanding of different people through cultural exchange. Tourism also helps keep culture alive; helps preserve traditional art forms; maintains cultural identity and passing on the cultural beliefs and rituals to the next generation (Chen 1997; Var & Kim, 1990). Staats et al. (1992) examined family patterns in the use of free time. The study reveals that most people spend most of their leisure time with family and friends and that they desire to do so. Argyle and Lu (1990) found that leisure activities fall into at least two major categories such as teams and clubs, dances, parties, debates, and meeting new people. Residents' positive awareness of the cultural exchange between tourists and residents influences the emotional satisfaction of meeting new people and having a good time.

Lastly, this study found that there is a positive relationship between the environmental impact of tourism and health and safety well-being (H8). Researchers have found that tourism helps create greater awareness and appreciation for the need to preserve the environment to preserve its natural beauty for tourist purposes (Var & Kim 1990). As Bubloz et al. (1980) noted the environment is the place that provides sustenance of the human environed unit. Thus, the environment should be preserved and enhanced to provide sufficient resources to meet those needs of the human units within it. If a resident perceives the positive environmental impact of tourism, he/she will have satisfaction regarding the environment; this effect will give him/her a sense of health, safety, and well-being. However, often tourism has been considered as a negative influence on the environment, in the form of the destruction of natural resources, the deterioration of cultural and historical sites, or the production of litter, garbage, and waste (Var & Kim, 1990). If a resident residing near a seaside lake saw contaminated water or garbage on the water because of restaurants in that area, he/she might refuse to drink unpurified water from the tap. If he/she drinks the water from the tap, he/she may think that he/she will become sick.

In conclusion, this study clearly supported the second research question and its associated hypotheses. Residents perceived the positive economic, social, and cultural impact of tourism, and their satisfaction of the related life domain was increased. However, residents in the community perceived the negative environmental impact of tourism, and the satisfaction of its associated life domain was decreased statistically significant.

Research Question 3:

Do the particular life domains affected by tourism impacts affect overall QOL of the residents in the community?

The third research question addresses the influence of particular life domains on the overall life satisfaction. The relationship between material well-being and overall life satisfaction was examined by hypothesis 9. It was hypothesized that there is a positive relationship between material well-being and residents' life satisfaction in general. This

study indicated that residents' satisfaction with their material well-being was affected by the economic impact of tourism (e.g., increasing opportunity for employment).

However, the relationship between community well-being and the overall life satisfaction examined by hypothesis 10 was not significant, and this result was not consistent with the previous studies. Cummins (1997) found that the satisfaction associated with the community well-being domain occurs when people achieve satisfaction with education, neighborhood, service and facilities, social life and social relations. Norman et al. (1997) conducted a study showing that community satisfaction does make a significant and positive contribution to community residents' perceptions of their quality of life. The study involved five rural South Carolina communities; it revealed that satisfaction with recreational services provided by the town does positively affect community satisfaction. On the other hand, Argyle and Lu (1990) and Andrew and Withey (1976) measured QOL using the formative concept, made up of happiness and life satisfaction. The results revealed that fun and family contribute more to happiness than to life satisfaction. Money, economic security, one's house, and the goods and services bought in the market contribute to life satisfaction more than to happiness. Life satisfaction refers to the satisfaction people may feel toward their overall living conditions and life accomplishments. Therefore, the community well-being affected by the social impact of tourism, such as the variety of entertainment in the community, well-maintained roads and other local services, and more recreational opportunities for local residents, may contribute to residents' happiness more than their life satisfaction from their accomplishments. That can be an explanation that the satisfaction with community well-being did not affect statistically significant on residents' overall life satisfaction

The relationship between emotional well-being and life satisfaction was examined by hypothesis 11. It was hypothesized that there is a positive relationship between overall life satisfaction and the satisfaction of emotional well-being. This hypothesized positive relationship was supported by the findings of this study. Findings of this study indicated that residents' satisfaction of emotional well-being affected by cultural tourism impacts significantly influences their overall life satisfaction. The results of this study are consistent with those of previous studies. Cummins (1997) found that the satisfaction of emotional well-being domain mostly came from leisure activities, religion, recreation,

and hobbies. QOL researchers have conceptualized leisure well-being in terms of: leisure satisfaction (Neal, Uysal, & Sirgy 1995, 1999: Norman, Harwell, & Allen 1997); leisure-life experience-construed and measured in terms of leisure boredom (Haggard, Granzin, & Painter, 1995); satisfaction with non-working activities (Campbell et al., 1976), amount of fun one is having (Andrews & Withey 1976); spare time activities (Andrew & Withey 1976); and leisure experience in terms of peace, achievement, exercise, and risk (Unger & Kernan 1990). Orman, Harwell, and Allen (1997) have conducted a study showing that leisure satisfaction in one's community does make a significant and positive contribution to community residents' perceptions of their own quality of life. Therefore, the residents' satisfaction with leisure life and a cultural life involved with of meeting tourist or cultural exchange between tourists and residents strongly affected their overall life satisfaction.

The relationship between health and safety well-being and overall life satisfaction was examined by hypothesis 12. Hypothesis 12 posits that there is a positive relationship between overall life satisfaction and the satisfaction of health and safety well-being. Hypothesis 12 was not supported by the study result. The finding of the study showed some relationship between the satisfaction of health and safety well-being and overall life satisfaction, but not enough to be statistically significant. The result of this study was not consistent with previous findings. Previous research has shown that feelings about personal health spill over to overall life satisfaction, because personal health is considered important in one's evaluation of life (Andrew & Withey 1976). However, the results of this study did not show the statistical significance of the relationship between health and safety well-being and overall life satisfaction. Health and safety well-being itself is truly important in the overall QOL of the residents. However, the components of health and safety well-being come from many different areas such as the health care system, environment impacts, the threat of the social crime, and etc. Residents might feel that threats to health and safety affected by the environmental impact of tourism might not significantly affect their lives. They may perceive threats from environmental degradation and waste problems, but they may feel that these are not personal problems but social problems. On the other hand, residents' satisfaction with health and safety well-being may mostly come from the health care system or social security system. In

addition, the satisfaction with health and safety well-being influenced by a well-preserved natural environment spills over into emotional well-being and satisfaction with leisure activities, not into satisfaction with health and safety well-being.

Research Question 4:

Do residents perceive tourism impacts differently according to tourism development stages, and do development stages have a moderating effect on the relationship between tourism impacts and particular life domains?

Research question four addressed the moderating influence of tourism development stages on the relationship between the dimensions of tourism impact and particular life domains. These relationships were examined through hypotheses 13, 14, 15, and 16. This research question posits that residents in the community usually start to perceive the economic impact of tourism in the beginning stage of tourism development, and feel the benefit of the economic impact of tourism the most at the growth stage of tourism development. Afterwards, when tourism resources reach their maximum status, residents in the community start to perceive the impact of social, cultural and environmental impact of tourism on the maturity stage of tourism development, and feel their impact strongest at the decline stage of tourism development. However, the results of this study did not statistically support hypotheses 13 to 16. Even though the study findings did not indicate the statistical significance of the moderating effects of the tourism development stage on the relationship between tourism impact dimensions and particular life domains, the results of this study, in a practical sense, showed that there were some meaningful moderating effects on the relationships between the dimensions of tourism impact and particular life domains. The moderating effects of tourism development on the relationship between the economic impact of tourism and the satisfaction of material well-being was strongest in the maturity stage; the moderating effects of tourism development on the relationship between the social impact of tourism and the satisfaction of community well-being was strongest in the maturity stage. The

moderating effects of tourism development on the relationship between the cultural impact of tourism and the satisfaction of emotional well-being was strongest in the decline stage; the moderating effects of tourism development on the relationship between the environmental impact of tourism and the satisfaction of health and safety well-being was strongest in the decline stage of tourism development. Therefore, hypotheses 13 to 16 were partially supported.

In addition, the results of this study indicated another important finding: that in the absence of interactions, the economic impact of tourism, adjusted by the mean of the satisfaction of the material well-being of the growth stage, was significantly higher than the un-weighted mean of other stages. The social impact of tourism adjusted by the mean of the satisfaction of the community well-being of the maturity stage was significantly higher than the un-weighted mean of other stages. The environmental impact of tourism adjusted by the mean of the satisfaction of the health and safety well-being of the growth and the maturity stage was significantly higher than the un-weighted mean of other stages.

Even though the findings of this study did not show statistical significance, the results of this study were similar to previous findings. In 1988, Allen et al. examined changes in residents' perceptions of seven dimensions of community life across 20 communities classified on the basis of the percentage of retail sales derived from tourism. Their study (1988, p.20) stated that, "Lower to moderate levels of tourism development were quite beneficial to the study communities, but as development continued, residents' perceptions of community life declined, particularly as related to public services and opportunities for citizens' social and political involvement", meaning that overall, residents in the community perceive the benefits of the economic impact of tourism and the satisfaction of material well-being in the lower to moderate levels of tourism development, but they are less likely to perceive the benefits of others impact of tourism (e.g., social, cultural and environmental) and satisfaction with its correspondent life domains (e.g., community well-being, emotional well-being, and health and safety well-being, respectively) in those levels of tourism development. On the other hand, residents in the community perceive the benefits of the social, cultural, and environmental impact of tourism and the satisfaction with its associated life domains in highest level of tourism

development, but they are less likely to perceive the benefits of the economic impact of tourism and satisfaction with material well-being in that level of tourism development.

Unlike the expectation that the results appear to be a social carrying capacity, this study results can be found residents' QOL in England and Albrecht's (1984) "social disruption theory", which postulates that boomtown community initially enter into a period of generalized crisis, resulting from the traditional stress of sudden, dramatic increases in demand for public services and improving community infrastructure. Additionally, resident develop adaptive behaviors that reduce their individual exposure to stressful situations. Through this process, residents' QOL is expected to initially decline, and then improve as the community and its resident adapt to the new situation (Krannich, Berry & Greider, 1989). This study results showed that the relationship between the economic impact of tourism and the satisfaction with material well-being initially decreased in the growth stage of tourism development and peaked in maturity stage of tourism development. However, when a community enters decline stage of tourism development, the relationship between the economic impact of tourism and the satisfaction with material well-being decreased, and the relationship may be considered to be the capacity of the destination area to absorb tourists before the host population would feel negative impacts. This is the consistent with the theoretical foundation of carrying capacity. When tourism reaches its maturity or maximum limit, residents' QOL may start deteriorating.

However, the relationship between the cultural impact of tourism and the satisfaction with emotional well-being decreased in the growth stage of tourism development, increased in the maturity stage of tourism development, and peaked in the decline stage of tourism development. Neither the theory of social carrying capacity nor social disruption offered much to explain this result. However, this result is consistent with Butler's (1980) argument that in the decline stage, more tourist facilities disappear as the area becomes less attractive to tourists and the viability of existing tourist facilities becomes more available to residents in the destination community.

The relationship between the environmental impact of tourism and the satisfaction with health and safety well-being increased in the growth stage of tourism development, decreased in the maturity stage of tourism development, and peaked in the decline stage

of tourism development. This result confirms Butler's (1980) concept of the tourist area cycle of evolution. As residents' perception of negative environmental impacts increases, their satisfaction with health and safety well being decreases in the decline stage of tourism development unless the area as a destination provides rejuvenating or alternative planning options.

5.3.2. Summary of the discussion

Overall, the findings of this study indicate that there is a positive relationship between the impact of tourism and a particular life domain, meaning that as residents' perception of the positive economic impact of tourism increases, their satisfaction of material well-being increases too; and that residents' increased satisfaction of the material well-being affected by the positive economic impact of tourism finally influences their overall life satisfaction. Findings also suggest that even though the study result did not indicate the statistical significance of the moderating effects of the tourism development stage, it did show that there were some meaningful moderating effects on the relationship between the dimensions of tourism impact and particular life domains.

5.4. IMPLICATION OF THIS STUDY

5.4.1. Managerial implications

As illustrated by Mathieson and Wall (1982), the nature of planning tourism destinations is complex. Tourism planners and developers often confront paradoxical effects when assessing alternative policies. Questions arise concerning how to maximize benefits and at the same time minimize the cost for residents in the tourism community. This research provides tourism planners with useful information concerning specific elements associated with residents' positive perception of the impact of tourism, their life satisfaction, and tourism development stages.

Findings of this study are of importance to tourism developers in the tourism community. Tourism in the community should be developed not simply on the analysis of

costs and benefits in the short-term, but also from a long-term perspective of residents' QOL and sustainable tourism. The findings of this study showed that as residents' perception of the impact of tourism increases, their life satisfaction with various life conditions increases, and that this effect finally influences to their overall life satisfaction. For example, as residents' perception of the economic impact of tourism increases, they are more likely to be satisfied with their lives based on material possessions. In addition, as residents' perception of the cultural impact of tourism increases, they are more likely to be satisfied with their lives based on emotional well-being such as satisfaction of leisure life and spiritual life. Then, the satisfaction with these specific life domains affects the overall QOL of residents in the community. Tourism development strategists need to consider the strength of this relationship, and focus on maintaining the residents' overall life satisfaction derived from tourism impacts.

This finding also suggests that tourism developers and marketers should know how residents perceive tourism and how it affects their life satisfaction according to tourism development stages. If the residents in a community always perceive the impact of tourism in negative ways, these residents may communicate their negative feelings to tourists or other residents, and tourism developers' efforts to get residents' support may be useless. The results of this study revealed that the relationship between the economic impact of tourism and material well-being was strongest in the maturity stage, meaning that residents strongly perceive the positive economic impact of tourism, and they are more satisfied with the material well-being domain in a maturity stage. However, as Butler (1980) mentioned, the maturity stage is called a stagnation stage that the peak numbers of visitors have been reached, and the capacity level for many variables may have been reached or exceeded with attendant environmental, social, and economic problems. Therefore, even though residents perceive a positive impact of tourism associated with their life satisfaction in the maturity stage that might not last long. Such a feeling may turn quickly into negative perceptions. So, tourism developers should plan a strategy that has residents start to perceive positive impact of tourism in the beginning stage of the development in order to fully recognize the economic impact of tourism in the growth stage.

Findings of this study also showed that relationships between the cultural impact of tourism and emotional well-being and between the environmental impact of tourism and health and safety well-being were strongest in the decline stage of tourism development, meaning that residents perceive a strong positive cultural impact of tourism in the decline stage, and feel more satisfaction in emotional well-being. This result is consistent with Burtler (1980)'s study that in the decline stage, more tourist facilities disappear as the area becomes less attractive to tourists and the viability of other tourist facilities becomes more questionable. Ultimately, the area may become a veritable tourist slum or lose its tourist function completely. However, local involvement in tourism is likely to increase at this stage, as employees and other residents are able to purchase facilities at significantly lower prices as the market declines. So residents' perception of this type of tourism impact is strong in the maturity and decline stages. However, residents' positive perceptions may quickly become negative when they perceive the negative impact of cultural and environmental tourism impacts. In this stage, tourism developers should try to rejuvenate the tourism destination before that community completely reaches a maximum carrying capacity and a decline stage.

Individuals seeking to gather support from the community for an already established tourism industry may find the information provided by this research useful. The research demonstrates that perception of the positive social impact of tourism was an important determinant in satisfaction with community well-being. This finding suggests that internal marketing techniques designed to inform residents of the social benefits they receive from tourism may be helpful in gaining the residents' support for the development, successful operation and sustainability of tourism. Promotion of the positive social and economic benefits of tourism may serve to sway the opinion of residents who perceive that they have little to gain economically from the tourism industry. Further, the dissemination of information concerning secondary economic benefits received by community members whose household income is not directly tied to the tourism industry may lead to support from otherwise neutral residents. The application of conservation and preservation programs for the community may serve to ease the concerns of residents who are skeptical to the environmental impact of tourism.

In addition, the measurement instrument refined and tested in this study should be used via a mail survey to periodically and spatially appraise how well the residents in the community perceive tourism impact and how they receive this impact regarding their satisfaction with what the industry is doing in terms of enhancing the QOL of the residents in the community. Also the data generated by periodically administering the survey to residents, tourism developers and managers (CBV directors or persons related to tourism industry) can be examined and compared with the mean score of the perceptions of tourism impact and life satisfaction. However, one thing should be noted: that while the same conclusions may not be appropriate for all rural communities considering tourism development, the tools developed for this research might be useful in other communities. Through application of the principles determined by this research, the strength of each factor in determining support for alternative plans could be ascertained in a variety of tourism settings.

5.4.2. Theoretical implications

The significant contribution of this study was the discovery of which determinants of satisfaction with the particular life domains are involved with the particular dimension of tourism impact, and that overall life satisfaction consists of the particular life domains. Perhaps most importantly, the findings demonstrated that factors that influence residents' QOL are multi-dimensional and dynamic. The study demonstrated how the economic impact of tourism influences the satisfaction with material well-being; and that the cultural impact of tourism affects overall life satisfaction positively through its interaction with perceptions of the social impact of tourism. The examination of the interplay of several elements provides information about which tourism impact dimension influences which particular life domain, and an explanation of why the relationship between the perception of tourism impact and the satisfaction of the particular life domains vary according to levels of tourism development within the same community. Furthermore, while conclusive evidence has demonstrated the strong positive relationship between the perception of tourism impact and residents' overall QOL (Perdue et al, 1990), this study revealed how the economic

impact of tourism influences the satisfaction of material well-being, and this satisfaction of the material well-being affects residents' overall life satisfaction. The discovery of the direct effect among the four types of tourism impacts on the satisfaction of four different life domains provides new information concerning the power of each type of impact to influence residents' final QOL.

This study contributes to the theoretical advancement in the field of tourism by confirming the usefulness of carrying capacity theory and the tourism development cycle principle in explaining host community residents' satisfaction through tourism. Life satisfaction, an important element to host community residents, was identified as a critical factor when the tourism planners try to extract residents' support for tourism development. When residents perceive the impact of tourism, then when they satisfy with tourism, finally they will support for tourism. The findings demonstrated that factors heretofore thought to influence residents' life satisfaction also influence their overall life satisfaction and in doing so have a greater effect on support for tourism.

The model developed and tested in this research provides a theoretical basis for the study of support for tourism in a variety of settings. The model can be utilized to compare communities with different social structures or at different stages of tourism development to determine changes in the interplay among the elements. New elements can be added to the model, which may further explain residents' satisfaction of a specific life domain from tourism. In addition, the proposed tourism impact model contributes a theoretical foundation for the examination of the relationship between the impact of tourism, satisfaction from various life conditions, and residents' overall life satisfaction. The theoretical model may be helpful in directing future research in determining, first, the elements being examined by the various components in the model. Once these are identified and evaluated, research may be focused on the dynamic components and/or the influence and role of each structure in the model.

5.5 LIMITATIONS OF THE STUDY

One limitation of the study was that the sample population of the study consisted of residents residing in pre-selected cities and counties of Virginia based on four secondary indicators. The secondary indicators were Population Growth Rate (PGR), Traveler Spending Growth Rate (TSGR), Direct Travel Employment Growth Rate (DTEGR), and State Travel Tax Growth Rate (STTGR). This means that the area selected for tourism development stages did not fully cope with the tourism development stages from the literature. Haywood (1986) and Butler (1980) divided the areas into different stages by using tourist arrivals. If the areas had been selected by using the number of visitors to a community, the results might have been different. However, it was difficult to count the exact number of visitors for a community. This may be one of the solutions if you divide the area according to its CVB (convention and visitors' Bureau) territory, not by its political territory, because CVB counts roughly the number of visitors.

In addition, this study was focused only on residents in Virginia. It is possible that if the study was conducted on the other residents of other states and counties, the magnitude and direction of the relationship between tourism impact and overall life satisfaction might be different. Also, if the survey was extended to include business people, tourism planners, or other kinds of stakeholders in the tourism community, there may be different levels of influence of perception of tourism impact on overall life satisfaction. Including many residents in other sectors may help us better understand the relationship between tourism impacts and life satisfaction and the role of tourism development stages.

This study examined the influence of four-tourism impact dimensions on four specific well-being domains. One limitation is related to testing only the influences of one tourism impact dimension on one particular life domain. The survey should investigate dynamic interactions among impact dimensions and particular life domains. Among those, the study could find some spillover effects, for example, the satisfaction of community well-being might influence the satisfaction of emotional well-being; that may be the reason that the effect of satisfaction of the community well-being was not

statistically significant to the overall life satisfaction. In addition, the study should test the role that positive and negative impacts of tourism might have before they are divided into various dimensions of tourism impact.

5.6 SUGGESTIONS FOR FUTURE STUDY

Past tourism impact studies have correlated resident support for tourism activities with economic benefits, and resident opposition to tourism with negative social and environmental impacts (Brougham & Butler, 1981; Keogh, 1990; Milman & Pizam, 1988; Pizam, 1978; Sheldon & Var, 1984; Witter, 1985). Other research determined that, even though the anticipation of personal benefits was the best predictor of positive attitudes toward tourism, removing the effects of this predictor did not affect the significance of the relationship between the perception of impacts and support for tourism development (Perdue et al., 1990). This study provides an explanation of how residents' perception of tourism impacts did significantly affect satisfaction with particular life domains. However, future research can better explain whether residents who felt their overall life condition increased because of tourism did actually support tourism.

Furthermore, the future study is needed to resolve the question of why the relationship between the impact of tourism and particular life domains varies according to levels of tourism development using longitudinal study. If a similar study is repeated in one community through all development stages of tourism, the study is able to give an exact answer or to confirm the results of present study about the moderating effect of tourism development stage on the relationship between tourism impact and particular life domains. In that case, the study can also answer if these same factors play a similar role in determining perceptions of the impacts and attitudes toward support for tourism in communities where tourism is more fully developed.

Future research is needed to investigate how tourism impact affects residents' quality of life in different types of communities. For example, residents' satisfaction with tourism impact in Virginia Beach (the beach area) might be different from that of

Williamsburg (the historic site). Residents in certain types of tourism community might perceive a certain type of tourism impact unacceptable while in others they are more acceptable. For example, the residents in Virginia Beach might perceive the social and cultural impact of tourism in a positive way (they may like the crowdness in the beach or they like to meet many tourists from the world) while the residents in Williamsburg might perceive those in a negative way (they may think tourists interrupt their peace life or the cultural legacy is changing in a negative way because of tourists etc.). Further examination will help identify which communities that would accept which types of impact tourism and those that would not.

In this work, impact was grouped into economic, social, cultural and environmental segments. The future study about this will identify the question raised by the study is how and why a resident views a specific impact as a benefit or cost, and how this perception varies with the type of life domains. While this grouping provided useful information, we need more information about specific impacts and how the evaluation of each impact affects particular life domains and overall life satisfaction. Once all elements of interaction are defined, research is needed to analyze the spillover effect from dimension to dimension and life domain to life domain. This is important for planning when limited resources have to be allocated to specific projects and the community wants to have residents' support to accomplish sustainable tourism development.

Furthermore, only four dimensions of tourism impact and life satisfaction domains were studied here. Qualitative work is needed to unveil other tourism dimensions that residents feel their life satisfaction increase through the benefits of tourism development.

5.7. CONCLUSIONS

The results of this study provided some explanation for how residents' perception of the impact of tourism influences their satisfaction with particular life domains, and how their specific life satisfaction affects their overall life satisfaction. Findings of this study also showed that the relationship between tourism impacts and the particular life

satisfaction resulting from tourism are different according to tourism development stages. Building on previous research, which had demonstrated that various tourism impacts were the determinants of life satisfaction in many ways, the analysis uncovered elements that affect particular life conditions, and examined the interplay of these items according to tourism development stages.

Among the important implications of this explanatory work are: the importance of examining factors that influence the perception of the impacts of tourism as well as those that affect the satisfaction of specific life conditions; recognition of the roles of the economic, cultural, social and environmental impact of tourism; the material, community, emotional, and health and safety well-being domains along with four different stages of tourism development; and the establishment of a theoretical foundation for the examination resident QOL through tourism impact.

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Appendix A: Survey instrument

Dear Community Resident:

Enclosed is an important survey designed to assess your quality of life in the community. Specifically, this survey is designed to assess community residents' perceptions of how their overall quality of life is affected by tourism. Your participation in this survey allows you to voice your opinion to help community planners improve the quality of life in your community. Your help will be greatly appreciated.

It will take approximately fifteen minutes of your time to complete this survey. Your participation in this survey is voluntary, and your response will remain confidential. The survey questionnaire has an identification number for tracking purposes only.

All the responses will be combined to develop statistical profiles to help community leaders identify areas of strength and weakness. There are no right or wrong answers to any of the questions in this survey. You need only to express your feelings about how you see things in your community.

Please complete this survey as soon as you can and return it in the pre-addressed and stamped envelope. We would like to have the survey returned before May 15th, 2002 so that your response may be included in the final results. We appreciate your cooperation in this matter very much.

If you have any questions regarding this survey, please contact the project director, Research Associate Kyungmi Kim at 540 961 7213 or email kkyungmi@vt.edu.

Sincerely,

Kyungmi Kim, Research Associate
Principal Investigator
Hospitality and Tourism Management
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Muzaffer Uysal, Ph.D.
Professor of Hospitality and Tourism Management
Virginia Tech

I. Your feelings about how tourism impacts your community

The following statements are about the economic impact of tourism in your community. Please tell us how much you agree or disagree with each statement.

[1=Strongly Disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly Agree]

1. The benefits of tourism to the community outweigh its costs.	1	2	3	4	5
2. Tourism brings important economic benefits to the residents of the community.	1	2	3	4	5
3. Tourism creates employment opportunities for residents in the community.	1	2	3	4	5
4. Tourism provides desirable jobs in the community.	1	2	3	4	5
5. One of the most important aspects of tourism is that it creates a variety of jobs for the residents in the community.	1	2	3	4	5
6. Local businesses benefit the most from tourists.	1	2	3	4	5
7. Tourism brings more investment to the community's economy.	1	2	3	4	5
8. Tourism helps national governments generate foreign exchange earnings.	1	2	3	4	5
9. Tourism generates tax revenues for local governments.	1	2	3	4	5
10. Our standard of living has increased due to tourist spending in the community.	1	2	3	4	5
11. Tax revenues from tourism are used to improve roads, highways, and public services for residents.	1	2	3	4	5
12. Tourism helps improve the economic situation for many residents in this community.	1	2	3	4	5
13. The price of many goods and services in the community have increased because of tourism.	1	2	3	4	5

14. Real estate prices in the community have increased because of tourism. 1 2 3 4 5

15. The cost of living in the community has increased because of tourism. 1 2 3 4 5

The following statements are about the social impact of tourism in your community. Please tell us how much you agree or disagree with each statement.

[1=Strongly Disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly Agree]

16. During the peak tourist season, I find it harder to get tickets for the theater, movies, concerts, or athletic events. 1 2 3 4 5

17. Tourism has resulted in unpleasantly overcrowded hiking trails for local residents. 1 2 3 4 5

18. Tourism has resulted in unpleasantly overcrowded parks for local residents. 1 2 3 4 5

19. Tourism has resulted in unpleasantly overcrowded shopping places for local residents. 1 2 3 4 5

20. Tourism contributes social problems such as crime, drug use, prostitution, and so forth in the community. 1 2 3 4 5

21. Increased tourism provides more recreational opportunities for local residents. 1 2 3 4 5

22. Because of tourism, roads and other local services are well maintained. 1 2 3 4 5

23. Tourism is a major reason for the variety of entertainment in the community. 1 2 3 4 5

The following statements are about the cultural impact of tourism in your community. Please tell us how much you agree or disagree with each statement.

[1=Strongly Disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly Agree]

24. Tourism has increased residents' pride in the local culture in the community. 1 2 3 4 5

25. Tourism encourages a variety of cultural activities for local residents. 1 2 3 4 5

26. Tourism helps keep culture alive and helps maintain the ethnic identity of the local residents. 1 2 3 4 5

27. The commercial demand of tourists causes changes in the style and forms of traditional arts and crafts. 1 2 3 4 5

28. Tourism encourages residents to imitate the behavior of the tourists and relinquish cultural traditions. 1 2 3 4 5

29. Tourism causes the disruption of traditional cultural behavior patterns in local residents. 1 2 3 4 5

30. Meeting tourists from all over the world is definitely a life enriching experience. 1 2 3 4 5

31. The cultural exchange between residents and tourists is valuable for the residents. 1 2 3 4 5

32. The cultural exchange between residents and tourists is pleasant for the residents. 1 2 3 4 5

33. I would like to meet tourists from as many countries as possible in order to learn about their cultures. 1 2 3 4 5

The following statements are about the environmental impact of tourism in your community. Please tell us how much you agree or disagree with each statement.

[1=Strongly Disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly Agree]

34. Tourism causes environmental pollution. 1 2 3 4 5

35. Tourism produces noise. 1 2 3 4 5

36. Tourism produces littering. 1 2 3 4 5

37. Tourism produces congestion. 1 2 3 4 5

38. Tourist activities like boating produce serious water pollution in lakes, bays, or the ocean. 1 2 3 4 5

39. Tourism produces large quantities of waste products. 1 2 3 4 5

40. Hotels, airlines, attractions, and other related tourism businesses that serve tourists throw away tons of garbage. 1 2 3 4 5

41. Tourists' littering destroys the beauty of the landscape. 1 2 3 4 5

42. Tourism has contributed to the preservation of the natural environment and the protection of the wildlife in the community. 1 2 3 4 5

43. Tourism has improved the ecological environment of the community in many ways. 1 2 3 4 5

44. Tourism does not contribute to the negative effect of vegetation and loss of meadows and green space. 1 2 3 4 5

II. Your feelings about life

The following statements are about your satisfaction in various living conditions. Please tell us how satisfied you are with each condition.

[1=Very Unsatisfied, 2= Unsatisfied, 3= Neutral, 4= Satisfied, 5=Very Satisfied]

1. Your income at your current job 1 2 3 4 5

2. The economic security of your job 1 2 3 4 5

3. Your family income 1 2 3 4 5

4. The pay and fringe benefits you receive 1 2 3 4 5

5. Your real estate taxes 1 2 3 4 5

6. The cost of living in your community 1 2 3 4 5

7. The cost of basic necessities such as food,

housing, and clothing	1	2	3	4	5
8. The conditions of the community environment (air, water, land)	1	2	3	4	5
9. The service you get in this community	1	2	3	4	5
10. The facilities you get in this community	1	2	3	4	5
11. The people who live in this community	1	2	3	4	5
12. Your spare time	1	2	3	4	5
13. Leisure activities in your community	1	2	3	4	5
14. The influx of tourists from all over the world into your community.	1	2	3	4	5

The following statements are about your satisfaction with life. Please tell us how much you agree or disagree with each statement.

[1=Strongly Disagree, 2=Disagree, 3= Neutral, 4=Agree, 5=Strongly Agree]

15. I am very satisfied with the availability of religious services in my community.	1	2	3	4	5
16. I am particularly happy with the way we preserve culture in my community.	1	2	3	4	5
17. I feel I extend my cultural outlook when I talk with tourists.	1	2	3	4	5
18. I always drink bottled or filtered water because I think the water is not clean.	1	2	3	4	5
19. When I see garbage left on the ground from the tourists, I don't feel good about tourism.	1	2	3	4	5
20. Environmental pollution threatens public safety and causes health hazards.	1	2	3	4	5

The following statements are about your satisfaction with health and safety conditions. Please tell us how satisfied you are with each categories.

[1=Very Unsatisfied, 2= Unsatisfied, 3= Neutral, 4= Satisfied, 5=Very Satisfied]

21. Your health	1	2	3	4	5
22. Air quality in your area	1	2	3	4	5
23. Water quality in your area	1	2	3	4	5
24. Your leisure life	1	2	3	4	5
25. Your cultural life	1	2	3	4	5
26. Your social status	1	2	3	4	5
27. Your spiritual life	1	2	3	4	5
28. Your home life	1	2	3	4	5
29. Your community life	1	2	3	4	5
30. Environmental cleanness in your area	1	2	3	4	5
31. Accident and crime rates in your community	1	2	3	4	5
32. Safety and security in your community	1	2	3	4	5
33. Your life as a whole	1	2	3	4	5
34. The way you are spending your life	1	2	3	4	5

35. Which of the following statements best fits how you feel? (Check only one)

a. My life is much worse than most other people's.
b. My life is somewhat worse than most other people's.
c. My life is about the same as most other people.
d. My life is somewhat better than most other people's.
e. My life is much better than most other people's.

III. General information about tourism

1. The following are stages of tourism development from beginning, growth, and maturity to end. How do you rate the tourism development in your community?

[1] Beginning stage [2] Growth stage [3] Maturity stage [4] Decline stage

2. How long have you lived in the present community? _____

IV. About you

1. In what year were you born? _____

2. Gender: Male _____ Female _____

3. Ethnic group:
_____ Caucasian _____ Hispanic
_____ African-American _____ Asian
_____ Other

4. Which of the following best describes your household? (check only one)
_____ Single adult living alone or with other single adults
_____ Single adult living with children or dependents
_____ Married couple living without children or dependents at home
_____ Married couple living with children or dependents at home

5. Including yourself, how many people make up your household? _____

6. What was the last year of school you completed? (circle one)

Grade school	High School	College	Graduate School
1 2 3 4 5 6 7 8	9 10 11 12	F S J S	Master Ph.D./Professional

7. Which of the following best describes your and your spouse's present employment situation?

	Self	Spouse (if applicable)
Student	_____	_____
Homemaker	_____	_____
Unemployed	_____	_____
Retired	_____	_____
Professional/Technical	_____	_____
Executive/ administrator	_____	_____
Middle management	_____	_____
Sales/marketing	_____	_____
Clerical or service	_____	_____

Tradesman/mechanic operator	_____	_____
Self employed/ Business owner	_____	_____
Government/military	_____	_____
Educator	_____	_____
Other (specify)	_____	_____

8. If employed outside the house, is your work (circle one)
Full time _____ Part time _____ None _____

9. How much of the income of the company you work for (or business you own) comes from the tourist trade? (circle one)
[1] None [2] A little [3] Some [4] A lot [5] Almost all

10. What part of your current household income comes from the money spent by the visitors to your community?
Approximately _____ %

11. What is your approximate household income before taxes?

_____ $20,000 or less	_____ $ 60,001 - $ 80,000
_____ $20,001 - $40,000	_____ $ 80,001 - $ 100,000
_____ $40,001 - $60,000	_____ Over $100,000

Thank you for the filling out the survey. Please go back and check that you have responded to all survey questions. By completing this questionnaire, you will be included in a drawing for four 25$ cash awards. To be included for the drawing, please type or print your name and address in this box. Winner will be notified by phone in order to verify mailing address for awards.

Name:
Address:
Tel:

Appendix B: Reminder postcard

Dear Community residents, May 30, 2002

Recently, a questionnaire was sent to you from Virginia Tech asking about your assessment about the tourism impacts. If you have already filled out and returned the questionnaire, we really appreciate it! If the questionnaire has become lost or misplaced, we would be more than happy to send you another copy. We appreciate the time and effort that take the complete questionnaire. Your responses are very important in Virginia Tech's effort to continue to provide the community residents with pertinent and valuable research and technical assistance.

If you have any question or comment, please contact Kyungmi Kim at Virginia Tech by telephone (540) 961-7213 or by e-mail at kkyungmi@vt.edu

Sincerely,

Kyungmi Kim, ABD
Principal Investigator
Hospitality and Tourism Management
Box 850 Virginia Tech
Blacksburg, VA 24061

Appendix C.

Counties and cities in each stage and the number of respondents

	POP	Percentage	NOS	Respondents	Percentage
Beginning					
Lancaster County	11567	5%	29	7	9.5%
Newport News City	180150	76%	458	44	59.5%
Westmoreland County	16918	7%	43	4	5.4%
Wythe County	27599	12%	70	19	25.6%
(Total)	236,234	100%	600	74	100%
Growth					
Chesapeake City	199184	45%	272	34	43.6%
Fluvanna County	20047	5%	27	6	7.7%
Greene County	15244	3%	21	5	6.4%
Loudoun County	169599	39%	231	26	33.3%
New Kent County	13462	3%	18	3	3.8%
Powhatan County	22377	5%	31	4	5.2%
(Total)	439,913	100%	600	78	100%
Maturity					
Gloucester County	34780	50%	298	43	47.8%
Nelson County	14445	21%	124	16	17.8%
Rockbridge County	20803	30%	174	31	34.4%
(Total)	70,028	100%	600	90	100%
Decline					
Covington City	6303	16%	94	21	26.6%
Petersburg City	33743	84%	506	58	73.4%
(Total)	40,046	100%	600	79	100%

POP: Populations estimated in 2002.
NOS: number of stratified samples

Appendix D. Demographic Profile of the respondents

Category	Frequencies	Percentages (%)
Age (N=304, m=53.6)		
Under 25	4	1.3
25-34	28	9.2
35-44	60	19.7
45-54	66	21.7
55-64	78	25.7
Over 65	68	22.4
The years you live in the community (N=312, m=22.34 years)		
Less than 10 years	111	35.6
From 10 to 20 years	62	19.9
Over 20 years	139	44.6
Gender (N=319)		
Male	170	53.3
Female	149	46.7
Ethnic group (N=312)		
Caucasian	256	82.1
Hispanic	3	1.0
African-American	43	13.8
Asian	3	1.0
Other	7	2.2
Education (N=319)		
Seventh grade	2	0.6
Eighth grade	4	1.3
First high school	7	2.2
Second high school	3	0.9
Junior high	7	2.2
Senior high	82	25.7
Freshman	23	7.2
Sophomore	30	9.4
Junior	12	3.8
Senior	84	26.3
Master	53	16.6
Ph.D.	5	1.6
Professional	7	2.2
Household income (N=292)		
Less than $20,000	36	12.3
$20,001 - $40,000	64	21.9
$40,001 - $60,000	56	19.2
$60,001 - $80,000	66	22.6
$80,001 - $100,000	37	12.7
Over $100,001	33	11.3

Appendix D. Demographic Profile of the respondents continued

Category	Frequencies	Percentages
Tourism Percentage (N=60, m=12.6)		
From 1% to 25%	53	88.3
From 26% to 50%	6	10.0
Over 50%	1	1.7
Tourism related job (N=287)		
None		
A little	203	70.7
Some	33	11.5
A lot	38	13.2
Almost all	12	4.2
	1	0.3
Your job (N=295)		
Full time	165	55.9
Part time	40	13.6
None	90	30.5
Your vocation (N=313)		
Student	7	2.2
Homemaker	17	5.4
Unemployment	5	1.6
Retired	95	30.4
Professional/technical	49	15.7
Executive/administrator	14	4.5
Middle management	15	4.8
Sales/marketing	7	2.2
Clerical/service	17	5.4
Tradesman /mechanic operator	16	5.1
Self employed/Business owner	18	5.8
Government/military	14	4.5
Educator	19	6.1
Others	20	6.4

Appendix D. Demographic Profile of the respondents continued

Category	Frequencies	Percentages
Your spouse's vocation (N=244)		
Student	4	1.6
Homemaker	30	12.3
Unemployment	4	1.6
Retired	57	23.4
Professional/technical	37	15.2
Executive/administrator	9	3.7
Middle management	10	4.1
Sales/marketing	11	4.5
Clerical/service	14	5.7
Tradesman /mechanic operator	21	8.6
Self employed/Business owner	21	8.6
Government/military	8	3.3
Educator	12	4.9
Others	6	2.5
Household status (N=314)		
Single adult living alone or other single adults	58	18.5
Single adult with children or other dependent	17	5.4
Married couple living without children	139	44.3
Married couple living with children	100	31.8
How many people in your household (n=310)		
1.00	40	12.9
2.00	156	50.3
3.00	47	15.2
4.00	50	16.1
5.00	15	4.8
6.00	2	0.6

Appendix E. The results of the Pearson Chi-Square test for late response bias tests.

Category	First Mailing Frequencies	Second Mailing Frequencies	Pearson Chi-Square
Age (N=304, m=53.6)			
Under 25	3	1	$X^2 = 7.282$
25-34	12	16	(p=0.200)
35-44	25	35	
45-54	29	37	
55-64	41	37	
Over 65	41	27	
(Total)	(151)	(153)	
The years you live in the community (N=312, m=22.34 years)			
Less than 10 years	57	54	$X^2 = 0.198$
From 10 to 20 years	32	30	(p=0.906)
Over 20 years	68	71	
(Total)	(157)	(155)	
Gender (N=319)			
Male	84	86	$X^2 = 0.006$
Female	73	76	(p=0.941)
(Total)	(157)	(162)	
Ethnic group (N=312)			
Caucasian	125	131	$X^2 = 2.065$
Hispanic	2	1	(p=0.724)
African-American	21	22	
Asian	1	2	
Other	5	2	
(Total)	(154)	(158)	
Household income (N=292)			
Less than $20,000	16	20	$X^2 = 2.570$
$20,001 - $40,000	34	30	(p=0.766)
$40,001 - $60,000	25	31	
$60,001 - $80,000	34	32	
$80,001 - $100,000	19	18	
Over $100,001	13	20	
	(141)	(151)	
Employed Status (N=295)			
Full time	74	91	$X^2 = 6.613$
Part time	27	13	(p=0.037)
None	44	46	
	(145)	(150)	

Category	First Mailing Frequencies	Second Mailing Frequencies	Pearson Chi-Square
Education (N=319)			
Seventh grade	1	1	$X^2 = 10.836$
Eighth grade	1	3	(p=0.543)
First high school	3	4	
Second high school	1	2	
Junior high	1	6	
Senior high	40	42	
Freshman	10	13	
Sophomore	17	13	
Junior	8	4	
Senior	42	42	
Master	24	29	
Ph.D.	4	1	
Professional	5	2	
	(157)	(162)	
Tourism Percentage (N=60, m=12.6)			
From 1% to 25%	30	23	$X^2 = 1.338$
From 26% to 50%	3	3	(p=0.512)
Over 50%	0	1	
	(33)	(27)	
Income from the tourist trade (N=287)			
None	92	111	$X^2 = 3.389$
A little	18	15	(p=0.495)
Some	21	17	
A lot	7	5	
Almost all		1	
	(138)	(149)	
Household status (N=314)			
Single adult living alone or other single adults	27	31	$X^2 = 0.555$ (p=0.907)
Single adult with children or other dependent	9	8	
Married couple living without children	72	67	
Married couple living with children	49	51	
	(157)	(157)	
How many people in your household			
1.00	21	19	$X^2 = 3.476$
2.00	82	74	(p=0.627)
3.00	22	25	
4.00	22	28	
5.00	7	8	
6.00	0	2	
	(154)	(156)	

Appendix E. The results of the Pearson Chi-Square test for late response bias tests.

Category	First Mailing Frequencies	Second Mailing Frequencies	Pearson Chi-Square
Your occupation (N=313)			
Student	4	3	$X^2 = 10.488$
Homemaker	8	9	(p=0.654)
Unemployment	3	2	
Retired	53	42	
Professional/technical	23	26	
Executive/administrator	8	6	
Middle management	3	12	
Sales/marketing	3	4	
Clerical/service	10	7	
Tradesman /mechanic operator	7	9	
Self employed/Business owner	10	8	
Government/military	6	8	
Educator	7	12	
Others	11	9	
	(156)	(157)	
Your spouse's occupation (N=244)			
Student	1	3	$X^2 = 15.383$
Homemaker	16	14	(p=0.284)
Unemployment	3	1	
Retired	32	25	
Professional/technical	20	17	
Executive/administrator	6	3	
Middle management	6	4	
Sales/marketing	4	7	
Clerical/service	10	4	
Tradesman /mechanic operator	7	14	
Self employed/Business owner	6	15	
Government/military	3	5	
Educator	6	6	
Others	2	4	
	(122)	(122)	

Appendix F.

Individual items of the constructs with mean scores and standard deviation

1. Economic impact constructs and variables

Variables	Mean	SD	Skew.	Kurt.
Employment opportunity				
Provides desirable jobs	3.52	1.046	-.661	-.033
Creates variety of jobs	3.56	.979	-.868	.385
Creates employment opportunity	4.01	.897	-1.353	2.251
Revenue from tourist for local business and government				
Brings more investment and spending	3.59	.938	-.763	.491
Local government generates foreign exchange	3.31	.854	-.233	.476
Generates tax revenues for local governments	3.90	.872	-1.125	1.725
Local business benefits from tourism	3.83	.941	-.858	.606
Standard of living				
Standard of living increases	2.99	1.042	-.160	-.558
Improve economic situation	3.14	1.025	-.476	-.523
To improve roads, highways, and public services	2.99	1.016	-.319	-.575
Cost of living				
The cost of living in the community	3.11	.997	.008	-.742
The price of goods and service increases	3.21	.985	-.101	-.531
Real estate prices in the community	3.21	1.033	-.010	-.717

2. Social impact constructs and variables

Variables	Mean	SD	Skew.	Kurt.
Social problem				
For peak season, harder to get ticket.	2.65	.990	.317	-.272
Resulted in unpleasantly overcrowded hike trail	2.51	.869	.368	.129
Resulted in unpleasantly overcrowded park	2.58	.961	.577	.022
Resulted in unpleasantly overcrowded shopping	2.64	1.05	.627	-.315
plac	2.54	1.05	.599	-.164
Contributes social problem such as crime.				
Local Service				
Tourism is a major reason for the variety of entertainment in the community	2.95	.997	-.154	-.762
Because of tourism, roads and other local services are well maintained	2.93	1.017	-.218	-.634
Increased tourism provides more recreational opportunities for local residents	3.25	.983	-.466	-.394

3. Cultural impact constructs and variables

Variables	Mean	SD	Skew.	Kurt.
Preservation of local service				
Tourism encourages a variety of cultural activities for local residents.	3.25	1.009	-.430	-.461
Tourism helps keep local culture alive and maintain cultural identity.	3.17	.981	-.306	-.572
Tourism has increased residents' pride in the local culture in the community	3.25	.962	-.344	-.375
Deterioration of local service				
Tourism encourages residents to imitate the behavior of the tourists and relinquish cultural traditions.	2.41	.851	.320	-.055
The commercial demand of tourists causes change in the style and forms of traditional arts and crafts.	2.96	.913	-.044	-.328
Tourism causes the disruption of traditional cultural behavior patterns in local residents.	2.39	.907	.574	.138
Cultural exchange				
Meeting tourists from all over the world is definitely a life enriching experience.	3.82	.881	-.935	1.297
The cultural exchange between residents and tourists is valuable for the residents.	3.64	.895	-.714	.610
The cultural exchange between residents and tourists is pleasant for the residents.	3.51	.871	-.461	.290
I would like to meet tourists from as many countries as possible in order to learn about their culture.	3.63	.977	-.476	-.038

4. Environmental impact constructs and variables

Variables	Mean	SD	Skew.	Kurt.
Pollution				
Tourism brings environmental pollution.	2.95	1.09	.111	-.794
Tourism produces noise.	3.07	1.06	-.012	-.769
Tourism produces littering.	3.32	1.05	-.232	-.735
Tourism produces congestion.	3.51	1.06	-.544	-.372
Tourist activities like boating produce serious water pollution in lakes, bays, or the ocean.	3.11	1.01	.107	-.615
Solid waste				
Tourism produces large quintiles of waste products.	3.33	1.022	-.244	-.606
Tourism businesses that serve tourists throw away tons of garbage a year.	3.46	.970	-.490	-.090
Tourists' littering destroys the beauty of the landscape.	3.16	1.011	-.050	-.749
Preservation of wildlife and ecology				
Tourism has improved the ecological environment in the community in many ways.	2.91	.888	-.207	-.255
Tourism has contributed to preservation of the natural environment and protection of the wildlife in the community.	3.02	.936	-.285	-.515
Tourism does not contribute to the negative effect of vegetation and loss of meadows and green space.	2.94	.935	-.277	-.772

5. Material Well-being domain

Variables	Mean	SD	Skew.	Kurt.
Income and employment				
Your income at your current job	3.44	.978	-.809	.237
Economic security of your job	3.55	1.005	-.709	.293
Family income	3.49	.962	-.945	.505
Pay and fringe benefits you get	3.43	1.008	-.678	-.010
Cost of living				
Real estate taxes	2.83	1.048	-.104	-.843
Cost of living in your community	3.22	.925	-.659	-.172
Cost of basic necessities such as food, housing and clothing	3.15	1.001	-.612	-.675

6. Community well-being variables

Variables	Mean	SD	Skew.	Kurt.
Conditions of the community environment (air, water, land)	3.33	.950	-.637	-.317
Service you get in this community	3.31	.908	-.753	.059
Facilities you get in this community	3.25	.938	-.661	-.235
People who live in this community	3.70	.833	-.995	1.403
Your community life	3.83	.815	-.872	1.423

7. Emotional well-being domain

Variables	Mean	SD	Skew.	Kurt.
Leisure well-being				
Spare time	3.56	.941	-.851	.411
Leisure activity in your community	3.39	.960	-.607	.006
The influx of tourists from all over the world you're your community.	3.18	.844	-.474	.623
Your leisure life	3.75	.856	-.933	.980
Spiritual well-being				
I am very satisfied with the availabilities of religious services in my community.	4.04	.937	-1.199	1.641
I am particularly happy with the way we preserve culture in my community	3.44	.878	-.588	.436
I feel I extend my cultural outlook when I talk with tourists	3.45	.864	-.789	1.005
Your cultural life	3.71	.813	-.690	.631

8. Health and safety well-being domain

Variables	Mean	SD	Skew.	Kurt.
Health well-being				
Your Health	3.75	.966	-1.134	1.064
Air quality in your area	3.61	.949	-.980	-.766
Water quality in your area	3.41	1.038	-.633	-.395
I always drink bottled or filtered water because I think the water is not clean.**	3.50	1.246	-.572	-.677
When I see garbage left on the ground from the tourists, I do not feel good about tourism.**	2.60	1.053	.371	-.433
Environmental pollution threatens public safety and causes health hazards.**	2.25	1.070	.801	.128
Safety well-being				
The environmental cleanness in your area.				
The community's accident rate or crime rate.	3.44	1.028	-.815	.074
The community's safety and security.	3.31	.992	-.463	-.382
	3.55	.919	-.773	.344

Note: ** Reverse coded

9. Quality of life (QOL) in general

Variables	Mean	SD	Skew.	Kurt.
Your life as a whole	4.20	.708	-.966	2.272
The way you are spending your life	4.04	.797	-.876	-.975
The life how you feel	3.90	.846	-.448	-.048

APPENDIX G. The procedure of selecting the number of indicators

1. The cutting value used to select the indicators and constructs

	Number of indicators		
	overall fit	Each loading	
Degrees of Freedom			Standized
Least Squares Chi-Square	Less than DF*3	No – loading, Should be	residual should be less
P	**>0.05**	P<0.05	than 2.56
Sample size	**>100**		
RMSEA	**Close to 0.06**		
SRMR	**Close to 0.08**	**Error**	**Modification**
GFI	Close to 0.95	**variance**	**indices**
AGFI	Close to 0.95	**should not be**	**should be less**
PGFI		**greater than**	**than 3.89 on**
IFI	Close to 0.95	**.5**	**other latent**
NNFI	Close to 0.95		**variables**
CFI	Close to 0.95		
RNI	Close to 0.95		
Critical N (CN)	>=200		

2. Economic impact of tourism construct

	Number of indicators			
	RLG (4)	RLG & EO	RLG*SL	RLG*CL
Degrees of Freedom	2 P=0.74	13 P=0.00	13 P=0.85	13 P=0.095
Least Squares Chi-Square	0.59	46.33	7.94	19.58
RMSEA	0.0	0.090	0.0	0.040
SRMR	0.0072	0.034	0.014	0.047
GFI	1.00	0.96	0.99	0.98
AGFI	1.00	0.91	0.98	0.96
PGFI	0.2	0.45	0.46	0.46
NFI	1.00	0.96	0.99	0.97
NNFI	1.00	0.95	1.01	0.98
PNFI	0.33	0.59	0.61	0.60
CFI	1.00	0.97	1.00	0.99
IFI	1.00	0.97	1.01	0.99
RFI	0.99	0.93	0.99	0.96
Critical N (CN)	4897.37	196.47	1096.44	443.94

Note: EO-Employment opportunity, RLG-Revenue from tourist for local business and government, SL-Standard of living, CL-Cost of living

Economic impact of tourism construct continued

	Number of indicators		
	RLG*EO*SL	**RLG*EO*SL*CL**	
Degrees of Freedom	32 P=0.0000	**59 P=0.0000**	2 p=0.109
Least Squares Chi-Square	76.41	**125.98**	4.43
RMSEA	0.066	**0.060**	0.090
SRMR	0.033	**0.047**	0.030
GFI	0.95	**0.94**	0.99
AGFI	0.92	**0.91**	0.93
PGFI	0.56	**0.61**	0.20
NFI	0.95	**0.94**	0.97
NNFI	0.96	**0.95**	0.96
CFI	0.97	**0.97**	0.99
IFI	0.97	**0.97**	0.99
RFI	0.93	**0.92**	0.92
Critical N (CN)	214.51	**211.4**	318.84
X1		**0.79 (0.05)**	delete
X2		**0.88**	delete
X3		**0.85**	.78 (0.08)
X4		**0.57(0.05)**	.58 (0.08)
X5		**0.79**	delete
X6		**0.63**	.68 (0.08)
X7		**0.71**	delete
X8		**0.79(0.05)**	delete
X9		**0.74**	delete
X10		**0.84**	.72 (0.08)
X11		**0.76(0.05)**	delete
X12		**0.75**	delete
X13		**0.91**	delete

Note: Bold type-the final indicators and constructs selected, EO-Employment opportunity, RLG-Revenue from tourist for local business and government, SL-Standard of living, CL-Cost of living, X1-Provides desirable jobs, X2-Creates variety of jobs, X3-Creates employment opportunity, X4-Brings more investment and spending, X5-Local government generates foreign exchange, X6-Generates tax revenues for local governments, X7-Local business benefits from tourism, X8-standard of living increases, X9-Improve economic situation, X10-To improve roads, highways, and public services, X11-The cost of living in the community, X12-The price of goods and service increases, X13-Real estate prices in the community

3. Social impact of tourism construct

	Number of indicators		
	SP (5)	***SP*LS***	6 with 2 La
Degrees of Freedom	5 P=0.00	**19 P=0.0016**	8 p=0.074
Least Squares Chi-Square	35.46	**41.74**	14.31
RMSEA	**0.00034**	**0.078**	0.063
SRMR	**0.031**	**0.056**	0.029
GFI	0.96	**0.95**	0.98
AGFI	0.87	**0.91**	0.94
PGFI	0.32	**0.50**	0.37
NFI	0.96	**0.95**	0.97
NNFI	0.94	**0.96**	0.98
PNFI	0.48	**0.64**	0.52
CFI	0.97	**0.97**	0.99
IFI	0.97	**0.97**	0.99
RFI	0.93	**0.92**	0.95
Critical N (CN)	132.15	**170.84**	276.22
X1	-0.67	**0.67 (0.06)**	delete
X2	-0.91	**0.91**	.89 (0.06)
X3	-0.91	**0.91**	.93
X4	-0.82	**0.82**	.82
X5	-0.57	**0.57 (0.07)**	.56 (0.07)
X6		**0.67**	1.10 (1.36)
X7		**0.78**	0.48 (0.60)
X8		**0.79**	delete

Note: X1-X5 measure Social problem (SP), and X6-X8 measure Local service (LS)
X1- For peak season, harder to get ticket, X2-Resulted in unpleasantly overcrowded hike trail, X3-Resulted in unpleasantly overcrowded park, X4-Resulted in unpleasantly overcrowded shopping place, X5-Contributes social problem such as crime*, X6*-Tourism is a major reason for the variety of entertainment in the community, X7-Because of tourism, roads and other local services are well maintained, X8-Increased tourism provides more recreational opportunities for local residents.

4. Cultural impact of tourism

	Number of indicators		
	PLS*DLC*	*7 with 2 La*	**4 with 1 la**
Degrees of Freedom	32 P=0.00	13	**2**
Least Squares Chi-Square	140.5	231.67 p=0.0	**7.85 p=0.01969**
RMSEA	0.1	0.23	**0.096**
SRMR	0.11	0.13	**0.018**
GFI	0.92	0.83	**0.99**
AGFI	0.86	0.68	**0.94**
PGFI	0.53	0.38	**0.20**
NFI	0.91	0.79	**0.99**
NNFI	0.90	0.67	**0.97**
PNFI	0.65	0.49	**0.33**
CFI	0.93	0.79	**0.99**
IFI	0.93	0.80	**0.99**
RFI	0.88	0.66	**0.96**
Critical N (CN)	120.34	28.06	**350.36**
X1	0.84 (0.05)	0.85 (0.05) .27	**D**
X2	0.87	0.88 .27	**D**
X3	0.83	0.81 .34	**D**
X4	0.25 (0.06)	Delete	
X5	0.53 (0.08)	Delete	
X6	1.23 (0.14)	Delete	
X7	0.78 (0.05)	0.78(0.05) .39	**0.78 (0.05) .39**
X8	0.89	0.91 .17	**0.91 (0.05) .17**
X9	0.82	0.80 .35	**0.80 .35**
X10	0.70	0.69 .52	**0.70 .52**

Note: X1-X3 measure preservation of local service (PLC), and X4-X6 measure deterioration of Local service (DLS), X7-X10 measure Cultural exchange (CE), X7-Meeting tourists from all over the world is definitely a life enriching experience, X8-The cultural exchange between residents and tourists is valuable for the residents, X9-The cultural exchange between residents and tourists is pleasant for the residents, X10-I would like to meet tourists from as many countries as possible in order to learn about their culture.

5. Environmental impact of tourism

	Number of indicators			
	11 with 3 LA	*10 with 3La*	9 with 3 La	**8 with 3 LA**
Degrees of Freedom	41 P=0.00	32 P=0.00005	24 p=0.00024	**17 p=0.00397**
Least Squares Chi-Square	99.51	73.06	55.81	**36.47**
RMSEA	0.085	0.080	0.082	**0.076**
SRMR	0.083	0.038	0.034	**0.030**
GFI	0.92	0.93	0.94	**0.96**
AGFI	0.87	0.88	0.89	**0.91**
PGFI	0.57	0.54	0.50	**0.45**
NFI	0.93	0.95	0.95	**0.96**
NNFI	0.94	0.96	0.96	**0.95**
PNFI	0.69	0.67	0.63	**0.58**
CFI	0.96	0.97	0.97	**0.97**
IFI	0.96	0.97	0.97	**0.97**
RFI	0.91	0.93	0.93	**0.93**
Critical N (CN)	133.05	152.88	150.03	**150.03**
X1	0.85 (0.06) .28	0.85 (0.06) .28	0.86 (0.06) .27	**0.88 (0.06) .22**
X2	0.90 (0.06) .18	0.90 .18	0.92 .16	**0.92 .16**
X3	0.87 .24	0.87 .24	0.86 .26	**0.85 .28**
X4	0.77 .40	0.77 .40	0.78 .40	**D**
X5	0.76 .42	0.76 .42	D	**D**
X6	0.91 .17	0.91 .17	0.90 (0.06) .19	**0.88 .22**
X7	0.74 .46	0.74 .46	0.75 (0.07) .44	**0.77 .41**
X8	0.62 (0.07) .62	0.62 (0.07) .62	0.62 .62	**0.62 (0.07) .61**
X9	0.84 (0.08) .30	0.83 (0.13) .30	0.84 (0.14) .30	**0.84 (0.15) .30**
X10	0.88 (0.08) .23	0.89 (0.14) .21	0.89 (0.15) .22	**0.89 (0.15) .22**
X11	0.42 (0.07) .82	delete	D	**D**

Note: X1-5 measure Pollution(P), X1-tourism brings environmental pollution, X2-Tourism produces noise, X3-Tourism produces littering, X4-Tourism produces congestion, X5-Tourist activities like boating produce serious water pollution in lakes, bays, or the ocean, X6-8 measure Solid waste (SW), X6-Tourism produces large quintiles of waste products, X7-Tourism businesses that serve tourists throw away tons of garbage a year, X8-Tourists' littering destroys the beauty of the landscape, X9-11 measure Preservation of wildlife and ecology (PWE), X9-Tourism has improved the ecological environment in the community in many ways, X10-Tourism has contributed to preservation of the natural environment and protection of the wildlife in the community, X11-Tourism does not contribute to the negative effect of vegetation and loss of meadows and green space.

6. Overall measurement used by Summated scales

T	Number of indicators			
Tourism impact	EI (4a)*SI(2a)* CI(4)*ENV(3a)	EI(3a)*SI(3)* CI(4)*ENV(3a)	EI(3a)*SI(3)* CI(4)*ENV(2a)	**EI(3a)*SI(3)* CI(4)*ENV(3)**
Degrees of Freedom	matrix is not positive define	59 p=0.00	48 p=0.00001	**59 p=0.00002**
Least Squares Chi-Square		178.68	101.83	**113.71**
RMSEA		**0.090**	**0.067**	**0.061**
SRMR		**0.13**	**0.040**	**0.045**
GFI		0.90	0.95	**0.93**
AGFI		0.85	0.87	**0.90**
PGFI		0.58	0.36	**0.61**
NFI		0.89	0.94	**0.93**
NNFI		0.90	0.92	**0.96**
PNFI		0.67	0.50	**0.71**
CFI		0.92	0.96	**0.97**
IFI		0.92	0.96	**0.97**
RFI		0.85	0.89	**0.91**
Critical N (CN)		116.44	135.32	**198.46**
X1 (ei1)		0.81 (0.05) .34	0.81 (0.06) .33	**0.81 (0.06).34**
X2 (ei2)		0.80 (0.05) .36	0.80 (0.06) .36	**0.80 (0.06).36**
X3 (ei3)		0.83 (0.05) .31	0.83 (0.06) .31	**0.83 (0.06).32**
X4		Delete	D	**D**
X5 (q21)		**0.71 (0.06) .49**	**0.71 (0.08) .49**	0.71 (0.06).49
X6 (q22)		**0.77 (0.06) .40**	**0.77 (0.07) .40**	0.78 (0.06).40
X7 (q23)		**0.75 (0.06) .43**	**0.76 .43**	0.75 (0.06).43
X8 (q30)		0.78 (0.06) .39	0.78 (0.06) .39	**0.78 (0.06).39**
X9 (q31)		0.89 (0.05) .22	0.89 (0.05) .22	**0.89 (0.05).21**
X10 (q32)		0.82 (0.05) .32	0.82 (0.05) .32	**0.82 (0.05).32**
X11 (q33)		0.71 (0.06) .50	0.71 (0.06) .50	**0.71 (0.06).50**
X12		**.98 (0.11) .05**	1.11 -.23	**D**
X13		**.73 (0.09) .46**	0.65 .50	**0.86 (0.06).27**
(q39, q40, q41)				**0.79 (0.06).37**
				0.63 (0.06).60
X14		**-.20 (0.07) 0.96**	Delete	**Delete**

Note: X1-EO-Employment opportunity, X2-RLG-Revenue from tourist for local business and government, X3-SL-Standard of living, X4-CL-Cost of living,

5. Material well-being

	Number of indicators	
	7 with 2 LA	6 with 2 LA
Degrees of Freedom	**13 P=0.37**	8 P=0.00
Least Squares Chi-Square	**14.07**	64.61
RMSEA	**0.020**	0.19
SRMR	**0.040**	0.11
GFI	**0.98**	0.74
AGFI	**0.96**	0.74
PGFI	**0.46**	0.90
NFI	**0.98**	0.74
NNFI	**1.0**	1.0
PNFI	**0.61**	0.34
CFI	**1.0**	0.90
IFI	**1.0**	0.91
RFI	**0.97**	0.81
Critical N (CN)	**377.14**	59.21
X1	**0.84 (0.06) .29**	0.80 (0.06)
X2	**0.64 (0.07) .59**	0.65 (0.07)
X3	**0.85 (0.06) .28**	0.83 (0.06)
X4	**0.79 (0.06) .37**	0.84 (0.06)
X5	**0.63 (0.07) .60**	Delete
X6	**0.94 (0.06) .12**	0.96 (0.07)
X7	**0.82 (0.06) .32**	0.81 (0.07)

X1-X4 measure Income and employment (EI), X1-Your income at your current job, X2-Economic security of your job, X3-Family income, X4-Pay and fringe benefits you get , X5-7 measure Cost of living(CL), X5-Real estate taxes, X6-Cost of living in your community, X7-Cost of basic necessities such as food, housing and clothing

6. Community well-being

	Number of indicators	
	5 with 1 LA	**4 with 1 La**
Degrees of Freedom	5 P=0.00	**2 p=0.0098**
Least Squares Chi-Square	26.18	**9.25**
RMSEA	0.15	**0.13**
SRMR	0.058	**0.038**
GFI	0.95	**0.98**
AGFI	0.85	**0.89**
PGFI	0.32	**0.20**
NFI	0.93	**0.97**
NNFI	0.88	**0.92**
PNFI	0.46	**0.32**
CFI	0.94	**0.97**
IFI	0.94	**0.98**
RFI	0.85	**0.91**
Critical N (CN)	117.51	**193.16**
X1	0.64 (0.07) .59	**0.63 (0.07) .60**
X2	0.87 (0.06) .24	**0.89 (0.06) .20**
X3	0.80 (0.06) .36	**0.80 (0.06) .37**
X4	0.62 (0.07) .62	**0.59 (0.07) .65**
X5	0.37 (0.07) .86	**D**

X1-Conditions of the community environment (air, water, land), X2-Service you get in this community, X3-Facilities you get in this community, X4-People who live in this community, X5-Your community life

7. Emotional well-being

	Number of indicators	
	8 with 2 LA	**4 with 1 LA**
Degrees of Freedom	19 P=0.00	**2 p=0.45**
Least Squares Chi-Square	129.90	**1.60**
RMSEA	**0.17**	**0.00**
SRMR	**0.092**	**0.020**
GFI	0.86	**1.0**
AGFI	0.73	**0.98**
PGFI	0.45	**0.20**
NFI	0.77	**0.99**
NNFI	0.70	**1.0**
PNFI	0.52	**0.33**
CFI	0.80	**1.0**
IFI	0.80	**1.0**
RFI	0.66	**0.96**
Critical N (CN)	65.12	**1158.93**
X1	0.68 (0.07) .54	**0.77 (0.09) .41**
X2	0.60 .64	**0.56 (0.08) .69**
X3	0.46 .79	**D**
X4	0.79 (0.06) .38	**0.53 (0.08) .72**
X5	0.45 (0.07) .80	**D**
X6	0.49 (0.07) .76	**D**
X7	0.38 (0.07) .86	**D**
X8	0.74 (0.07) .45	**0.43 (0.08) .82**

X1-4 measure Leisure well-being (LW), X1-Spare time, X2-Leisure activity in your community, X3-The influx of tourists from all over the world you're your community, X4-Your leisure life, X5-8 measure Spiritual well-being (SW), X5-I am very satisfied with the availabilities of religious services in my community, X6-I am particularly happy with the way we preserve culture in my community, X7-I feel I extend my cultural outlook when I talk with tourists, X8-Your cultural life

8. Health and safety well-being

	Number of indicators		
	9 with 3 LA	9 with 2 LA	**5 with 2 LA**
Degrees of Freedom	24 P=0.00	26 p=0.00	**4 p=0.16**
Least Squares Chi-Square	103.26	107.19	**6.62**
RMSEA	**0.13**	**0.125**	**0.057**
SRMR	**0.10**	**0.1**	**0.045**
GFI	0.90	0.89	**0.99**
AGFI	0.81	0.81	**.95**
PGFI	0.48	.51	**.26**
NFI	0.79	.78	**0.98**
NNFI	0.73	.75	**.98**
PNFI	0.53	.56	**. .39**
CFI	0.82	.82	**0.99**
IFI	0.83	.82	**.99**
RFI	0.68	.70	**.95**
Critical N (CN)	77.60	.78.93	**393.20**
X1	**0.28 (0.08) .92**	.28 (0.08) .92	**D**
X2	0.64 (0.07) .59	.64 (0.07) .59	**.58 (0.07) .66**
X3	0.88 .23	.88 (0.07) .22	**.97 (0.08) .07**
X4	0.78 (0.13) .39	.62 (0.07) .62	**.59 (0.07) .65**
X5	**0.23 (0.08) .95**	.15 (0.08) .98	**D**
X6	**0.23 (0.08) .95**	.18 (0.07) .97	**D**
X7	0.52 (0.07) .73	.52 (0.07) .73	**D**
X8	0.85 (0.07) .27	.86 (0.07) .27	**.79 (0.09) .38**
X9	0.88 (0.07) .23	.88 (0.07) .23	**.96 (0.10) .08**

X1-6 measure Health well-being (HW), X1-Your Health, X2-Air quality in your area, X3-Water quality in your area, X4-I always drink bottled or filtered water because I think the water is not clean.**, X5-When I see garbage left on the ground from the tourists, I do not feel good about tourism.**, X6-Environmental pollution threatens public safety and causes health hazards.** (X4,5, and 6 were reverse corded); X7-9 measure Safety well-being (SW), X7-The environmental cleanness in your area, X8-The community's accident rate or crime rate, X9-The community's safety and security.

Summated scales

T	Number of indicators			
Well-being domain	MW (2a)*Cw(5)* Ew(4)*HSw(2a)	MW (2a)*Cw(4)* Ew(4)*HSw(2a)	MW (2a)*Cw(4)* Ew(3)*HSw(2a)	MW (2a)*Cw(3)* Ew(3)*HSw(2a)
Degrees of Freedom	59 p=0.00	48 p=0.0	38 p=0.0	29 p=0.0
Least Squares Chi-Square	391.13	238.73	224.76	192.49
RMSEA	**0.133**	**0.134**	**0.15**	**0.16**
SRMR	**0.11**	**0.098**	**0.082**	**0.076**
GFI	.84	0.85	0.84	0.85
AGFI	.76	.75	.73	.72
PGFI	.55	.52	.49	.45
NFI	.77	.79	.69	.65
NNFI	.74	.75	.58	.47
PNFI	.59	.57	.48	.42
CFI	.80	.82	.71	.66
IFI	.80	.82	.72	.66
RFI	.70	.71	.55	.45
Critical N (CN)	72.94	68.40	38.19	28.45
X1 mw1	.61 (0.06) .63	.55 (0.07) .70	.66 (0.07) .56	.62 (0.07) .61
X2 mw2	.71 (0.06) .50	.79 (0.06) .38	.65 (0.07) .57	.70 (0.07) .52
X3 c1	.68 (0.05) .53	.66 (0.06) .57	.62 (0.06) .61	.75 (0.06) .44
X4 c2	.80 (0.05) .36	.83 (0.06) .32	.81 (0.06) .35	D
X5 c3	.76 (0.05) .42	.81 .35	.84 (0.06) .29	.88 (0.06) .22
X6 c4	.69 (0.05) .53	.66 (0.06) .57	.65 (0.06) .57	.65 (0.06) .58
X7 c5	**.46 (0.06) .79**	D	D	D
X8 e1	.68 (0.05) .53	.68 (0.07) .54	.50 (0.07) .75	.50 (0.07) .75
X9 e2	.56 (0.06) .69	.56 (0.06) .69	D	D
X10 e3	.86 (0.05) .26	.86 (0.06) .26	.87 (0.06) .24	.89 (0.06) .21
X11 e4	.76 (0.05) .42	.54 (0.08) .42	.78 (0.06) .39	.77 (0.06) .41
X12 hs1	.54 (0.07) .71	.58 (0.08) .71	.57 (0.08) .68	.56 (0.08) .69
X13 hs1	.58 (0.07) .66	**.58 .67**	**.55 (0.08) .70**	**.56 (0.08) .69**

X1 measure Income and employment (mw1), X2-Cost of living(mw2), X3-Conditions of the community environment (air, water, land), X4-Service you get in this community, X5-Facilities you get in this community, X6-People who live in this community, X7-Your community life, X8-Spare time, X9-Leisure activity in your community, X10-Your leisure life, X11-Your cultural life, X12-Health well-being (hs1), X13- Safety well-being (hs2)

T	Number of indicators
Well-being domain	MW (2a)*Cw(2)* Ew(3)*HSw(2a)
Degrees of Freedom	21 p=0.00004
Least Squares Chi-Square	56.96
RMSEA	**0.088**
SRMR	**0.056**
GFI	.95
AGFI	.88
PGFI	.44
NFI	.94
NNFI	.92
PNFI	.55
CFI	.96
IFI	.96
RFI	.89
Critical N (CN)	138.29
X1 Mw1	.56 (0.06) .69
X2 mw2	.78 (0.06) .40
X3 c1	D
X4 c2	D
X5 c3	.73 (0.06) .47
X6 c4	.65 (0.06) .57
X7 c5	D
X8 e1	.53 (0.06) .72
X9 e2	D
X10 e3	.92 (0.06) .15
X11 e4	.72 (0.06) .49
X12 hs1	.45 (0.07) .80
X13 hs1	**.70 (0.08) .52**

X1 measure Income and employment (mw1), X2-Cost of living(mw2), X3-Conditions of the community environment (air, water, land), X4-Service you get in this community, X5-Facilities you get in this community, X6-People who live in this community, X7-Your community life, X8-Spare time, X9-Leisure activity in your community, X10-Your leisure life, X11-Your cultural life, X12-Health well-being (hs1), X13- Safety well-being (hs2)

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Virginia Tech, Blacksburg, Virginia, December 2002
Dissertation: The effects of tourism impacts upon Quality of Life of residents in the community.

Master of Science in Restaurant Hotel Institutional and Tourism,
Purdue University, West Lafayette, Indiana, August 1998
Thesis: Market Segmentation of Japanese Pleasure Travelers based upon Marital Status

Bachelor of Science in Economics,
Korea University, Seoul, Korea, February 1987
Graduation paper: Tax Structure of Korea

PROFESSIONAL EXPERIENCE

2002 Research Assistant, Hospitality and Tourism Management, Virginia Tech, Blacksburg, VA
Conducted research project: developing agricultural tourism,

2001 Instructor, Tourism Analysis (HTM 3454), Hospitality and Tourism Management, Virginia Tech, Blacksburg, VA

1999-2001 Graduate Teaching Assistant, Hospitality and Tourism Management, Virginia Tech, Blacksburg, VA

HTM 2454: Introduction to Travel and Tourism Management: A survey of travel and tourism in the United States with focus on terminology, demographics, and financial significance.

HTM 2474: Introduction to Meetings and Convention Management: General overview designed to provide students with information about meetings and convention planning and the industry and define activities of key participants.

HTM 3454: Tourism Analysis: Different aspects of tourism, including origin, destination, and impact.

HTM 4984: Attraction Management (Special Study): Provides an understanding of the tourism attractions in the hospitality and tourism industry.

1997-1998 Research Assistant, Hospitality and Tourism Management, Purdue University, West Lafayette, IN
Conducted Research Project: Pittsburgh County Visitor Profile Study

1993 -1995 Marketing Project Officer, Korean Air, Seoul, Korea
Planned the tour package program "Joyful Holidays" for Korean Airlines, Promoted campaign with Korean Red Cross and a major telecommunication company, DACOM

1991-1993 Automation project officer, Korean Air, Seoul, Korea
Participated co-hosting agreements about Computerized Reservation System with SABRE, WORLDSPAN, ABACUS, etc.

1991 Flight Booking Controller, Korean Air, Seoul, Korea
Controlled and booked seats for travel agent by using Yield Management System

1987-1990 Computer Programmer, Korean Air, Seoul, Korea
Coded and modified the Computerized Reservation On-line System in Assembler Language

PUBLICATIONS

Papers in Refereed Journals

Kim, K. & Uysal, M. (2003). Perceived socio-economic impacts of festivals and special events: Organizer Perspectives. (In Press) *Journal of Hospitality and Leisure Marketing*, 10(3/4).

Kim, K, Uysal, M. & Chen, J. (2001). Festival visitor motivation from the organizers' points of view. *Event Management*, 7(2), 127-134.

Gursoy, D. Kim, K. & Uysal, M. (2002). Developing and testing perceived economic impact scales of festival and event tourism Submitted to *Tourism Management*.

McGehee, N. & Kim, K. (2002) Farmers' motivation for agri-tourism business submitted to *Journals of Travel Research*

Abstracts in Refereed Conference Proceedings

Kim, K. & Uysal M. Effects of tourism impacts upon Quality of Life of residents in the community. *Proceedings of International Society for Quality-of-Life Studies* (based on the paper presented at the ISQOLS Annual Meeting, Williamsburg, Virginia, November 13-16, 2002).

Gursoy, D & Kim, K. (2002). Modeling the cost of travelers' information search behavior. *Proceedings of International CHRIE conference* (based on the paper presented at the CHRIE Annual Meeting, Orlando, Florida, August 7-10, 2002).

Kim, K., Gursoy, G. (2002). Perceived socio-economic impacts of festivals among organizers. *Proceedings of the Seventh Annual Graduate Education and Graduate Student Research Conference in Hospitality and Tourism*, p 340-342 (based on the paper presented at the Annual Graduate Education and Graduate Student Research Meeting, Houston, Texas, January 3-5, 2002).

Kim, K. & Uysal, M. (2001). Developing and testing perceived economic impact Scales of festival and event tourism. *Proceedings of International CHRIE conference*(based on the paper at the CHRIE annual meeting, Toronto, Canada, July 25-28, 2001).

Kim, K. (2001). Multivariate methodologies applied to the study of Festival and Event tourism. *Proceedings of the Sixth Annual Graduate Education and Graduate Student Research Conference in Hospitality and Tourism*, p 249-253 (based on the paper at the Annual Graduate Education and Graduate Student Research Meeting, Atlanta, Georgia, January 4-6, 2001).

PRESENTATIONS AT PROFESSIONAL MEETINGS

Kim, K. & Uysal M. "Effects of tourism impacts upon Quality of Life of residents in the community" was presented at Community Quality of Life Conference, Williamsburg, Virginia, November 13-16, 2002.

McGehee, N. & Kim, K. "Agricultural Diversification: Developing Linkages between Agri-tourism Entrepreneurs and Destination Marketing Organizations" was posted at 3rd National Small Farm Conference, Albuquerque, New Mexico, September 17-20, 2002.

Gursoy, D & Kim, K. "Modeling the cost of travelers' information search behavior" was presented at 2002 International CHRIE conference, Orlando, Florida, August 7-10, 2002.

Kim, K. & Gursoy, D. "Perceived socio-economic impacts of festivals among organizers" was presented at the Seventh Annual Graduate Education and Graduate Student Research Conference in Hospitality and Tourism, Houston, Texas, January 5-7, 2002.

Kim, K. & Uysal, M. "Developing and testing perceived economic impact scales of festival and event tourism" was presented at 2001 International CHRIE conference, Toronto, Canada, July 2001.

Kim, K. "As a determinant of tourism demand, destination attractiveness" was presented at the College of Human Resources and Education Faculty Association Meeting and Fourth Annual CHRE Graduate Student Research Day, Blacksburg, Virginia, March 27, 2001.

Kim, K. "Multivariate methodologies applied to the study of Festival and Event Tourism" was presented at the Sixth Annual Graduate Education and Graduate Student Research Conference in Hospitality and Tourism, Atlanta, Georgia, January 4-6, 2001.

GRANTS AND AWARDS

"Graduate Research Development Project" $500 Virginia Tech Graduate Student Association in October, 2002

"Luray Caverns Grant" $2,500 National Tourism Foundation in July 2002

International Marketing Plan Award of the 50th Virginia Conference on World Trade presented by Jim Gilmore, Governor of Virginia, October 14, 1999.
Prepare an International Marketing Plan (IMP) for Taylor-Ramsey Inc. to explore potential market in Saudi Arabia. Offered by Virginia Economic Development Partnership (VEDP). Working in a team of four, under the guidance of Dr. Sirgy.
Related website: http://www.mba.vt.edu/newsletter/spring00/governor.html

PROFESSIONAL SERVICE

Women's President of School of Political and economics, School of Management and School of Law in 1985.
Student Member of Oriental Painting Club and "TIME" Magazine Reading Club

Membership in Other Organization

1999 – present Student Member of HTM Graduate Association and Minority Student Association
1999 – present Korean Student Association, Virginia Polytechnic Institute and State University
1998 – present Alumni Association in Hospitality and Tourism Management, Purdue University
1987 – present Alumni Association in Economics, Korea University

TECHNICAL SKILLS

Experience with ASSEMBLY programming language
Experience with general computer software Word, Excel, Access, and PowerPoint.
Experience with statistical computer software Minitab, SAS, SPSS, MATLAB and LISREL

REFERENCES

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Virginia Tech, Blacksburg, VA 24061 (540-231-8426)

Dr. Ken McCleary (mccleary@vt.edu)
Professor of Hospitality and Tourism Management
Virginia Tech, Blacksburg, VA 24061 (540-231-3262)

Dr. M. Joseph Sirgy (sirgy@vt.edu)
Professor of Marketing
Virginia Tech, Blacksburg, VA 24061 (540-231-5110)