

Assessing Community Quality of Life in the Context of Tourism Development

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Abstract One of major purposes of tourism development in a destination is to improve the quality of life (QOL) of host community. This study aims to assess tourism-related community quality of life (TCQOL). The study applied Sirgy and Cornell's community QOL model (2001) and modified the measuring approach incorporating resident perceptions of satisfaction, importance, and tourism effects (Andereck and Nyaupane 2010) to evaluate resident perceptions of community quality of life in the context of tourism development. The assessment incorporating the community quality of life model and the modified measuring approach that could be a useful tool for tourism practitioners and scholars to understand resident perceptions of community QOL, assess changes of resident perceived community QOL in a host community, and compare the community QOL experiences to other areas.

Keywords Community quality of life · Tourism-related Community Quality of Life (TCQOL) · Resident attitudes · Tourism impacts · Sustainable tourism development

Introduction

Tourism development brings myriad effects to the lives of host residents. Once a community becomes a tourism destination, the residents' living experiences in the host community are affected by positive and negative tourism impacts.

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Sustainable tourism development has noted that should meet the needs of the local population's standard of living over the terms and considers not only the aspects of the environmental or economic but also the experiences of residents and visitor. Additionally Local residents tend to support for tourism development if their QOL is ensured, the sustainability of tourism industry is to be maintained. Thus increasing the QOL of host community should be the major consideration in the process of tourism development (McCool and Martin 1994).

Studies on resident perceptions of tourism impacts have focused on the collective beliefs held by residents about impacts derived from tourism development. The results of tourism impact studies identified residents' perceived tourism impacts in three categories of benefits and costs: (1) economic, such as increasing income, job opportunities, tax, and inflation; (2) socio-cultural, such as crime, crowding, community image, awareness of cultural pride and heritage, and improvement of cultural facilities; and (3) environmental, such as pollution, wildlife destruction, and improvement of local infrastructure (Andereck 1994; Andereck and Jurowski 2006; Jurowski 1994; Marcouiller 1997). Types of tourism impacts positively change resident perceptions of quality of life (QOL) including, job opportunities, additional and improved infrastructure, festivals, restaurants, natural and cultural attractions, and recreation/leisure opportunities (Belisle and Hoy 1980; Liu, et al. 1987; Liu and Var 1986; McCool and Martin 1994; Perdue, et al. 1990). Conversely, negative tourism impacts such as crowding, traffic congestion, crime, increased cost of living, and conflict between tourists and residents are detrimental to resident QOL (Andereck 1994; Belisle and Hoy 1980; Brunt and Courtney 1999; Cohen 1988; Lindberg and Johnson 1997; Liu, et al. 1987; McCool and Martin 1994; Perdue, et al. 1990; Pizam 1978). The extant tourism impact literature focuses on measuring tourism impacts, which in turn change resident QOL. However assessing tourism impacts is not the same as understanding development nor resident QOL in a tourism destination. Although tourism impacts change residents' QOL, the indicators of tourism impacts can only represent residents' perceptions of tourism impacts, but not their living experiences. In other words, using indicators of tourism impacts to evaluate residents' QOL may not be appropriate. For example, residents' may perceive traffic congestion but it becomes a factor changing their QOL only when they are not satisfied with it. In another case, tourism development may bring tax to community, but tax contributes to resident living experience only when it is used to improve public services such as fire/police, recreation and transportation services. In this sense, study of resident QOL should directly investigate residents' living experiences in a host community and tourism effect on quality of life indicators. To this end, this research aims directly evaluate residents' community QOL affected by tourism.

Tourism Impacts and Resident Quality of Life

Many communities encourage tourism development because they expect economic benefits to improve their standard of living. Yet negative economic effects of tourism such as increased living costs may degrade residents' quality of life (Liu and Var 1986). In addition, economic benefits may not fully represent residents' QOL, which can decline if tourism causes deterioration in social or physical environments (Jurowski and

Gursoy 2004; Roehl 1999). These positive and negative consequences for economic, socio-culture, and environmental concerns dynamically change residents' living experiences. Researchers have explored factors that influence resident quality of life. Allen et al. (1988) noted that residents' perceptions of community life satisfaction vary with the levels of tourism development. Their study investigated residents' perceptions of the importance of and their satisfaction with various living factors by using the 33-indicator community life scale with seven community life dimensions (public service, formal education, environment, recreation opportunities, economics, citizen involvement and social opportunity, and medical service) (Allen and Beattie 1984; Allen, et al. 1987; Allen, et al. 1988). The results suggested that the level of tourism development was specifically related to residents' perception of community life. Different levels of tourism development have caused a variety of tourism impacts, and this accordingly implies that tourism impacts influence community life. Roehl's (1999) study in Nevada investigated the relationships among resident characteristics, perceptions of the impacts of gaming, and perceived quality of life. He found that perceived social costs were negatively correlated with QOL, whereas perceived job growth was positively correlated with QOL. Several studies (Ko and Stewart 2002; Vargas-Sanchez et al. 2009) treated overall community satisfaction as a mediator between tourism impacts and resident support for tourism development in a hypothetical model. Ko and Stewart (2002) found that residents' overall community satisfaction was related to perceived positive and perceived negative tourism impacts (which include economic, socio-cultural, and environmental impacts) but the path relationship between personal benefits from tourism development and community satisfaction was rejected. Vargas-Sanchez et al. (2009) applied Ko and Stewart's hypothetical model in Minas de Riotinto, Spain. Their results confirmed that overall community satisfaction was related to resident perception of positive tourism impacts. Surprisingly, in both studies, the results of the relationship between overall community satisfaction and resident attitude on additional tourism development were mixed. Ko and Stewart (2002) found no evidence to support this relationship, but Vargas-Sanchez et al. (2009) found a significantly negative relationship in their study site. Nunkoo and Ramkissoon (2010a, b) have found that overall community satisfaction, satisfaction with neighborhood conditions (referred to as community conditions), and satisfaction with community services predict resident support for additional tourism development. Recently, Kim et al. (2013) have examined tourism impacts on residents' senses of particular life domains that are affecting overall life satisfaction.

As seen from the selected studies, tourism development contributes positively and negatively to well-being domains (such as community well-being, economic well-being, and health well-being) of community in a tourism destination (Uysal et al. 2012). Tourism practitioners and tourists should become socially responsible because they are affecting the quality of lives of local community.

Tourism-Related Community Quality of Life

In recent years, quality of life (QOL) has become an emerging topic with broad discussion in tourism literature. Resident attitudes studies have found that residents recognize tourism impacts in their community, which in turn change their quality of life (QOL). The concept of resident QOL, generally complex, is simplified. The complexity

of QOL concepts is seen in the many aspects and levels of people's lives and environments it encompasses (Schalock 1996). The levels of QOL study range from individual, family, community, and state, to the entire world through subjective and objective perspectives (Sirgy et al. 1995; Sirgy et al. 2000). There is a great deal of QOL definitions and models. Phillips (2006) stated that happiness, life satisfaction, and subject well-being are close to the notion of quality of life, but they are not mutually exclusive. Sirgy et al. (2000) associated individuals' QOL to their life satisfaction. Based on an established theory in quality of life research, namely, the bottom-up spillover theory (Andrew and Withey 1976; Campbell et al. 1976; Diener 1984), Sirgy et al. (2000) suggested that the individual's global life satisfaction (referred to as the individual's quality of life) is a function of other satisfaction domains such as community, work, family, and leisure, and each domain is a function of its sub-domains. They further extended community QOL model, broadening it by incorporating the sum of global satisfaction domains with other aspects of the community, namely community conditions, that include satisfaction with quality of the environment, rate of change to the natural landscape, race relations, cost of living, crime, ties with people, neighborhood situation, and the housing situation (Sirgy and Cornwell 2001). Their proposed model therefore suggested that global community satisfaction is a function of three domains: the sum of global community services satisfaction, the sum of global satisfaction of community conditions, and the sum of global satisfaction with other life domains. The sum of global community services satisfaction domain includes satisfaction with government services (e.g., police, fire/rescue, library), business services (e.g., banking/savings, insurance, department stores), and nonprofit services (e.g., alcohol/drug abuse services, crisis intervention, religious services) (Sirgy and Cornwell 2001; Sirgy, et al. 2000). The sum of global satisfaction with community conditions domain encompasses satisfaction with the quality of the environment, change to the natural landscape, cost of living, crime, ties with people, neighborhood situation, and the housing situation (Sirgy and Cornwell 2001). Community QOL studies have aimed to understand local residents' well-being, feelings, and perceptions, which are typically gauged using satisfaction measurements. Epley and Menon (2008) defined community QOL as a representative group of socio-economic and environmental indicators that contribute to the livability and desirability of the region. Study of resident QOL on the community level has contributed to community planning and development (Epley and Menon 2008; Sirgy and Cornwell 2001; Sirgy, et al. 2000).

From community QOL and tourism impacts literature, tourism-related community quality of life (TCQOL) could be considered as "resident perceptions of community living experiences affected by tourism development" and is operationalized as residents' community satisfaction (weighted by importance) adjusted by residents' perceived tourism effects. TCQOL model was developed accordingly that includes two major dimensions, satisfaction with community conditions and satisfaction with community services, have been identified in explaining residents' community living experience (see Fig. 1). Satisfaction with community conditions has been identified in the context of residents' evaluations of the quality of various physical, social, and economic conditions and aspects of the community such as crime and safety, recreational and entertainment activities, infrastructure, traffic condition, parks, job opportunities, and taxes (Grzeskowiak, et al. 2003). Tourism impact studies have documented the ways in which community conditions are influenced by positive–negative tourism

effects (Andereck 1994; Belisle and Hoy 1980; Brunt and Courtney 1999; Lankford and Howard 1994; Liu, et al. 1987; Liu and Var 1986; McCool and Martin 1994; Perdue, et al. 1987, 1990; Pizam 1978). Satisfaction with community services in this context encompasses resident evaluations of the various government services (police, fire/rescue, library), business services (banking/savings, insurance, department stores), and non-profit services (alcohol/drug abuse services, crisis intervention, religious services) that are potentially influenced by tourism development (Grzeskowiak, et al. 2003). Tourism impacts literature has found that tourism development affects community services (Ap 1990; Ap 1992; Ap and Crompton 1998; Belisle and Hoy 1980; Brunt and Courtney 1999; Keogh 1989; Lankford and Howard 1994; Liu and Var 1986; Milman and Pizam 1988; Pizam 1978).

Method

Study Site and Data Collection

Orange County, located in South Central Indiana, had a population of 19,465 people in 2010 (STATSIndiana 2010). According to the Orange-County-Economic-Development-Partnership (2009), woodworking and furniture manufacturing are major industries in the Orange County economy. Relative to other counties in Indiana, Orange County is not affluent, as the annual per capita personal income was USD 29,042 in

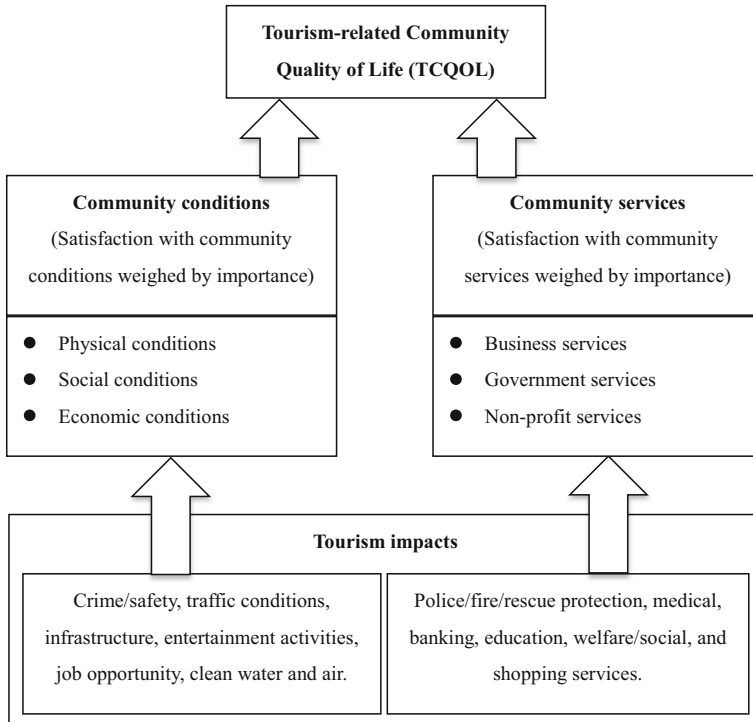


Fig. 1 Tourism-related community quality of life model

2009, lower than the state average of USD 34,042, and ranked 73rd in income out of the state's 92 counties (STATSIndiana 2010). Orange County has looked to diversify and stimulate its economy through increased tourism development, which as a re-emerging industry is becoming a major economic development tool. Traditional attractions include lakes, a ski slope, shopping venues, a resort, and an array of museums. The developed tourist attractions and amenities opened in fall 2006, including a refurbished upscale resort, four-star and other lodgings, a casino, golf courses, and an indoor/outdoor water park. Evidence suggests that recent tourism development has indeed provided economic growth to Orange County. For example, official statistics (STATSIndiana 2010) indicate that Orange County's average earning per job for the accommodations and food service sector ranks #1 in state. This sector experienced dramatic job growth as seen in increase in number of workers from 950 to 2044, and the average earning per job increased 25 % during 2006 and 2007. However, a growing concern and corresponding body of literature explore that the impacts (socio-cultural, environmental, and economic) of tourism to the host society that in turn may alter the residents' lives. Community quality of life (QOL) investigation enables researchers to better understand the vary types of tourism impacts on residents' community QOL in the host community.

The data were collected through a traditional paper and pencil questionnaire administered by mail. A 3,000 surface mail survey was conducted among a random sample of the households in Orange County during August and September of 2011. This mail survey includes a paper questionnaire, a pre-paid return envelope, and a cover letter explaining the purpose of the study and assurance of confidentiality.

Measurement

The instrument in this study is mainly comprised of resident socio-demographics and perceptions of tourism-related community quality of life (TCQOL). The dimensions of TCQOL encompass community conditions and community services. The TCQOL indicators were derived from extant tourism and community quality of life literature as well as previous investigation in Orange County, Indiana during the spring of 2007. The prior survey in Orange County captured residents' perceptions of tourism impacts and quality of life. The TCQOL indicators are listed in Table 1.

In this study, respondents were asked to rate both importance (1=not at all important to 5=extremely important) and satisfaction (1=not at all satisfied to 5=extremely satisfied) with each TCQOL indicator. Additionally authors measured residents' perceived effects of tourism with each TCQOL indicator (1=tourism greatly decreases to 5=tourism greatly increases). The purpose of using three sets of scales is to calculate TCQOL scores. A TCQOL score is determined by the importance, satisfaction, and perceived effect of tourism on community quality of life (Andereck and Nyaupane 2010; Brown et al. 1998; Massam 2002). TCQOL scores were calculated accordingly. TCQOL scores represent residents' perceptions on how tourism influences their community quality of life. It denotes an individual's value judgment of community quality of life indicators by incorporating satisfaction, importance, and tourism effect scales. Calculating TCQOL scores requires a series of steps by using these three scales. The first step is to calculate quality of life (QOL) scores. Researches have suggested that appraisal of quality of life should take individuals' satisfactions and their values (i.e.,

Table 1 List of TCQOL indicators

	Community conditions
A.	Job opportunities
B.	Property values
C.	Prices for goods and services
D.	Cost of living
E.	Infrastructure (roads, bridges, utilities)
F.	Traffic conditions
G.	Crime level
H.	Personal safety
I.	Entertainment opportunities
J.	Recreation opportunities
K.	Clean air and water
L.	Conditions of cultural/historical sites
M.	Conditions of wildlife habitats
N.	Conditions of natural areas
O.	Overall appearance in the community
P.	Overall community livability
Q.	Overall community conditions
	Community services
A.	Formal education
B.	Medical availability and services
C.	Fire protection services
D.	Police protection services
E.	Garbage collection services
F.	Public transportation services
G.	Banking services
H.	Shopping facilities and services
I.	Restaurant facilities and services
J.	Recreational facilities and services
K.	Family supporting services
M.	Overall community services

Sources: Andereck and Jurowski 2006; Andereck and Nyaupane 2010; Grzeskowiak, et al. 2003; Ko and Stewart 2002; Perdue, et al. 1990; Schalock 1996; Sirgy and Cornwell 2001; Sirgy, et al. 2000

importance) into account (Brown et al. 1998; Massam 2002). The combination of both satisfaction and importance measures allows researchers to assess resident preferences and evaluations of those preferences (Brown et al. 1998; Felce and Perry 1995; Massam 2002). Following this approach, authors computed quality of life (QOL) scores using the following equation:

$$QOL\ score = (satisfaction * importance)^{1/2} \quad (1)$$

The square root of satisfaction multiplying importance represents resident perceptions of each community QOL indicator, where QOL score is ranging from 1 to 5. The square root aims to maintain consistency of interval.

Regarding calculation of TCQOL scores, previous studies have developed an approach measuring tourism and quality of life index by multiplying QOL scores and

perceptions of tourism effects (Andereck and Jurowski 2006; Andereck and Nyaupane 2010). TCQOL scores are thus computed by using the respondents' perceived tourism effects in conjunction with QOL scores. An equation that defines TCQOL scores is:

$$TCQOL = QOL * (\text{tourism effect}) \quad (2)$$

The higher TCQOL score means residents perceived better community QOL, which is attributed to tourism development, and vice versa. For example, a TCQOL indicator is answered as, "very important, very satisfied, and tourism greatly increases" and its TCQOL score is 25 (the QOL score of 5 multiplies a perception of tourism effect rating of 5). The TCQOL score range is from 1 to 25. The TCQOL score reflects resident's community quality of life experiences in the context of tourism development.

Results and Discussion

A random sample of the entire list with 3,000 households was taken for this study. After a surface mailing, the replied surveys totaled 341, 17 incomplete surveys, and 387 were returned for insufficient or unknown addresses, resulting an overall response rate of 12.4 %.

Tables 2 and 3 demonstrates the statistics of satisfaction, importance, QOL score, tourism effect, and TCQOL score in both community condition and services. The ranking of each indicator is identified in the tables. This information provides relatively order in its category.

For community conditions (see Table 2), the highest-rated satisfaction elements are close to satisfied, and they are personal safety ($M=3.64$), conditions of cultural/historical sites ($M=3.63$), and clean air and water ($M=3.60$). Respondents did not satisfy with property value ($M=2.86$), infrastructure ($M=2.76$), and job opportunities ($M=2.20$). Respondents considered that personal safety ($M=4.47$) and clean air and water ($M=4.48$) are most important factors in community conditions. Two elements in community conditions, entertainment opportunities ($M=3.70$) and recreation opportunities ($M=3.86$), are considered relatively less important compared to other community conditions. Regarding to residents' perceived QOL, the highest rated elements are personal safety ($M=3.99$), clean air and water ($M=3.96$); the lowest rated elements are job opportunity ($M=3.00$) and conditions of infrastructure ($M=3.35$). Tourism has been considered to increase job opportunities mostly ($M=3.98$), followed by traffic conditions ($M=3.89$) and entertainment opportunity ($M=3.88$). The role of tourism in providing better conditions of cultural and historical sites ($M=14.44$) is rated the highest, followed by overall community livability ($M=14.13$), and recreation opportunities ($M=14.10$). Job opportunities ($M=12.03$) variable is rated the lowest. By using means of tourism effect and QOL in community conditions, the scatter plot of tourism effect and QOL is therefore produced (see Fig. 2). Two reference lines are made available using the mean level of QOL score at 3.59 and the mean level of tourism effect at 3.65. In up-left area of Fig. 2, residents perceive the attributes as relatively high tourism influence, but perceptions of quality of life are below average. In the first quadrant, conditions of cultural/historical sites (c1), recreation opportunities (c3), overall community condition (c5), and appearance in the community (c4) variables

Table 2 Means for TCQOL indicators in community conditions

Community conditions	Satisfaction	Importance	QOL score	Tourism effect	TCQOL score
Conditions of cultural/historical sites	3.63(2)	4.00(15)	3.77(4)	3.76(7)	14.44(1)
Overall community livability	3.49(4)	4.36(7)	3.86(3)	3.58(12)	14.13(2)
Recreation opportunities	3.49(5)	3.86(16)	3.60(9)	3.86(4)	14.10(3)
Overall appearance in the community	3.14(10)	4.30(10)	3.61(8)	3.77(6)	13.96(4)
Overall community conditions	3.28(8)	4.38(6)	3.73(7)	3.65(11)	13.91(5)
Personal safety	3.64(1)	4.47(2)	3.99(1)	3.41(14)	13.60(6)
Entertainment opportunities	3.27(9)	3.7(17)	3.40(14)	3.88(3)	13.40(7)
Clean air and water	3.60(3)	4.48(1)	3.96(2)	3.31(16)	13.29(8)
Traffic conditions	2.93(12)	4.07(14)	3.37(15)	3.89(2)	13.11(9)
Infrastructure (roads, bridges, utilities)	2.76(16)	4.31(9)	3.35(16)	3.82(5)	12.95(10)
Conditions of natural areas	3.47(6)	4.17(12)	3.75(5)	3.32(15)	12.71(11)
Cost of living	2.93(13)	4.41(4)	3.50(11)	3.67(9)	12.67(12)
Property values	2.86(15)	4.23(11)	3.40(13)	3.71(8)	12.66(13)
Prices for goods and services	2.93(14)	4.34(8)	3.48(12)	3.66(10)	12.61(14)
Conditions of wildlife habitats	3.45(7)	4.17(13)	3.74(6)	3.30(17)	12.61(15)
Crime level	2.99(11)	4.43(3)	3.57(10)	3.42(13)	12.10(16)
Job opportunities	2.2(17)	4.39(5)	3.00(17)	3.98(1)	12.03(17)

The number in parentheses represents its ranking in the category

represent residents perceived high quality of life and tourism effect. The variables in second quadrant reflect low satisfaction but high tourism effect of residents'

Table 3 Means for TCQOL indicators in community services

Community services	Satisfaction	Importance	QOL score	Tourism effect	TCQOL score
Police protection services	3.53(3)	4.56(3)	3.97(2)	3.65(4)	14.59(1)
Fire protection services	3.58(2)	4.58(2)	4.01(1)	3.58(5)	14.49(2)
Recreational facilities and services	3.37(6)	4.02(11)	3.63(8)	3.85(2)	14.15(3)
Medical availability and services	3.43(5)	4.60(1)	3.92(3)	3.55(7)	14.11(4)
Restaurant facilities and services	3.05(10)	4.07(9)	3.45(10)	3.88(1)	13.48(5)
Overall community services	3.33(8)	4.18(5)	3.68(7)	3.58(6)	13.32(6)
Formal education	3.35(7)	4.46(4)	3.81(4)	3.38(9)	12.97(7)
Garbage collection services	3.45(4)	4.14(7)	3.73(6)	3.40(8)	12.84(8)
Banking services	3.63(1)	4.10(8)	3.81(5)	3.35(10)	12.78(9)
Shopping facilities and services	2.69(11)	4.18(6)	3.27(11)	3.69(3)	12.17(10)
Family supporting services	3.08(9)	4.04(10)	3.47(9)	3.24(12)	11.38(11)
Public transportation services	2.61(12)	3.78(12)	3.04(12)	3.35(11)	10.28(12)

The number in parentheses represents its ranking in the category

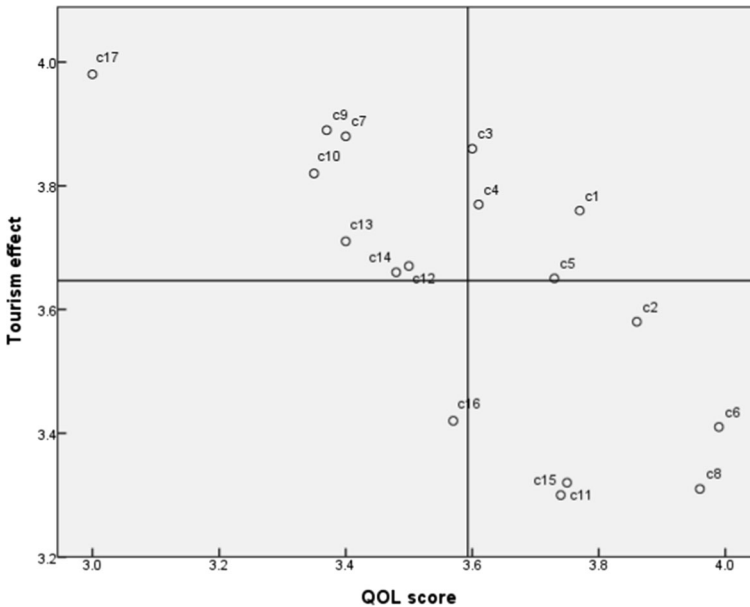


Fig. 2 Tourism effect and QOL scatter plot of community conditions Note: c1: conditions of cultural/historical sites; c2: overall community livability; c3: recreation opportunities; c4: overall appearance in the community; c5: overall community conditions; c6: personal safety; c7: entertainment opportunities; c8: clean air and water; c9: traffic conditions; c10: infrastructure (roads, bridges, utilities); c11: conditions of natural areas; c12: cost of living; c13: property values; c14: prices for goods and services; c15: conditions of wildlife habitats; c16: crime level; c17: job opportunities

perceptions. It should be noted that residents recognize tourism increases job opportunity but not meet their expectation yet.

For community services (see Table 3), the lowest rated satisfaction elements are public transportation services ($M=2.61$) and shopping facilities and services ($M=2.60$). Banking services ($M=3.63$) and fire protection services ($M=3.58$) are considered most satisfied. Public transportation services ($M=3.78$) are reported less important in community services. Several types of private services (i.e. restaurant, recreation, and shopping facilities and services) are thought to have improved with tourism ($M=3.88$). The role of tourism in providing better services of police protection ($M=14.59$) is rated the highest, followed by fire protection services ($M=14.49$) and recreational facilities and services ($M=14.15$). The intersection in the grid of community services is made using the mean of QOL score at 3.65 and the mean level of tourism effect 3.54 (see Fig. 3). Residents perceive low tourism effect on formal education (s7), garbage collection services (s8) and banking services (s9), but perceptions of quality of life in these attributes are above average.

In order to better understand the elements affecting overall community conditions and overall community services respectively, regression analysis was conducted. For elements affecting the overall community conditions, analysis has revealed an R^2 of 0.638 with the significant contributing variables being infrastructure, conditions of cultural/historical sites, conditions of wildlife habitats and community appearance (Table 4). For these variables, conditions of wildlife habitats are considered less tourism influence (rank 17th). Additionally, infrastructure, conditions of cultural/historical sites

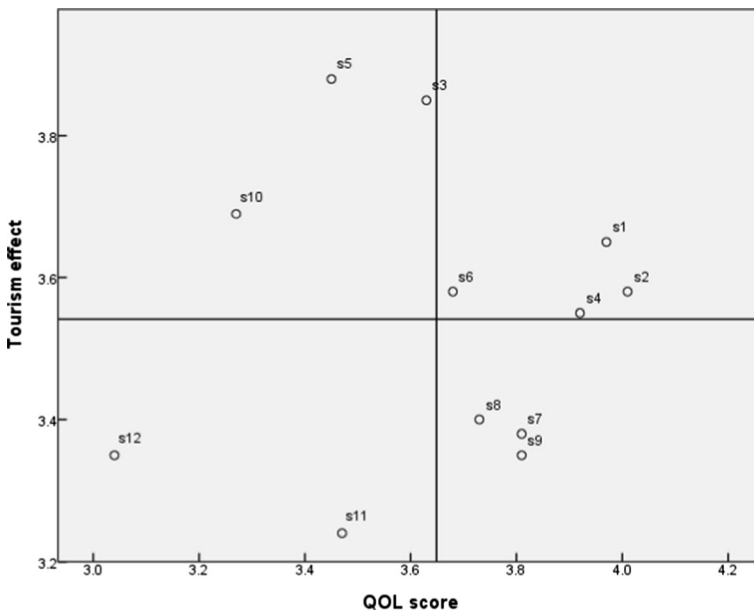


Fig. 3 Tourism effect and QOL scatter plot of community services Note: s1: police protection services; s2: fire protection services; s3: recreational facilities and services; s4: medical availability and services; s5: restaurant facilities and services; s6: overall community services; s7: formal education; s8: garbage collection services; s9: banking services; s10: shopping facilities and services; s11: family supporting services; s12: public transportation services

and community appearance are perceived moderate tourism effect (rank 5th, 7th and 6th respectively).

Regarding to community services, respondents indicated that formal education, restaurant facilities and services, recreational facilities and services, family supporting services elements are significant contributors to overall community services with an R^2 of 0.624 (Table 5). Restaurant and recreational facilities and services are influenced by tourism development mostly. Nevertheless, formal education and family supporting services are considered relatively less tourism effect.

The results indicate that residents concern conditions of infrastructure, cultural/historical sites, wildlife habitats and community appearance in terms of community conditions. Additionally, respondents consider formal education service, restaurant facilities and services, recreation facilities and services and family supporting services. However tourism development has varied level of influences on these elements.

Given TCQOL reflects resident's community quality of life experiences affected by tourism development, for better understanding tourism influence on domains in both community conditions and community services in the study site, the TCQOL scores were factor analyzed. Exploratory factor analysis was then conducted using principal components analysis with varimax rotation of TCQOL items resulted in four domains and two domains of community conditions and community services respectively and these items were loaded reasonably well and have strong reliability (Tables 6 and 7). Six items were excluded after the factor analysis as these items cross-load on more than one domain. The four domains in community conditions are (1) community opportunity, which includes four items related to entertainment/recreation and job opportunity;

Table 4 Elements affecting the overall community conditions using regression analysis

Independent variables	Standardized coefficients	<i>p</i> -value	Tourism effect
Job opportunities	-.013	0.759	–
Property values	-.023	0.630	–
Prices for goods and services	.032	0.603	–
Cost of living	.111	0.054	–
Infrastructure (roads, bridges, utilities)	.099	0.041*	3.82(5)
Traffic conditions	-.021	0.634	–
Crime level	-.071	0.148	–
Personal safety	.062	0.260	–
Entertainment opportunities	-.100	0.118	–
Recreation opportunities	.105	0.083	–
Clean air and water	.040	0.400	–
Conditions of cultural/historical sites	-.117	0.021*	3.76(7)
Conditions of wildlife habitats	.223	0.005*	3.30(17)
Conditions of natural areas	-.073	0.345	–
Overall appearance in the community	.714	0.000*	3.77(6)

* $p < 0.05$

Adjusted R square is 0.638

The number in parentheses represents its ranking in tourism effect

(2) quality of environment in community, which includes three items of natural conditions and environmental cleanliness; (3) cost of living in community, which

Table 5 Elements affecting the overall community services using regression analysis

Independent variables	Standardized coefficients	<i>p</i> -value	Tourism effect
Formal education	.143	0.001*	3.38(9)
Medical availability and services	.063	0.208	–
Fire protection services	.086	0.104	–
Police protection services	.030	0.598	–
Garbage collection services	.012	0.785	–
Public transportation services	.039	0.368	–
Banking services	.052	0.226	–
Shopping facilities and services	.004	0.932	–
Restaurant facilities and services	.168	0.001*	3.88(1)
Recreational facilities and services	.220	0.000*	3.85(2)
Family supporting services	.319	0.000*	3.24(12)

* $p < 0.05$

Adjusted R square is 0.624

The number in parentheses represents its ranking in tourism effect

includes three items related to services and goods prices; (4) community security, which includes three items considered community safety conditions. Additionally, two domains in community services are (1) public services, which includes four items related government services; (2) private services, which includes three items of social and entertainment activities.

For residents' community quality of life experiences affected by tourism, respondents concern community opportunity, quality of community environment, community cost of living, community security, public services and private services. The results show respondents have perceived comprehensive tourism effect on their living experiences. They have found different types of opportunities tourism brought in. In the meantime, community environment, living expense and community security are changed and public and private services are shift due to tourism development.

Conclusion

Based on the idea that economic benefits lead to a high quality of life, Orange County introduces tourism industry and expects to stimulate the local economy. However, this investigation indicates that there are factors other than economics to consider in terms

Table 6 Domains in community conditions using factor analysis

Domains	Factor loadings	Eigenvalue	Variance explained (%)	Cronbach's alpha
Community opportunity		6.625	44.166	0.838
Entertainment opportunities	.817			
Recreation opportunities	.797			
Infrastructure (roads, bridges, utilities)	.688			
Job opportunities	.593			
Quality of environment in community		1.692	11.281	0.897
Conditions of wildlife habitats	.870			
Conditions of natural areas	.862			
Clean air and water	.781			
Cost of living in community		1.209	8.058	0.806
Prices for goods and services	.893			
Cost of living	.815			
Property values	.690			
Community security		1.115	7.430	0.704
Crime level	.820			
Traffic conditions	.655			
Personal safety	.601			

Kaisere-Myere-Olkin (KMO) measures of sampling adequacy is 0.869 and Bartlett's test of sphericity is 2,405.6 ($p < .001$), indicating that the factor analysis is appropriate

Conditions of cultural/historical sites and appearance in the community were excluded because both items are cross-loaded on more than one factor

Table 7 Domains in community services using factor analysis

Domains	Factor loadings	Eigenvalue	Variance explained (%)	Cronbach's alpha
Public services		5.827	52.977	0.875
Fire protection services	.846			
Police protection services	.816			
Garbage collection services	.776			
Medical availability and services	.711			
Private services		1.125	10.227	0.844
Restaurant facilities and services	.839			
Recreational facilities and services	.818			
Shopping facilities and services	.788			

Kaisere-Myere-Olkin (KMO) measures of sampling adequacy is 0.902 and Bartlett's test of sphericity is 1,680.2 ($p < .001$), indicating that the factor analysis is appropriate

Banking services, formal education, family supporting services and public transportation services were excluded because these items are cross-loaded on both factors

of community living experiences. These results indicate that tourism development contributes to the difference in community QOL for respondents and capture resident perceptions of community QOL in the context of tourism development. Several elements are identified contribute to community conditions and services, but respondents perceive different level of tourism effect on these elements. By using TCQOL scores, this research further find community quality of life domains affected by tourism. This investigation monitors current residents living experiences as well as provides baseline data that benefits to future comparisons in a longitudinal study or to the other tourist destinations that in turn contributes to tourism officials in policy and decision-making.

Host communities play an important role in the process of tourism development and their support for tourism is essential for the development, planning, successful operation, and sustainability of tourism (Jurowski 1994). The host communities have been recognized as part of the tourism experiences, and the importance of community involvement and support has been well acknowledged (Andereck and Vogt 2000; Ap 1992). The principles of sustainable tourism development further highlight the importance of residents' quality of life. To answer the issues in resident quality of life study of tourism literature, this study assess tourism-related community quality of life (TCQOL) in understanding residents' community living experiences in the context of tourism development. Additionally the results find significant elements contributing to community life. This study benefits tourism researchers in several ways. First, incorporating satisfaction, importance, and tourism effect measures allow researchers access to residents' preferences, evaluation of these preferences, and perceptions of tourism effects. This is a useful tool for measuring the subjective nature of community quality of life and has the potential to be an effective instrument for monitoring residents' tourism experiences. Second, researchers could further assess changes of resident perceived community QOL across time, and compare the community QOL experiences

to other tourism destinations. Third, this research provides a systematic method of detecting and understanding the diversity of residents' perceptions of their community quality of life.

Qualitative inquiry techniques on stakeholders may help developing indicators of TCQOL that adds depth to understand residents' perceptions of tourism-related community living experience. This research extensively reviewed quality of life literature and resident attitude studies to retrieve indicators of community quality of life affected by tourism, however, the ways of tourism influencing community quality of life may be showing a degree of context sensitivity. The present study used indicators from literature rather than include tourism stakeholders' (such as residents, tourism policy makers, and tourism business owners) opinions about community quality of life. The indicators may not totally reflect the current community quality of life resulting from tourism in a host community. Authors suggest that future research should include stakeholders' opinions to ensure instrument reflect the current situation of community living experiences in the context of tourism development of a study site.

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