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The quest of tourism and overall well-being: the developing economy of Pakistan

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Abstract

Purpose – This study aims to examine the causal relationship between tourism and overall well-being. The main objective of this research is to inform the policymakers that tourism can play a vital role in shaping the overall well-being in the developing economies.

Design/methodology/approach – This investigation used several time series techniques and procedures that include bounds test and autoregressive distributed lag mechanism to analyze the relationship between tourism and overall well-being in Pakistan by using time series data for the period 1980-2016.

Findings – The findings suggest a significant positive relationship between tourism and overall well-being both in the short and long run. The authors find that tourism and overall well-being affect each other positively.

Practical implications – This research indicates that policymakers and government can improve the overall well-being through tourism development. However, tourism policies and long-term planning should be focused on sustainable developments for achieving long-term goals. Besides, special incentives should be provided to the private sector for tourism development.

Originality/value – To the best of the authors' knowledge, this is the first investigation that examines the causal relationships between tourism and overall well-being through objective indicators in a developing

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economy. This study fills the immense literature gap and provides new directions to scholars to investigate the mentioned relationship through objective indicators.

Keywords Tourism, Overall well-being, ARDL, Developing economy

Paper type Research paper

1. Introduction

Well-being has been a philosophical and sociological concern since the beginning of time, and research has been extended over time to various disciplines such as psychology, health sciences, tourism and economics (Smith and Diekmann, 2017). Tourism studies have become more focused on well-being in the past few decades, both from a theoretical and methodological perspective (Smith and Diekmann, 2017). Extensive research reveals that tourism experiences and activities have a consequence on tourists' life satisfaction and the well-being of residents. Tourism activities contribute to several life domains such as leisure, self-esteem, self-identity, family life, health and culture (Uysal *et al.*, 2016). Historically, most of the research focused on the impacts of tourism on the resident's community, such as cultural, environmental, economic, emotional and social (Andereck *et al.*, 2005; Moscardo *et al.*, 2013; Sharpley, 2014; Uysal *et al.*, 2012c; Ap, 1992; Nunkoo and Gursoy, 2012). However, tourism developments also influence quality of life (QOL) or overall well-being of the local community (Liburd *et al.*, 2012; Uysal *et al.*, 2012b; Uysal *et al.*, 2012a) and became a primary concern for community leaders and governments (Aref, 2011; Lipovčan *et al.*, 2014; Aman *et al.*, 2013; Benckendorff *et al.*, 2009; Moscardo *et al.*, 2013). However, these studies have been conducted in developed countries, and less is known about the effects of tourism on well-being in the developing world. This investigation focuses explicitly on tourism's contributions to the overall well-being in the developing economy of Pakistan.

According to WTTC (2017), tourism's direct contribution to Pakistan's economy was $7.6bn (2.7% of total GDP) in 2016 and it suggests an increase of 5.6% per annum from 2017 to 2027. In 2016, the tourism sector in Pakistan directly produced 1,337,500 jobs, 2.3% of total employment, which is expected to rise by 2.5% per annum to 1,757,000 jobs in 2027 (WTTC, 2017). The investment in the tourism sector in 2016 was recorded 9.3% of the total investment, approximately $3.6bn (WTTC, 2017).

Tourism developments improve the quality of residents' lives by addressing the economic, social, cultural and recreational concerns, and provide certain other benefits (Benckendorff *et al.*, 2009; McCool and Martin, 1994; Peters and Schuckert, 2014). Scholars have used subjective indicators to measure the effects of tourism over well-being (Andereck and Nyaupane, 2011; Aref, 2011; Gjerald, 2005; Khizindar, 2012; Matarrita-Cascante, 2010; Nichols *et al.*, 2002; Kim *et al.*, 2013; Uysal *et al.*, 2012b); the current authors have used objective indicators to measure the effects of tourism on overall well-being in a developing economy. The current literature is scant about the relationship between tourism and overall well-being in developing economies. Since 2005 onwards, tourism and overall well-being rose simultaneously in Pakistan; however, terrorism razes tourism, which is evident from the shocks in tourism activities in Figure 1. The present authors seek to propose a novel perspective of tourism and overall well-being by investigating the causal relationships through economic modeling. The assessment of the current research about tourism and well-being is vital for several reasons. First, this research focuses on the effectiveness of tourism in the enhancement of overall well-being. Second, it assesses the role of overall well-being in supporting tourism activities in a country.

Moreover, this study provides excellent insights to policymakers, politicians and government officials that tourism and well-being contribute to each other. Therefore, policymakers can use tourism development as a policy agenda for the improvements in the

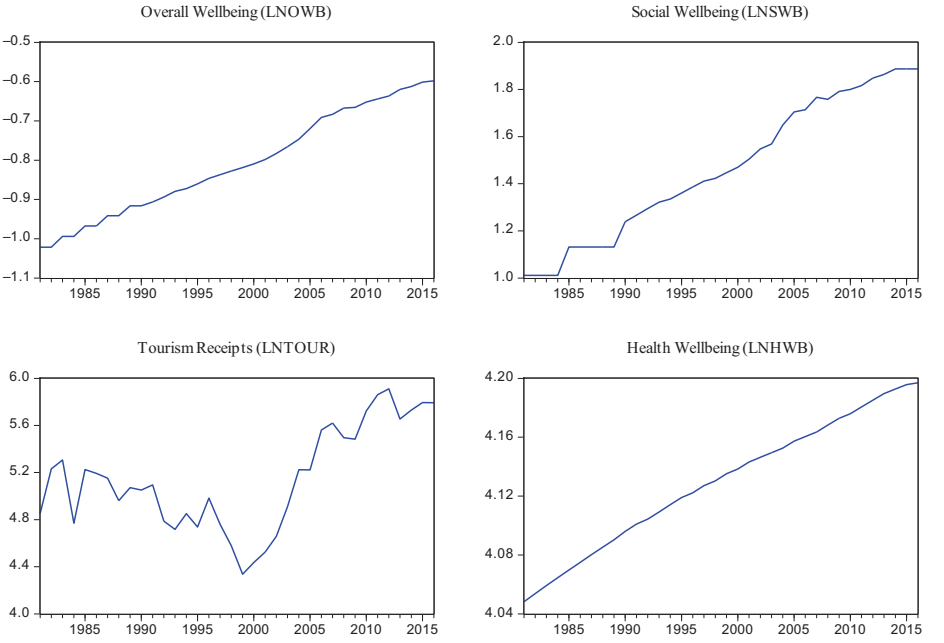

Figure 1.
Variables trends

overall well-being of general masses. Besides, this investigation contributes to the current literature on the relationship between tourism and well-being in several novel ways. First, to the best of our knowledge, this is the first research that investigates the relationship between tourism and overall well-being in the context of a developing country. Second, we have used objective indicators for examining the relationship between tourism and well-being, while the current literature is mostly focused on subjective measures. Third, we deal with well-being as macro phenomena and our findings suggest that tourism can play a vital role in the enhancement of overall well-being in the developing economies. Fourth, scant studies used econometrics model to map the relationship between tourism and well-being; hence, this study focused on econometrics.

Furthermore, to conduct this investigation, the time-series data of Pakistan from 1980 to 2016 has been used. Several time-series techniques have been applied; for instance, the bounds test approach and the autoregressive distributed lag (ARDL) model. Augmented Dicky–Fuller (ADF), Philips and Perron (PP) and Zivot–Andrew root tests are applied for checking the stationarity of variables and to fulfill the primary assumption of the bounds test approach that all variables should be stationary at I(0), I(1) or a combination of both. Afterward, bounds test approach is used for confirming the long-run relationship between the variables; then, ARDL model is applied for the estimation of long-run relationships. Several diagnostics tests, for instance, Breusch–Godfrey correlation LM test, Breusch Pagan Godfrey heteroskedasticity test, Jarque–Bera normality tests, cumulative sum (CUSUM) and CUSUM square tests have been conducted for checking the stability of the estimated models. The main findings of the study suggest that tourism positively contributes to the overall well-being, while an increase in overall well-being increases tourism activities. This research is composed of six sections; Section 1 deals with the introduction. Section 2 deals with the relevant literature. Section 3 covers the methodology and estimation strategy. Section 4 describes the findings of the study and Section 5 is composed of the

discussion. Finally, Section 6 deals with conclusion, practical implications, limitations and future research prospects.

2. Literature review

In the entire world, tourism is considered as a mean of economic development and has become a part of the strategic planning almost in every country (Uysal *et al.*, 2016). Tourism has significant effects on the well-being of the stakeholders (Jurowski *et al.*, 1997). Tourism research has concentrated on the well-being through the associated terms such as life satisfaction, QOL, wellness and happiness (Smith and Diekmann, 2017; de Bloom *et al.*, 2010; Dolnicar *et al.*, 2012; Gilbert and Abdullah, 2004; Neal *et al.*, 2004; Uysal *et al.*, 2016; Smith and Puczkó, 2008; Nawijn, 2011a; Nawijn, 2011b). The tourism industry is facing numerous obstacles such as socioeconomic uncertainty, terrorism, deficient technology, ecological and sustainability issues, and the furthermost risky is the inadequate dissemination of tourism reimbursements.

There is no definite consensus concerning the definition of tourism. But when it comes to explanation within the basic terms, it can be summed up that:

> Tourism is a collection of activities, services, and industries which deliver a travel experience comprising transportation, accommodation, eating and drinking establishments, retail shops, entertainment businesses and other hospitality services provided for individuals or groups traveling away from home (Robert and Goeldner, 1986).

The mentioned components in the above definition directly or indirectly contribute to the well-being of the tourists and destination residents.

Prominent scholars such as Uysal *et al.* (2012a), Uysal *et al.* (2012b) and Uysal *et al.* (2012c) proposed two models for examining the relationship between tourism and well-being from a system point of view; the first model is based on variables that impact the well-being of tourists and the second focuses on the factors that influence the well-being of the host communities. The key focus in the first model shows tourists' experiences that contribute to QOL (Dann, 2012), satisfaction with life domains and overall well-being (Sirgy *et al.*, 2011). The second model illustrates how tourism influences the living conditions of the host community at a destination by affecting economic conditions, infrastructure, life amenities and destination competitiveness; in fact, it contributes to the overall life domains of the community as a whole (Crouch and Ritchie, 2012).

Research suggests that tourism contributes to residents and tourists well-being, for instance, studies suggest that tourism activities refresh mind and body (Bushell and Sheldon, 2009), improve awareness of natural and cultural heritage, maximize self-esteem (Hartwell *et al.*, 2018) and help in personality development and self-identity (Hartwell *et al.*, 2018; Dolnicar *et al.*, 2012). The research on tourism contribution to the resident community is examined through the impacts on QOL and its consequences toward tourism development (Jamal and Dredge, 2014; Sharpley and Telfer, 2014; Andereck *et al.*, 2005). The trends suggest that the impacts of tourism vary according to the level of individual contact, tourism development stage and benefit obtained from tourism (Hartwell *et al.*, 2018). Wiseman and Brasher (2008) suggest that community well-being and its dynamics can be better understood by community engagement and policy paradigms at a destination. Besides, scholars pointed out that traditional approaches of measuring well-being has been proved methodologically problematic (Hartwell *et al.*, 2018) and offered new conceptual paradigms for measuring specific dimensions and values that can contribute to the life domain of the destination

community (Tyrrell *et al.*, 2013; Tyrrell *et al.*, 2010). What is debatable from these studies is that the prevailing methodologies of measuring tourism contribution to the community well-being is questionable and required a mix of subjective and objective measures that can reconcile the deficiencies of each other. Unfortunately, objective side of measuring tourism impacts on community at large has been ignored. Hence, this research focuses on the objective indicators to measure the tourism influence on community at macro level.

It is evident from various studies that governments, politicians and community leaders consider tourism as a substantial instrument for enhancing employment prospects, revenues, social interrelation and economic diversity (Kim *et al.*, 2013). The trends suggest that tourism has both progressive and adverse impacts on well-being (Kim *et al.*, 2013; Allen *et al.*, 1988; Prentice, 1993; Tosun, 2002; Deaton, 2008). Researchers have examined the effects of tourism on social well-being (McCabe *et al.*, 2010; Coulthard *et al.*, 2011; Morgan *et al.*, 2015). Additionally, scholars have captured the influence of tourism on cultural well-being (Uysal *et al.*, 2016; Kousis, 1989; Hall and Brown, 2006; Kim *et al.*, 2013) and on environmental well-being (Butler, 1999; Holden, 2003; Andereck, 1995; Farrell and Runyan, 1991). Scholars have also investigated the rapport of tourism and material well-being (Konu, 2010; León, 2007; Pesonen and Komppula, 2010). The study by Kim *et al.* (2013) expresses that tourism influences residents' material as well as non-material well-being. The research by Woo *et al.* (2015) conveys that tourism development has impacted both material and non-material well-being of the residents. Trends suggest that a mix of objective and subjective indicators such as poverty, per capita income, crime rate, pollution and perceptions have been used for measuring well-being (Kim *et al.*, 2013; Crotts and Holland, 1993). Tourism activities contribute to numerous life spheres such as household, social, leisure, economic and cultural aspects of life (Beeton, 2006).

A number of countries are developing their rural areas by means of tourism (Ashley *et al.*, 2000; Roe *et al.*, 2004; Beeton, 2006) and empowering the less-privileged class of the society by providing occupational openings that support the overall well-being (Chant, 2005; Cukier *et al.*, 1996; Roe *et al.*, 2004) and enrich self-esteem (Gu and Ryan, 2008; Wang and Xu, 2015). Tourism improves the standard of living and offers avenues for employment (Ko and Stewart, 2002; Upchurch and Teivane, 2000). Scholars submit that tourism growth enhances cultural exchanges and provides leisure prospects for natives and tourists (Stylidis *et al.*, 2014; Dyer *et al.*, 2007).

Studies reveal that tourism development contributes to the economic prosperity and well-being of the community (Raymond and Brown, 2007). Moreover, in distant geographies of several countries, tourism has enhanced the socio-economic well-being of the residents (Briedenhann and Wickens, 2004; Oakes, 2005). In most of the developing countries where tourism development is in the nascent stage, it has been regarded as a positive contributor to the overall well-being (Kim *et al.*, 2013; Uysal *et al.*, 2012a; Sharpley, 2014; Woo *et al.*, 2015; Uysal *et al.*, 2012c). However, some of the related works are summarized in Table 1.

3. Methodology

This study explores the relationships between tourism and overall well-being in a developing economy. Annual time-series data of Pakistan has been collected from the World Bank online depository and different versions of Pakistan statistical yearbooks for the period 1980-2016. In this research, the literacy rate represents social well-being (LNSWB); life expectancy represents health well-being (LNHWB), Human Development Index (HDI) represents overall well-being (LNOWB), and tourism receipts (LNTOUR) represent tourism

Authors	Measurement	Summary
Perdue and Gustke (1991)	Economic growth, education, population growth and health facilities were used to measure the influence of tourism residents' QOL	The summary of the study suggests that tourism development has increased the material, social and health conditions in the community
Crotts and Holland (1993)	Objective indicators were used to measure tourism impact on well-being	This study suggests that tourism increased residents' income and housing costs at the destination
Jurowski *et al.* (1997)	Subjective indicators were used for developing a theoretical framework by applying path analysis	This study applied the social exchange theory to measure tourism impacts and developed a theoretical framework. This study suggested that several factors, i.e. level of economic gain, use of resources, attitude and community attachment shapes residents' perceptions and their support for tourism development
Bachleitner and Zins (1999)	Subjective indicators were used to analyze how cultural tourism influence residents QOL	Using the TIAS model developed by Lankford and Howard, an empirical analysis was conducted. The four-quadrant model of social impacts by Bjorklund and Philbrick was applied to explain perceptual shifts. The findings suggest that cultural tourism enhanced tourism growth and in rural communities. It is noted that cultural tourism has great influences on the socio-psycho behaviors of individuals in the community
Andereck and Vogt (2000)	Subjective indicators were applied to measure tourism development and support for tourism development with 41 items with a five-point Likert scale	The main objective of this article is to investigate the relationship between tourism and residents' support for tourism development. Seven communities were identified for the research. The findings suggest that communities differ concerning support for tourism development and positive perception of tourism
Spiegel *et al.* (2007)	This study used focus groups and critical interviews in two coastal communities	Study to determine health impacts on residents of the expansion of tourism in Cuba
Wheeler and Laing (2008)	A mix of qualitative and quantitative data was used to measure the level of satisfaction	The findings suggest that the relationship between tourism and well-being was moderated by livability
Vargas-Sánchez *et al.* (2009)	Six objective indicators were used to measure community overall well-being	The findings of this research suggest that overall community satisfaction was positively influenced by positive impacts of tourism. However, individual benefits and negative perception does not influence community satisfaction
Meng *et al.* (2010)	A total of 17 objective indicators were used to measure the QOL	The findings suggest that people living in tourism-developed areas were living better than those who were living in less-developed tourism destinations
Aref (2011)	A questionnaire survey was conducted on a Likert scale from 1 to 5	The findings suggest that tourism positively affects resident well-being in Sheraz, Iran

(*continued*)

Table 1.
Summary of related literature

Authors	Measurement	Summary
Nawijn and Mitas (2012)	A self-administered questionnaire was used to measure residents' attitude toward tourism and its impacts of community well-being	The findings suggest that perceived tourism impacts are related to life satisfaction. Moreover, tourism positively influences health, infrastructure, personal relationship and services
Khizindar (2012)	Three subjective indicators were used to measure the QOL	The findings suggest that social, environmental and cultural impacts of tourism influence resident's well-being
Kim *et al.* (2013)	This study used nine subjective indicators to measure several aspects of well-being and overall life satisfaction	The results of this article suggest that stages of the tourism life cycle moderate the relationships between tourism and well-being
Angeloni (2013)	Secondary data was used to analyze the weaknesses of cultural tourism in Italy	The findings suggest that cultural tourism can enhance the well-being of locals by enhancing the function of local government. The author argues that a destination that manages its resources efficiently and effectively has the ability to improve the QOL of the community
Buzinde *et al.* (2014)	This article applied a bottom-up approach to investigate original elements of well-being for a better understanding of how tourism affects indigenous experiences of well-being	Two focus group discussions were undertaken in the two communities to record the basic understanding of well-being in the community. Besides, what factor influence well-being and how tourism influences the environment, culture and economy at Maasai and what are the challenges and positive outcomes of tourism. All ages of people agreed that tourism benefits the local community, but it has negative impact on community well-being
Lipovčan *et al.* (2014)	Subjective well-being measured on a scale of 0-10 was used to measure tourists' satisfaction and residents' well-being at 41 different destinations. The destinations were grouped into three categories based on touristic quality	The residents of destinations with the higher quality of tourist products were happier and satisfied with their lives than those living in the destinations with medium and lower quality of tourist offers
Sharpley and Telfer (2014)	This review article explores the development of research into residents' perceptions of tourism	The research presents a critical review of relevant research related to tourism development and well-being. The article provides a good overview of the progress made in tourism research and also criticizes and provides suggestions where required
Woo *et al.* (2015)	Six subjective indicators were used to measure tourism development and its impacts on QOL	Tourism development positively affects material and non-material life that contribute to QOL. However, QOL is a determinant of tourism future developments
Jeon *et al.* (2016)	Four subjective indicators were used to measure resident's QOL	The article suggests that resident QOL was positively influenced by perceived economic benefits, social costs and environmental sustainability

Table 1.

activities. A dummy variable is used for measuring terrorism shocks. The data has been transformed by taking the natural log of all variables. The details of all variables are provided in Table 2.

Scholars and international organizations such as Katz *et al.* (1983), Council (2011) and Robine and Ritchie (1991) have used life expectancy as an overall measure of population health. The literacy rate has been regarded as a direct measure of life achievements and access to the minimum level of education; HDI is a compound indicator of overall well-being (Cooke *et al.*, 2007). International organizations such as Organisation for Economic Co-operation and Development also used the same type of indicators to measure well-being (Beaumont, 2011).

Scholars have applied ARDL model on panel and time-series data in tourism research (Lin *et al.*, 2015; Liu and Pratt, 2017; Katircioglu, 2009; Adnan *et al.*, 2013). This research used the ARDL model to estimate the long- and short-run relationship between tourism and overall well-being. Health and material well-being were taken as control variables. Besides, ARDL and other statistical tools are used to analyze well-being, tourism, economic growth and other factors (Gebrehiwot, 2016; Ahmad and Riaz, 2011; Shahbaz and Aamir, 2008; Lee *et al.*, 2013; Ridderstaat *et al.*, 2016). The following equation (1) and (2) are assumed to analyze the relationship between the mentioned variables.

$$\mathbf{LNOWB_t} = \beta_0 + \beta_1(\mathbf{LNSWB_t}) + \beta_2(\mathbf{LNHWB_t}) + \beta_3(\mathbf{LNTOUR_t}) + \beta_4(\mathbf{Dummy_t}) + \boldsymbol{\mu_t} \quad (1)$$

$$\mathbf{LNTOUR_t} = \beta_0 + \beta_1(\mathbf{LNOWB_t}) + \beta_2(\mathbf{LNSWB_t}) + \beta_3(\mathbf{LNHWB_t}) + \beta_4(\mathbf{Dummy_t}) + \boldsymbol{\mu_t} \quad (2)$$

Where β_0 is constant; β_1, β_2, β_3 and β_4 are the parameters; and μ_t is error term, assumed to be normally distributed.

3.1 Estimation strategy

This investigation used the ARDL bounds testing approach to co-integration developed by Pesaran and Shin (1998) and Pesaran *et al.* (2000). Traditional approaches of co-integration such as Johansen and Juselius (1990), Phillips and Hansen (1990) and Engle and Granger (1987) have certain demerits in comparison to ARDL bounds test approach. The traditional approaches can be used only when variables are stationary at the order I(1) while the ARDL bounds test approach can be used whether the variables are stationary at I(0) or I(1), or a combination of both. The ARDL approach is appropriate for the analysis of the present data because of small sample size (Nkoro and Uko, 2016). The ARDL error correction model accommodates satisfactory lags that capture the data generation process in general to specific framework (Laurenceson and Chai, 2003). Under the ARDL approach, equations (1) and (2) are molded as under for the ARDL:

Variables	Description	Proxy	Units
LNOWB	Overall well-being	HDI	Score (0-1)
LNHWB	Health well-being	Life expectancy	In years
LNSWB	Social well-being	Literacy rate	Per population
LNTOUR	Tourism activities	Tourism receipts	In million $

Table 2. Variables details

$$\Delta(\mathbf{LNOWB_t}) = \beta_0 + \sum_{i=1}^{q} \beta 1_i \Delta(\mathbf{LNOWB_{t-1}}) + \sum_{i=1}^{q} \beta 2_i \Delta(\mathbf{LNSWB_{t-1}}) + \sum_{i=1}^{q} \beta 3_i \Delta(\mathbf{LNHWB_{t-1}}) + \sum_{i=1}^{q} \beta 4_i \Delta(\mathbf{LNTOUR_{t-1}}) + \sum_{i=1}^{q} \beta 5_i \Delta(\mathbf{Dummy_{t-1}}) + \beta_6(\mathbf{LNOWB_{t-1}}) + \beta_7(\mathbf{LNSWB_{t-1}}) + \beta_8(\mathbf{LNHWB_{t-1}}) + \beta_9(\mathbf{LNTOUR_{t-1}}) + \beta_{10}(\mathbf{Dummy_{t-1}}) + \boldsymbol{\mu_t} \quad (3)$$

$$\Delta(\mathbf{LNTOUR_t}) = \beta_0 + \sum_{i=1}^{q} \beta 1_i \Delta(\mathbf{LNTOUR_{t-1}}) + \sum_{i=1}^{q} \beta 2_i \Delta(\mathbf{LNOWB_{t-1}}) + \sum_{i=1}^{q} \beta 3_i \Delta(\mathbf{LNSWB_{t-1}}) + \sum_{i=1}^{q} \beta 4_i \Delta(\mathbf{LNHWB_{t-1}}) + \sum_{i=1}^{q} \beta 5_i \Delta(\mathbf{Dummy_{t-1}}) + \beta_6(\mathbf{LNTOUR_{t-1}}) + \beta_7(\mathbf{LNOWB_{t-1}}) + \beta_8(\mathbf{LNSWB_{t-1}}) + \beta_9(\mathbf{LNHWB_{t-1}}) + \beta_{10}(\mathbf{Dummy_{t-1}}) + \boldsymbol{\mu_t} \quad (4)$$

In equations (3) and (4), the parameters β_1, β_2, β_3, β_4 and β_5 represent short-run measurements and β_6, β_7, β_8, β_9 and β_{10} are the long-run elasticities. Moreover, Δ is the first difference operator and q indicates the optimal lag length. Error correction terms (ECTs) of equations (3) and (4) are given below:

$$\Delta(\mathbf{LNOWB_t}) = \beta_0 + \sum_{i=1}^{q} \beta 1_i \Delta(\mathbf{LNOWB_{t-1}}) + \sum_{i=1}^{q} \beta 2_i \Delta(\mathbf{LNSWB_{t-1}}) + \sum_{i=1}^{q} \beta 3_i \Delta(\mathbf{LNHWB_{t-1}}) + \sum_{i=1}^{q} \beta 4_i \Delta(\mathbf{LNTOUR_{t-1}}) + \sum_{i=1}^{q} \beta 5_i \Delta(\mathbf{Dummy_{t-1}}) + \boldsymbol{\gamma ECT_{t-1}} + \boldsymbol{\mu_t} \quad (5)$$

$$\Delta(\mathbf{LNTOUR_t}) = \beta_0 + \sum_{i=1}^{q} \beta 1_i \Delta(\mathbf{LNTOUR_{t-1}}) + \sum_{i=1}^{q} \beta 2_i \Delta(\mathbf{LNOWB_{t-1}}) + \sum_{i=1}^{q} \beta 3_i \Delta(\mathbf{LNSWB_{t-1}}) + \sum_{i=1}^{q} \beta 4_i \Delta(\mathbf{LNHWB_{t-1}}) + \sum_{i=1}^{q} \beta 5_i \Delta(\mathbf{Dummy_{t-1}}) + \boldsymbol{\gamma ECT_{t-1}} + \boldsymbol{\mu_t} \quad (6)$$

In equations (5) and (6), q represents the optimal lag length, γ is the speed of adjustment parameter and *ECT* represents the error correction term, derived from long-run

relationships. The subsequent step in the ARDL approach is to calculate F-statistic and to equate it with tabulated critical bounds to examine whether the long-run co-integration exists or not (Pesaran *et al.*, 2001; Shahbaz, 2013). Besides, a dummy variable is used for measuring the effects of terrorism from 2002 to 2013.

The null hypotheses for equations (3) and (4) can be stated as *H0*: $\beta_6 = \beta_7 = \beta_8 = \beta_9 = \beta_{10} = 0$, which assume that no long-run relationship between the variables exists, whereas the alternative hypothesis for co-integration can be *Ha*: $\beta_6 \neq \beta_7 \neq \beta_8 \neq \beta_9 \neq \beta_{10} \neq 0$. If the F-statistic calculated value is larger than the upper bounds ($F > F^U$) at 1%, 5% or 10% significance level, the decision will be in favor of co-integration, if it falls shorter than the lower bounds ($F^L > F$), there will be no co-integration and in case F-statistic falls between lower and upper bounds ($F^L < F < F^U$), the result will be called inconclusive. ARDL model assumes that variables should be stationary of I(0) or I(1) or the combination of both; three different unit root tests are applied to authenticate whether the variables are stationary or not, i.e. ADF test (Dickey and Fuller, 1979), PP test (Phillips and Perron, 1988) and Zivot–Andrews test (Zivot and Andrews, 1992). ADF test is based on the following equation:

$$\Delta Y_t = \ Y_t = \ \alpha_0 + \ \alpha_1 Y_{t-1} + \sum_{i=0}^{n} d_j \Delta Y_{t-1} \ + \varepsilon_i \tag{7}$$

Whereas the PP unit root test can be illustrated algebraically as:

$$\Delta Y_t = \alpha \ + \rho^* Y_{t-1} + \varepsilon_i \tag{8}$$

4. Findings

The Jarque–Bera statistics in Table 3 confirm that all the variables are normally distributed. The normality specifies the authenticity of data and allows us for further analysis.

The outcomes of ADF and PP tests in Table 4 reveal that the variables are stationary either at I(0) or at I(1). The output recommends that the ARDL bounds test approach is appropriate for estimating the relationship between the mentioned variables. Scholars have criticized ADF and PP tests that they do not provide any information about structural breaks, which may cause biasedness (Baum, 2003).

Zivot–Andrews unit root test provides evidence about structural breaks; hence, Zivot–Andrews unit root test is used for checking the robustness of the results in Table 3. The findings of the Zivot–Andrews test are given in Table 5.

	LNOWB	LNSWB	LNHWB	LNTOUR
Mean	−0.808	1.462	4.129	5.146
Median	−0.823	1.435	4.132	5.123
Maximum	−0.597	1.887	4.196	5.910
Minimum	−1.022	1.011	4.048	4.335
Std dev.	0.134	0.297	0.044	0.438
Skewness	0.084	−0.017	−0.179	0.114
Kurtosis	1.737	1.667	1.888	1.977
Jarque–Bera	2.432	2.666	2.044	1.647
Probability	0.626	0.263	0.359	0.438

Table 3.
Descriptive statistic

Feridun and Shahbaz (2010) suggest that F-statistic is sensitive to the lag order of the variables. Hence, appropriate lag length selection is essential for applying the ARDL approach. The smaller the value of the criteria, the better will be the model. In the case of current data, the Akaike information criterion shows the minimum value at lag 4; hence, the optimal lag length is 4. Bounds test results are summarized in Table 6; the computed F-statistic values for Models 1 and 2 are greater than the upper bound at 1% significance level. This confirms the co-integration between the variables, which authenticate long-run relationships between overall well-being and tourism for the period 1980-2016.

The long-run relationships for both models are summarized in Table 7. The results of ARDL Model 1 with optimal lags (1, 4, 4, 2, 2) recommend that a positive relationship exists between tourism and overall well-being. The estimates of ARDL Model 1 suggest that 10% increase in tourism increases overall well-being by 0.42%.

However, the findings of Model 2 with optimal lags (2, 3, 4, 4, 2) suggest that overall and health well-being are positively associated with tourism. The results of Model 2 recommend that a 1% increase in overall and health well-being increases tourism by 20.48% and

Tests	LNOWB	LNSWB	LNHWB	LNTOUR
ADF				
I(0)	−0.243	−0.524	−5.120*	−1.095
I(I)	−9.404*	−6.390*	−3.200`	−6.695*
PP				
I(0)	−0.226	−0.528	−5.191*	−1.045
I(I)	−8.516*	−6.640*	−3.200**	−6.720*

Table 4.
Unit root tests

Notes: *, ** and *** refer to rejection of null hypothesis that unit root exist at 1%, 5% and 10%, respectively

Variable	Unit root at levels *t*-statistic	Year of break	Unit root at first differences *t*-statistic	Year of break
LNOWB	−5.330* (0, I)	2005	−3.122**(1, I)	2008
LNSWB	−3.459** (0, I)	2004	−6.911* (0, I)	1990
LNHWB	−1.633 (0, I)	1987	−6.449**(0, I)	2008
LNTOUR	−3.588** (0, I)	2004	−7.831* (0,I)	2000

Table 5.
Zivot and Andrews' (1992) unit root tests

Notes: *, ** and *** refer to rejection of null hypothesis that unit root exist at 1%, 5% and 10%, respectively. () refers to optimal breaks

Models 1 and 2	F-statistic	Upper bound	Lower bound	Remark
LNOWB/(LNSWB, LNHWB, LNTOUR, DUMMY)	12.78*	5.06 3.74		Cointegration
LNTOUR/(LNOWB, LNSWB, LNSWB, DUMMY)	6.097*	5.06 3.74		Cointegration

Table 6.
Bound tests results

Note: *, ** and *** indicate cointegration at 1%, 5% and 10%

Model 1 (1, 4, 4, 2, 2) Determinants	Constant	LNTOUR	LNSWB	LNHWB
Coefficient	−8.882	0.042	0.112	1.875
t-stat	−4.501*	5.940*	1.411	3.756*
Model 2 (2, 3, 4, 4, 2)				
Determinants	Constant	LNOWB	LNSWB	LNHWB
Coefficient	266.63	20.485	0.796	59.733
t-stat	5.814*	4.318*	0.348	5.483*
Diagnostic tests				
Parameters		Model 1		Model 2
Adjusted R^2		0.822		0.674
$\chi^2_{Normality}$		1.73 (0.420)		0.024 (0.988)
χ^2_{Hetro}		12.87 (0.744)		18.25 (0.506)
$\chi^2_{Serial\ correlation}$		5.55 (0.07)		5.19 (0.076)
F-statistic (Prob)		9.435 (0.001)		4.37 (0.006)
D/W statistics		2.24		2.62

Notes: *, ** and *** refer to level of significance at 1%, 5% and 10%, respectively. () represent probability

Table 7. The estimated long-run coefficient results (ADRL) estimation

59.73%, respectively. All the diagnostic tests confirm that no violation of any linear regression assumptions occurs. This indicates that models are free of specification problems.

The short-run elasticities and ECTs are reported in Table 8. The ECT specifies the speed of adjustment toward the long-run equilibrium. The ECT coefficient demonstrates how speedily variables return to equilibrium; it must be significant at 5% level, having a negative sign (Pahlavani *et al.*, 2005). Banerjee *et al.* (1998) suggest that a high value of ECT is further proof of a long-run stable relationship. ECT values for Models 1 and 2 are −0.777 and −0.886, correspondingly significant at 1%, proposing that a deviation from equilibrium will be corrected in the future by 77.7% and 88.6%, respectively. The calculated short-run elasticity for tourism has a significant positive relationship with overall well-being in Model 1; the coefficient of tourism indicates that a 10% increase in tourism will enhance overall well-being by 0.21% within one year. Moreover, the dummy variable is negative in the short run, indicating that terrorists' activities have negative effects on the overall well-being. Furthermore, the short-run dynamics of Model 2 suggest that overall and health well-being

Variables	Model 1 Δ LNOWB	Model 2 Δ LNTOUR
Δ LNOWB		17.126 (3.327)*
Δ LNSWB	0.069 (1.847)***	1.689 (1.651)
Δ LNHWB	2.615 (2.272)**	69.865 (1.831)***
Δ LNTOUR	0.021 (4.008)*	
Δ Dummy	−0.008 (−2.597)**	−0.221 (−1.622)
ECT $_t(-1)$	−0.777 (−5.738)*	−0.886 (−4.923)*

Notes: *, ** and *** refer to level of significance at 1%, 5% and 10%, respectively. () represent *t*-statistic

Table 8. Error correction model representation of the selected ARDL models

are positively associated with tourism. The short-run coefficients of Model 2 suggest that 1% of overall and health well-being increase tourism by 17.12% and 69.86%, respectively. The graphs of CUSUM and CUSUM square presented in Figures 2-5 reveal that plots for both CUSUM and CUSUM square are between the critical boundaries at a 5% level of significance. The results of CUSUM and CUSUM square authenticate the accuracy and stability of long- and short-run parameters of the ARDL models.

5. Discussion

The World Tourism Organization proposes tourism as a tool through which the Sustainable Development Goals (SDGs) can be accomplished (UNWTO and UNDP, 2017). Well-planned tourism helps to improve human well-being by reducing poverty, hunger, ensure education for all and sustainable development. Literature trends reveal that Tourism has a great potential to accelerate progress across the SDGs (UNWTO/GTERC, 2017; Adnan *et al.*, 2013). The tourism

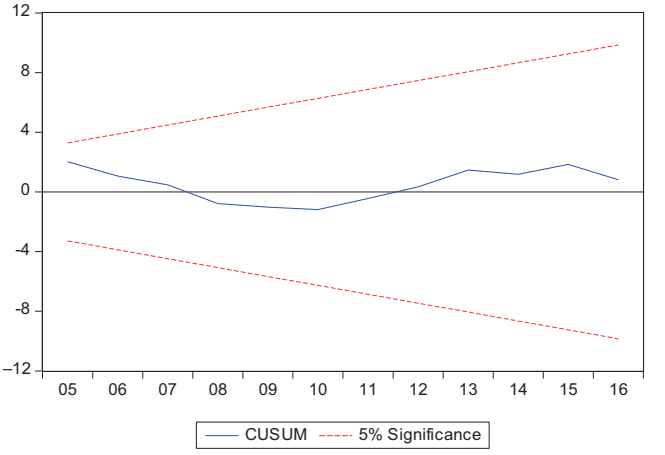

Figure 2.
CUSUM Model 1

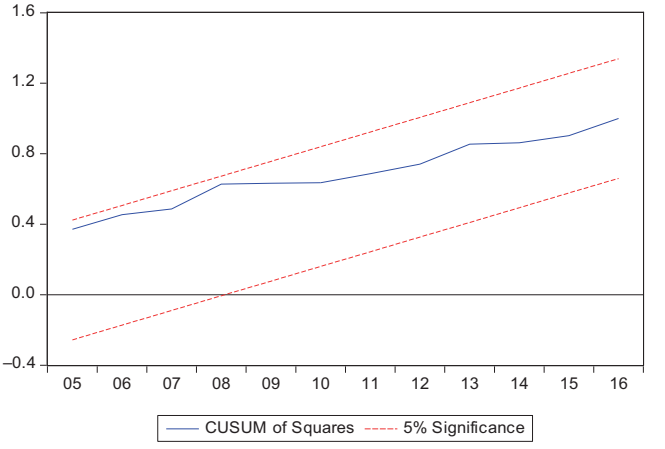

Figure 3.
CUSUM square
Model 1

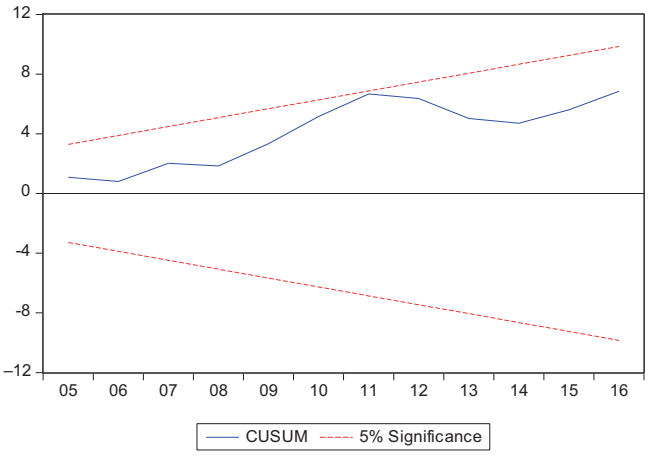

Figure 4.
CUSUM Model 2

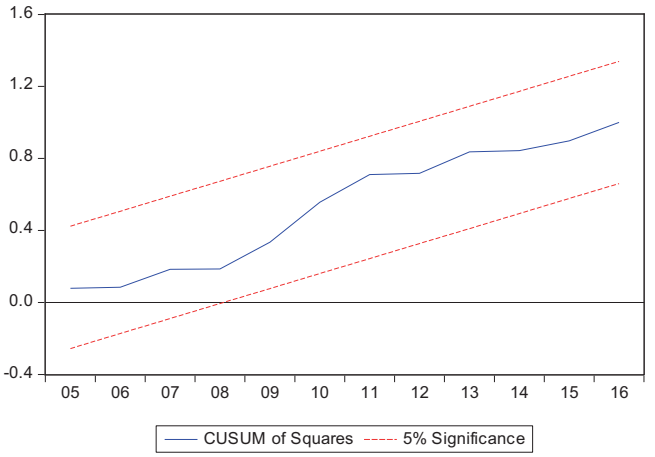

Figure 5.
CUSUM square Model 2

sector can generate quality jobs for durable growth, reduce poverty and offer incentives for environmental conservation (UNWTO and UNDP, 2017). The findings of this study indicate that tourism has significant positive effects on overall well-being both in the short and long run. A 10% increase in tourism activities increases overall well-being by 0.42% and 0.48%, respectively, in long and short run. Hence, a focus on sustainable tourism development in the developing economies would be beneficial for economic growth, poverty alleviation and improvement in education. Our proxy HDI for overall well-being is a combined indicator of economic growth, life expectancy and access to education; therefore, tourism development in the developing nations would collectively provide support directly or indirectly to the pillars of well-being. Through the development of tourism, Pakistan will be able to achieve some of the SDGs, either directly or indirectly. The results also suggest that an increase in the overall well-being increases tourism activities; 1% increase in overall well-being increases tourism by 20.48% and 17.13%, respectively, in the long and short run. Several scholars argued that poverty, hunger and deficiencies in education facilities significantly contribute to crimes, social evils and terrorists activities in a country (Alcalá *et al.*, 2017), which are

the major obstacles for tourism development; hence, rise in overall well-being would help Pakistan to overcome the social evils prevailing in the country. Thus, tourism development can improve the well-being of the people, and such improvement will accelerate tourism activities as suggested by our results. Moreover, the findings are in line with the results of several scholars who suggested that tourism enhances local communities' well-being, such as Crouch and Ritchie (1999) and Slee *et al.* (1997).

6. Conclusion

Debate on the relationship between tourism and well-being has produced a vast literature, but the results are still inconclusive and remained open for discussion. To supplement the previous findings, we attempted to capture the relationship between tourism and overall well-being by using econometric modeling for a developing country. This paper sets out to explore the empirical relationship between tourism and overall well-being. In doing so, it was revealed that tourism and overall well-being have significant impacts on each other. The existing literature suggests that tourism contributes to the economic, social, cultural, environmental and emotional aspects of the host community (Adnan *et al.*, 2013; Allen *et al.*, 1988; Uysal *et al.*, 2012a). Pakistan is a country of natural, cultural and heritage wonders. A well-thought tourism development would be helpful in the enrichment of job creation, tourism SMEs development and economic growth; moreover, it would be supportive in the achievement of SDGs. The quantitative estimates of our models suggest that tourism development in Pakistan would enhance the living standards. Though previous studies through subjective indicators have suggested that tourism can improve well-being, but to the best of our knowledge, scant literature is available on objective indicators. Besides, this research suggests that well-being positively contributes to tourism; hence, it provides evidence for a bi-directional causal relationship between tourism and overall well-being. This study contributes to the current literature on the relationship between tourism and overall well-being in several ways. First, this study investigates the relationship between tourism and well-being on a macro level. Second, we used objective indicators instead of subjective, hence, provide a new methodological approach. Third, we found that tourism and well-being are bi-directional. Fourth, tourism development can be used as a strategic tool to uplift the well-being in developing countries. Therefore, in light of the bi-directional relationship between tourism and overall well-being, it is suggested that both sides of the equation positively contribute to each other, thus, better tourism and welfare policies at national level will improve the living standards of the residents and also increase tourism activities.

6.1 Practical implications, limitations and future prospects

This investigation is of particular importance for policymakers, community leaders and politicians in Pakistan. Around the world, the private sector plays a vital role in tourism development; hence, Pakistan should provide finances to private sector for the required development. The institutional mechanism should be revised for sustainable tourism development to achieve maximum SDGs. Tourism policymakers should strengthen and facilitate the dialogues between the related stakeholders for taking advantage of tourism's inter-linkages to have better impact on well-being. A better financial system should be developed for the development of tourism SMEs in rural areas of Pakistan. Academia should be involved and funded for in-depth tourism research for the development of knowledge, strategies and research-based policies. There are certain limitations to the current study. First, the outcomes may correctly address the case of some developing countries but may not be fully applicable to other nations. Second, it provides a macro view of the subject mentioned, which may or may not be true at a micro-level. In future, scholars can find the relationship between tourism and overall well-being by using panel data. This research puts a call for scholars to

further research the relationship between tourism and well-being by using different combination of objective indicators.

References

Adnan, H., Qazi, M., Ali, K. and Rana, E. (2013), "Tourism-led growth hypothesis: a case study of Pakistan", *Asia Pacific Journal of Tourism Research*, Vol. 18, pp. 303-313.

Ahmad, K. and Riaz, A. (2011), "An econometric model of poverty in Pakistan: ARDL approach to co-integration", *Asian Journal of Business and Management Sciences*, Vol. 1, pp. 75-84.

Alcalá, H.E., Sharif, M.Z. and Samari, G. (2017), "Social determinants of health, violent radicalization, and terrorism: a public health perspective", *Health Equity*, Vol. 1 No. 1, pp. 87-95.

Allen, L.R., Long, P.T., Perdue, R.R. and Kieselbach, S. (1988), "The impact of tourism development on residents' perceptions of community life", *Journal of Travel Research*, Vol. 27 No. 1, pp. 16-21.

Aman, O., Manap, A.A., Ismail, A.F., Kudus, N. and Rahmiati, F. (2013), "The impact of tourism innovation on quality of life of residents in the community: a case study of Sungai Melaka", *Journal of Human Capital Development (JHCD)*, Vol. 6, pp. 27-40.

Andereck, K.L. (1995), "Environmental consequences of tourism: a review of recent research", *Environmental Consequences of Tourism: a Review of Recent Research*, pp. 77-81.

Andereck, K.L. and Nyaupane, G.P. (2011), "Exploring the nature of tourism and quality of life perceptions among residents", *Journal of Travel Research*, Vol. 50 No. 3, pp. 248-260.

Andereck, K.L. and Vogt, C.A. (2000), "The relationship between residents' attitudes toward tourism and tourism development options", *Journal of Travel Research*, Vol. 39 No. 1, pp. 27-36.

Andereck, K.L., Valentine, K.M., Knopf, R.C. and Vogt, C.A. (2005), "Residents' perceptions of community tourism impacts", *Annals of Tourism Research*, Vol. 32 No. 4, pp. 1056-1076.

Angeloni, S. (2013), "Cultural tourism and well-being of the local population in Italy", *Theoretical and Empirical Researches in Urban Management*, Vol. 8, pp. 17-31.

Ap, J. (1992), "Residents' perceptions on tourism impacts", *Annals of Tourism Research*, Vol. 19 No. 4, pp. 665-690.

Aref, F. (2011), "The effects of tourism on quality of life: a case study of Shiraz, Iran", *Life Science Journal*, Vol. 8, pp. 26-30.

Ashley, C. Boyd, C. and Goodwin, H. (2000), "Pro-poor tourism: putting poverty at the heart of the tourism agenda",

Bachleitner, R. and Zins, A.H. (1999), "Cultural tourism in rural communities: the residents' perspective", *Journal of Business Research*, Vol. 44 No. 3, pp. 199-209.

Banerjee, A., Dolado, J. and Mestre, R. (1998), "Error-correction mechanism tests for cointegration in a single-equation framework", *Journal of Time Series Analysis*, Vol. 19 No. 3, pp. 267-283.

Baum, C.F. (2003), "A review of Stata 8.1 and its time series capabilities", Working Papers in Economics, 23.

Beaumont, J. (2011), "Measuring national well-being: a discussion paper on domains and measures",

Beeton, S. (2006), *Community Development through Tourism*, Landlinks Press.

Benckendorff, P., Edwards, D., Jurowski, C., Liburd, J.J., Miller, G. and Moscardo, G. (2009), "Exploring the future of tourism and quality of life", *Tourism and Hospitality Research*, Vol. 9 No. 2, pp. 171-183.

Briedenhann, J. and Wickens, E. (2004), "Tourism routes as a tool for the economic development of rural areas – vibrant hope or impossible dream?", *Tourism Management*, Vol. 25 No. 1, pp. 71-79.

Bushell, R. and Sheldon, P.J. (2009), *Wellness and Tourism: Mind, Body, Spirit, Place*, Cognizant Communication.

Butler, R.W. (1999), "Sustainable tourism: a state-of-the-art review", *Tourism Geographies*, Vol. 1 No. 1, pp. 7-25.

Buzinde, C.N., Kalavar, J.M. and Melubo, K. (2014), "Tourism and community well-being: the case of the Maasai in Tanzania", *Annals of Tourism Research*, Vol. 44, pp. 20-35.

Chant, S. (2005), "Gender and tourism employment in Mexico and the Philippines", *Gender, Work and Tourism*, Routledge.

Cooke, M., Mitrou, F., Lawrence, D., Guimond, E. and Beavon, D. (2007), "Indigenous well-being in four countries: an application of the UNDP'S human development index to indigenous peoples in Australia, Canada, New Zealand, and the United States", *BMC International Health and Human Rights*, Vol. 7 No. 1, p. 9.

Coulthard, S., Johnson, D. and Mcgregor, J.A. (2011), "Poverty, sustainability and human wellbeing: a social wellbeing approach to the global fisheries crisis", *Global Environmental Change*, Vol. 21 No. 2, pp. 453-463.

Council, N.R. (2011), *Accounting for Health and Health Care: approaches to Measuring the Sources and Costs of Their Improvement*, National Academies Press.

Crotts, J.C. and Holland, S.M. (1993), "Objective indicators of the impact of rural tourism development in the state of Florida", *Journal of Sustainable Tourism*, Vol. 1 No. 2, pp. 112-120.

Crouch, G.I. and Ritchie, J.B. (1999), "Tourism, competitiveness, and societal prosperity", *Journal of Business Research*, Vol. 44 No. 3, pp. 137-152.

Crouch, G.I. and Ritchie, J.B. (2012), "Destination competitiveness and its implications for host-community QOL", *Handbook of Tourism and Quality-of-Life Research*, Springer.

Cukier, J., Norris, J. and Wall, G. (1996), "The involvement of women in the tourism industry of Bali", *Journal of Development Studies*, Vol. 33 No. 2, pp. 248-270.

Dann, G.M. (2012), "Tourist motivation and quality-of-life: in search of the missing link", *Handbook of Tourism and Quality-of-Life Research*, Springer.

DE Bloom, J., Geurts, S.A., Taris, T.W., Sonnentag, S., DE Weerth, C. and Kompier, M.A. (2010), "Effects of vacation from work on health and well-being: lots of fun, quickly gone", *Work and Stress*, Vol. 24, pp. 196-216.

Deaton, A. (2008), "Income, health, and well-being around the world: evidence from the gallup world poll", *The Journal of Economic Perspectives : a Journal of the American Economic Association*, Vol. 22 No. 2, pp. 53-72.

Dickey, D.A. and Fuller, W.A. (1979), "Distribution of the estimators for autoregressive time series with a unit root", *Journal of the American Statistical Association*, Vol. 74 No. 366, pp. 427-431.

Dolnicar, S., Yanamandram, V. and Cliff, K. (2012), "The contribution of vacations to quality of life", *Annals of Tourism Research*, Vol. 39 No. 1, pp. 59-83.

Dyer, P., Gursoy, D., Sharma, B. and Carter, J. (2007), "Structural modeling of resident perceptions of tourism and associated development on the sunshine coast", *Tourism Management*, Vol. 28 No. 2, pp. 409-422.

Engle, R.F. and Granger, C.W. (1987), "Co-integration and error correction: representation, estimation, and testing", *Econometrica*, Vol. 55 No. 2, pp. 251-276.

Farrell, B.H. and Runyan, D. (1991), "Ecology and tourism", *Annals of Tourism Research*, Vol. 18 No. 1, pp. 26-40.

Feridun, M. and Shahbaz, M. (2010), "Fighting terrorism: are military measures effective? Empirical evidence from Turkey", *Defence and Peace Economics*, Vol. 21 No. 2, pp. 193-205.

Gebrehiwot, K.G. (2016), "The impact of human capital development on economic growth in Ethiopia: evidence from ARDL approach to co-integration", *Bahir Dar Journal of Education*, p. 16.

Gilbert, D. and Abdullah, J. (2004), "Holidaytaking and the sense of well-being", *Annals of Tourism Research*, Vol. 31 No. 1, pp. 103-121.

Gjerald, O. (2005), "Sociocultural impacts of tourism: a case study from Norway", *Journal of Tourism and Cultural Change*, Vol. 3 No. 1, pp. 36-58.

Gu, H. and Ryan, C. (2008), "Place attachment, identity and community impacts of tourism – the case of a Beijing Hutong", *Tourism Management*, Vol. 29 No. 4, pp. 637-647.

Hall, D.R. and Brown, F. (2006), *Tourism and Welfare: Ethics, Responsibility and Sustained Well-Being*, Cabi.

Hartwell, H., Fyall, A., Willis, C., Page, S., Ladkin, A. and Hemingway, A. (2018), "Progress in tourism and destination wellbeing research", *Current Issues in Tourism*, Vol. 21 No. 16, pp. 1830-1892.

Holden, A. (2003), "In need of new environmental ethics for tourism? ", *Annals of Tourism Research*, Vol. 30 No. 1, pp. 94-108.

Jamal, T. and Dredge, D. (2014), "Tourism and community development issues", *R. Sharpley and D. Telfer, Tourism and Development. Concepts and Issues, Second Edition. London: Channel View*, pp. 178-204.

Jeon, M.M., Kang, M.M. and Desmarais, E. (2016), "Residents' perceived quality of life in a cultural-heritage tourism destination", *Applied Research in Quality of Life*, Vol. 11 No. 1, pp. 105-123.

Johansen, S. and Juselius, K. (1990), "Maximum likelihood estimation and inference on cointegration – with applications to the demand for money", *Oxford Bulletin of Economics and Statistics*, Vol. 52 No. 2, pp. 169-210.

Jurowski, C., Uysal, M. and Williams, D.R. (1997), "A theoretical analysis of host community resident reactions to tourism", *Journal of Travel Research*, Vol. 36 No. 2, pp. 3-11.

Katircioglu, S.T. (2009), "Revisiting the tourism-led-growth hypothesis for Turkey using the bounds test and Johansen approach for cointegration", *Tourism Management*, Vol. 30 No. 1, pp. 17-20.

Katz, S., Branch, L.G., Branson, M.H., Papsidero, J.A., Beck, J.C. and Greer, D.S. (1983), "Active life expectancy", *New England Journal of Medicine*, Vol. 309 No. 20, pp. 1218-1224.

Khizindar, T.M. (2012), "Effects of tourism on residents' quality of life in Saudi Arabia: an empirical study", *Journal of Hospitality Marketing and Management*, Vol. 21 No. 6, pp. 617-637.

Kim, K., Uysal, M. and Sirgy, M.J. (2013), "How does tourism in a community impact the quality of life of community residents? ", *Tourism Management*, Vol. 36, pp. 527-540.

Ko, D.-W. and Stewart, W.P. (2002), "A structural equation model of residents' attitudes for tourism development", *Tourism Management*, Vol. 23 No. 5, pp. 521-530.

Konu, H. (2010), "Identifying potential wellbeing tourism segments in Finland", *Tourism Review*, Vol. 65 No. 2, pp. 41-51.

Kousis, M. (1989), "Tourism and the family in a rural Cretan community", *Annals of Tourism Research*, Vol. 16 No. 3, pp. 318-332.

Laurenceson, J. and Chai, J.C. (2003), *Financial Reform and Economic Development in China*, Edward Elgar Publishing.

Lee, C.G., Ng, P.K. and Lee, C. (2013), "Short-run and long-run causalities between happiness, income and unemployment in Japan", *Applied Economics Letters*, Vol. 20 No. 18, pp. 1636-1639.

León, Y.M. (2007), "The impact of tourism on rural livelihoods in the Dominican Republic's coastal areas", *The Journal of Development Studies*, Vol. 43 No. 2, pp. 340-359.

Liburd, J.J., Benckendorff, P. and Carlsen, J. (2012), "Tourism and quality-of-life: how does tourism measure up?", *Handbook of Tourism and Quality-of-Life Research*, Springer.

Lin, V.S., Liu, A. and Song, H. (2015), "Modeling and forecasting Chinese outbound tourism: an econometric approach", *Journal of Travel and Tourism Marketing*, Vol. 32 Nos 1/2, pp. 34-49.

Lipovčan, L.K., Brajša-Žganec, N. and Poljanec-Borić, S. (2014), "What is good for tourists should be good for residents too: the relationship between the quality of the touristic offer and subjective well-being of residents", *Tourism Analysis*, Vol. 19 No. 6, pp. 719-730.

Liu, A. and Pratt, S. (2017), "Tourism's vulnerability and resilience to terrorism", *Tourism Management*, Vol. 60, pp. 404-417.

McCABE, S., Joldersma, T. and Li, C. (2010), "Understanding the benefits of social tourism: Linking participation to subjective well-being and quality of life", *International Journal of Tourism Research*, Vol. 12 No. 6, pp. 761-773.

McCOOL, S.F. and Martin, S.R. (1994), "Community attachment and attitudes toward tourism development", *Journal of Travel Research*, Vol. 32 No. 3, pp. 29-34.

Matarrita-Cascante, D. (2010), "Changing communities, community satisfaction, and quality of life: a view of multiple perceived indicators", *Social Indicators Research*, Vol. 98 No. 1, pp. 105-127.

Meng, F., Li, X. and Uysal, M. (2010), "Tourism development and regional quality of life: the case of China: 旅游发展和区域生活质量: 中国案例研究", *Journal of China Tourism Research*, Vol. 6 No. 2, pp. 164-182.

Morgan, N., Pritchard, A. and Sedgley, D. (2015), "Social tourism and well-being in later life", *Annals of Tourism Research*, Vol. 52, pp. 1-15.

Moscardo, G., Konovalov, E., Murphy, L. and Mcgehee, N. (2013), "Mobilities, community well-being and sustainable tourism", *Journal of Sustainable Tourism*, Vol. 21 No. 4, pp. 532-556.

Nawijn, J. (2011a), "Determinants of daily happiness on vacation", *Journal of Travel Research*, Vol. 50 No. 5, pp. 559-566.

Nawijn, J. (2011b), "Happiness through vacationing: Just a temporary boost or long-term benefits?", *Journal of Happiness Studies*, Vol. 12 No. 4, pp. 651-665.

Nawijn, J. and Mitas, O. (2012), "Resident attitudes to tourism and their effect on subjective well-being: the case of Palma de Mallorca", *Journal of Travel Research*, Vol. 51 No. 5, pp. 531-541.

Neal, J.D., Sirgy, M.J. and Uysal, M. (2004), "Measuring the effect of tourism services on travelers' quality of life: further validation", *Social Indicators Research*, Vol. 69 No. 3, pp. 243-277.

Nichols, M., Stitt, B.G. and Giacopassi, D. (2002), "Community assessment of the effects of casinos on quality of life", *Social Indicators Research*, Vol. 57 No. 3, pp. 229-262.

Nkoro, E. and Uko, A.K. (2016), "Autoregressive distributed lag (ARDL) cointegration technique: application and interpretation", *Journal of Statistical and Econometric Methods*, Vol. 5, pp. 63-91.

Nunkoo, R. and Gursoy, D. (2012), "Residents' support for tourism: an identity perspective", *Annals of Tourism Research*, Vol. 39 No. 1, pp. 243-268.

Oakes, T. (2005), *Tourism and Modernity in China*, Routledge.

Pahlavani, M. Wilson, E. and Worthington, A.C. (2005), "Trade-GDP nexus in Iran: an application of the autoregressive distributed lag (ARDL) model",

Perdue, R.R. and Gustke, L. (1991), "The effects of tourism development on objective indicators of local quality of life. Tourism: building credibility for a credible industry", *Proceedings of the Travel and Tourism Research Association twenty-second annual conference, Hyatt Regency Hotel, Long Beach, CA, June 9-13, 1991, University of UT*, pp. 191-201.

Pesaran, M.H. and Shin, Y. (1998), "An autoregressive distributed-lag modelling approach to cointegration analysis", *Econometric Society Monographs*, Vol. 31, pp. 371-413.

Pesaran, M.H., Shin, Y. and Smith, R.J. (2000), "Structural analysis of vector error correction models with exogenous I (1) variables", *Journal of Econometrics*, Vol. 97 No. 2, pp. 293-343.

Pesaran, M.H., Shin, Y. and Smith, R.J. (2001), "Bounds testing approaches to the analysis of level relationships", *Journal of Applied Econometrics*, Vol. 16 No. 3, pp. 289-326.

Pesonen, J. and Komppula, R. (2010), "Rural wellbeing tourism: Motivations and expectations", *Journal of Hospitality and Tourism Management*, Vol. 17 No. 1, pp. 150-157.

Peters, M. and Schuckert, M. (2014), "Tourism entrepreneurs' perception of quality of life: an explorative study", *Tourism Analysis*, Vol. 19 No. 6, pp. 731-740.

Phillips, P.C. and Hansen, B.E. (1990), "Statistical inference in instrumental variables regression with I (1) processes", *The Review of Economic Studies*, Vol. 57 No. 1, pp. 99-125.

Phillips, P.C. and Perron, P. (1988), "Testing for a unit root in time series regression", *Biometrika*, Vol. 75 No. 2, pp. 335-346.

Prentice, R. (1993), "Community-driven tourism planning and residents' preferences", *Tourism Management*, Vol. 14 No. 3, pp. 218-227.

Raymond, C. and Brown, G. (2007), "A spatial method for assessing resident and visitor attitudes towards tourism growth and development", *Journal of Sustainable Tourism*, Vol. 15 No. 5, pp. 520-540.

Ridderstaat, J., Croes, R. and Nijkamp, P. (2016), "The tourism development–quality of life nexus in a small island destination", *Journal of Travel Research*, Vol. 55 No. 1, pp. 79-94.

Robert, W.M. and Goeldner, C.R. (1986), *Tourism, Principles. Practices, Philosophies*, John Wiley and Sons, Inc. New York, NY.

Robine, J.M. and Ritchie, K. (1991), "Healthy life expectancy: evaluation of global indicator of change in population health", *BMJ*, Vol. 302 No. 6774, pp. 457-460.

Roe, D. Ashley, C. Page, S. and Meyer, D. (2004), "Tourism and the poor analysing and interpreting tourism statistics from a poverty perspective",

Shahbaz, M. (2013), "Linkages between inflation, economic growth and terrorism in Pakistan", *Economic Modelling*, Vol. 32, pp. 496-506.

Shahbaz, M. and Aamir, N. (2008), "Macroeconomic determinants of the happiness of the poor: a case study of Pakistan",

Sharpley, R. (2014), "Host perceptions of tourism: a review of the research", *Tourism Management*, Vol. 42, pp. 37-49.

Sharpley, R. and Telfer, D.J. (2014), "Tourism and development: concepts and issues", Channel View Publications.

Sirgy, M.J., Kruger, P.S., Lee, D.-J. and Yu, G.B. (2011), "How does a travel trip affect tourists' life satisfaction?", *Journal of Travel Research*, Vol. 50 No. 3, pp. 261-275.

Slee, B., Farr, H. and Snowdon, P. (1997), "The economic impact of alternative types of rural tourism", *Journal of Agricultural Economics*, Vol. 48 No. 1-3, pp. 179-192.

Smith, M.K. and Diekmann, A. (2017), "Tourism and wellbeing", *Annals of Tourism Research*, Vol. 66, pp. 1-13.

Smith, M. and Puczkó, L. (2008), *Health and Wellness Tourism*, Routledge.

Spiegel, J., Gonzalez, M., Cabrera, G., Catasus, S., Vidal, C. and Yassi, A. (2007), "Promoting health in response to global tourism expansion in Cuba", *Health Promotion International*, Vol. 23 No. 1, pp. 60-69.

Stylidis, D., Biran, A., Sit, J. and Szivas, E.M. (2014), "Residents' support for tourism development: the role of residents' place image and perceived tourism impacts", *Tourism Management*, Vol. 45, pp. 260-274.

Tosun, C. (2002), "Host perceptions of impacts: a comparative tourism study", *Annals of Tourism Research*, Vol. 29 No. 1, pp. 231-253.

Tyrrell, T., Paris, C.M. and Biaett, V. (2013), "A quantified triple bottom line for tourism: experimental results", *Journal of Travel Research*, Vol. 52 No. 3, pp. 279-293.

Tyrrell, T., Paris, C.M. and Casson, M. (2010), "Evaluating tourism community preferences", *Tourism Analysis*, Vol. 15 No. 1, pp. 121-124.

UNWTO and UNDP (2017), *Tourism and the Sustainable Development Goals–Journey to 2030*, UNWTO Madrid.

UNWTO/GTERC (2017), "Asia tourism trends 2017 edition".

Upchurch, R.S. and Teivane, U. (2000), "Resident perceptions of tourism development in Riga", *Tourism Management*, Vol. 21 No. 5, pp. 499-507.

Uysal, M., Perdue, R. and Sirgy, M.J. (2012a), *Handbook of Tourism and Quality-of-Life Research: Enhancing the Lives of Tourists and Residents of Host Communities*, Springer Science and Business Media.

Uysal, M., Sirgy, M.J. and Perdue, R.R. (2012b), "The missing links and future research directions", *Handbook of Tourism and Quality-of-Life Research*, Springer.

Uysal, M., Woo, E. and Singal, M. (2012c), "The tourist area life cycle (TALC) and its effect on the quality-of-life (QOL) of destination community", *Handbook of Tourism and Quality-of-Life Research*, Springer.

Uysal, M., Sirgy, M.J., Woo, E. and Kim, H.L. (2016), "Quality of life (QOL) and well-being research in tourism", *Tourism Management*, Vol. 53, pp. 244-261.

Vargas-Sánchez, A., Plaza-Mejia, M.D.L.Á. and Porras-Bueno, N. (2009), "Understanding residents' attitudes toward the development of industrial tourism in a former mining community", *Journal of Travel Research*, Vol. 47 No. 3, pp. 373-387.

Wang, S. and Xu, H. (2015), "Influence of place-based senses of distinctiveness, continuity, self-esteem and self-efficacy on residents' attitudes toward tourism", *Tourism Management*, Vol. 47, pp. 241-250.

Wheeler, F. and Laing, J. (2008), "Tourism as a vehicle for liveable communities: case studies from regional Victoria", *Annals of Leisure Research*, Vol. 11 No. 1-2, pp. 242-263.

Wiseman, J. and Brasher, K. (2008), "Community wellbeing in an unwell world: trends, challenges, and possibilities", *Journal of Public Health Policy*, Vol. 29 No. 3, pp. 353-366.

Woo, E., Kim, H. and Uysal, M. (2015), "Life satisfaction and support for tourism development", *Annals of Tourism Research*, Vol. 50, pp. 84-97.

WTTC (2017), "Travel and tourism economic impact 2017 Pakistan",

Zivot, E. and Andrews, D.W. (1992), "Further evidence on the great crash, the oil-price shock, and the unit-root hypothesis", *Journal of Business and Economic Statistics*, Vol. 10 No. 3, pp. 251-270.

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