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Pro-Wellbeing Tourism: The Dynamic Relationship Between Household Consumption Expenditure and Tourism Growth in Tanzania

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ABSTRACT

Measurement of people's sustainable wellbeing is important for monitoring and evaluating economic activities. Therefore, there is a need for a statistical approach capturing population's sustainable wellbeing to complement measures of market activities. Since there are several dimensions of wellbeing, this paper pioneers the measurement of material wellbeing in Tanzania by studying the dynamic relationship between tourism development, agricultural growth, and per capita household final consumption expenditure during 1990–2017. The Vector Autoregressive model and Impulse Response Function reveal that tourism development has a significant positive impact on overall wellbeing of the population, but the country needs grassroots people-focused policies to translate tourism growth into improved wellbeing of the poorest. Further, promoting the production and consumption of tourism products integrates other sectors in the production process and leads to multiple benefits to the poor.

KEYWORDS

Causality; Impulse response function; pro-wellbeing tourism; Tanzania; tourism; vector autoregressive model

1. Introduction

The role of tourism development in poverty reduction has been emphasized by many studies due to tourism's consistent contribution to job creation and generation of foreign exchange which in turn reinforces economic growth, advances local investments and food security, etc. (Brida et al., 2016; Croes & Vanegas, 2008; Folarin & Adeniyi, 2020; Hampton & Jeyacheya, 2020; UNCTAD, 2017; Vanegas Sr., 2012). While tourism is considered to affect poverty through four channels: income channel, price channel, tax channel, and risky and dynamic influences channel (Blake et al., 2008; Folarin & Adeniyi, 2020; Hyytiä & Kola, 2013; Njoya & Seetaram, 2018), some studies suggest that benefits of tourism do not necessarily reach the poor nor enhance their wellbeing (Llorca-Rodríguez et al., 2017; Nelson, 2012; Thomas, 2014; Torres & Momsen, 2004).

It is further observed that studies analyzing the dynamic relationship between tourism growth and improvement of the quality of population's wellbeing in Africa, where poverty is still quite endemic, are very scant. For example, while empirical studies focusing on the tourism-poverty relationship in the context of Tanzania are quite scant, to the best of

authors' knowledge, there is no empirical study focusing on the dynamic relationship between tourism growth and population's wellbeing. Besides, while the use of tourism growth in developing nations as a vehicle for poverty reduction is primarily based on tourism's positive impact on economic growth (Kareem, 2013; Kibara et al., 2012; Lawal et al., 2018; Nene & Taivan, 2017; Odhiambo, 2011; Tang & Tan, 2015), most developing countries in sub-Saharan Africa, including Tanzania, have embraced tourism as a tool for poverty alleviation by making two assumptions: first, there exists an inverse relationship between tourism and poverty. Second, tourism expansion leads to improved wellbeing. Nevertheless, in the case of Tanzania, there is no empirical study available to vindicate these assumptions.

To narrow the existing gap in sub-Saharan Africa, this paper generates empirical evidence on pro-wellbeing tourism in Tanzania by responding to two fundamental questions: first, is there an inverse relationship between tourism growth and people's wellbeing, and if so, to what extent does population's wellbeing respond to the innovations in the tourism sector? Second, what is the causal direction, if any, between tourism development and population's wellbeing?

The term pro-wellbeing tourism is used in this paper to describe a tourism approach that enhances net welfare of the tourism destination's population and hence contributes to the population's quality of life. The increased welfare benefits may be economic, but they may also be social, environmental, or cultural. Thus pro-wellbeing tourism is neither a tourism sector nor product but an approach to the industry. Strategies for making tourism pro-wellbeing ought to unlock opportunities especially for the poorest population to access tourism growth benefits.

Besides, an objective definition of wellbeing entails both personal and more objective standpoints as well as providing an evaluative statement upon which the content of wellbeing may be evaluated (Stiglitz et al., 2009; Wallace et al., 2021). Thus, in this paper wellbeing is used to refer to the degree of wealth and material comfort accessible to a person or community; it is the access to individual's pool of resources to respond to daily psychological, social, and physical challenges faced (Dodge et al., 2012; Wallace et al., 2021).

Tanzania is chosen as a case in point because the country's policymakers have identified tourism as wealth generating and poverty alleviation sector although such a pro-poor tourism approach is suffering from inadequate empirical support. Thus this research is a unique contribution to tourism–poverty literature via an investigation for welfare improvement of population because, first it seeks to narrow the existing empirical evidence gap on the tourism–poverty nexus in sub-Saharan Africa. Second, to the best of researchers' knowledge, this is the first study estimating empirically the nexus between tourism growth and population's welfare in Tanzania using Vector Autoregressive (VAR) and Johansen Cointegration approaches to analyze the households' final consumption expenditure per capita and percentage contribution of international tourism revenue to GDP as proxies for wellbeing and tourism growth, respectively. In effect, the study pioneer measuring people's wellbeing in Tanzania to complement studies on the measurement of economic activities which are based on trickle-down economic theories.

The remainder of this paper is organized as follows: after a review of literature in Section 2, the research methodology is presented in Section 3 while the empirical findings and discussion are presented in Section 4. Sections 5 and 6 focus on key policy implications and conclusion, respectively.

2. Literature review

Very often poverty is judged by setting an income threshold such that those who fall below it are deemed to be poor. For instance, the World Bank proposes a poverty line of US\$ 1.9 per day as a minimum threshold for acceptable livelihood (World Bank, 2015). The limitation of this approach is that poverty becomes relative over time and space. The current study perceives poverty as deprivation of necessities of human life and adopts the United Nation's description of absolute poverty as severe deprivation of basic human needs, such as food, shelter, clothing, safe drinking water, and information, as well as deprived access to education, health, and sanitation facilities (United Nations, 1995). The absolute poverty approach, which centers on deprivation of necessities minimizes the difficulties of measuring poverty given factors such as changes in the level of real income over time, transfer payments, etc.

The effect of economic growth on poverty through tourism is commonly considered in two related perspectives: the impact of tourism growth on inequality and the impact of tourism growth on poverty reduction (Folarin & Adeniyi, 2020; Ravallion & Chen, 2003). The impact of tourism growth on income inequality is highly researched (Croes & Rivera, 2017; Li et al., 2016; Lv, 2019; Nguyen et al., 2020; Uzar & Eyuboglu, 2019). The current research focuses on the impact of tourism growth on Population's wellbeing, which has not received an adequate empirical assessment in Tanzania and by extension in sub-Saharan where poverty is rampant.

While the alleviation of poverty is fundamental to sustainable development, for instance, as emphasized within the framework of the United Nation Sustainable Development Goals (Sustainable Development Goals, 2015), well-being is a more appropriate measure of tourism's contribution given the contemporary emphasis of the United Nations Development Programme (UNDP) and others on human development and well-being as an indicator of human progress. Therefore, to advance pro-poor tourism studies which target specific groups and projects, this research adopts a broader focus by assessing the contribution of tourism on population's well-being.

2.1. Tourism growth and population's wellbeing

There is a general inclination among scholars that quality of life is a broader concept than economic production and wellbeing (or living standards). This is because the attempt to quantify the quality of life goes beyond production and wellbeing. For instance, the report by the commission on the measurement of economic performance and social progress recommends three conceptual approaches in measuring the quality of life: measurement based on the notion of subjective wellbeing, measurement based on the notion of capabilities, i.e. the functionings—beings and doings, and measurements rooted in the notion of fair allocations (Stiglitz et al., 2009).

In view of the aim and scope of this research, we focus our review on studies focusing on the quality of life in terms of capabilities, i.e. the ability to live a good life in terms of emotional, physical, and material wellbeing (Jankinson, 2021). So, tourism growth is thought to improve the population's quality of life because tourism activities generate additional job and income opportunities, form a basis for constructive cultural exposures and social cohesion, improve the quality of physical environmental and physical infrastructures, etc.

There is a growing consensus in the modern economics literature that time is ripe for the measurement of economic activities to necessarily be complemented with measurement of population's wellbeing to provide vital information about the population's quality of life (Mahadevan & Fan, 2020; Moscardo, 2009; Ridderstaat et al., 2016; Stiglitz et al., 2009). For instance, Stiglitz et al., (2009) affirm that the current system of measuring economic activities needs to be improved to better reflect structural changes such as the rapidly growing share of services and production of complex products in modern economies. For Stiglitz, capturing quality change is an essential aspect in measuring real income and real consumption, which are two key ingredients of people's wellbeing.

Motivated by the need to complement economic measurements by introducing the aspect of the quality of population's wellbeing, some researchers have explicitly considered tourism's influence on the quality of life especially at the destination community (Aref, 2011; Buzinde et al., 2014; Pope, 2018; Ramkissoon, 2020; Ridderstaat et al., 2016). For instance, focusing on two Maasai communities in Tanzania Esilalei and Oltukai, Buzinde et al. (2014) assessed the impact of tourism on the communities' wellbeing using the bottom-up assessment approach. The findings established that tourism affects the attributes of community wellbeing (livestock, children, and land resources) positively and negatively, and that it particularly contributes to the advancement of women's status.

Besides, while several studies have adopted descriptive approach to assess the dynamic relationship between tourism development (TD) and quality of life (QL), a few studies have gone ahead to undertake empirical research to investigate the relationship between TD and QL. For instance, Ridderstaat et al., (2016) investigated the relationship between tourism growth, economic growth, and quality of life (proxied by tourism receipts, GDP, and human development index, respectively) for the island of Aruba during 1972–2011. The multivariate cointegration analyses and Granger causality testing confirmed bidirectional causality between TD and QL. Therefore, the study results underscore the significance of acknowledging the role of tourism development for enhanced quality of life and vice versa. Likewise, Aref (2011) surveyed to assess the effect of tourism on the residents of Shirazi, Iran. The results supported the hypothesis that tourism has a positive effect on the quality of life of residents, i.e. TD impacts positively on emotional, community, health, and safety wellbeing of the residents. Therefore, based on these studies, TD has the potential of facilitating elements of personal growth and enhanced wellbeing.

In sum, tourism development is adopted by the tourism destination communities for its economic benefits founded on the theory that an increase in income from tourists will advance the quality of life in the community, but if the tourism-related development programs are not well managed, tourism growth may degrade the quality of life within a destination community by deteriorating social conditions and failing to safeguard the natural environment (Buzinde et al., 2014; Naidoo & Sharpley, 2016).

2.2. Current trends in the tourism-poverty literature

It has been argued that people's wellbeing and poverty alleviation are two different aspects, but they are related (Croes, 2012; Park et al., 2002; Raphael, 2011; Singh, 2021; Skevington, 2009). Hence, to complement our review of nexus between tourism and quality of life, we review selected tourism-poverty studies.

The current tourism–poverty literature can be categorized into three major trends based on the conclusion arrived at by each study. First, some studies advocate the use of tourism expansion as a tool for poverty alleviation through its positive effect on economic growth (Croes & Rivera, 2017; Croes & Vanegas, 2008; Mahadevana & Suardi, 2019; Saayman et al., 2012; Vanegas Sr, 2012). This category has found a positive and significant relationship between poverty and tourism. For example, Croes and Rivera (2017) employed a social accounting matrix, national accounts for the year 2008, and information from the 2010 National census to assess the share of tourism growth benefits to the poor in Ecuador. The findings affirmed that tourism exhibits an extensive multiplier effect for the poor, reduces inequality, and both urban and rural poor benefit from the distributional effect of tourism growth.

Second, some tourism-poverty studies such as Alam and Paramati (2016), Kinyondo and Pelizzo (2015), Mahadevan et al. (2017), Saayman et al. (2012) attest that tourism is growth-oriented but not pro-poor because the benefits of tourism growth do not effectively trickle down to the poor households due to lack of effective distributive policies at the national level and lack of relevant skills among the poor to participate effectively in the tourism sector. For example using a general equilibrium model for analysis, Mahadevan et al., (2017) assessed the regional impact of tourism-led growth on poverty alleviation and income inequality in Indonesia. They established that increasing domestic and international tourism revenue leads to increased economic growth, but such growth is not pro-poor because the additional tourism revenue is accompanied by increasing income inequality both in rural and urban areas.

The third category of studies shows that tourism growth has neither a significant impact on economic growth nor poverty reduction (Ekanayake & Long, 2012; Georgantopoulos, 2013; Tang & Tan, 2013; Tugcu, 2014; Wu & Wu, 2018). For instance, using bootstrap panel Granger causality, Wu and Wu (2018) investigated the relationship between economic growth and international tourism revenue among 12 western regions of China during 1995–2015. The results show that out of 12, 5 regions maintained a neutral hypothesis, i.e. no significant causal impact between international tourism receipts and economic growth.

2.3. Pro-poor tourism and the trends of poverty in Tanzania

Pro-poor tourism (PPT) is a tourism approach that delivers development opportunities for the poor and in turn, leads to improved net benefits for the poor through improved socio-economic and environmental conditions. Many developing nations, e.g. Tanzania, have adopted the PPT approach as a tool for poverty alleviation due to tourism's potential to increase foreign exchange, investment opportunities, and job creation in the tourism destination. Tanzania is regarded as among the highest premier tourism destinations in Africa because of its massive tourist attractions: Mount Kilimanjaro (the highest in Africa), Serengeti National Park, Ngorongoro Crater, and Selous Game Reserve, (all World Heritage sites), and Ancient Swahili Coast in Bagamoyo and Zanzibari (Nelson, 2012; Odhiambo, 2013).

Tourism is among the leading sectors in Tanzania making a consistent significant annual contribution to national income. For instance, in 2019 travel and tourism contributed 10.7% and 11.1% of the total GDP and total employment respectively (WTTC, 2020).

Thus the sector is very instrumental in fighting poverty e.g. through job creation and development of market for traditional products (Kyara et al., 2021; Luvanga & Shitundu, 2003; Wamboye et al., 2020). Nevertheless, the Human Development Index (HDI) report ranks the country 163 out of 189 countries in 2019, with an actual HDI of 0.529, which is equivalent to PHDI (Planetary Pressures-adjusted HDI) of 0.526. This is a decline from a ranking of 152 out of 187 countries in 2013 (HDI, 2020). This scenario lends evidence to an overall decline in welfare improvement in Tanzania from 2013 to 2019. Nevertheless, the incidence of poverty, measured by poverty headcount ratio as per the World Bank poverty line, has recorded an improvement as depicted in Figure 1. The proportion of the population living below the poverty line has declined from 86.2% in the year 2000 to 49.4% in 2017. Nevertheless, the poverty headcount ratio varies across regions and it is worse in rural areas as compared with urban areas (NBS, 2021).

With regards to basic needs poverty, which is closely identified with material well-being, food poverty and access to primary education, Tanzania has maintained consistent improvement from 1985 as depicted in Table 1. Basic needs poverty countrywide declined from 39% to 25.4%, while food poverty declined from 22% during 1985–95 to 8% in 2020. Likewise, while only 57% of all the children aged 7–13 could access a primary school in 1995; in 2020 about 90% are estimated to have access to primary school education.

Tanzania's tourism sector has experienced significant growth trends since the country started to implement economic liberalization policies in 1985. Following the liberalization policies, the private sector started taking a more active interest and investing in the tourism sector and the related sectors such as hospitality and transport. The World Bank data confirms that the international arrivals increased from 285,000 visitors in 1995 to 1,378,000 in 2018, representing an increase of 384% within 23 years. During the same period, the actual receipts increased from US\$ 502 million in 1995 to US\$ 2.465 billion in 2018; representing an increase of 391% (WDI, 2021). In 2019, the tourism sector contributed 10.7% of the GDP and 11.1% of the total employment countrywide (WTTC, 2020).

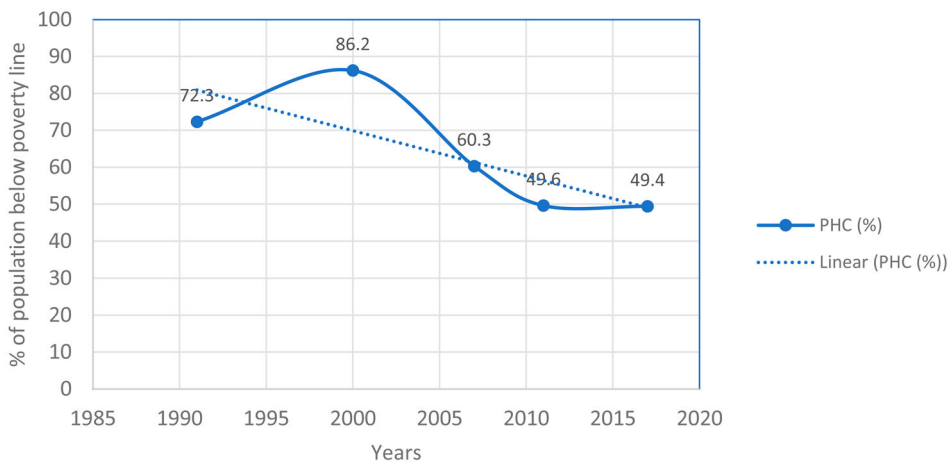


Figure 1. Tanzania Poverty Headcount (PHC) ration as % of total population for the period 1991–2017.

Table 1. Poverty trend in Tanzania from 1985 to 2020.

	1985–1995	1995–2005	2005–2015	2015–2020*
	Population (%)			
Basic need poverty	39	36	28	25.4*
Food poverty	22	19	10	8
Children aged 7–13 attending primary school	57	61	82	90

Source: Tanzania National Bureau of Statistics.

*Estimates based on 2018 statistics.

2.4. Gaps in the tourism-poverty/wellbeing literature

In view of the above literature, we draw the following key observations. First, there are unsatisfactory number of credible empirical studies focusing on disaggregate dynamic sectoral growth, population's wellbeing, and poverty reduction in sub-Saharan Africa where poverty is rife. For instance, to the best understanding of the authors, there is no published empirical study on tourism growth and wellbeing in sub-Saharan Africa. Likewise, there are only limited empirical studies on tourism-poverty nexus focusing on sub-Saharan Africa. While empirical studies on tourism-wellbeing nexus in sub-Saharan Africa are notoriously missing, most tourism-poverty nexus studies are largely focusing on Asia, Middle East, Latin America, and some European countries. Besides, of the limited empirical studies on poverty alleviation and some general narrative studies focusing on the quality of life in sub-Saharan Africa they are aggregate in character—focusing on the level of the national economy and devoid of detailed disaggregate sectoral analysis. For instance, the East African Community (EAC) countries (Tanzania, Kenya, Uganda, Burundi, and Rwanda) have earmarked tourism as a tool for poverty reduction but there are neither disaggregate tourism-poverty nexus nor tourism-wellbeing nexus empirical studies to support the trend. Of the few tourism empirical studies focusing on Tanzania and Kenya, most of them examine aggregate national income and tourism growth without direct attention on neither tourism-population's wellbeing nexus nor tourism-poverty nexus (Kibara et al., 2012; Odhiambo, 2011; Yusuf & Ali, 2018). So, there is a huge gap in African economies in terms of both wellbeing and poverty sectoral empirical research. To correctly and rigorously examine the quality of population's wellbeing and the incidence of poverty, disaggregate sectoral studies to complement aggregate/national level studies are indispensable (Vanegas et al., 2015).

Second, some studies on dynamic economic growth, population's wellbeing, and poverty reduction exhibit significant methodological errors by employing the absolute values of e.g. national income, poor population, and tourism revenue instead of comparing the annual incremental change in national income, proportionate change in poor population, and percentage contribution of tourism revenue to the national income (Ferrer-i-Carbonell, 2005; Odhiambo, 2011; Yusuf & Ali, 2018). Using the absolute values of variables such as GDP, the dollar value of international tourism revenue, dollar value of exports and imports, absolute value of poor population, etc., to measure poverty is inappropriate and may lead to spurious regression results. This is so because, for example, while the tourism revenue may be increasing over time, its proportionate contribution to GDP and poverty reduction may not remain statistically significant if other

sectors are growing and making a greater contribution to GDP than the tourism sector. Thus the use of proportion (percentage) contribution to GDP is the most appropriate approach (Kyara et al., 2021; Nene & Taivan, 2017; Sokhanvar et al., 2018).

The current study aims to pioneer empirical analysis on tourism–wellbeing nexus from Tanzania based on disaggregate sectoral growth, thereby contributes to reducing the above gaps. Tanzania is chosen as a case in point because its economy is more dependent on tourism among the EAC members. To the best understanding of the authors, there has not been a dynamic empirical study on tourism and wellbeing focusing on Tanzania using Households Final Consumption Expenditure per capita as a proxy for population’s wellbeing and employing the Vector Autoregressive model for analysis.

3. Methodology

3.1. Data and variables

This analysis employs annual time series data for the period 1990–2017, for three variables: the dependent variable is population’s wellbeing, which is proxied by Households Final Consumption Expenditure per Capita (HCP), in constant 2010 US\$. The data for this variable were extracted from the World Development Indicators (WDI)—World Bank database. The HCP is consistent with the World Bank conception of poverty i.e. the inability to achieve a minimal living standard when measured in terms of basic consumption needs (Odhiambo, 2009; Quartey, 2005; Squire et al., 1990). HCP, also called private consumption, measures the market value of all goods and services including durable assets purchased by households (WDI, 2021). We also observe that where data for the traditional proxy for poverty, i.e. poverty head count ratio, are not available, some studies have used HCP as an alternative proxy for poverty (Garza-Rodriguez, 2018; Ho & lyke, 2018; Uddin et al., 2014) because the consumption pattern is an indicative measure of the pattern of income distribution, which can indicate the level of poverty. In this case, an increase in HCP is associated with increased accessibility to poverty reduction capabilities such as education and health care services. Nevertheless, some studies contend that HCP is not an ideal proxy for poverty because HCP does not provide information on income distribution or consumption which is an essential ingredient for measuring poverty (Havinga et al., 2009). On the contrary, HCP is the most reliable proxy for measuring population’s wellbeing (Chiripanhura, 2010; Havinga et al., 2009; Stiglitz et al., 2009) because it consists of the expenditure, including imputed expenditure, incurred by resident households on individual consumption goods and services, including those sold at prices that are not economically significant (Chiripanhura, 2010).

The explanatory variables are annual international tourism receipts (TOUR) and agricultural value-added (AGVA). Both independent variables enter the series as annual percentage contribution to GDP. The AGVA data are obtained from the WDI database, while the TOUR data are from the United Nations Economic Commission for Africa database (UNECA, 2021).

It is recognized here that there is a domestic aspect of tourism revenue, although here we use the international tourism receipts alone. This is due to a lack of data and also because poverty alleviation, and more so population’s wellbeing, is associated with net inflow from abroad (Vanegas et al., 2015) and income distribution.

Since agriculture is the main source of employment and livelihood for most people and tourists consume agricultural products at tourist destinations, then development in the agricultural sector is thought to have a direct impact on the well-being of poor people (White, 2012) However, record keeping in the agricultural sector in Tanzania is still at a rudimentary level. Therefore, the actual value added is far more than the statistics reported here.

3.2. Model specification

The current research utilizes the Vector Autoregressive (VAR) model for analysis. The VAR model is one of the most prominent multivariate regression time-series analytical techniques. The VAR technique explains past and causal relationships among multiple variables over time, as well as predicts future observations (Bose et al., 2017; Lashitew, 2017; Lütkepohl, 2005; Tavares & Tran, 2019). To test for the long-run and short-run cointegration among economic variables in a VAR model, we employ Johansen and Juselius (1990) cointegration technique. This approach requires that all variables be cointegrated in the same order.

Following Farhani and Rahman, 2019; Tavares and Tran, 2019; Ozturk et al., 2016; Rahman, 2020; and Shahbaz et al., 2013, the empirical nexus between poverty and its explanatory variables can be expressed as follows:

$$HCP = f(TOR, AGVA) \tag{1}$$

To get the direct elasticities from the coefficient values of Equation (1), we transform the variables into a natural logarithm. Thus a VAR model containing the three variables is expressed as follows:

$$LNHCP_t = \alpha + \sum_{i=1}^k \beta_i LNHCP_{t-i} + \sum_{j=1}^k \Phi_j LNTOUR_{t-j} + \sum_{m=1}^k \Phi_m LNAGVA_{t-m} + \mu_{1t} \tag{2}$$

$$LNTOUR_t = \alpha + \sum_{i=1}^k \beta_i LNHCP_{t-i} + \sum_{j=1}^k \Phi_j LNTOUR_{t-j} + \sum_{m=1}^k \Phi_m LNAGVA_{t-m} + \mu_{2t} \tag{3}$$

$$LNAGVA_t = \alpha + \sum_{i=1}^k \beta_i LNHCP_{t-i} + \sum_{j=1}^k \Phi_j LNTOUR_{t-j} + \sum_{m=1}^k \Phi_m LNAGVA_{t-m} + \mu_{3t} \tag{4}$$

where LN denotes the natural logarithms of the variables. β_i , Φ_j and Φ_m are slope coefficients to be estimated. μ is an error term and t is the period from 1990 to 2017. The expected signs of all the coefficients are positive. This is because other factors remain constant, an increase in international tourism receipts and agricultural value-added is economically expected to generate additional income to households, thereby increasing the household final consumption expenditure per capita and improving wellbeing.

As a preliminary step in VAR analysis, we first test for unit root. To this end, we utilize the Augmented Dickey–Fuller (ADF) approach (Dickey & Fuller, 1979). Then, we carry out a Johansen Cointegration test to ascertain the order of cointegration of the variables (Johansen & Juselius, 1990). The cointegration results will inform us of the appropriate form of VAR to be employed (Bronnmann et al., 2020). Since the estimation of the VAR model is sensitive to lag length, the Akaike information criterion (AIC) will be used for selecting the appropriate lag length (Ouattara, 2004; Shahbaz et al., 2013). To assess causality among the variables, if any, and its direction, we employ the pairwise Granger causality technique and Wald test respectively (Granger, 1988; Rahman & Kashem, 2017; Shahbaz et al., 2013; Wu et al., 2018). Breusch–Pagan–Godfrey test for heteroskedasticity and test for serial correlation will also be performed.

Since Equation (2) is of main interest because of the objectives of this research, the study will assess how population wellbeing (standard of living) responds to shocks in the tourism and agriculture sector by making use of the Impulse Response Function (IRF) approach. The IRF provides useful insight for policymakers because it enables the tracking of the effect of sectoral change on HCP over time (Mahadevana & Suardi, 2019).

4. Empirical findings

Unit root: The ADF test for unit root was applied and the results, in Table 2, confirm that all the three series have unit root at level, and they all become stationary at first difference.

Optimal lag determination: The results of optimal lag length determination are summarized in Appendix 1. Following the AIC approach, 1 is the optimal lag to be included in the estimation of the model.

4.1. The cointegration test results

Appendix 2 shows summary results of the Johansen cointegration test. The Trace test and Max-eigenvalue test indicate no cointegration at the 0.05 level. Therefore, there is no long-run relationship among the variables. Since the series are not cointegrated, we run the standard unrestricted VAR model.

4.2. Unrestricted VAR estimates

Appendix 3 presents unrestricted VAR output with p -values. The Wald coefficient test was used to ascertain if all the estimated coefficients in the model are statistically significant or

Table 2. ADF unit root test results.

		Null Hypothesis (H_0): The series has unit root		
	Independent variable	ADF test stat.	p -Value	Conclusion
LNHCP	At level	−0.7291	0.8215	Fail to reject H_0
	At level with trend & intercept	−3.6409	0.0456	Fail to reject H_0
	At 1st difference	−4.4636	0.0018	Reject H_0
LNTOUR	At level	−2.8191	0.0689	Fail to reject H_0
	At level with trend & intercept	−0.7157	0.9588	Fail to reject H_0
	At 1st difference	−3.9982	0.0051	Reject H_0
LNAGVA	At level	−1.5249	0.506	Fail to reject H_0
	At level with trend & intercept	−1.0558	0.9183	Fail to reject H_0
	At 1st difference	−4.69	0.0009	Reject H_0

Source: Authors' calculations.

not (Behar, 2010; Smale et al., 2016). Since some coefficients are not significant, the Wald test is used to perform a diagnostic check of the coefficients and re-estimate the parsimonious VAR model.

Specification of Parsimonious VAR Model: Removing the non-significant coefficients in Appendix 3 and re-estimating the model, we obtain the parsimonious VAR model as presented in Table 3. All the coefficients in the parsimonious model are significant, and they can be used for forecasting.

From Equation (1), in Table 3: C(1) is the coefficient of LNHCP(-1) and it is significant. It has a value of 0.939103 with a p -value of 0.0000. This means that LNHCP(-1) affects LNHCP; a 1% change in the past value of LNHCP lead to 0.94% changes in the current value of LNHCP. C(2) is a coefficient of LNTOUR(-1) and it is significant. Thus LNTOUR(-1) affects LNHCP. 1% increase in LNTOUR(-1) translates to 0.06% increase in LNHCP. C(3) is a coefficient of LNAGVA(-1) and it is significant at a 5% level with a p -value of 0.0114. Thus an 1% increase in the past value of LNAGVA is associated with a 0.078 increase in LNHCP. The R^2 value of the first equation is 0.967737 implying that 96.77% of the variance of the dependent variable LNHCP, is accounted for the independent variable in the model; it is the measure of the fitness of the model.

From Equation (2): C(6) is a coefficient of LNTOUR(-1) and it is significant. So, LNTOUR(-1) affects LNTOUR. In this case, when the past value of tourism revenue increases by 1%, the current revenue increases by 1.01%.

Finally, from Equation (3) we observe that C(11) which is a coefficient of LNAGVA(-1), is significant and has a p -value of 0.0000. This implies that an 1% increase in the past value of LNAGVA will lead to a 0.99% increase in the current value of LNAGVA.

4.3. Pairwise Granger causality

To establish the direction of causality among the variables, the Granger causality test was estimated based on parsimonious VAR and the results are summarized in Table 4. There is unidirectional causality from LNTOUR to LNHCP. Further, three diagnostic tests, i.e. autocorrelation, normality, and heteroscedasticity were carried out to check the reliability of the causality tests. They all produced evidence in support of the causality test results.

Table 3. Unrestricted parsimonious VAR model.

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.939103	0.021896	42.88876	0.0000
C(2)	0.058116	0.017988	3.230741	0.0018
C(3)	0.078224	0.030159	2.593734	0.0114
C(6)	1.012757	0.022101	45.82423	0.0000
C(11)	0.995285	0.005542	179.6050	0.0000
Determinant residual covariance		4.41E-07		
Equation 1: $LNHCP = C(1)*LNHCP(-1) + C(2)*LNTOUR(-1) + C(3)*LNAGVA(-1)$				
R-squared	0.967737		Durbin-Watson stat	1.895789
Equation 2: $LNTOUR = C(6)*LNTOUR(-1)$				
R-squared	0.802715		Durbin-Watson stat	1.535466
Equation 3: $LNAGVA = C(11)*LNAGVA(-1)$				
R-squared	0.831426		Durbin-Watson stat	1.892358

Source: Authors' calculations.

Table 4. Granger causality tests for Tanzania with annual data (1990–2017).

Null Hypothesis (H_0)	F-Statistic	p-Values	Conclusion
LNHCP does not Granger Cause LNAGVA	0.01149	0.9155	Fail to reject H_0
LNAGVA does not Granger Cause LNHCP	0.15963	0.6930	Fail to reject H_0
LNTOUR does not Granger Cause LNAGVA	2.39526	0.1348	Fail to reject H_0
LNAGVA does not Granger Cause LNTOUR	0.53372	0.4721	Fail to reject H_0
LNTOUR does not Granger Cause LNHCP	9.57428	0.0050	Reject H_0
LNHCP does not Granger Cause LNTOUR	0.14900	0.7029	Fail to reject H_0

Source: Authors' estimation.

4.4. The impulse response function of the parsimonious VAR system

To further assess the tendencies of the significant Granger causality test results, we estimate the Impulse Response Function (IRF). The IRF is applied to give us an insight into the length of time necessary for the causal effect to take place and the qualitative nature of the relationship. It traces the impact of shocks on the dependent variable for several periods in the future (Sethi et al., 2019).

The upper part of Figure 2 depicts the response of HCP to a one standard deviation shock on TOUR. The middle line which represents IRF is within the 5% critical bound as expected. The IRF function maintains a consistent upward trend and remains in the positive region. This means that innovations in the tourism sector have positive impacts on the population's living standards.

The lower part of the curve captures responses of HCP to innovations in AGVA. The IRF function is within the 5% critical bound as expected. Shocks in the agricultural sector led to a positive impact on population's living standards up to around the mid of third period, beyond which the positive impact starts declining but remain within the positive region.

5. Policy implication

The results of this analysis support the common proposition that tourism sector growth leads to improved population's wellbeing: a short-run unidirectional causality from tourism development to improved people's wellbeing in Tanzania was confirmed. Also, both tourism and agricultural development are found to significantly affect living standards in Tanzania. Such findings lend evidence for the use of policy instruments focusing on tourism-based welfare improvement and economic development (Croes & Vanegas, 2008; Folarin & Adeniyi, 2020; Kim et al., 2006, 2016; Mahadevana & Suardi, 2019; Vanhove, 2017). Therefore, in the case of Tanzania, policies to promote tourism development should be strengthened because they will ultimately intensify population's wellbeing.

The unidirectional causality from tourism development to wellbeing implies that when tourism increases by 1%, households' final consumption expenditure per capita increases by 0.06%; a scenario that represents the overall improvement of population's wellbeing. Considering that international tourism demand generates foreign earnings, it is valuable for a developing country like Tanzania to intensify tourism products as a special type of export to generate foreign earnings to offset the balance of payment deficits and finance poverty reduction and welfare improvement programs. To this end, Farmaki (2012) affirms that diversification and improvement of the tourism product standards is key for sustainable tourism.

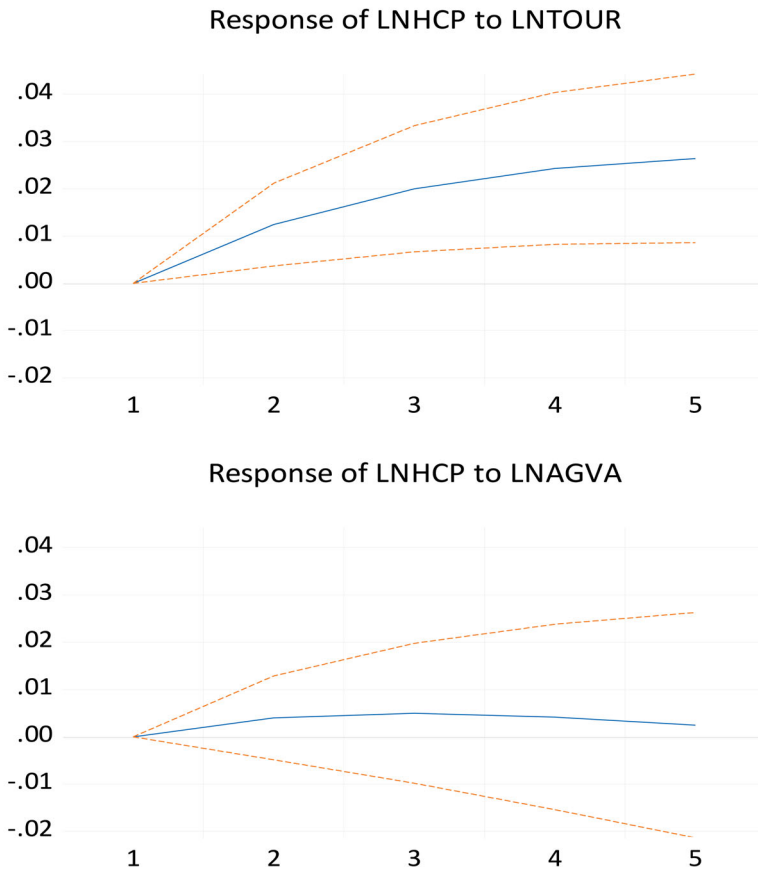
Response to Cholesky One S.D. (d.f. adjusted) Innovations ± 2 S.E.

Figure 2. Impulse response function.

Empirical evidence on the causal relationship between people's wellbeing and tourism development is a valuable tool for policymakers in Tanzania when setting tourism-welfare-related policies. The unidirectional causality from tourism to wellbeing in Tanzania calls for specific policies to promote production and consumption of tourism products and services, which in turn integrate other sectors such as agriculture, leading to multiple benefits especially to the poor households: rapid and mass employment, market for traditional products, improved demand for agricultural products, and provision of transport and other tourists' related services. In this way, tourism development becomes an engine of growth and an effective tool for welfare improvement and poverty alleviation.

Since wellbeing is a multidimensional aspect, we affirm that Tanzania needs to develop grassroots people-centered policies which involve the poor as a target group, in crafting tourism policy, planning the allocation of tourism resources, and taking lead in implementation and evaluation of tourism activities if the continued emphasis to utilize tourism for the country's macroeconomic goals must translate into higher levels of people's wellbeing. Such a policy orientation is necessary because the great potential of tourism to transform lives of those at the bottom of the pyramid is still hindered by factors such

as lack of reliable access to credit facilities, lack of appropriate entrepreneur skills among the poor, excessive government bureaucracy in registering a new business, and exaggerated rent seeking in form of multiple taxations.

For instance, to secure improved welfare for the poorest from the additional tourism revenue, Tanzania must apply appropriate tax and transfer policies. Three policy changes need to be effectively adopted if the poor households in Tanzania are to experience improved wellbeing from the additional tourism sector income. First, wages and salaries paid to personnel in the tourism sector must be competitive with other sectors in the economy and reflect the real cost of living. Besides, in the case of Tanzania, since women and children are the majority and most vulnerable among the poor, the sector should ensure that women are given fair employment opportunities, and they earn as much as men in similar positions and credentials.

Second, Tanzanians need to be empowered and enabled to own and run key operations in the tourism and hospitality industry. Also, Tanzanians must be given priority when it comes to recruitments to fill ordinary positions, e.g. program managers, tour guides, chefs, bookkeepers, etc. As is the case in other developing African economies (Holden et al., 2011), to make the most appropriate use of tourism for poverty reduction, Tanzania needs to strengthen the participation of poor people in tourism sector activities by upholding inclusivity in planning and decision making as well as striving for a better understanding of the experiences of poor people. While the Tanzanian tourism sector is currently providing about 11.1% of the total employment countrywide, improved tourism strategies have great potential of delivering employment and income for a greater number of Tanzanians, and hence improved material wellbeing.

Third, Tanzania needs to strengthen her effort to improve and expand basic infrastructures which will, in turn, amplify the tourism growth and its consequent impact on the welfare of the poor. Since Tanzania has no sufficient resources for infrastructural development, a policy instrument is needed to channel the proportion of tourism revenue to infrastructural development to maximize tourists' experience, thereby leading to more tourism revenue and improved welfare.

6. Conclusion

In this paper, we analyzed the impact of tourism development on the population's wellbeing in Tanzania. For robust results, the unrestricted VAR approach to cointegration and Granger causality test has been identified as the most appropriate method for analysis based on the nature of the data and the objective of this research. To overcome the limitations associated with the bivariate model, the study incorporated agricultural value-added as a percentage of GDP, in addition to tourism and people's wellbeing to form a multivariate model.

The cointegration and causality test lend empirical evidence that tourism development in Tanzania is an essential tool for improving the population's living standards. The cointegration confirms the relationship between tourism development and welfare improvement, while the causality test confirms a unidirectional causality from tourism to people's wellbeing. As expected, the signs of the coefficients for the international tourism receipts and agricultural value-added are positive and they significantly affect Tanzania's household consumption expenditure per capita.

The findings point to the need for grassroots people-focused tourism policies, which require concerted public and private sector participation to further harness the tourism sector growth benefits for effective welfare improvement. Such participation will mark a radical departure from the current trend of development policies based on tickle-down economic theories to embracing an active participatory approach, which seeks to understand the poor people's experience of poverty, as a basis for developing appropriate welfare improvement and poverty alleviation strategies. For instance, emphasis on the use of tourism to attain macroeconomic goals will not necessarily make extreme poverty history at the household level; a down-top approach is indispensable. Equally, strategy for tourism development in Tanzania should include environmental sustainability component, brand development and marketing, strengthening private sector investment, and developing local tourism products and services to meet international tourism standards.

Further, in the interim period after the Covid-19 pandemic, the future of tourism in Tanzania is likely to rely heavily on domestic tourists and international tourists from other African countries. This is because Tanzania's key tourist market sources in Europe, North America, and Southeast Asia are experiencing greater impacts of the pandemic. As a coping mechanism to sustain the sector, Tanzania's tourism stakeholders need to diversify its tourist attractions for local and regional visitors thereby compensating for a possible drop from its key traditional tourist market sources as the country waits for the world to fully open again for travel. To this end, Tanzania Tourism Board (TTB) needs to run a campaign and support local and regional tourists to travel to and within Tanzania. Diversification strategies could range from developing tourism products and services suitable for domestic and regional tourists targeting the southern area of the country (which is rich with wildlife and geographical and historical features), attract private companies to invest in hotels and accommodation facilities, air transport, ground-tour handling, and other services. Moreover, TTB needs to borrow a leaf from other countries in the region such as South Africa and Kenya, where domestic tourism is more developed.

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Appendices

Appendix 1. Optimal lag length determination

VAR lag order selection criteria

Endogenous variables: LNAGVA LNHCP LNTOUR

Lag	LogL	LR	FPE	AIC	SC	HQ
0	15.04340	NA	7.95e-05	-0.926416	-0.781251	-0.884613
1	88.64277	124.5528*	5.56e-07*	-5.895598*	-5.314938*	-5.728389*
2	95.75135	10.38946	6.65e-07	-5.750104	-4.733949	-5.457488

*Lag order selected by the criterion.

Source: Authors' estimation.

Appendix 2. Johansen cointegration test

[A] Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None	0.448902	28.20277	29.79707	0.0755
At most 1	0.367443	12.71088	15.49471	0.1258
At most 2	0.030423	0.803271	3.841465	0.3701

[B] Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.448902	15.49189	21.13162	0.2559
At most 1	0.367443	11.90761	14.26460	0.1142
At most 2	0.030423	0.803271	3.841465	0.3701

Trace test and Max-eigenvalue test indicate no cointegration at the 0.05 level.

Source: Authors' estimation.

Appendix 3. Unrestricted VAR estimates

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.899608	0.068172	13.19622	0.0000
C(2)	0.057963	0.018229	3.179752	0.0022
C(3)	0.050110	0.055131	0.908917	0.3666
C(4)	0.333075	0.543628	0.612690	0.5421
C(5)	-0.418388	0.396212	-1.055970	0.2947
C(6)	0.786476	0.105945	7.423433	0.0000
C(7)	-0.392335	0.320420	-1.224438	0.2250
C(8)	4.336340	3.159550	1.372455	0.1744
C(9)	0.095407	0.179684	0.530974	0.5971
C(10)	-0.077372	0.048046	-1.610364	0.1119
C(11)	0.798163	0.145312	5.492759	0.0000
C(12)	0.254386	1.432868	0.177536	0.8596
Determinant residual covariance		2.23E-07		
Equation: LNHCP = C(1)*LNHCP(-1) + C(2)*LNTOUR(-1) + C(3)*LNAGVA(-1) + C(4)				
R-squared	0.968255	Mean dependent var		6.021541
Adjusted R-squared	0.964114	S.D. dependent var		0.190038
S.E. of regression	0.036000	Sum squared resid		0.029808
Durbin-Watson stat	1.919279			
Equation: LNTOUR = C(5)*LNHCP(-1) + C(6)*LNTOUR(-1) + C(7)*LNAGVA(-1) + C(8)				
R-squared	0.868147	Mean dependent var		2.068684
Adjusted R-squared	0.850949	S.D. dependent var		0.541949

(Continued)

Continued.

	Coefficient	Std. Error	t-Statistic	Prob.
S.E. of regression	0.209231	Sum squared resid		1.006886
Durbin-Watson stat	1.756431			
Equation: LNAGVA = C(9)*LNHCP(-1) + C(10)*LNTOUR(-1) + C(11)*LNAGVA(-1) + C(12)				
R-squared	0.860574	Mean dependent var		3.385162
Adjusted R-squared	0.842388	S.D. dependent var		0.239008
S.E. of regression	0.094887	Sum squared resid		0.207082
Durbin-Watson stat	2.004397			

Source: Authors' estimation.

c(4), c(8) and c(12) are intercepts of the 3 equations respectively.

From model 1:

- ✓ C(1) is a coefficient of LNHCP(-1) and is significant: LNHCP(-1) affects LNHCP.
- ✓ C(2) is a coefficient of LNTOUR(-1) and is significant: LNTOUR(-1) affects LNHCP.
- ✓ C(3) is a coefficient of LNAGVA(-1) and it is not significant: LNAGVA(-1) does not affect LNHCP.
- ✓ C(4) is the intercept; and it is not statistically significant.

From model 2:

- ✓ C(5) and c(7) are coefficients of LNHCP(-1) and LNAGVA(-1) respectively and they are not significant; so, they don't affect LNTOUR.
- ✓ C(6) is a coefficient of LNTOUR(-1) and it is statistically significant: LNTOUR(-1) affects LNTOUR.
- ✓ C(8) is constant term, and it is not statistically significant.

From model 3:

- ✓ C(9) and c(10) are coefficients of LNHCP(-1) and LNTOUR(-1) respectively, and they are not statistically significant. Thus, LNHCP(-1) and LNTOUR(-1) does not affect LNAGVA.
- ✓ C(11) is a coefficient of LNAGVA(-1) and is significant: LNAGVA(-1) affects LNAGVA.
- ✓ C(12) is the intercept and is not statistically significant.