



## Is Financial Development a Determinant of Tourism? A Case of Selected Emerging Markets

**Kunofiwa Tsaurai<sup>1</sup>**

**Abstract:** This paper examined the influence of financial development on tourism growth in selected emerging markets with the aid of panel data (2001-2019). The influence of the combination between financial and development of human capital on tourism growth in selected emerging markets was also investigated. Fully modified ordinary least squares (FMOLS), fixed effects, pooled ordinary least squares (OLS) and the random effects were the econometric estimation methods employed in this study. In a nutshell, factors such as financial sector development, foreign direct investment, trade openness, development of human capital and economic growth and the complementarity variable had a significant positive influence on tourism growth in selected emerging markets. To enhance tourism growth, selected emerging markets are urged to design and implement policies and programmes earmarked at increasing financial development, foreign direct investment, trade openness, economic growth and development of human capital. Threshold panel regression analysis could be another avenue through which the influence of financial development on tourism is examined in future.

**Keywords:** Emerging markets; Financial Development; Tourism; Panel Data

**JEL Classification:** G15; P2; Z3

### 1. Introduction

Rasool et al (2021) noted that tourism has become one of the most prominent sectors that contributes to the overall rapid growth in economic growth and exports in the world. Their study argued that tourism brings foreign currency, helps in the marketing of the country's most important features and hence improving the image

---

<sup>1</sup> Professor, Department of Finance, Risk Management and Banking, University of South Africa, Address: P.O. Box 392, UNISA 0003, Pretoria, South Africa, Corresponding author: tsaurk@unisa.ac.za.

of the country. According to Blake et al (2006), inbound tourism was also found to stimulate infrastructural investment, competition, human capital development, income and employment creation. Other recent authors agreed with the tourism led growth hypothesis (Banday & Ismail. 2017; Brida et. al. 2016; Dhungel, 2015). The positive influence of tourism on the growth of the economy cannot be disputed any longer.

What is more important according to Malec and Abrham (2016) is to understand the determinants of tourism growth to develop and implement policies that are geared at promoting tourism led economic growth. There are few empirical researchers available on the determinants of tourism growth and these are not limited to Xie (2020), Malec and Abrham (2016), Montes-Rojas and Barroso (2020), Melese and Belda (2021), Nyasha and Odhiambo (2021), Tavares (2020), John and Nazif (2021), Permatasari and Esquivias (2020), Gidebo (2021), Permatasari and Esquivias (2020), Permatasari and Esquivias (2020), Pervan and Juric (2021), Puah et al (2019), Panahi and Nasibparast (2018) and Adeola et al (2018).

One of the major and prominent determinants of tourism according to literature (Khanna & Sharma. 2020; Gao et. al. 2022; Habib et. al. 2019; Al-Mulali et. al. 2020; Wada. 2021; Jamel. 2020) is financial development. Although theoretical literature emphatically noted that financial development enhances tourism, empirical research on the subject matter produced results which are conflicting, mixed, divergent and far from producing conclusive findings. The empirical research is also characterized by several methodological limitations. For example, they ignored that tourism is affected by its own lag, the endogeneity problem characterizing the tourism function and used outdated data in most cases. None of the available empirical research on the influence of financial development on tourism exclusively focused on emerging markets. To author's knowledge, the existing literature has not yet examined the channels through which tourism growth is influenced by the financial sector. Majority wrongly assumed that the tourism growth function is in a form of a straight line. This study filled in all these gaps.

Section 2 describes the determinants of tourism from an empirical angle, Section 3 focuses on the theoretical literature on the effect of financial development on tourism whilst Section 4 focus on the empirical literature regarding the influence of financial development on tourism. Section 5 presents and describes financial development and tourism growth trends for selected emerging markets. Research methodological framework is described in Section 6. Section 7 focuses on the pre-estimation diagnostics. Analysis of data and results description and interpretation is done in Section 8. Section 9 is the conclusion.

## 2. Determinants of Tourism from an Empirical Angle

**Table 1. Determinants of tourism – Empirical focus**

Publisher	Country/Countries of study	Time frame	Econometric approaches	Findings
Xie (2020)	Norway	2005-2018	Time series data analysis	Growth of the economy had a significant positive impact on economic growth in Norway.
Malec and Abrham (2016)	European countries	2005-2013	Panel data analysis	Tourism was positively influenced by own lag.
Assaf and Josiassen (2012)	World economy	2005-2008	Data envelopment analysis	Crime rate, hotel price index, visa requirement, unemployment rate, fuel price level, carbon emissions per capita, corruption index and ticket price are the factors which had a negative impact on tourism growth. In contrast, factors which had a positive impact on tourism growth include good attitude towards foreign visitors, improved economic growth, number of airlines operating, airlines' quality of service provision, number of top quality hotels, education, levels of staff training or human capital development.
Montes-Rojas and Barroso (2020)	Sao Tome and Principe	2000-2016	Random effects panel data analysis	Exports of the host country and issuing country were found to be positively related to tourism. Countries characterised by high economic growth and high flight connectivity were found to attract more tourists.
Melese and Belda (2021)	Southeast Ethiopia	Survey data	Multiregression regression analysis	Higher price level had a deleterious effect on tourism in Southeast Ethiopia. An improved brand image enhanced tourism in Southeast Ethiopia. Current market research and development had a positive impact on tourism in Southeast Ethiopia.
Nyasha and Odhiambo (2021)	Three developing countries	1995-2018	Autoregressive Distributive Lag (ARDL)	Financial development, political stability, tourist disposable income and trade openness were found to have positively influenced tourism growth and development. Price level, exchange

				rate and carbon emissions are the three factors that had a deleterious influence on tourism growth.
Snieska et al (2014)	Lithuania	2004-2012	Descriptive statistics	Foreign direct investment, economic growth, gross monthly earnings, revenue and government expenditure were the factors which were found to have enhanced rural tourism.
Tavares (2020)	European countries	2000-2018	Generalized Methods of Moments	Tourism growth was positively affected by its own lag and economic growth. Financial and economic crises had a deleterious effect on tourism growth in European countries.
John and Nazif (2021)	Sub-Saharan African countries	1995-2018	System Generalized Methods of Moments	Internet usage was found to have spurred tourism growth in Sub-Saharan African countries.
Seetanah et al (2011)	Mauritius	1985-2006	Multiregression analysis	Infrastructural development's impact on tourism growth was found to be positive.
Permatasari and Esquivias (2020)	Indonesia	2000-2014	Descriptive statistics	Longer distance had a negative effect on tourism growth whilst factors such as per capita income of tourists, available hotel rooms and relative prices had a positive impact on tourism in the case of Indonesia.
Ayyappa et al (2014)	India	1995-2010	Descriptive statistics	Relative prices, income of tourists, distance and tourism infrastructure were found to be the factors which positively affected tourism growth India.
Gidebo (2021)	Literature review analysis	Literature review analysis	Literature review analysis	Economic growth, infrastructural development, depreciated currency, cheaper accommodation costs, relative prices, high quality of hotel infrastructure are some of the factors which were found to enhance tourism growth in the tourism receiving country.
Bentum-Ennin (2019)	Ghana	1985-2010	Descriptive statistics	Depending political rights and civil liberties enhanced international tourist arrivals.

Marti and Puertas (2017)	European Mediterranean countries	2009-2013	Multiregression analysis	Infrastructural development, natural resources availability, price competitiveness, international openness, development of human capital, information and communication technology were found to be some of the factors that enhanced tourist arrivals into European Mediterranean countries.
Pervan and Juric (2021)	Croatia	2012-2019	Descriptive statistics	Lag of tourism demand, relative price, foreign direct investment, income per tourist, low terrorism and corruption were found to have attracted tourist arrivals into Croatia.
Tsangari (2012)	Cyprus	1995-2010	Time series regression analysis	High economic growth, income of origin countries, political and financial stability are some of the factors that attract tourists into Cyprus.
Puah et al (2019)	Sarawak	2010-2016	ARDL	Income level's influence on tourism in Sarawak was positive and significant. The lag of tourism was observed to have positive effect on tourism demand in Sarawak.
Adeola et al (2018)	Africa	1995-2015	Panel data analysis	Travel cost and domestic prices were found to be insignificant factors which influenced tourism growth in Africa. High levels of infrastructural development, economic growth, political stability, foreign direct investment, real exchange rate and trade openness had an enhanced tourism growth in Africa.
Panahi and Nasibparast (2018)	Developing countries	1995-2012	Bayesian model averaging approach	High population of the destination country (market size), economic growth (an indication of development level) were found to have had a significant positive impact on tourism growth in developing countries.

*Source: Author compilation*

It is quite clear from Table 1 that financial development is one of the determinants of tourism from an existing empirical literature point of view. What is also undoubtful is that there is no agreeable list of factors that influence tourism because the results from the empirical literature are conflicting, diverse and mixed. The implication is that there is still a lot of room to contribute towards literature on the topic on tourism and financial development.

### **3. Impact of financial development on tourism – Theoretical literature**

According to Croes and Vanegas (2008), developed financial sector in the tourists receiving nation enables the tourists to comfortably enjoy their holiday accessing financial, banking and investment services. A developed financial sector helps the tourists to actively trade in the domestic and international financial markets whilst they are still enjoying their holiday (Croes and Vanegas. 2008). Hall and Williams (2008) argued that tourism firms can easily engage in innovative activities that attracts more tourists if they secure funding from stock markets and banks.

Franks and Mayer (1990) noted that tourism firms can only grow if strict corporate governance practices are followed across the whole sector. They further argued that this can only be achieved if the financial system is well regulated in a manner that brings efficiency in the tourism industry. Williams and Balaz (2015) observed that tourism firms operate in a very risky, and quite sensitive economic sectors that can respond to the slightest changes in environments, political, economic and geopolitical issues. A well-developed financial sector enables the tourism firms to diversify their risk through, hedging and insurance products usage.

The ability of the financial sector to pool savings, direct investments and capital allocation in the economy generally improves the investment climate in the country hence attracting foreign direct investment, foreign portfolio investment and even foreign students enrolling in higher learning institutions (Cooray. 2010). Such an environment is quintessential in enhancing entrepreneurship in the tourism industry. Entrepreneurship in the tourism industry is boosted also by the availability of different and many sources of finance rather than the exclusive use of leverage, argued Chen (2010). According to Hur et al (2006), industries which have more international exposure such as tourism sector suffer the most in an environment characterised by low financial sector development as that thwart cross border transactions.

Gounopoulos et al (2012) argued that domestic credit availability in the economy give some semblance of economic stability, enhances business confidence, show a political climate that is stable, improves the general confidence of consumer hence pushing up the demand for tourism products.

#### 4. Impact of Financial Development on Tourism – Empirical Literature

**Table 2. Influence of financial development on tourism–Empirical literature review**

Publisher	Unit of analysis	Time frame	Econometric approaches	Results
Khanna and Sharma (2020)	207 countries	1995-2018	Panel data analysis	Developed financial markets attracted more tourists across all the countries studied.
Ohlan	India	1960-2014	Autoregressive Distributive Lag	A bi-directional causality relationship from financial development towards tourism was observed.
Tsaurai (2018)	Southern African countries	1995-2014	Pooled ordinary least squares, random effects and fixed effects	The complementarity between tourism and financial development enhanced economic growth in the Southern African countries studied.
Rasool et al (2021)	BRICS	1995-2015	Panel data analysis	A co-integrating relationship between tourism, financial development and economic growth was noted.
Gao et al (2022)	Developing and developed countries	2019 and 2020 cross sectional data	Cross sectional data analysis	Tourism development in China was enhanced by financial inclusion growth.
Ibrahim (2021)	India	Primary data	Descriptive statistics	Financial institutions played a huge role in enabling the tourism firms to champion asset creation and begin new business venture.
Habib et al (2019)	Bangladesh	1995-2016	Vector Error Correction Model	Provision of more credit to boost infrastructural development end up enhancing the tourism industry in Bangladesh.
Yenisehirlioglu and Bayat (2019)	Middle East and North African (MENA) countries	1995-2016	Panel data analysis	A neutrality hypothesis was confirmed in as far as the relationship between tourism income and financial development in the MENA region is concerned.

Ehigiam usoe (2021)	African countries	1995-2016	Error Correction Model	A bi-directional causality relationship was observed between financial development and tourism.
Al-Mulali et al (2020)	Top tourist destination countries	1995-2017	Panel data analysis	In majority countries, financial development had a significant positive effect on tourism development.
Jamel (2020)	Saudi Arabia	1990-2018	Vector Autoregressive model	Both financial development and carbon emissions were found to have attracted tourists into Saudi Arabia.
Wada (2021)	MENA	2012-2018	ARDL	Financial development and international tourist arrivals were found to vary directly.
Nesti (2018)	Selected ASEAN countries	1995-2016	Panel data analysis	A long run relationship between financial development, tourism and economic growth was observed.

Source: Author

Empirical research results coming from Table 2 shows that the influence of financial development on tourism growth is fourfold. Firstly, financial development enhances tourism. Secondly, financial development's influence on tourism is very negligent. Thirdly, there is a feedback relationship between financial development and tourism. Fourthly, other factors must be available in the tourists receiving country for financial development's influence on tourism to be positive and significant. These results are mixed, divergent and conflicting, therefore still void of the satisfactory answer as to the impact of financial development on tourism.

## 5. Financial Development and Tourism Growth Trends for Selected Emerging Markets

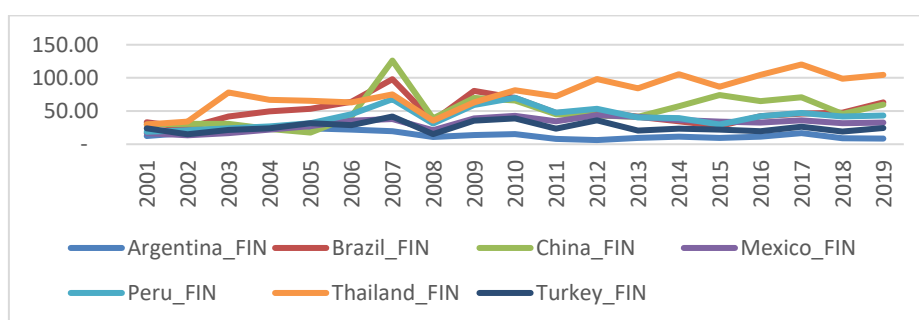


Figure 1. Domestic Credit to Private Sector (% of GDP) Trends for Selected Emerging Markets

Source: Author

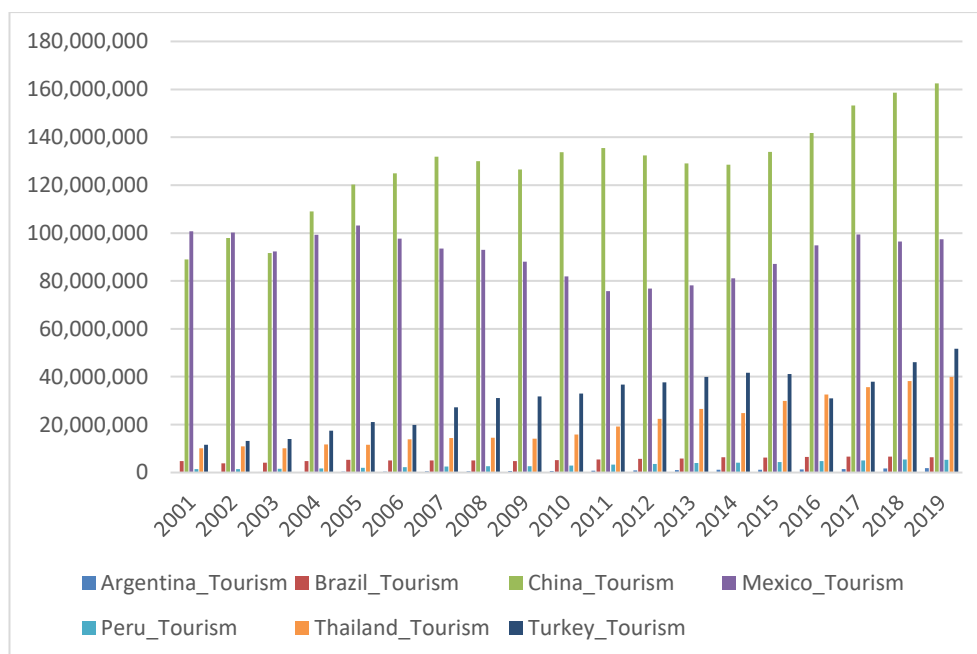


For Argentina, financial development increased from 12.42% of GDP in 2001 to 19.85% of GDP in 2007, declined by 10.23 percentage points during the period between 2007 and 2013 before further marginally declining by 0.90 percentage points, from 9.62% of GDP in 2013 to 8.72% of GDP. Financial development for Brazil massively went up by 64.78 percentage points during the period from 33.26% of GDP in 2001 to 98.04% of GDP in 2007, declined by 56.77 percentage points during the subsequent five-year period before going up by 21.96 percentage points during the period between 2013 to 2019.

During the period between 2001 and 2007, China's financial development increased by a massive 96.50 percentage points (from 29.65% of GDP in 2001 to 126.15% of GDP in 2007), went down by 84.89 percentage points during the subsequent six-year period (2007-2013) before increasing by 18.37 percentage points during the six-year period to end the year 2019 at 59.63% of GDP. Between 2001 and 2007, Mexico's financial development went up by 21.10 percentage points, increased by 3.49 percentage points during the subsequent six-year period, from 37.78% of GDP in 2007 to 41.27% of GDP in 2013 before plummeting by 8.69 percentage points during the period ranging from 2013 to 2019 (from 41.27% of GDP in 2013 to 32.58% of GDP in 2019).

For Peru, the period between 2001 and 2007 saw financial development going up from 18.82% of GDP to 67.91% of GDP. Financial development then declined by 27.66 percentage points during the period between 2007 and 2013 before going up by 3.06 percentage points during the subsequent six-year period, from 40.25% of GDP in 2013 to 43.32% of GDP in 2019. Thailand's financial development consistently increased during the nineteen-year period ranging from 2001 to 2019. Financial development went up from 29.88% of GDP in 2001 to 74.97% of GDP in 2007, went up by 9.34 percentage points during the subsequent six-year period (2007-2013) before further going up by 20.28 percentage points, from 84.31% of GDP in 2013 to 104.59% of GDP in 2019.

As for Turkey, financial development increased by 17.78 percentage points, from 23.98% of GDP in 2001 to 41.76% of GDP in 2007. Between 2007 and 2013, Turkey's financial development declined by 21.32 percentage points before going up by 3.87 percentage points during the subsequent six-year period, from 20.44% of GDP in 2013 to 24.31% of GDP in 2019.



**Figure 2. Number of International Tourist Arrivals Trends for Selected Emerging Markets**

Argentina's number of international tourist arrivals went up from 123 000 people in 2001 to 511 000 people in 2007, went up by 112% during the period between 2007 and 2013 before further going up by 75% during the subsequent six-year period, from 1 084 000 people in 2013 to 1 894 000 people in 2019. Brazil's tourism increased from 4 773 000 people in 2001 to 5 026 000 people in 2007, massively went up by 16% during the subsequent six-year period during the period between 2007 and 2013 before further going up from 5 813 000 people in 2013 to 6 353 000 people in 2019.

China's tourism massively went up from 89 013 000 people in 2001 to 131 873 000 people in 2007, declined by 2% during the period between 2007 to 2013 before increasing by 26% during the subsequent six-year period, from 129 078 000 people in 2013 to 162 538 000 people in 2019. Mexico's tourism declined from 100 718 000 people in 2001 to 93 582 000 people in 2007 before further plummeting by a massive 17% during the period between 2007 and 2013. The period between 2013 and 2019 saw Mexico's tourism jumping by a massive 25%, from 78 100 000 people in 2013 to 97 406 000 people in 2019.

Regarding Peru's tourism, it went up from 1 374 900 people in 2001 to 2 451 000 people in 2007, increased by 64% during the period between 2007 and 2013 before surging by 32% during the subsequent six-year period, from 4 010 000 people in

2013 to 5 275 000 people in 2019. For Thailand, its tourism increased by 43%, from 10 133 000 people in 2001 to 14 464 000 people in 2007 before going up from 14 464 000 people in 2007 to 26 547 000 people in 2013. The period between 2013 and 2019 saw Thailand's tourism going up by 50%, from 26 547 000 people in 2013 to 39 916 000 people in 2019. Turkey's tourism figures massively went up by 134%, from 11 619 000 people in 2001 to 27 215 000 people in 2007 and then increased by 46% during the subsequent period ranging from 2007 and 2013. Turkey's tourism figures then further went up by 30%, from 39 861 000 people in 2013 to 51 747 000 people in 2019.

## 6. Research Methodological Framework

The impact of financial development on tourism growth are summarized in the form of equation 1 (tourism growth function).

$$\text{TOURISM} = f(\text{FIN}, \text{HCD}, \text{OPEN}, \text{CARBON}, \text{GROWTH}, \text{PG}, \text{FDI}) \quad (1)$$

TOURISM stands for tourism growth, FIN is financial development whilst HCD stands for human capital development. OPEN, CARBON, GROWTH, PG and FDI represents trade openness, carbon emissions, population growth, economic growth and foreign direct investment respectively. The choice of the independent variables included in the tourism growth function was informed by the availability of data and similar empirical research on this topic. These prior empirical researches that determined the choice of independent variables in the tourism function include Panahi and Nasibparast (2018), Adeola et al (2018), Puah et al (2019), Tsangari (2012), Pervan and Juric (2021), Marti and Puertas (2017), Bentum-Ennin (2019), Gidebo (2021), Ayyappan et al (2014), Permatasari and Esquivias (2020), Seetanah et al (2011), John and Nazif (2021), Tavares (2020), Nyasha and Odhiambo (2021) and Snieska et al (2014).

When the tourism growth function is converted into an econometric format, equation 1 becomes equation 2.

$$\begin{aligned} \text{TOURISM}_{it} = & \beta_0 + \beta_1 \\ & \text{FIN}_{it} + \beta_2 \text{HCD}_{it} + \beta_3 (\text{FIN}_{it} \cdot \text{HCD}_{it}) + \beta_4 \text{OPEN}_{it} + \beta_5 \text{CARBON}_{it} + \beta_6 \text{GROWTH}_{it} \\ & + \beta_7 \text{PG}_{it} + \beta_8 \text{FDI}_{it} + \mu + \varepsilon \end{aligned} \quad (2)$$

The intercept is represented by  $\beta_0$ .  $\beta_1$  to  $\beta_7$  are co-efficients of the respective independent variables such as financial development, trade openness and development of human capital, trade openness, carbon emissions, economic growth, population growth and foreign direct investment. Equation 2 introduced the complementarity between financial and development of human capital

$[\beta_3(\text{FIN}_{it}, \text{HCD}_{it})]$  as one of the independent variables of tourism growth. The introduction of the complementarity variable is consistent with Assaf and Josiassen (2012) whose study noted that educated, skilled and highly knowledgeable personnel coupled with the availability of developed, flexible and deep financial markets creates a favourable environment that attracts tourists. This aspect investigates if the development of human capital is a channel through which financial development influences tourism in selected emerging markets. Fixed effects fully modified ordinary least squares (FMOLS), random effects and pooled OLS were the four econometric estimation techniques used to estimate equation 2.

This study used panel data (2001-2019) to examine the influence of financial development on tourism growth in selected emerging markets. Argentina, China, Peru, Turkey, Brazil, Mexico and Thailand are the selected markets included in this study. The secondary panel data was obtained from the World Development Indicators.

**Table 3. Control Variables of the Tourism Growth Function -Theoretical Rationales**

Variables	Measures used	Theoretical rationale	Expected relationship
Development of the financial sector (FIN)	Domestic credit to private sector (% of GDP)	Consistent with Nyasha and Odhiambo (2021), tourists are more concerned with daily transactional nature of the banking sector that is why this study used domestic credit to private sector ratio. Their study noted that a developed banking sector is more likely to enable tourists to easily transact daily.	+
Growth of the economy (GROWTH)	Gross domestic product per capita	High economic growth in the tourists destination country is an indication of the prevalence of enhanced development level. The latter attracts tourists as they can easily enjoy quality time where they can easily access top range services during their period of stay (Panahi and Nasibparast. 2018).	+
Trade openness (OPEN)	Trade (% of GDP)	Tourism as a form of trade in the services is positively sensitive to high levels of open markets, an argument which was supported by Pedak (2018).	+

Emissions of carbon dioxide (CARBON)	Carbon dioxide emissions in metric tons per capita	According to Kaufmann et al (2006), tourists are more concerned about their health, safety and security when choosing a tourist destination country. High levels of carbon dioxide emissions make the potential tourist destination country less attractive.	-
Development of human capital (HCD)	Human capital development index	According to Assaf and Josiassen (2012), high levels of human capital development in the destination country attracts more tourists because educated and skilled personnel are better able to offer high quality services to the tourists. These high-quality services include financial, tourists guide, research, food preparation services, all of which makes the tourists more comfortable to stay longer in their destination country.	+
Population growth (PG)	Population growth (annual %)	Panahi and Nasibparast (2018) argued that high levels of population in the tourist receiving country attracts more tourists. They noted this high level of population enhances the size of the market of the tourist receiving country hence positively influencing tourism.	+/-
Direct investment from foreign countries (FDI)	Net foreign direct investment (% of GDP)	Boora and Dhankar (2017) observed that tourism follows foreign direct investment. For tourists, the flow of foreign direct investment into a country is a sign that the financial sector is developed, infrastructure is developed, trade openness is high. Their study argued that the factors which attracts foreign direct investment are like the ones that attracts tourists into a country.	+

Source: Author Compilation

## 7. Pre-Estimation Diagnostics

Table 4 (appendix section) shows that there is a multicollinearity problem, in line with Stead (1996) because the correlation between tourism and carbon emissions exceeded 70%. Table 5 (appendix section) indicates that most of the variables are not normally distributed because the probability of the Jarque-Bera criterion is zero or almost zero. The range for tourism, financial development, growth of the economy and trade openness indicates that outliers exist. Standard deviation (greater than 100) for tourism and economic growth shows there exist outliers. All variables in the model were skewed to the right, a sign that the data is not normally distributed.

## 8. Main Data Analysis, Results Description and Interpretation

**Table 6. Panel Stationarity Tests Using Individual Intercept**

<b>Level</b>				
	LLC	IPS	ADF	PP
TOURISM	-0.85**	-0.35	-0.17	-0.32*
FIN	-4.61***	-2.46***	27.30**	36.61***
HCD	-5.44***	-4.59***	46.38***	55.34***
OPEN	-0.77	0.003	12.20	15.09
CARBON	-5.25***	-2.23**	29.96***	28.93**
GROWTH	-1.70***	-0.90***	31.70***	22.73*
PG	-0.20	-0.44	27.15**	14.92
FDI	-1.39*	-1.68**	25.57**	49.78***
<b>First difference</b>				
TOURISM	-2.14***	-1.89***	-1.43**	-3.62***
FIN	-8.65***	-7.72***	77.57***	185.82***
HCD	-6.80***	-5.01***	50.54***	89.22***
OPEN	-4.11***	-4.49***	45.51***	88.75***
CARBON	-3.12***	-3.04***	32.96***	54.26***
GROWTH	-3.83***	-2.71***	22.11*	53.54***
PG	-1.32**	-1.53*	21.82*	53.09***
FDI	-7.31***	-8.93***	89.44***	645.67***

Source: E-Views

\*, \*\* and \*\*\* stands for 10%, 5% and 1% significance levels respectively.

Where LLC, ADF, IPS and PP stands for Levin et al (2002), Augmented Dick and Fuller Fisher Chi Square, Im et al (2003) and Phillip Peron (PP) respectively. Table 6 produced results which indicates that variables were stationary or significant at first difference, hence paving way for data analysis (panel-cointegration tests), in line with Tembo (2018).

Kao (1999)'s method was employed to estimate whether there is a relationship (long run) between the used variables.

**Table 7. Kao (1999) Results**

Series	ADF t-statistic
TOURISM FIN HCD OPEN CARBON GROWTH PG FDI	-2.1054**

*Source: Author Compilation*

The results presented in Table 7 shows that the variables used are defined by a long run relationship at five percent significance level, consistent with Tembo (2018)'s interpretation. The results cleared way for final data analysis to be undertaken.

**Table 8. Main Data Analysis Results**

	Fixed effects	FMOLS	Random effects	Pooled OLS
FIN	0.41**	0.65***	0.04	1.69***
HCD	0.67	1.99	1.62	1.99***
FINHCD	0.14***	0.49***	0.86	1.89***
OPEN	0.71	0.74**	0.19***	0.50*
CARBON	-0.12	-0.38	-0.66	-1.73***
GROWTH	0.84***	0.78***	1.21***	0.15
PG	-0.38*	-0.62**	-0.27	1.08***
FDI	0.05	0.04***	0.04	0.61**
Adjusted R-squared	0.67	0.61	0.59	0.64
J-statistic	115.98	29.21	43.97	33.17
Prob(J/F-statistic)	0.00	0.00	0.00	0.00

*Source: E-Views*

Fixed effects, FMOLS and pooled OLS shows that financial development had a significant positive influence on tourism growth whilst random effects produced results which shows a non-significant positive correlation running from financial development towards tourism growth. These results resonate with Nyasha and Odhiambo (2021) whose study noted that tourists are more concerned with daily transactional nature of the banking sector that is why this study used domestic credit to private sector ratio.

Development of human capital's influence on tourism growth was non-significant positive under fixed effects, FMOLS and random effects whilst pooled OLS shows that human capital development's effect of tourism was positive and significant. The results resonate with Assaf and Josiassen (2012) whose study noted that developed human capital in the destination country attracts more tourists because educated and skilled personnel are better able to offer high quality services to the tourists.

The complementarity between financial and development of human capital had a significant positive effect on tourism growth (fixed effects, FMOLS, pooled OLS). Random effects show that the combination between financial and development of human capital's influence on tourism growth was positive (non-significant). These results mean that the complementarity variable (financial and development of human

capital) enhanced tourism growth, consistent with Assaf and Josiassen (2012) whose findings implied that high levels of development of human capital in the destination country attracts more tourists because educated and skilled personnel are better able to offer high quality financial services to the tourists.

FMOLS, pooled OLS and random effects noted that trade openness's influence on tourism growth was positive and significant whilst fixed effects shows that trade openness had a non-significant positive effect on tourism growth. These results resonate with Pedak (2018) whose study observed that tourism as a form of trade in the services is positively sensitive to high levels of open markets.

Carbon emissions' influence on tourism growth was observed to be negative but non-significant (fixed effects, FMOLS and random effects) yet a significant negative relationship from carbon emissions towards tourism growth was noted using the pooled OLS. These results resonate with Kaufmann et al (2006) whose study says that tourists are more concerned about their health, safety and security when choosing a tourist destination country.

Economic growth's effect on tourism growth was observed to be positive and significant under the FMOLS, random and fixed effects whilst pooled OLS indicates a significant positive relationship from economic growth towards tourism growth. The results agree with Panahi and Nasibparast (2018) which argued that economic growth attracts tourists as they can easily enjoy quality time where they can easily access top range services during their period of stay.

Pooled OLS indicates that population growth's effect on tourism growth was observed to be significant positive, in line with Panahi and Nasibparast (2018) whose study argued that high level of population enhances the market size of the tourist receiving country hence positively influencing tourism. Population growth was observed to have a significant negative influence on tourism growth (fixed effects, FMOLS) yet the random effects shows a non-significant negative relationship from population growth towards tourism growth, in contradiction with available literature.

FMOLS and pooled OLS indicates that foreign direct investment had a significant positive influence on tourism growth. Fixed and random effects show a non-significant positive correlation running towards tourism growth from foreign direct investment. These two set of results are consistent with literature which says that tourism follows foreign direct investment (Boora and Dhankar. 2017).



## 9. Conclusion

This paper examined the influence of financial development on tourism growth in selected emerging markets with the aid of panel data (2001-2019). The influence of the combination between financial and development of human capital on tourism growth in selected emerging markets was also investigated. In a nutshell, factors such as financial sector development, foreign direct investment, trade openness, development of human capital and economic growth and the complementarity variable had a significant positive influence on tourism growth in selected emerging markets. To enhance tourism growth, selected emerging markets are urged to design and implement policies and programmes earmarked at increasing financial development, foreign direct investment, trade openness, economic growth and development of human capital. Threshold panel regression analysis could be another avenue through which the influence of financial development on tourism is examined in future.

## References

- Adeola, O.; Boso, N. & Olaniyi, E. (2018). Drivers of international tourism demand in Africa. *Business Economics*, 53 (1), pp. 25-36.
- Al-Mulali, U.; Solarin, S.A. & Gholipour, H.F. (2020). Relationship between financial development and inbound tourism: A revisit, *Journal of Public Affairs*, 21 (3), pp. 1-5.
- Assaf, A.G. & Josiassen, A. (2012). Identifying and ranking the determinants of tourism performance: A global investigation. *Journal of Travel Research*, 51 (4), pp. 388-399.
- Aye, G.C. & Edoja, P.E. (2017). Effect of economic growth on CO2 emission in developing countries: Evidence from a dynamic panel threshold regression model. *General and Applied Economics*, <https://doi.org/10.1080/23322039.2017.1379239>.
- Ayyappan, S.V.; Kumar, S. & Jose, J. (2014). Infrastructural determinants of tourism in India, *Atna Journal of Tourism Studies*, 9 (1), pp. 63-73.
- Banday, U.J. & Ismail, S. (2017). Does tourism development lead positive or negative impact on economic growth and environment in BRICS countries? A panel data analysis. *Economics Bulletin*, 37(1), pp. 553–567
- Bentum-Ennin (2019). Determinants and economic impact of international tourist arrivals in Ghana, *African Economic Research Consortium Policy Brief Number 580*.
- Blake A, Sinclair MT, Soria JAC (2006). Tourism productivity: evidence from the United Kingdom. *Annals of Tourism Research*, 33(4), pp. 1099–1120
- Boora, S.S. & Dhankar, S. (2017). Foreign direct investment and its impact upon the Indian hospitality industry. *African Journal of Hospitality, Tourism and Leisure*, 6 (1), pp. 1-17.
- Brida, J.G.; Cortes-Jimenez, I. & Pulina, M. (2016). Has the tourism-led growth hypothesis been validated? A literature review. *Current Issues Tourism*, 19(5), pp. 394–430

- Chen, H. (2010). Macroeconomic conditions and the puzzles of credit spreads and capital structure. *Journal of Finance*, 65(6), pp. 2171-2212.
- Cooray, A. (2010). Do stock markets lead to economic growth? *Journal of Policy Modeling*, 32(4), pp. 448-460.
- Croes, E. & Vanegas, S.M. (2008). Co-integration and causality between tourism and poverty reduction. *Journal of Travel Research*, 47 (1), pp. 94-103.
- Dhungel, K.R. (2015). An econometric analysis on the relationship between tourism and economic growth: empirical evidence from Nepal. *International Journal of Economics and Financial Management*, 3(2), pp. 84-90.
- Ehigiamusoe, K.U. (2021). The nexus between tourism, financial development and economic growth: Evidence from African countries. *African Development Review*, 33 (2), pp. 382-396.
- Franks, J. & Mayer, C. (1990). Capital markets and corporate control: A study of France, Germany and the UK. *Economic Policy*, 5(10), pp. 189-231
- Gao, Q.; Liu, Y. ;Ayub, B. & Hussain, M. (2022). Does Health Crises Effect Tourism: Role of Financial Inclusion for Green Financial Development. *Front. Public Health* 10:896894. Doi: 10.3389/fpubh.2022.896894
- Gidebo, H.B. (2021). Factors determining international tourist flow to tourism destinations: A systemic review. *Journal of Hospitality Management and Tourism*, 12 (1), pp. 9-17.
- Gounopoulos, D.; Petmezas, D. & Santamaria, D. (2012). Forecasting tourist arrivals in Greece and the impact of macroeconomic shocks from the countries of tourists' origin. *Annals of Tourism Research*, 39(2), pp. 641-666.
- Habib, S.S.; Sharif, M.S. & Hossain, M.A. (2019). Nexus between economic growth, tourism revenue and financial development in Bangladesh: A time series analysis. *Business and Economic Research*, 9 (3), pp. 134-149.
- Hall, C. M. & Williams, A. (2008). *Tourism and innovation*. Routledge.
- Hur, J.; Raj, M. & Riyanto, Y. E. (2006). Finance and trade: A cross-country empirical analysis on the impact of financial development and asset tangibility on international trade. *World Development*, 34(10), pp. 1728-1741.
- Ibrahim, P.A. (2021). Exploring tourism opportunities: Role of financial institutions in the promotion of tourism entrepreneurship in Kerala. *ASEAN Journal on Hospitality and Tourism*, 19 (2), pp. 86-100.
- Im, K.S.; Pesaran, M. H. & Shin, Y. (2003). Testing unit roots in heterogeneous panels. *Journal of Econometrics*, 115 (1), pp. 53-74.
- Jamel, L. (2020). The relation between tourism and economic growth: A case of Saudi Arabia as an emerging tourism destination. *Virtual Economics*, 3 (4), pp. 29-47.
- John, K. & Nazif, D. (2021). Determinants of intra-SSA tourism demand. *Munich Personal RePEc Archive (MPRA) Paper Number 106492*.
- Kao, C. (1999). Spurious regression and residual-based tests for co-integration in panel data. *Journal of Econometrics*, 90, pp. 247-259.
- Kaufmann, D. ; Kraay, A. & Mastruzzi M. (2006). Governance Matters VI: Aggregate and Individual Governance Indicators 1996-2006. *Policy Research Working Paper No. 4280*. World Bank, Washington: DC.

- Khanna, R. & Sharma, C. (2020). Does financial development raise tourism demand? A cross-country panel evidence. *Journal of hospitality and Tourism Research*, 20 (10), pp. 1-31.
- Liu, J.; Wang, M.; Yang, L.; Rahman, S. & Sriboonchitta, S. (2020). Agricultural productivity growth and its determinants in South and Southeast Asian countries, *Sustainability*, 12 (2020), pp. 1-21.
- Levin, A.; Lin, C.F. & Chu, C.S.J. (2002). Unit root tests in panel data: Asymptotic and finite-sample properties. *Journal of Econometrics*, 108 (1), pp. 1-24.
- Malec, L. & Abraham, J. (2016). Determinants of tourism industry in selected European countries: A smooth partial least squares approach. *Economic Research*, 29 (1), pp. 66-84.
- Marti, L. and Puertas, R. (2017). Determinants of tourist arrivals in European Mediterranean countries: Analysis of competitiveness, *European Journal of Tourism Research*, 15 (2017), 131-142.
- Melese, K. B. & Belda, T.H. (2021). Determinants of tourism product development in Southeast Ethiopia: Marketing perspectives. *Sustainability*, 13, pp. 1-21.
- Montes-Rojas, G. & Barroso, R. (2020). What are the empirical determinants of international tourist arrivals and expenditures? An empirical application to the case of Sao Tome and Principe, *World Bank Group (Macroeconomics, Trade and Investment Global Practice) Working Paper Series Number 9189*.
- Nesti, N.O. (2018). Investigating the relationship between tourism, trade openness and financial development to economic growth in six selected ASEAN countries, *Universitas Andalas Diploma Thesis in Social Sciences*.
- Nyasha, S. & Odhiambo, N.M. (2021). Determinants of tourism development: Empirical evidence from three developing countries. *International Economics*, 74 (3), pp. 335-368.
- Ohlan, R. (2017). The relationship between tourism, financial development and economic growth in India. *Future Business Journal*, 3 (1), pp. 9-22.
- Panahi, H. & Nasibparast, S. (2018). Determinants of tourism development in developing countries: A Bayesian econometric approach. *Geographical Journal of Tourism Space*, 7 (26), pp. 43-58.
- Pedak, M.O. (2018). The Effect of Tourism on GDP. *A dissertation submitted to Jonkoping University*.
- Permatasari, M. M. & Esquivias, M. A. (2020). Determinants of tourism demand in Indonesia: A panel data analysis, *Tourism Analysis*, 25, pp. 77-89.
- Pervan, M. & Juric, E. (2021). Determinants of tourism demand in Croatia, *International Journal of Economics and Statistics*, 9 (2021), pp. 102-107.
- Puah, C.; Jong, M. & Arip, M. A. (2019). Determinants of tourism demand in Sarawak: An augmented gravity model, *Proceedings of the International Conference on Economics*, 2019 (ICE 2019), pp. 150-157.
- Rasool, H.; Maqbool, S. & Tarique, M. (2021). The relationship between tourism and economic growth among BRICS countries: A panel co-integration analysis, *Future Business Journal*, 7 (1), pp.1-11.
- Snieska, V. Barkauskiene, K. and Barkauskas, V. (2014). The impact of economic factors on the development of rural tourism: Lithuanian case, *Procedia -Social and Behavioral Sciences*, 156, pp. 280-285.
- Stead, R. (1996). *Foundation quantitative methods for business*. Prentice Hall. England.
- Tavares, R.V. (2020). Modelling the determinants of international tourism demand in Cabo Verde Islands by European countries: A dynamic panel data econometric analysis, *African Journal of Hospitality, Tourism and Leisure*, 9 (4), pp. 484-499.

Tsangari, H. (2012). Determinants of tourism for “sun and sea” Cyprus, *European Research Studies Journal*, 15 (3), pp. 161-184.

Tembo, J. (2018). Regional financial integration and its impact on financial sector development: The case of Southern Africa. *Unpublished Doctoral Thesis*. University of South Africa.

Tsaurai, K. (2018). The role of financial sector development in the tourism-growth nexus: A case of Southern African countries. *Journal of Economics and Behavioral Studies*, 10 (3), pp. 100-110.

Wada, I. (2021). Institutional quality and tourism growth nexus in MENA countries. *The Romanian Economic Journal*, 24 (81), pp. 3-14.

Williams, A. M. & Baláz, V. (2015). Tourism risk and uncertainty: Theoretical reflections. *Journal of Travel Research*, 54(3), pp. 271-287

Xie, J. (2020). The economic determinants of tourism seasonality: A case study of the Norwegian tourism industry. *Cogent Business and Management*, 7 (1), pp. 1-14.

Yenisehirlioglu, E. and Bayat, T. (2019). The relationship between tourism income and financial development in the MENA countries. *Journal of Business Research-TURK*, 11 (2), pp. 1183-1190.

## Appendix Section

**Table 4. Correlation Analysis**

	TOURISM	FIN	HCD	OPEN	CARBON	GROWTH	PG	FDI
TOURISM	1.00							
FIN	0.12	1.00						
HCD	0.05	-0.09	1.00					
OPEN	0.05	0.52***	0.01	1.00				
CARBON	0.74***	0.02	-0.01	0.08	1.00			
GROWTH	0.0003	-0.23***	-0.18**	-0.32***	0.29***	1.00		
PG	-0.18**	-0.60	-0.05	-0.40***	-0.18***	0.34***	1.00	
FDI	-0.01	0.16*	-0.03	0.06	-0.36***	-0.32***	-0.23**	1.00

Source: E-Views

**Table 5. Descriptive Statistics**

	TOURISM	FIN	HCD	OPEN	CARBON	GROWTH	PG	FDI
Mean	40 055 165	41.66	0.78	56.43	3.54	7 175.18	1.00	2.77
Median	14 150 000	35.71	0.76	48.11	3.77	7 245.45	1.02	2.69
Maximum	162 538 000	126.15	1.74	140.44	7.43	14 613.04	1.72	7.07
Minimum	123 000	6.27	0.55	21.85	0.98	1 053.11	0.28	0.45
Std. Dev.	47 381 324	25.22	0.18	31.65	1.50	3 388.18	0.37	1.22
Skewness	1.02	1.12	3.77	1.44	0.55	0.04	0.01	0.44
Kurtosis	2.62	3.96	20.62	4.04	3.37	2.04	2.03	3.30
Jarque-Bera	24.07	33.05	2 035	52.00	7.41	5.17	5.18	4.69
Probability	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
Observations	133	133	133	133	133	133	133	133

Source: E-Views