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# Empirical Analysis of Factors Affecting International Competitiveness of Zambia's Tourism Industry

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**Abstract:** Zambia's tourism industry has been developing noticeably for the last decade and it has become one of the major potential options for economy growth and diversification. Zambia is one such a country that offers unique attractive tourist sites yet it is not among the top 50 worldwide tourist destinations. This research was undertaken in order to empirically analyze factors affecting international competitiveness of the tourism industry in Zambia. The study used Trade Specialization Coefficient (TSC) as a measure of Tourism Industry Competitiveness in Zambia, and carried out an Empirical Analysis using econometric variables selected based on Porters Diamond Model of competitiveness. Using a Principal Component Analysis and Multiple Linear Regression Analysis, the study found that 78.3% of the International Competitiveness of Zambia's Tourism Industry can be explained by the identified variables in this study. This study concludes that there is need to develop a tourism development plan that streams down from a national to regional level, which will strengthen actions on the ground, leading to a coordination necessary to create opportunities for linking the tourism industry to policies going hand in hand with investment opportunities provided by modern information and telecommunications, which are necessary for improving the International competitiveness of Tourism Industry.

**Keywords:** Tourism, International Competitiveness, Porters-Diamond-Model, Affecting Factors

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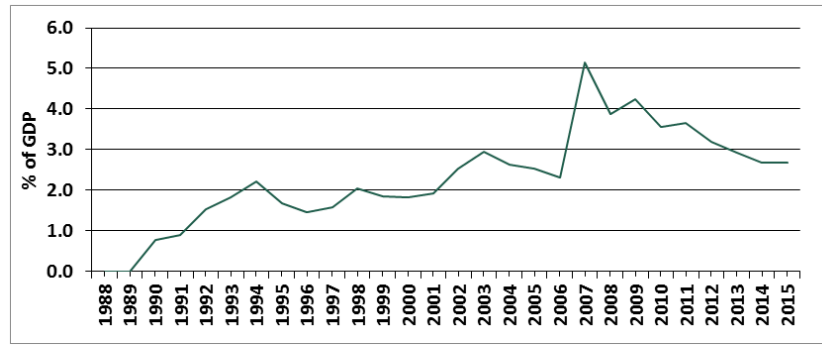
## 1. Introduction

The country of Zambia in the southern part of Africa, has untapped environmental tourism reserves, talk of its richness in cultural and heritage sites, ample wildlife, rich water resources, harmony and serenity.

Zambia is one such a country that offers unique attractive tourist sites yet it is not among the top 50 worldwide tourist destinations. The country has a great landmass, an abundance of natural resources, a temperate climate and a stable political environment. This should make it an ideal tourist destination, yet out of the whole Sub Sahara Africa, Zambia only commands 0.6% of the total demand for tourism in the region (Tourism and Travel Council, 2008) [1]. All these resources are yet to be exposed to the outside world. The challenges to Zambia are how it can enhance awareness of its diverse tourism attractions and position the country as a tourism destination. This research has analyzed those factors that are affecting international competitiveness of tourism industry in Zambia.

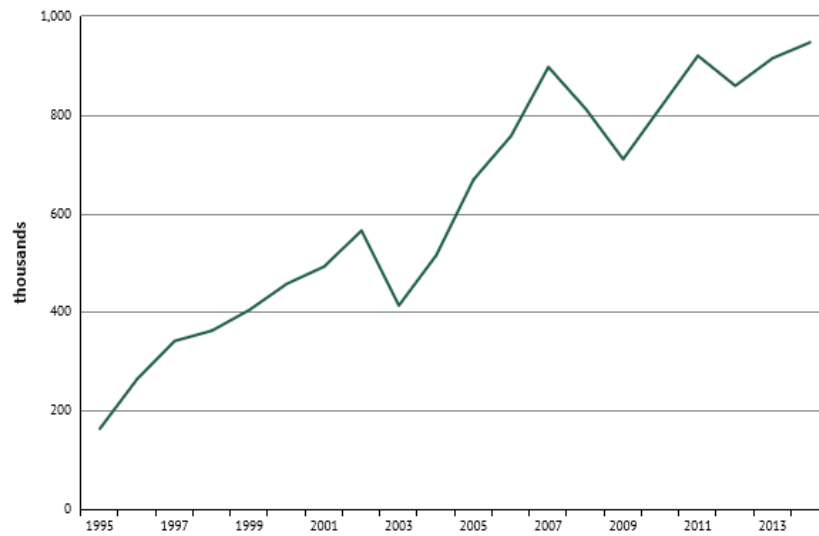
The tourism sector in Zambia is accelerating at a fast pace. According to an Article published on July 13, 2016 by the ZambiaInvest. com [2]. There was a major and notable enhancement recorded in the tourism industry during the period of 2006-2010 where there was a significant increase in tourist numbers along with greater investment from the private sector. The target of 736,450 tourists was set by Fifth National Development Plan 2006-2010 and against this target, international tourist arrivals in Zambia averaged at 793,999 during that period.

The direct tourism earnings increased from USD174 million in 2005 to USD200 in 2009 against the targeted value of USD304 million by 2010. In addition, employment level increased to 25,860 in 2009 from 19,650 in 2005. During the tenure of 2006 to 2010; the contribution of tourism sector in GDP of Zambia remained constant at 3.1%. In 2012, Zambia received 859,088 tourists compared to 920,299 recorded in 2011.



(Source: knoema.com/atlas/Zambia)

Figure 1. Tourism Direct Contribution to GDP -% share.



(Source: knoema.com/atlas/Zambia)

Figure 2. Arrivals non-resident tourists at national borders.

However there was a decline of 6.7% in the number of tourist arrival in 2014, despite that there is still growth anticipation in tourism industry by the Zambian government. The tourist sector structure of Zambia comprises of several types of enterprise including boarding hostels, lodges, hotels, tour operators, guesthouses and transport providers.

There are several large international franchises and chains in Zambia and also numerous small luxury lodges owned by foreigners and many small informal enterprises. Overall, Zambian tourism sector is dominated by small and medium sized operators that are well integrated vertically. Therefore these operators are reliant on overseas providers for various services such as flights, marketing and representation.

Over the time, Zambia has faced increased competition in tourism sector from its regional neighbors and this trend is expected to intensify in the future. Major competitors include Kenya, Tanzania, South Africa, Namibia, and Botswana. Political and economic problems in Zimbabwe however have suppressed competition from their tourist industry. However Zimbabwe is expected to recover easily as a competitor because their tourism sector is better developed and priced competitively.

But it should be noted that although there has been an increase in tourism sector of Zambia in the past decade, the sector is underperforming in comparison to other countries in the same region along with relation to its own potential. Despite having major tourism attractions, Zambia receives fewer tourists. The number of visitors is low, average visitor expenditure and length of stay is also limited. Botswana, neighboring country of Zambia has three times the number of tourists of Zambia. The overall average visitor stay of Zambia is also in decline. Zambia has around 34 game management areas and 19 national parks covering 33 percent of the country area but only five percent has been developed for tourism. This is the situation that is now being addressed by the government.

## 2. Literature Review

The review carried out in this research discovered that very little research has been carried out in Zambia on tourism industry in general; especially recent work on international competitiveness. An attempt has been made in this research to reveal the related literature; this research brings innovation

and an addition to literature on Zambia's Tourism industry studies, as there is currently no empirical study on factors affecting international competitiveness of the tourism industry of Zambia. Furthermore general review of the related current literature, according to Chen et al, (2016) [3] shows that although there is a significant amount of research devoted to competitiveness, relatively few studies focus on evaluating competitiveness from the tourists' perspective.

Table 1 summarizes 87 articles that have been reviewed in this research, published from 1995 to 2015 in leading tourism and hospitality journals dealing with the concepts of international competitiveness.

**Table 1.** Published articles in leading tourism and hospitality journals.

Journal / Publisher	Number of Articles
1 Annals of Tourism Research	3
2 Journal of Sustainable Tourism	4
3 Tourism Management	13
4 Journal of Travel Research	11
5 International Journal of Hospitality Management	1
6 International Journal of Contemporary Hospitality	16
7 Tourism Geographies	2
8 Cornell Hospitality Quarterly	-
9 Journal of Hospitality & Tourism Research	1
10 Leisure sciences	-
11 Leisure Studies	-
12 International Journal of Tourism Research	4
13 Current Issues in Tourism	10
14 Scandinavian Journal of Hospitality and Tourism	2
15 Journal of Travel & Tourism Marketing	3
16 Journal of leisure research	-
17 Tourism Economics	14
18 Asia Pacific Journal of Tourism Research	3
TOTAL	87

Source: J. Komšić, J. Dorčić: tourism destination competitiveness and online reputation

The analysis of published articles in the top 18 rated leading tourism and hospitality journals searched for the keywords "competitiveness" showed that in terms of "competitiveness", in total 87 full-length articles related to tourism and were found in different academic search database. According to the review of these articles, it was found that Ritchie and Crouch (2003) [4] were the first to commence development of a general model of destination competitiveness. The model linked together the macro and microenvironment factors and consists of five components, which are core resources and attractions, supporting factors and resources, destination policy, planning and development, destination management, and qualifying and amplifying determinants. Each of these five categories is further broken down into sets of indicator. Dwyer and Kim (2003) [5] introduced a holistic approach to the determinants and indicators of destination competitiveness. Their indicators were categorized into five subgroups: endowed resources, supporting factors, destination management, situational conditions, and demand factors.

Hanafiah et al (2015) [6] critically reviewed the Crouch and Ritchie (2003) and Dwyer and Kim (2003) models and stated that one of the greatest weaknesses of the models were the exhaustive lists of tourism destination factors without the mechanism for prioritizing these criteria. Hanafiah et al (2015) stated that the Crouch and Ritchie model does not pinpoint the causal relations in the tourism destination competitiveness model. Furthermore, the Dwyer and Kim (2003) model simplified and extended the previous model by not only integrating a number of determinants into extended categories, but also taking demand conditions into consideration and determining destination competitiveness development of the elements serving to create socioeconomic prosperity. Nevertheless, it is important to note that most of the selected determinants were not based on any empirical testing.

The World Economic Forum (WEF) Geneva published the Travel & Tourism Competitiveness Report (TTCI) 2008 (World Economic Forum, 2008) [7] to explore the factors that drive the travel and tourism competitiveness of destinations. The TTCI is composed of 14 "pillars" of travel and tourism competitiveness, which include policy rules and regulations, environmental regulation, safety and security, health and hygiene, prioritization of travel and tourism, air transport infrastructure, ground transport infrastructure, tourism infrastructure, information and communication technology (ICT) infrastructure, price competitiveness in the travel and tourism industry, human resources, affinity for travel & tourism, and natural and cultural resources.

In addition, Gomezelj and Mihalic (2008) [8] focused their research on environmental management using ingratiated resources, created resources, supporting factors, destination management, and situational condition and demand conditions to assess tourism competitiveness. Assaker (2011) adapted the CM framework and proposed the application of the economy, infrastructure, the environment and tourism as the significant determinants in explaining destination competitiveness [9]. Tseng and Chen (2013) constructed a framework for the evaluation of tourism destination competitiveness of cities in Taiwan using descriptive statistical analysis [10]. In contrary, Knezevic Cvelbar et al. (2015) developed productivity-related measures for destination competitiveness examination based on economic and tourism factors [11].

Cucculelli and Goffi (2015) [12] extend the Ritchie and Crouch (2000) model of destination competitiveness by introducing a set of sustainability indicators and testing their role in explaining the competitiveness of a tourism destination. The authors used the following indicators: sustainable tourism destination management, general infrastructures, events and activities, responsible tourist behavior, local empowerment in the tourism sector, destination marketing, quality of environmental and natural resources, gastronomy, historical and artistic feature, price-quality relationship, tourist accommodations, emphasis on maximizing local economic development.

### 3. Measuring International Competitiveness

#### 3.1. Trade Specialization Coefficient (TSC)

In order to measure the international competitiveness of tourism of countries, a number of concepts can be used, such as the concept of market share (MS), revealed comparative advantage (RCA), trade combining density index (TCD) and trade specialization coefficient (TSC). In this research a close attribute to trade specialization coefficient (TSC) has been used.

Trade Specialization Coefficient reflects the proportion of a certain industry’s net exports to the total imports and exports of the industry in a country. It is jointly decided by the size of the import and export volume of the current year, domestic production and consumption, foreign production and consumption (Mu and Zhang, 2010) [13]. Trade Specialization Coefficient is also used as a tool to analyze the competitiveness of a certain industry in a country.

The formula of TSC is as follows:

$$(TSC) TSC_{ij} = (X_{ij} - M_{ij}) / (X_{ij} + M_{ij}).$$

In the formula,  $X_{ij}$  means the export value of product  $j$  in country  $i$ ;  $M_{ij}$  means the import value of product  $j$  in country  $i$ . The greater TSC value expresses the stronger export competitiveness of the country; the smaller TSC value

expresses the weaker export competitiveness of the country; 0 means the competitiveness is near the average level. Trade specialization coefficient is always less than 1 and greater than -1.

Trade Specialization Coefficient (TSC) has been used reflecting the proportion of tourism industry’s net exports to the total imports and exports of the industry in Zambia. Trade Specialization Coefficient is used as a tool to analyze the competitiveness of a certain industry in a country. It is jointly decided by the size of the import and export volume of the current year, domestic production and consumption, foreign production and consumption (Mu and Zhang, 2010: 8). Therefore in this research, a relationship of selected variable effect on TSC has been analyzed using multi linear regression analysis.

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**Table 2.** Calculated Trade Specialization Coefficients.

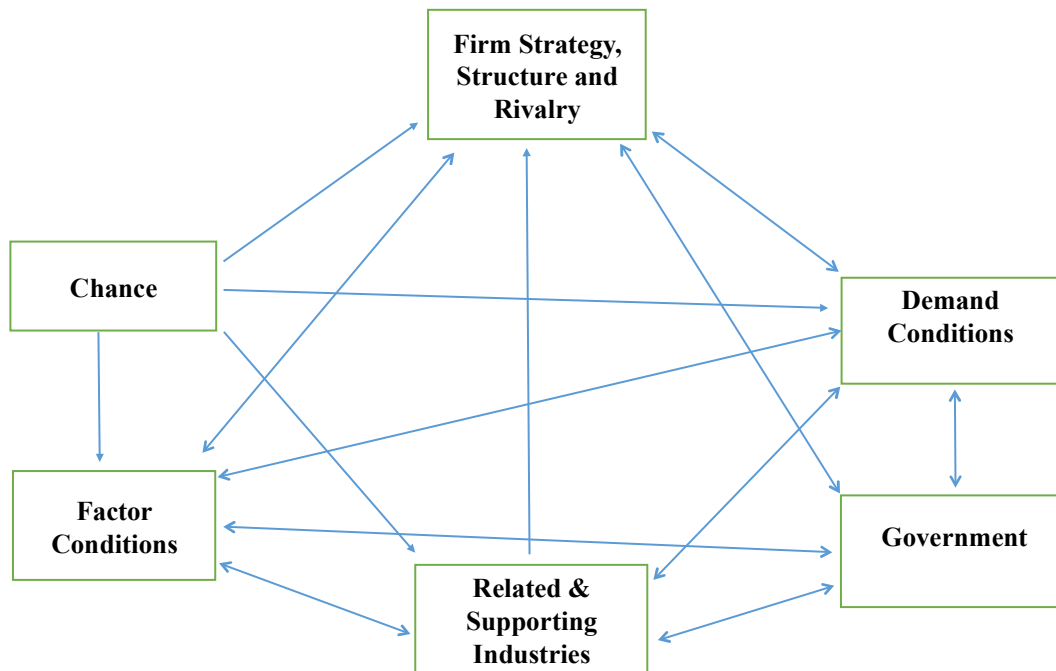
Year	Export of Tourism	Import of Tourism	TSC Indicator
1997	2.37	6.20	-0.45
1998	4.36	6.49	-0.20
1999	6.03	8.50	-0.17
2000	7.68	7.77	-0.01
2001	7.58	6.30	0.09
2002	5.79	6.90	-0.09
2003	7.03	6.40	0.05
2004	4.43	3.96	0.06
2005	15.81	3.38	0.65
2006	11.13	2.92	0.58
2007	11.46	2.70	0.62
2008	9.62	3.04	0.52
2009	9.67	3.50	0.47
2010	6.11	2.98	0.34
2011	5.89	2.95	0.33
2012	4.93	3.27	0.20
2013	4.76	3.24	0.19
2014	5.80	3.69	0.22

Source: Calculated by Author using formula explained

#### 3.2. Porters’ Diamond Model

Porter concluded through the ‘Diamond framework’, which originally advocated the theory of competitiveness in the following years (1990a, 1997a, 1998b, 2000). Porter improved the understanding of the international competitiveness [14]. According to Peng (2004) this is the first multilevel theory to realistically connect firms, industries and nations. International

competition at the firm level has transformed over the years because of the changing pattern of world trade, globalization of the world economy, rapid development and spread of ICT and the rise of transnational organizations [15]. These changes resulted in a revival of explanations for trade particularly at the level of individual industries (Porter 1990a, 2003). Porter introduced the concept of National Diamond (1990) that identifies the following:



Source: Wikipedia

**Figure 3.** Porters Diamond Model.

#### *Factor Conditions*

Theoretically factor conditions include essential as well as advanced components. The fundamental factors incorporate geographical conditions, natural resources, infrastructure, Energy supply, basic labor force resources and financial market. The Advanced factors consist of technical equipment, talents, and skills, enhanced education, innovation and capital operations.

#### *Demand conditions*

These take into account domestic demand and international demand. It can be argued that the increase of national income of Zambia and the resident's income is bound to result in an improvement in domestic demand for tourism. GDP per capita growth rates can be used to analyze the dependence of tourism demand conditions whether on local or international. Likewise when modern home market purchasers weight firms to advance speedier and to make more propelled items than those of contenders, this will brag the international competitiveness of the industry in the long run.

#### *Related and supporting industries*

These can deliver inputs that are imperative for development and internationalization. These ventures give financially savvy inputs, however, they likewise take part in the redesigning procedure, therefore animating different organizations in the bind to improve.

#### *Firm strategy, structure and rivalry*

This constitute the fourth determinant of competitiveness. The way in which companies are created, set goals and are managed is important for success. But the presence of intense

rivalry in the home base is also important; it creates pressure to innovate in order to upgrade competitiveness.

#### *Government and Chance*

Porter additionally includes that Government can impact each of the over four determinants of aggressiveness. Plainly government can impact the supply states of key creation elements, request conditions in the home market, and rivalry between firms. Government intercessions can happen at nearby, local, national or supranational level. As indicated by porter, Chance occasions are events that are outside of control of a firm. They are vital in light of the fact that they make discontinuities in which some increase competitiveness positions and some lose. The Porter Diamond Model is that these variables collaborate with each other to make conditions where advancement and enhanced competitiveness happens.

## 4. Data Analysis

The empirical analysis is based on variables selected based on porters model. The data was collected from the World Bank [17] and the Zambia statistics [18]. The 15 variables have been selected based on porter's model for competitiveness, which identifies determinants of competitiveness, which are those measuring local firm strategy and rivalry, variables measuring Factor (Input) Conditions, variables measuring Demand Conditions, and variables measuring Related and Supporting Industries. These variables have been examined over time for a selected period of time, which is from 1997 to 2014.

*Table 3. Economic Variables Chosen based on Porters Diamond Model.*

Porters Diamond	Variable	Variable Description
DEMAND	GDP	GDP at market prices (constant 2005 US\$)
DEMAND	INFL	Inflation, consumer prices (annual%)
FACTOR	UEM	Unemployment, total (% of total labor force)
FACTOR	NNI	Net national income per capita (constant 2005 US\$)
FACTOR	CPI	Consumer price index (2010 = 100)
FIRM STRATEGY	FDI	Foreign direct investment, net inflows (% of GDP)
FIRM STRATEGY	CRED	Commercial banks and other creditors (INT, current US\$)
GOVT	EDEX	Adjusted savings: education expenditure (current US\$)
GOVT	GNE	Gross national expenditure (current US\$)
GOVT	HEX	Health expenditure per capita (current US\$)
GOVT	IMST	Improved sanitation facilities (% of population with access)
GOVT	TROP	Trade Openness Index (Trade to GDP Ratio (%))
RELATED INDUSTRY	ICT	ICT goods imports (% total goods imports)
RELATED INDUSTRY	INTE	Investment in telecoms with private participation
RELATED INDUSTRY	AIRT	Air transport, registered carrier departures worldwide

**4.1. Principal Component Analysis**

A principal component analysis was carried out in analyzing data, in order to ascertain whether the correlation among the 15 variables could be accounted for in terms of comparatively few latent variables. And to determine how many important components are present in the data, and further to analyze the extent to which these important components are able to explain the observed correlations between the variables. Relevant tables showing the work and

analysis done have been included in this section.

Below are the Eigenvalues and the Scree Plot. The analysis results in the table are showing the importance of each of the 15 principal components (Variables). Only the first three variables have eigenvalues over 1.00, this concludes that a three-factor solution is to be adequate in determining which factors affect the international competitiveness of the tourism industry in Zambia. And together these explain over 84.362% of the total variability in the data.

*Table 4. Below is the Eigenvalues and the Scree Plot.*

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative%
1	9.998	66.655	66.655	9.998	66.655	66.655	9.013	60.083	60.083
2	1.446	9.642	76.297	1.446	9.642	76.297	2.037	13.577	73.661
3	1.210	8.065	84.362	1.210	8.065	84.362	1.605	10.701	84.362
4	.762	5.079	89.441						
5	.623	4.152	93.593						
6	.454	3.024	96.617						
7	.255	1.701	98.318						
8	.115	.764	99.082						
9	.059	.394	99.476						
10	.038	.251	99.727						
11	.024	.158	99.885						
12	.014	.093	99.978						
13	.002	.015	99.993						
14	.001	.006	100.000						
15	4.349E-05	.000	100.000						

The middle part of the table is showing the eigenvalues and percentage of variance explained for just the three factors of the initial solution that are regarded as important. The first factor of the initial solution is much more important than the second and third. However, in the right hand part of the table, the eigenvalues and percentage of the variance explained for the three rotated factors are displayed. The effect of rotation was to spread the importance more or less equally between the three rotated factors.

The conclusion in the total variance explained above was supported by the scree plot below, which is actually displaying the same data visually. This is also showing that a

three-factor solution was adequate in determining which factors affect the international competitiveness of the tourism industry in Zambia.

The Rotated Component Matrix was further carried out. In the table 5 below shows the factor loadings that resulted from Varimax rotation. The results show the three rotated components (factors), which are just as good as the initial factors (selected variables) in explaining and reproducing the observed correlation matrix. The table below shows to which component the variables belong based on the highest positive and negative loadings.

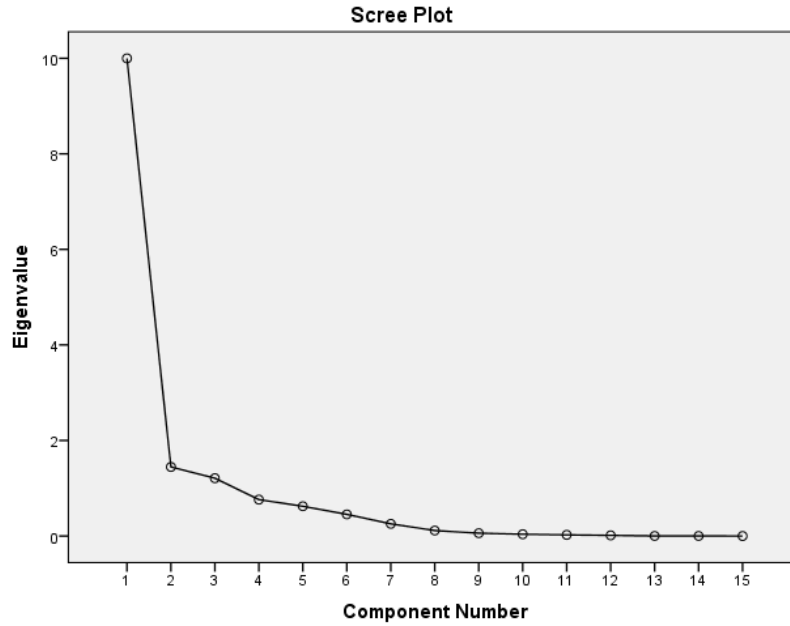


Figure 4. Scree Plot showing three factor solution.

Table 5. Rotated Component Matrix.

	Component		
	1	2	3
GDP	.953		
INFL	-.906		
UEM			.933
NNI	.915		
CPI	.959		
FDI		.777	
CRED	.828		
EDEX	.961		
GNE	.949		
HEX	.962		
IMST	.959		
TROP	.663		
ICT			.395
INTE		.814	
AIRT	.669		

Table 6. Component Transformation Matrix.

Component	1	2	3
1	.942	.306	-.138
2	.171	-.082	.982
3	-.289	.948	.130

The Component Transformation Matrix is showing information about the extent to which the factors have been rotated.

#### 4.2. Linear Regression Analysis

Regression model has been used in analyzing the results of the principal component analysis; the research has used this model and assumed that the relationship between the independent variables identified as being the three components and the international competitiveness of tourism is linear, other factors held constant. Therefore international

competitiveness of tourism industry is a function of the variables reduced into three components from the Principal Component Analysis. The dependent variable being Trade Specialization Coefficient (TSC) measuring the international competitiveness of tourism industry in Zambia, in the function below:

$Y = f(\text{Ind\_Var1} + \text{Ind\_Var2} + \text{Ind\_Var3})$  where, F= function

$Y = \text{TSC}$  (Trade Specialization Coefficient)

Ind\_Variable 1 (Component 1: Table 5 make up of 11 variables) = (GDP+INFL+NNI+CPI+CRED+EDEX+GNE+HEX+IMST+TROP+AIRT)

Ind\_Variable 2 (Component 2: Table 5 make up of 2 variables) = (FDI+INTE)

Ind\_Variable 3 (Component 3: Table 5 make up of two variable) = (UEM+ICT)

The dependent variable was Trade Specialization Coefficient (TSC), from the descriptive statistics below, showing that the mean value of rate of change in TSC has been 18.9% from 1997 to 2014.

Table 7. Descriptive Statistics.

Descriptive Statistics			
	Mean	Std. Deviation	N
TSC	.1889	.31014	18
Ind_Var1	.9347	.02193	18
Ind_Var2	3.8662	.23833	18
Ind_Var3	.6245	.02985	18

The figure below shows the relationship between the dependent (TSC) and the independent variables using the correlation coefficient. The correlation matrix is also showing the most significant factors in the list of the independent variables.

Table 8. Table of Correlations.

		TSC	Ind_Var1	Ind_Var2	Ind_Var3
Pearson Correlation	TSC	1.000	.623	.812	-.016
	Ind_Var1	.623	1.000	.601	-.403
	Ind_Var2	.812	.601	1.000	-.310
	Ind_Var3	-.016	-.403	-.310	1.000
Sig. (1-tailed)	TSC		.003	.000	.475
	Ind_Var1	.003		.004	.049
	Ind_Var2	.000	.004		.105
	Ind_Var3	.475	.049	.105	
N	TSC	18	18	18	18
	Ind_Var1	18	18	18	18
	Ind_Var2	18	18	18	18
	Ind_Var3	18	18	18	18

The above table shows the results of the study, which indicated that TSC is strongly correlated at 0.623 with “Ind\_Var1” (GDP; INFL; NNI; CPI; CRED; EDEX; GNE;

HEX; IMST; TROP; AIRT). Further it is strongly correlated with “Ind\_Var2” (FDI; INTE) at 0.812, and lastly shows negative correlated with Ind\_Var3 (UEM; ICT) at -0.016.

Table 9. Model Summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.885 <sup>a</sup>	.783	.737	.15920	.783	16.839	3	14	.000

The above table shows the R Square of 0.783, which indicates that 78.3% of Trade Specialization Coefficient, which is measuring the International Competitiveness of Zambia’s Tourism Industry, can be explained by the independent variables identified and tested in this analysis.

78.3% is quite sufficient in this case.

The ANOVA table below shows how well the regression equation fits the data, it is predicting the dependent variable as shown below:

Table 10. ANOVA.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.280	3	.427	16.839	.000 <sup>b</sup>
	Residual	.355	14	.025		
	Total	1.635	17			

This table indicates that the regression model predicted the dependent variable significantly well. The table above under the "Regression" row on the "Sig." column. This indicates the statistical significance of the regression model that was run. Here,  $p < 0.000$ , which is less than 0.05, and indicates that, overall, the regression model statistically significantly predicts the outcome variable, meaning it is a good fit for the

data.

The Coefficients table below shows the necessary information used in this study in predicting the International Competitiveness of tourism from the selected variables, as well as to determine whether these variables contributes statistically significantly to the model (by looking at the "Sig." column).

Table 11. Coefficients.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF	
1	(Constant)	-9.953	2.321		-4.288	.001	-14.932	-4.975		
	Ind_Var1	4.616	2.298	.326	2.008	.064	-.314	9.546	.587	1.705
	Ind_Var2	.938	.204	.721	4.606	.000	.501	1.374	.633	1.579
	Ind_Var3	3.526	1.420	.339	2.484	.026	.481	6.571	.830	1.204

The values in the "B" column under the "Unstandardized Coefficients" column, as shown below: The “B” coefficients shows by how much effect on international competitiveness for a single unit increases in each variable. Like so, 1 point increase on the independent variable (Ind\_Var1) corresponds to 4.616 points increase on the international competitiveness of tourism measured by the TSC, and 1 point increase on the independent variable (Ind\_Var2) corresponds to 0.938 increase and lastly 1 point increase on the independent

variable (Ind\_Var3) corresponds to 3.526 increase on the TSC measuring international competitiveness of tourism industry in Zambia.

4.3. Discussion of Linear Regression Analysis Results

The Multiple Linear Regression Analysis carried out in this study indicated that the value of R Square is 0.783, which indicates that 78.3% of the International Competitiveness of Zambia’s Tourism Industry can be



explained by the independent variables identified and tested in this study. 78.3% is quite sufficient in this case to support the validity of this study.

The Coefficients table showed that 1-point increase on the independent variable (Ind\_Var1) corresponds to 4.616 points increase on the international competitiveness of tourism in Zambia. This variable is a product of the principal component analysis of data reduction, which is a makeup of 11 different independent variables that have been reduced into one component named as Independent Variable 1 (Ind\_Var1).

The variables making up this composition are as follows; Gross Domestic Product (GDP), Inflation (INF), Net National Income (NNI), Consumer Price Index (CPI), Commercial Banks and Creditors (CRED), Education Expenditure (EDEX), Gross National Expenditure (GNE), Health Expenditure (HEX), Improved Sanitation Facilities (IMST), Trade Openness (TROP) and Air transport registered carrier departures worldwide (AIRT). All these variables were reduced into one component in principal component analysis with highest loadings on Component 1 explained in the rotated component table under principal component analysis section. What this explains is that all these variables have the same positive correlation of 4.616 with TSC, which means that these variables are statistically significant together and the effect can be explained together. As the correlation coefficient is positive at 4.616 it explains that International Competitiveness of Tourism Industry in Zambia was found to be responsive to these variables, this suggests that these are empirical factors affecting international competitiveness of the tourism industry in Zambia. The 1-point increase on these independent variables will correspond to 4.616 points increase on the international competitiveness of tourism measured by the TSC.

The Coefficients table also shows the Independent Variable 2 (Ind\_Var2) which is also a named variable from the principal component analysis, make up of two initial variables "FDI; INTE" which are Foreign Direct Investment and Investment in Telecoms with private participation. The coefficients table shows that 1-point increase on the independent variable (Ind\_Var2) corresponds to 0.938 increases in the International Competitiveness of Tourism Industry in Zambia.

Zambia lacks the necessary technology, which FDI is regarded as a way of filling up the gap in this study. FDI in tourism is concentrated in activities such as hotel accommodation, restaurants and car rentals, however in Zambia there is little FDI in tour operators, reservation systems, travel agencies and airlines. This is because Zambia is a developing country with a developing market, most of the global hotel brands and tourism investment related wish to have a presence in established markets providing leisure and business tourism and as such the majority of these occur in developed countries. On the other hand, Investment in telecoms with private participation "INTE" has been found to be significant in this study and positive effect on International Competitiveness of Tourism in Zambia. The increasing competitiveness in the global tourism market encourages tourism operators to investment more in

promotion, resources, knowledge and quality in order to achieve satisfactory growth. Therefore, it is extremely important to be in touch with the latest technological trends and have the knowledge required to effectively respond to the challenges of global competition. Internet technology provides high-quality and efficient operations in all economic sectors, including the tourism industry.

Lastly the Coefficients table shows the Independent Variable 3 (Ind\_Var3), which is also a result of data reduction from principal component analysis, this variable is a makeup of Unemployment and Information Communication Technology (UEM; ICT). The results shows that 1 point increase on the independent variable (Ind\_Var3) corresponds to 3.526 increase on the TSC measuring international competitiveness of tourism industry in Zambia.

## 5. Conclusion and Policy Recommendation

### 5.1. Conclusion

The general objective of this research was to investigate the current situation of the tourism industry in Zambia and analyze the factors affecting the international competitiveness of tourism industry. This research has provided a good start up literature on Zambia's tourism industry competitiveness, and it will help further research in this area.

The study carried out an Empirical Analysis using the variables selected based on Porters Diamond Model for competitiveness, which identifies four determinants which are those measuring local firm strategy and rivalry, variables measuring Factor (Input) Conditions, variables measuring Demand Conditions, and variables measuring Related and Supporting Industries. The data for these variables was obtained from the World Bank database and the Zambia central statistics office; this was empirically analyzed using a principal component analysis and linear regression analysis model.

The Multiple Linear Regression Analysis carried out in this study indicated that 78.3% of the International Competitiveness of Zambia's Tourism Industry could be explained by the independent variables, which were tested in this study. These factors are significant in this study with positive effect on International Competitiveness of Tourism in Zambia. The increasing competitiveness in the global tourism market encourages tourism operators and governments to investment more in promotion, resources, knowledge and quality in order to achieve satisfactory growth. Therefore, it is extremely important to be in touch with the latest technological trends and have the knowledge required to effectively respond to the challenges of global competition.

### 5.2. Policy Recommendations

Tourism continues to be an important economic sector for Zambia capable of attracting foreign direct investments and supporting the much-needed economic diversification. Recognizing the fact that this diversification implementation

will require an integrated open-ended process engaging government at all levels, international organizations, businesses, and consumers, the recommendations in this empirical analysis of factors affecting international competitiveness of tourism industry are structured in a form of a simplified life cycle of the tourism value chain.

There is need to develop a tourism plan that streams down from a national to regional development plan that will strengthen action on the ground and build the skills and resources that will improve the international competitiveness of Zambia's tourism industry. This coordination is important in improving planning as considering these connections will create opportunities for linking all the regional tourist attractions. Tourism planning should be closely linked to policies for international competitiveness, which will define conditions necessary to serve as basis for industry development.

There is need for collaboration with tourism industry key players to promote investment in sustainable infrastructure, through financing from national and international organizations dealing with investments in infrastructure related to tourism.

Tourism promotion and marketing should involve the quadrants of international competitiveness as a primary basis for influencing consumer choices. This should go hand in hand with policies opening up investment opportunities provided by modern information and telecommunications, which will not only make it easy to understand behavior of tourists through linkages using networks, media and other communication systems. But this will also help government and other businesses to set baseline for measuring targets, review progress and report towards the achievement of international competitiveness of the tourism industry.

## Appendix

*Table 12. Selected Variables Based on Porters Model.*

Year	GDP	INFL	UEM	NNI	CPI	FDI	CRED
1997	5694070030	24.41872157	14.5	474.6608728	11.98163155	4.819577319	30000
1998	5672105370	24.45845635	12	453.799867	14.91215368	5.596883537	26000
1999	5935869034	26.78769668	12.19999981	451.938697	18.90677617	4.758677081	4062000
2000	6167209016	26.03041179	12.89999962	447.9386929	23.82828787	3.379914273	3605000
2001	6495111398	21.39378218	14.5	469.586865	28.92605987	3.541352382	3305000
2002	6787782053	22.23334464	14.69999981	494.6749978	35.35729045	7.11494945	4395000
2003	7259191744	21.40157839	15.19999981	504.4538666	42.92430868	7.078974814	4286000
2004	7769686790	17.96778911	15.30000019	504.418109	50.63685795	6.253578887	24917000
2005	8331870169	18.3244397	15.89999962	486.7565338	59.91577845	4.284032189	28173000
2006	8990395734	9.019572472	15.60000038	496.8288233	65.31992551	4.827128722	23023000
2007	9741312805	10.6573496	15.19999981	513.280524	72.28129833	9.418111673	22658000
2008	10498592313	12.44557935	15.60000038	600.7707282	81.27712466	5.240508113	24312000
2009	11466599106	13.39525463	14.80000019	586.1043735	92.16440247	4.532779776	23651000
2010	12647453081	8.501761334	13.19999981	631.7546686	100	8.533199545	18268000
2011	13449105083	6.429396811	13.19999981	683.3696291	106.4293968	4.670962309	35091000
2012	14354307052	6.575899708	13.10000038	766.8386025	113.4280872	6.942853352	17618000
2013	15317976308	6.977676055	13.10000038	750.7240588	121.3427317	7.828996557	17618000
2014	16237054898	7.811954417	13.30000019	750.7240588	130.8219706	5.570779527	33400000

*Table 12. Continue.*

Year	EDEX	GNE	HEX	IMST	TROP	ICT	INTE	AIRT
1997	82051518.69	4455202739	27.67649894	40.5	52.05429577	9.830205541	5000000	1200
1998	82874668.38	3785843725	24.90824007	40.5	63.26887784	2.83203125	34200000	1200
1999	69977323.22	3734295184	24.3207841	40.5	66.32883268	2.251407129	25000000	5400
2000	62658356.8	4052199595	24.36048524	40.6	61.48729444	6.174385637	27000000	6118
2001	79250351.96	4686087817	24.74165066	40.7	76.98604442	5.028522414	25000000	4886
2002	89540726.58	4640454190	26.08083993	41	59.16325375	3.963552951	25000000	4875
2003	114794110.7	5438342002	35.07592245	41.2	58.90226957	4.305816941	32320000	5214
2004	151964443	6453317374	38.86516106	41.5	69.91686934	3.25143413	25000000	5825
2005	143222638.2	8413427310	52.27383468	41.7	62.0029752	4.615906383	74000000	5965
2006	169189273.9	11821896145	62.92278027	41.9	64.31642237	4.332893238	238000000	6013
2007	132631802.8	13858624460	48.1756618	42.2	74.08029056	3.258937277	141000000	6396
2008	175029991.1	18200328510	66.53854373	42.4	69.3892887	2.823682234	131000000	4361
2009	158042105	14963433582	53.65967398	42.6	63.25229656	2.968934636	114000000	4361
2010	200366813.4	19019028163	64.17510388	42.8	75.31160518	2.348232727	623000000	9730
2011	239310207.7	22249331228	70.52581827	43	84.32608202	2.96948794	127300000	11497
2012	260821883.3	23687907641	82.86919808	43.2	89.98698373	2.284304543	58000000	8288
2013	272076987	26231027780	87.83302346	43.5	90.26845806	2.220416788	39400000	7672.822967
2014	270826541.5	26234394910	85.85307416	43.7	68.71670683	2.477960652	39000000	7685.827751

Source: Compiled by author from World Bank data

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## References

- [1] Tourism and Travel Council. WTTC, (2008). Tourism Satellite Account Publication.
- [2] ZambiaInvest.com, July 13, 2016 “Zambia Tourism” <http://www.zambiainvest.com/tourism>
- [3] Chen, C. M., Chen, S. H., Lee, H. T. and Tsai, T. H. (2016), “Exploring destination resources and competitiveness—A comparative analysis of tourists' perceptions and satisfaction toward an island of Taiwan”, *Ocean & Coastal Management*, Vol. 119, pp. 58-67.
- [4] Ritchie, J. R. B., Crouch, G. I. (2003). *The Competitive Destination: A Sustainable Tourism Prospective*, CABI Publishing.
- [5] Dwyer, L. and Kim, C. (2003), “Destination competitiveness: Determinants and indicators”, *Current issues in Tourism*, Vol. 6, No. 5, pp. 369-414.
- [6] Hanafiah, M. H., Hemdi, M. A., Ahmad, I. (2015), “Reflections on Tourism Destination Competitiveness (TDC) Determinants”, *Advanced Science Letters*, Vol. 21, No. 5, pp. 1571-1574.
- [7] *Travel & Tourism Competitiveness Report (TTCI) 2008* (World Economic Forum, 2008, 25).
- [8] (Gomezelj and Mihalic, 2008). Destination competitiveness—Applying different models, the case of Slovenia. Faculty of Management Koper, University of Primorska, Cankarjeva 5, 6000 Koper, Slovenia Faculty of Economics, University of Ljubljana, Kardeljeva pl. 17, 1000 Ljubljana, Slovenia.
- [9] Assaker, G., Vinzi, V. E. and O'Connor, P. (2011), “Extending a tourism causality network model: A crosscountry, multigroup empirical analysis”, *Tourism and Hospitality Research*, Vol. 11, No. 4, pp. 258-277.
- [10] Tseng, H. P. and Chen C. H. (2013), “Exploration of destination competitiveness framework – city as a destination”, *Complex, Intelligent, and Software Intensive Systems (CISIS)*, 2013 Seventh International Conference, pp. 673-676.
- [11] Knezevic Cvelbar, Dwyer, L, Koman, M. and Mihalic, T. (2015), “Drivers of Destination Competitiveness in Tourism: A Global Investigation”, *Journal of Travel Research*, pp. 1-10.
- [12] Cucculelli, M. and Goffi, G. (2015), “Does sustainability enhance tourism destination competitiveness? Evidence from Italian Destinations of Excellence”, *Journal of Clear Production*, pp. 1-13.
- [13] Mu Quan and Zhang Shiqiu (2010): Factor Analysis of International Competitiveness of the Iron and Steel Industry in China, Peking University, Beijing, p. 8, [http://www.kadinst.hku.hk/sdconf10/Papers\\_PDF/p163.pdf](http://www.kadinst.hku.hk/sdconf10/Papers_PDF/p163.pdf)
- [14] Porter (1998), “The Competitive Advantage: Creating and Sustaining Superior Performance”. NY: Free Press.
- [15] Peng (2004) “Global Strategy”. M. W. Peng, J. Tan, & T. Tong, 2004 [www.utdallas.edu/~zlin/Chapter%202-BPS4305.ppt](http://www.utdallas.edu/~zlin/Chapter%202-BPS4305.ppt)
- [16] Porter, M. & van der Linde, C. (1995). Green and competitive. *Harvard Business Review*, September-October, 120-134.
- [17] The World Bank (2012). World Development Indicators <https://data.worldbank.org>
- [18] Zambia Statistics Office <http://zamstats.gov.zm>