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## Using Multiple Regression Analysis in Modelling the Role of Hospitality Industry in Cross River State

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### Abstract

*The overwhelming and rapid growth of hospitality (hotel) industry is of great concern especially its role in the economy of Cross River State. This paper seeks to evaluate the contribution of hotel industry in each of the socio-economic variables such as employment, revenue generation, urban development, tourism development and local economy development using multiple regression analysis. The result shows that 0.2, indicating 21.50% of*

*the total variations in hospitality (hotel) industry have influenced socio-economic development of Cross River State. The overall fit of the regression was 6.65 statistically significant at 1% confident coefficient level while 0.275 showed auto correction insignificant among the errors. However, findings have shown that even though much has not been felt from the hospitality (hotel) industry. The analysis shows that the industry has much to offer socio-economically to the growth of Cross River State if properly managed.*

### **Introduction**

The development of the hospitality industry has been rapid and wide spread in the last half century. It has become an important industry in most countries of the world, especially those with great tourism potentials (Wanderberge, 2005). Today, the industry is making heavy investment and providing new facilities such as more parking areas, swimming pools and more new buildings with larger guest rooms to provide comfort to different categories of visitors (Gray, 2004). In Nigeria, the hospitality (hotel) industry has become a lucrative business as result of modern technological facilities put in place by hoteliers makes the destination attractive and conducive for visitation. According to Isang (2005) hospitality (hotel) industry in Nigeria are potential tourist attraction which parade modern facilities such as, digital satellite, television system, telephone, intercom and garden meant for relaxation. In Cross River State, the development and rehabilitation of existing tourism potentials such as, the Tinapa Business resort, Obudu cattle ranch resort, Marina resort, the agreeable climate and the establishment of various hotels such as Mirage, Metropolitan hotel, Channel view with standard facilities has generated great influx of visitors into the state. These great potentials has necessitated towards the rapid growth of the hospitality (hotel) industry in Cross River State (Larry, 2005). Today, it is quite surprising that despite the growth of hospitality (hotel) industry and the influx of visitors, the residents within these laudable potentials have not socio-economically felt the impact or the contribution of the hospitality (hotel) industry in the socio-economic development of the state. What role is the industry playing in the socio-economic development of Cross River State?. Therefore, this paper seek to model the hospitality (hotel) industry in socio-economic development in Cross River State taking into consideration the joint contribution of hospitality (hotel) industry in revenue generation, employment creation, urban development, tourism development and the local economy development.

### **Analytical procedure**

The research is within the confine of Cross River State taking into consideration southern, central and northern senatorial district. One hundred and twenty six hotels including guest houses across the three senatorial district duly registered by Cross River State Tourism Bureau in Calabar were used while forty two hotels were picked randomly from each of the senatorial district for this study. The sample size that was drawn from the entire population was four hundred (400) which were randomly selected from the three senatorial districts. Furthermore, four hundred copies of questionnaire were randomly administered to the public and the residents within the hotel environment to assess the contribution of the hospitality (hotel) industry in the local economy development. In order to assessed the contribution of the hospitality (hotel) industry in urban development, tourism development, revenue generation and employment creation in the area. The analysis was done based on the data obtained from Cross River State Board of Internal Revenue, Tourism Bureau and hotel records. The multiple regression was then used to analyse the effect of hospitality (hotel) industry on the various variables identified. The variables that were modelled to ascertained which of the variable was highly impacted in Cross River State by the hospitality (hotel) industry. However, multiple regression analysis is mathematically states as:-

$$H = b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + e .$$

Where; H = Hotels in the study area (dependent variable)

$x_1$  = Revenue generation (₦) ( $b_1 > 0$ )

$x_2$  = Employment creation (No of persons employed in the various hotels) ( $b_2 > 0$ )

$x_3$  = urban development ( $b_3 > 0$ )

$x_4$  = Tourism development ( $b_4 > 0$ )

$x_5$  = Local economy ( $b_5 > 0$ )

$b_0$  = Constant

$b_1 - b_5$  = Coefficients of the endogenous variables  
 $e$  = Stochastic term usually distributed normally  
 $b_1 > 0$ ;  $b_2 > 0$ ;  $b_3 > 0$ ;  $b_4 > 0$ ; and  $b_5 > 0$  are expected signs of the explanation variables. The multiple regressions was used to enable one

forecast or predict what contribution the industry or what the government and policy makers should expect from the industry in the future.

### **Empirical overview**

The effects of hospitality (hotel) industry in the socio-economic development of the area under consideration are presented in Table 1. Thus, the influence of hotel industry in the socio-economic development of the area were viewed and discussed under revenue generation, employment creation, urban development, tourism development and local economic perspectives, out of the five (5) independent variables (revenue, employment, urban development, tourism development and local economy), four(4) of the variables were statistically significant at the 1% and 5% levels of significance with exception of the employment variable that was not significant as indicated in table 1. From the results, the coefficient of multiple determinations ( $R^2$ ) was 0.215; indicating 21.95% of total variations in hotel industry has influenced socio –economic development through the state’s revenue generation, employment creation for the teeming population, urban development, tourism development and an upswing in the local economy. This affirms Richter (2000) assertion on the impact of hospitality (hotels) in job creation, source of revenue generation for operators in the industry. According to Bensin (2004) in his empirical study on the socio-economic impact of hospitality industry discovered that the hotel industry has become a significant source of foreign exchange revenue for many countries of the world. The F-test statistic for the overall fit of the regression was 6.576 and was statistically significant at the 1% level. Besides, the estimated Durbin-Watson statistic of 0.275 showed autocorrelation was insignificant among the errors.

### **Result analysis**

The multiple regressions were used to evaluate the joint contribution of the hospitality (hotel) industry in each of the variable as illustrated in result analysis.

### **Revenue generation**

The Result shows that hotels in the area has significantly contributed to the state’s revenue earnings via levies (t-value = -2.821;  $P < 0.01$ ). Consequently, it has a coefficient of -0.0000741 and significant at the 1% level. With an estimated elasticity of 0.04593 in the short-run, an increase in the of hotel industry in Calabar by 10% has the tendency of reducing revenue generation

by 0.446% (policy implication) as some hotels would under-pay their tourism levy while some would evade such payments. This may, in fact responsible for the negative sign of the coefficient of the variable, which did not meet the prior expectation of the variable. However, this is evidence on the work of Hall (2003) and Bensin (2004) on the impact hospitality (hotel) industry in revenue, job and employment creation.

### **Employment creation**

Unarguably, hotel industry in the area has provided employment opportunities to some residents of the area both at the professional and non-professional levels. From our results in table 1, it has exerted positive impact in terms of employment creation, albeit not statistically significant but with the expected sign conjunctured ( $b = 0.312$ ;  $t\text{-value} = 1.009$ ,  $P > 0.05$ ). With estimated elasticity of 0.038, an increase in the number of hotels in Calabar by 10% is capable of creating employment to residents by 0.38% in the area. This is what Morrison (2004) point out “Not all businesses are started for growth, profit, profit maximization or even for performance many are established or purchased with the needs and preferences of the owners and their families being paramount businesses operating within this motivational paradigm do not necessary see phenomena such as seasonality as a problems”, rather it is an opportunity to wind down for the writer and enjoy lifestyle investing in training and development, for proprietors or family, may no be fully recognized so that options of enhancement through human resources development will not be priority for such operations.

### **Urban development**

The estimate showed a coefficient of -18.975 with a  $t\text{-value}$  of -2.701 and was statistically significant at the 1% level, albeit, it has not met the prior expectation. This result is shown in the works of Nwakanma (2002) who suggested operators of the hospitality industry alone can not catered for infrastructural development of tourism destination, according to him, both the government and private sector most work in partnership if the destination most strive effectively. This result is indicative that the presence of hotel industry in the study area has not enhanced urban development, perhaps, taxes and levies from hotel industry may have been misappropriated.

### **Tourism development**

In recent times, the Government of Cross River State has heralded and taken the lead in the crusade of tourism development in the country given its far reaching catalytic economic implications (Larry, 2005). From our results,

hotels in Calabar has significantly contributed to tourism development (t-value = 3.602;  $P > 0.01$ ), though with the expected sign conjunctured. It has elasticity of 0.4478, implying that an increase in hotel industry by 10% has the tendency of boosting tourism development in Calabar by 4.478%. This also affirms Uysel (2007) who opined that larger hotels provide a number of additional guest facilities such as restaurant, a swimming pool or child care and social function services which encourage influx of visitors to **GINY** destination. Nevertheless, this result was also evidence in the empirical work of (Laloper, 2005) which according to him states that hospitality industry in Nigeria are potential tourist attractions which parade modern facilities, such as digital satellite television system, internet and garden bar meant for relaxation. According to him, all those facilities have the potentials of attracting tourist and other fun seekers to any tourism destination. Thus, hotel development is significant in the enhancement of tourism development in Cross River State.

#### **Local economy development**

The development of hotels in the area significantly contributed to the upswing in the local economy ( $t = 2.774$ ;  $P < 0.01$ ). With the expected positive sign met, it has an estimated elasticity of 0.2926, implying that an increase in the number of hotels by 10% is capable of enhancing the upswing in the local economy by 2.926 in the study area. Drawing from the works of (Szivas, 1999) hotel plays a supporting role in human resource development and also enhances productivity and quality of all levels within organizations destination and counties. Hotel industry is a “multi product” industry and offers a wide range of occupations with a diversity of capital requirement.

#### **Recommendations**

In order to ensure the sustainability of hospitality (hotel) industry and the impact in the economic development of the state, the following recommendations are put forward.

- A sound database should be provided by the government to monitor the effective operation of the industry
- All the various stakeholders in the hospitality business must adhere to the state government regulations with respect to individual social responsibility to the state
- A workable mechanism must be put in place by Cross River Tourism Bureau to ensure tourism related activities all year round in the state

- The operators of the industry must be able to update their facilities and provide good quality service to the public.

### **Conclusion**

The development of the hospitality (hotel) industry in Cross River State has much to offer even though its impact has not been tremendously felt by an ordinary Cross Riverian who is still to understand its contribution to the economic development of the state. The multiple regression analysis shows that the industry has the capacity to provide the dividend needed in the nearest future if its potentials are adequately harnessed by the various stakeholders. Therefore, workable machinery must be put in place if the industry must function and provide the needed dividend to the people in the area.

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Table 1: Analytical results showing the influence of hospitality (hotel) industry in the socio-economic development of the area

Socio-economic variables	Coefficient	Standard error	t-value
Constant	31.363*	12.529	2.503
Revenue generation	-7.41E - 005***	0.000	-2.821
Employment creation	0.312	0.309	1.009
Urban development	-18.975***	7.025	1-2.701
Tourism development	32.708***	9.081	3.602
Local economy	22.606***	8.150	2.774
Diagnostics:			
R <sup>2</sup>	0.215		
Adj. R <sup>2</sup>	0.182		
F-test	6.567***		
DW	0.275		
SE	33.31532		

\* = Significant at 5% level: \*\*\* = Significant at 1% level