

## MZUNI OCCASIONAL PAPERS IN TOURISM ECONOMICS PART TWO:

### THE NKHATA-BAY TOURISM RESEARCH USING TOURISM

#### MULTIPLIERS: STATE OF THE ART

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#### ABSTRACT

This paper is a continuation to Mzuni Occasional papers in Tourism Economics Part One. It critically conceptualises tourism multipliers to determine the effects of tourist spending on income, land values and employment in Nkhata-bay areas such as Chikali Beach Nkhata-bay Central, Chintheche, Bandawe and Kande. In a traditional set-up theory, a multiplier measures the relationship between an autonomous injection of expenditure into an economy and the resultant changes in incomes which may occur. Autonomous injection of expenditure can take many forms which may include, for example, increases in export trading, additional foreign investment within the economy under review, and increases in Government Investment. Each of these forms of expenditure creates a stimulus to economic activity within the affected areas for example Nkhata-bay areas, which, provided that sufficient resources are available, in this case, generated additional business turnover, households incomes and employment as will be seen in the study. Therefore, increases in tourism expenditure are merely one form of autonomous injection although they are the only type considered at present. Therefore, the main and real intention of beginning to write a series of Mzuzu University (Mzuni) occasional papers in Economics, particularly this one, is to provide a vehicle or medium for the publication of the results of the current research and for a series of researches on the social-economic impacts of tourism on the economy of Malawi, that will follow in this and impact related fields of future tourism studies. Further, the other aim is to provide Government with quantified information for making informed decision in distributing the scarce resources; while academics and students may also be reminded of the real role of tourism in the economic development particularly as tourism continues to fuel other economic sector of the country paving their way to growth areas.

**KEYWORDS:** Tourism, Economics, Multiplier Effects, Nkhata-Bay, Mzuni and Malawi

#### INTRODUCTION

Tourism can be a blessing or a Blight. Some of the blessings of tourism development in Nkhata-bay have been spelt in part one of Mzuni Occasion Papers. Only a few of them have been spelt out but more will follow. Tourism a blight, has been manifested where tourist recreational area at Kande Beach in Nkhata-bay has been overcrowded during the winter and dry seasons. The seasonality of demand imposes many problems at Nkhata-bay Centre including Chikale Beach. 64% of domestic pick holidays, in the region (Nkhata-bay) are in August and September, whilst there is less than 5% of decrease in the 6 months (from November to April). The main effects of this seasonality were found to be fluctuation in the level of regional incomes usually dictated by the tobacco sell season that starts from April and ends in August each year.

Such may cause congestion and overcrowding and a low rate of return on capital investment.

Tourism recreation was also seen as impacting on resources through some external costs, such as litter clearance and damage to land and property in Nkhata-bay, whilst over-dependence upon tourism created some economic instability in the economy. The effect on land values has already been mentioned in part one of Mzuni Occasional papers. In some ways increases in land prices might be an advantage to a district, particularly through the improvement in the rating of prices, but if these increases lead to the alienation of resources and factors of production from other socially desirable uses, then the social subsystems, (benefits and costs) have to be more carefully assessed.

### **Problem Statement**

The Government of Malawi for the past two years allocated 92 million kwacha to support development of both local and foreign tourist because in the same period, these figures were 350 thousand and 850 respectively in Nkhata-bay who spend fifty five and hundred and ten respectively. But government made a knowledgeable action regarding a dollar effect on income generation

### **Objectives of the Study**

The overall objective of the study was to find out the social-economic impact of Nkhata-bay district. Therefore, the specific objectives were to find out the annual tourist arrivals in Nkhata-bay; to find out transport and accommodation modes; to assess the tourist expenditure on tourism activities on the area; to find out employment dollar ratio using in put out put methods and to assess the tourist dollar impact on employment and income generation by high income co-efficiency through use of input and out methods; to find out the level of water pollution at the Nkhata –bay water intake point and treatment of sewage in Nkhata-bay District.

## **LITERATURE REVIEW**

### **Fluctuations in the Level of Regional and District Employment**

Indeed, although employment is boosted in the tourism season, there has been a distinct social cost in providing full employment only for the peak season. The total number of Malawian employees has been shown in Minimum List Heading (MHL) 18 (hotel and catering). At the time of the survey in 2008 employment figure ranged from 500 in December to 959 in August and for 16 tourism establishment in Nkhata-bay employee's numbers ranged from 850 to 960 in August.

However, some comfort can be gained from the fact that, although employment varies seasonally, it does not vary to the same extent as the number of visitors. In Kande area of Nkhata-bay, the research showed that 35% of the workers in the accommodation sector were employed full-time, although summer trade was just only a quarter as at the time of research in 2008 as compared to dry season.

### **Congestion and Overcrowding**

As is always the case, tourism, unlike other export industries, depends upon attracting its customers to its locality. With a length of season of only 9 months, large concentrated influxes of business tourist into Nkhata-bay of foreign visitors into the outlying tourist areas of Chikale Beach and Kande put pressure on their accommodation capacity and transport facilities. Moreover the visitors are not evenly distributed, but tend to concentrated in particular areas of Nkhata-bay Centre, Chikale and Kande Beach, (in the case of Nkhata-bay). Over 60% of business tourists to the area travel

by public transport such as mini buses. As the tobacco sales enters its pick, overcrowding of minibuses increases, and road accidents also increase. This sometimes may scare the visitors. The other mode of transport to Nkhata-bay was hitch-hiking.

**Table 1: Method of Transport to the Destination Area Percentages**

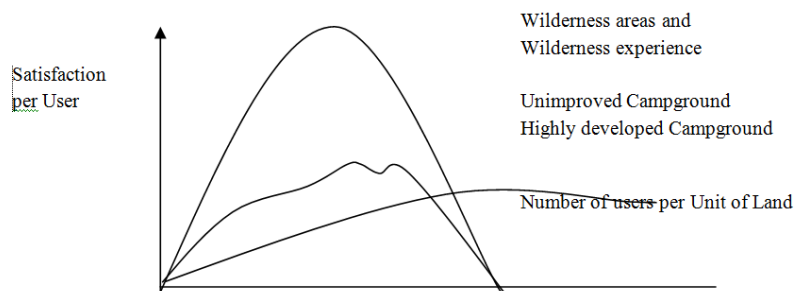
Mode	2003	2004	2005	2006	2007	2008
Car	30	34	43	45	48	51
Other Means (Public)	70	66	57	65	52	49
<b>Total</b>	100	100	100	100	100	100

**Source:** Mzuzu University Survey Questionnaire

**Note** – other means included overland vehicles packed with tourists.

The addition of weekend day-tripper traffic, peak hourly flows of up to 40% of average daily flow are sometimes recorded. In many areas of Nkhata-bay day tripper considerably out-number tourist traffic. In the pick season, for example, over 93% of all visitors are day-trippers. Congestion builds up especially near road junctions. For the planner; however, a more positive approach is needed. With the predicated increase of almost 50% in the number of vehicle traffic on rural roads by 2015, when transport resources will become very severely strained unless roads are improved and widened and straightened (MoT Report, 2009).

As the number of holiday-makers increased, overcrowding began to spoil the very facilities which the tourist came to enjoy. This was particularly apparent at the historic site of Bandawe Mission in Nkhata-bay, since ancient buildings do not adapt well to tourism. Cape Maclear provides an interesting example, where, according to the evidence of this research, monument Mwalawamphini, a statue of a woman image has been altered due to visitors touching it. According to the research evidence, up to 250 visitors a week visited the Cape passing through Mwalawamphini in the dry season of 2007. Today, the area is still crowded by visitation organized by Wildlife Society for School children particularly during weekends. Overcrowding is, however, according to this research, a relative term. The capacity of a tourist or recreational area at Kande to absorb visitors was governed not only by its size, but by the nature of demand. In this regard, the research seems to have shown that the ‘satisfaction per user’ of a district or area was related to the type of use and the number of users per unit of area. The research has presented the concept in the form of a diagram (see figure 1.1) but is not providing any empirical evidence to support this view. However in other types of research we will do so to determine the different visitors-carrying capacities of various types of tourist and recreation areas.



**Figure 1.1: User Satisfaction in Relation to Intensity of Kande Recreation Area Use (Hypothetical Example)**

**Note:** The assumptions are that:

- Different types of recreational land-use at Kande Beach create different satisfactions per users, and
- Satisfaction per user for each type of recreational experience at Chikale Beach is related to the intensity of use per unit on land available. From this, follows that (i) the total utility of the recreation area changes in both degree and kind if the area is more intensively used, and
- Overcrowding begins when intensity of use rises above the optimum satisfaction per user. Although where total satisfaction may be greater, satisfaction per user declines. Overcrowding is therefore psychological rather than physical and is related to the intensity of land use in each particular form of recreational experience. Exactly, this notion was observed at Nkhata-bay Chikale Beach and Kande Beach.

It was further noted that overcrowding reduced the amenity's value of the Kande Beaches. Apart from detracting tourist from enjoyment of their holidays at Kande and Chikale inconvenience was caused to the area's local residence and their use of facilities such as shops and car parks was inhibited by the influx of holiday-makers who often considerably outnumbered the residents, for example; tourist and day-trippers outnumber residents at Cape Maclear or Chikale Beaches (Chilembwe, 2014).

The additional traffic noise and exhaust fumes detract quality of life in the affected Nkhata-bay holiday areas, whilst the visual impact of large numbers of moving and parked vehicles at Kande impoverishes the aesthetic appeal of the countryside.

At Chikale and Kande Beaches congestion and overcrowding also adversely affected the ecology of the countryside. Large numbers of visitors tramping on the grass along paths which have in places worn away and so compacted the soil that drainage has been exposed and future growth stunted. In the hills that overlook Chikale Beach, where up to 250 people visit the summit of the highest peak on a clear day, tear and wear have made many footpaths dangerous in the countryside. The Nkhata-bay district Council sought advice about appropriate conservation measures from the researchers as the hills were almost becoming bare. In some areas erosion has become so marked that it may even prove possible to use erosion data derived from aerial photographs to calculate tourist usage rates.

Usable-portable water pollution to the residents of Nkhata-bay is becoming a serious problem. Lake water has been severely contaminated by the untreated waste sewage deposits from holiday cottages none of which are connected to sewers. Unfortunately planning regulations in Nkhata-bay are not strict and no enforcement of the law regarding sewage disposal. Butterfly and Mayoka Cottages which are not connected to the sewage system in the area are just on top and adjacent to the water drawing pump point that takes water to the District residents. Further and probably the most serious ecological impact in Nkhata-bay occurs along the coastline. The District Council's Report on Coastal Recreation and Holidays pointed out that three kinds of coastal environment are particularly venerable to over use by recreationists:-

- Sand dunes can provide seclusion and shelter for large numbers of people, but dune erosion has been aggravated by indiscriminate trampling and by the driving of motor-bikes and cars through the dune areas to reach the beach.
- In marsh-land areas the growth of sailing yachts and other water-based activities are destroying rare wildlife habitats and ecological plants. There is a strong case for the conservation of several representatives and fresh

water marsh environment in Chintheche area before these habitats irretrievably disappear.

- Kande Beach shores, particularly along isolated stretches of coastline between Kande and Makhuzi Beach are sites of rare bird and frog species. Noises from landing cruise boats and arriving visitors disturbs the bird's population and have damaged plants life. In several areas around Makhuzi Beach, sanctuaries now have to be protected to protect the habitats.

Conservation, recreation and tourism should not be incompatible. Whilst there is, in general, no merit in preserving beauty, solely for the enjoyment of a privileged few, many forms of habitat, by their nature would suffer if unrestricted access were available. In areas as Cape Maclear, for example, conservation appear to have successfully wedded the needs of conservation, recreation and tourism. Every effort should be made to educate the general public to appreciate the aims and methods of conservation, so that wherever possible holiday-makers can enjoy the beauty of the nature as part of their overall recreational experience.

### **The Low Rate of Return on Capital Investment**

Seasonality period, for example, Nkhata-bay District, is particularly reflected in accommodation occupancy rates. Some accommodation facility reduce activity for the summer period, fortunately this is not the case for the areas surveyed, but since fixed costs make up a relatively large proportion of the total, most units prefer to remain open throughout the year to obtain as much revenue as possible. Largely, because of the low occupancy rates outside the tourist season, returns on capital tend to be relatively low. In Nkhata-bay, this low rate of return has completely halted further developments by investors, and as a result, generally, in Malawi, in the past the relatively low rates of return on hotel investment had led to:-

- Shortage of tourist accommodation at peak periods say when political rallies are in the North and
- The growth of other form of tourist accommodation have been slowed down (World Bank, 2010)

The capital cost per person accommodated in a chalet size is only about K154, 700 whereas for hotel extensions is over K154, 700 and for new hotel building over K442, 000 or more. Hoteliers are not the only sufferers; operators of many other tourist and recreational facilities for example, the horse-back-ride facility provider at Kande (Kumulamba, 2014), also suffer and lack the capital necessary for large-scale developments. Since outside investors are often reluctant to become financially involved in markedly seasonal enterprise, local authorities in many areas have assumed the responsibility of bearing a share of the provision of parking spaces and toilets in places where large numbers of tourists congregate. Unfortunately, however, many local authorities in tourist and recreational areas have relatively low incomes, and in consequence they are either unwilling or unable to invest large sums of money in projects where the main benefits would accrue to people from other regions. Their principal concern is the welfare of local residents, and they are not normally prepared to accept low or even negative money rates of return on such capital projects.

### **External Costs**

Apart from the social costs of reduced amenity values, holiday-makers imposed other costs on local residents and public bodies. Each year and for the past two years forestry department removed over 1,000 tons of litter from adjacent forest to Kande and Nkhata-bay centre, and in the height of the season almost a ton of litter a day was brought down from

the hills. At present, many local communities and authorities in tourist Kande area find that their refuse collection costs rise in the pick season. Farmers and local residents also suffer trespass and damage to property, whilst camping on unauthorized sites, especially in wooded areas, increases the risk of bush fires, which result into soil erosion. Considerably those were greater flow of cars, many of them driven by people unfamiliar with rural road conditions, increases the probability of accidents, to both people and livestock, and the use of lay-bys and wasteland for overnight stays lowers standards of hygiene and may in some cases produce health hazards.

### **Economic Instability**

Empirical research evidence in Kande seem to stress the vulnerability of the tourist industry to cyclic fluctuation on the grounds that holiday spending is particularly income elastic and is therefore one of the first consumer items to be reduced in times of recession. The team, however investigating the holiday industry at Chikale Beach found no evidence to support this view and maintained that visitors' expenditure does not accurately reflect short-term economic fluctuations. It has also been stressed that the resilience of small hotel units changes demand.

Probably the demand for holiday is more susceptible in the short-run to changes in weather, political circumstances and public taste than to changes in economic conditions. As a matter of emphasis, one can say that little research has been carried out to determine the influence of weather conditions on holiday-making, although other literature indicate that studies have been carried out investigating the relationship between weather conditions and day-trippers recreationists. It should also be noted that political troubles rarely affect regional tourism especially in developed countries as some of the source markets. In this case, holiday in Kande and Chintheche areas appeared less affected by political upsurges in the countries of origin.

## **METHODOLOGY**

### **The Macro Approach**

In the case of the research conducted in and around Nkhata-bay district particularly Nkhata-bay Centre (Nkhata-bay Centre and Chikale Beach), Kande-Makuzi Beaches, the macro approach was favoured and was influenced by its relative ease of obtaining quite accurate turnover figures for each category of business of a district and area basis. This information was calculated from the published figures of sales taxes levied on many categories of tourist's goods and services by tourist organisations.

As a simple survey, state figures were not gathered but will be needed for a further comprehensive study of this nature in the near future to assist the Malawi government in coming up with accurate decision, and students in this field who want to pursue further studies in Tourism. The methodology, therefore, centered primarily upon the techniques of extracting tourist spending figures. Three principal methods were used each with several variants. These are the per capita sales comparison; the vehicle kilometer approach identifying the tourist element and identifying the tourist element in published sales figures.

### **The Micro Approach**

Elsewhere, researchers (Archer, 1977) have used macro methods and several useful micro surveys have also been carried out in both the developed world and developing economy (Gartner, 2008). Essentially these types of surveys involve interviewing either a larger random sample of tourists or the owners of establishments visited by tourists. The

sample is then grossed up to give a district total. In contrast, the micro approaches involve disaggregating a known total to find the tourist element. It was found necessary to avail all the methods here in these papers, the papers being academic, so that students should expand their research knowledge and skills.

### **Interviewing the Tourist**

During the survey, a number of tourists were interviewed particularly exit interviews. The technique was to question a random sample of tourists to find out:-

- What type of accommodation they used.
- How many nights they had spent in the accommodation mentioned in the district.
- The size and composition of the party.
- How much money they spent in the place of stay in District area and
- The distribution of this expenditure (example, the amount spent on lodging, and petrol)

A word of caution is that if the tourists in the area are questioned as they leave the district (exit interview) the data can be recorded on the spot by the interviewers, but if the tourist are interviewed somewhere within the district, they are given questionnaires to fill in and return at the end of their holiday and half may not return them. Both ways were however used in this research.

The sample then had to be expanded into a district totals. This type of survey is usually confined to road vehicle traffic, and mechanical traffic recorders are used to obtain volume and hours of travel on the survey dates which was the case with the present survey.

## **RESULTS AND DISCUSSIONS**

### **The Primary and Secondary Beneficiaries of Tourist Spending**

The current research in Nkhata-bay areas manifested that the tourist industry is not a single entity but consist of a heterogeneous group of firms and establishments providing a wide range of services for tourists. Some of these business or industry players are entirely or mainly dependent upon tourist spending, whilst others cater primarily for the resident pollution, and their income from holiday-makers forms only a marginal addition to their revenue. Yet tourist spending becomes diffused through a region or a district with multiplier effect, and many other sectors of the economy receive secondary benefits from the initial round of tourist spending.

In Nkhata-bay, particularly at Kande, the research showed that the degree of effectiveness of the multiplier action dependent upon (i) the pattern of the initial round of tourist spending and (ii) the amount of interaction within the district or destination area economy, particularly the size of the marginal propensity to import was high and where the destination (district) value added was low; there were high leakage element and a reduced multiplier effect within the district or destination. Kande, for example, had little leakage through food as most supplies at that time were locally available. The only major leakages were through foreign ownership of tourist accommodation.

The purpose of this section of this research is therefore, (i) to discuss the pattern of the initial round of tourist

expenditure and (ii) to examine the composition of the indirect and induced flows to see which sectors of the economy benefited most from the tourist spending and this has been done via the multiplier effect.

### The Pattern of Tourist Expenditure

Most tourism studies, especially those done in the developed world, include a breakdown of the initial round of tourist spending. Unfortunately, comparison between the findings is made difficult because of the wide range and different number of expenditure categories used by various researchers. In the Nkhata-bay research, a more useful picture emerged when spending pattern in each survey was reduced to four headings: food, lodging, transport and other meals taken at the accommodation place under the “lodgings” category. It became clear not to include purchases made en-route. However the extent of the indirect and induced district money flows dependent upon the nature of the original pattern of tourist expenditure and the size of the multiplier for each sector is partly governed by the size of the destination value added, which was found to be much greater in some sectors than in others. In the current study wide variations in the value added has been shown in certain principal tourist spending categories (see table 4.1. below). In a district context a high proportion of the other categories in this table would leak out of the destination economy.

**Table 4.1: Division of Various Kinds for Recreation Expenditures According to Recipient of Money in Percentages**

	For Goods Purchased	Owner's Competition	Wages	Other	Total
<b>1. Cash Outlays</b>					
Goods in restaurants	52	8	20	20	<b>100</b>
Groceries	85	5	5	5	<b>100</b>
Lodging	25	15	30	30	<b>100</b>
<b>2. Transportation</b>					
Gas and oil	75	8	8	9	<b>100</b>
Other	65	10	10	15	<b>100</b>
Miscellaneous	60	15	7	18	<b>100</b>
<b>Equipment Charges</b>					
Auto	85	3	5	7	<b>100</b>
Other	70	10	5	15	<b>100</b>

### Notes

The figures are rough approximations based on judgment. The indirect-induced effects of tourist spending can be most clearly revealed by input-output analysis. Using this method, the study separated the indirect effects, which he called “immediate” secondary effects, from the induced effects, for example; the secondary effects created by the expenditure of the personal income and local tax revenues generated by the direct and indirect tourist expenditure. In the case of the current Nkhata-bay study the exercise was carried out by treating households and Local Government first as exogenous and then secondly as endogenous to the matrix. The differences between the two sets of figures then represented the “induced” effects. The exercise was found useful in showing the relative magnitudes of the two effects. The induced effect was found to generate district money flows over three times as great as those created by the indirect effect alone, i.e. the total secondary effect was slightly over four times as great as the indirect effect. It was also found that the main recipients of the indirect and induced money flows were real estate, rentals and retail trade. The principal sectors in the list are shown in



table 4.2 where the values represent the size of the direct and induced turnover, not the destinational value added.

**Table 4.2: Main Beneficiaries from the Total Secondary Effect of Tourist Expenditure in Nkhata-Bay, 2009**

Item	MK ,000
Real estate and rental	95,214
Retail trade	89,796
Finance and Insurance	50,570
Professional	36,178
Food product manufacturing	35,727
Other services	26,640
Transport equipment	22,294
Communications and gas utilities	22,294
Agriculture	21,334
Wholesalers	20,488
Construction	17,722
Printing and Publication	17,496
Electricity	17,158
Others	14,505

Source: Nkhata-bay survey, 2008

**Notes**

The table 4.2 shows only the secondary effects. The initial round of tourist spending is not indicated. The table above shows a higher degree of linkages with local manufacturing industries than might be expected in a smaller districts economy. Tourist spending is shown as generating a turnover of over MK35 Million in the local manufacturing industries. Probably the reason for this high degree linkage is that the study looked at the whole of Nkhata-bay, and, therefore many more linkages might be expected between the industries and service sectors than would be present in a smaller manufacturing and service sectors.

**Employment Creation by Tourist Spending**

Like other export industries tourism creates an enormous amount of employment for the domestic labour force, but as was pointed out earlier, this employment is markedly seasonal. In the height of the tourist season, the demand made on the service industries, particularly hotels and catering, are so great that in many centres where the supply of local labour cannot expand sufficiently, there was the addition of many part-time employees, to meet the requirements as it has to be supplemented by an inflow of seasonal workers from the other regions. In this section of the research, efforts have been made, through some methods, to identify the amount of employment multiplier for Nkhata-bay areas. During the study, rigorous attempt to calculate employment generation of direct employment in a small number of Standard Industrial Class (S.I.C.) categories has been attributed to tourism and the considerable secondary effect get ignored. In the current research, therefore, a simple equation to calculate the amount of employment created by tourism in Nkhata-bay was used, and this is as showed below:-

**The Model**

$$\text{Employment Volume of business generated = by Tourism} = \frac{\text{Attributed to tourist Total Sales}}{\text{Total Sales}} = \text{Total number of workers}$$

The basic assumption made was that there is a fairly constant relationship between the number of employees and the volume of business which each can deal with effectively in each different sector whilst this is probably true if firms within each category are of similar size. No allowances were made for different levels of production and the achievement by some firms of economies of scale which reduced the labour/capital ratio altered the labour/sales ratio. Data requirements for such work would, however, be very heavy.

During the calculation, the research assessed employment generation for each separate category of business. It is believed and found that the method used in calculation, produced more accurate result across-the-categories. Other calculation could have further compounded and aggravated weaknesses inherent in the basic assumption that firms are all of similar size. The research found that, although tourist sales made about 21% of total turnover, yet this created 30.4% of the total employment. Such a discovery could not have been made if other method were used.

A very précised, yet not rigorous, approach was also use in the current research in assessing the employment created by tourist spending in Nkhata-bay destination area in the same period (2008). The researcher first identified the ten most markedly seasonal industries, which together contributed to practically all the seasonal swing (of employment between January and March). January and August had been established by a previous traffic survey as the low and high months of tourist travel in the area. Employment trends in each of the ten industries between 2005 and 2008 were charted for each area in Nkhata-bay. Form the charts the researcher assessed the proportion of jobs directly attributable to tourists, and also projected the trends forward to give advance estimates up to 2008, which claims gave a result rather surprisingly with high precision for all (ten) industries in combination – particularly during the dry months when tourism was at its maximum.

- **The Form to - Method**

The Nkhata-bay form – to method study has also included a rigorous attempt to find the direct and indirect employment generated by tourism. Details of the basic methodology and its main advantage and disadvantages have been given in these papers.

The researcher calculated both short-run and long-run multipliers. The short run ‘impact’ multiplier was calculated to show the direct and indirect effects alone, where the direct effect was assumed to be one unit of final demand change. i. e.

Employment serving recreation export

Direct	1,692	
Indirect	115	
	<hr/>	
	<b>1,807</b>	
	<hr/>	
Direct as % of total		93.6
Therefore, the impact multiplier direct effect =	1	
Direct-in-direct effect		$= 1 + 115$
	<b>1,692</b>	<b>= 1.07</b>

This was converted to show the short-run “induced” effect by first calculating the ratio of total employment in the household demand sector to total employment outside that sector, to show the number of employment units created in the household sector for each unit increase in non-consumption final demand i.e.

Number of employees in final demand sector		=3,634
Total number of employees		=12,677
Therefore the ratio		= $\frac{3,634}{12,677 - 3,634}$
		<b>=<u>0.401</u></b>

Therefore the total impact	=	1.401
And the induced impact	=	1.401 X 1.01
		<b>=<u>1.494</u></b>

The total induced impact multiplier for one unit change is one plus the ratio value, and this figure was then multiplied by the impact multiplier, 1.07 to give the direct – indirect impact multiplier of **1.498**.

For the long-run induced employment multiplier local investment and government spending are taken to be endogenous, i.e.

Number of employees		
Final demand		3,634
Government sector		374
Investment		580
		<del>4,588</del>
And total employment is		12,677 = <b>1.56</b>
Therefore the ratio is		$\frac{4,588}{12,677 - 4,588}$
And the long-run employment multiplier		
Is (1.56 X 1.07)		<b>=<u>1.6692</u></b>

- **Regression Analysis**

The researcher during the holiday industry survey research in the Nkhata-bay destination area, also used regression analysis to find the tourist industry’s share in employment creation in those Standard Industrial Class (S.I.C)

categories where visitors spending formed a significant part of Total Sales. In these categories it was assumed that the number of employees in each S.I.C. grade was the sum of (i) those required to serve the resident population (assumed to be a constant amount per thousand resident) and (ii) those required to serve visitors (assumed to be a different constant number per thousand visitors).

Since the distribution of visitors in relation to employment exchange Rate (E.E.R.) was not established and remained unknown a generous assumption had to be made. The distribution of visitors in each E.E.R was assumed to be in the same proportion as the number of employees in Medium Large Hotels (M.L.H.) number of hotels and catering. Over all the destination areas under survey the ratio of the total number of visitors to the total members employed in M.L.H. was found to be 15:1 and the number of visitors in each E.E.R was then obtained by multiplying the respective M.L.H Number by 15. The number employed per 1,000 residents was then regressed against the number employed per 1,000 visitors in each E.E.A. for each of the selected S.I.C. categories, to give the number of employees attributable to visitors spending.

For the other S.I.C. categories an estimate was made by first finding the average proportion of total sales attributable to tourists spending and then adjusting this proportion by various methods to suit the peculiarities of particular industries. The average proportion of total sales attributable to visitors was obtained by comparing the number of visitor person-week's spent in the areas with those spent by resident. The population of the district areas was multiplied by 52 to give the total available resident person-weeks. From this figure was subtracted the number of person-week's spent by the resident population on holiday away from the districts.

This latter figure was obtained by multiplying the population of the area by 10.5/7, for instance; the regional average length of dry season holiday in 2008. Next, the number of visitor person-week spent in the destinations (the number of visitors multiplied by their average length of stay) was subtracted from adjusted residents' person-weeks. No correction, however, appears to have been applied to adjust the length-stay figure. The ratio of visitor person-weeks to the total number spent in the destination was found to be 0.11.

This ratio was then adjusted to fit the requirements of each industry by a combination of intuition and guesswork. For example, by a very rough guess, it was estimated that 60% of agricultural output was exported from the districts, and, in consequences, the proportion of agricultural sales attributable to tourists was obtained from the formula -  $0.11 (1 - 0.6) = 0.044$ .

Four other categories were obtained by intuitive judgment. It is interesting to note that the researcher did not include in the agricultural sector the large income from farm house's bed and breakfast and caravans and camp sites on agricultural land.

There may be admittance to some weaknesses in the methodology: firstly the heroic assumptions which were made in the relationship between the number of employees and the size of turnover and number of visitors: secondly, the subjective nature of many of the adjustments which had to be made. To these should be added the manner in which rejected those results given by regression analysis which appeared intuitively to be unreasonable, and accepted the others as correct. Archer (1977), for example, calculated the employment generated by visitors spending in garages to be 193. This suggested that the sitting of garages and hence of employment in them, is determined by other things than holiday accommodation visitors. Researchers, then rightly, used a different method to assess this category, but, on the other hand, accepted the regression figure for postal service and telecommunication, and for local government services, although the

sitting of these service industries is unlikely to be influence very noticeably by the distribution of tourist accommodation. Since regression analysis produced a meaningless result for garages, the figures for the other categories may also be somewhat suspect. At that time it was important for me to have to re-examine the basic, heroic assumption that there was a constant relationship (i) Between the number of employees, (ii) The size of the domestic population and (iii) The number of tourists.

This is an academic paper which will not only assist economic and sector decision making at government level, but will also assist those students who are pursuing the programmes in tourism and hospitality management particularly those who end up doing tourism impact analysis researches. According to economic base theory, the exogenous sector consumption of locally produced product – is treated as having a stable derivative relationship to total economic activity. The latter is subject to a wider range of variation because of the larger changes in the exogenous sector. Consequently, the multiplier for growth is basically the change in total employment divided by the change in export employment.

In Nkhata-bay study a tourist economic base multiplier was used to find the indirect employment generated by tourist spending in each of the areas under review. First, the following identity was proposed

$$E_t = E_{rc} + E_{rg} + E_{rx}$$

Where  $E_t$  = total destination employment

$E_{rc}$  = destination (Nkhata-bay) employment serving local household consumption expenditure.

$E_{rx}$  = local employment servicing investment activity

$E_{rg}$  = local employment servicing local, state and national government activities

$E_{rx}$  = local employment servicing the destination exports

Investment, government and export activities were treated as exogenous.

From this:

$$\frac{1 - E_{rc}}{E_t} = \frac{E_{r1} + E_{rg} + E_{rx}}{E_t}$$

And therefore, if  $\$_{E_{rx}2}$  is the direct increase in employment created by one unit of direct employment, in the form of a multiplier expression.

The current research has used this formula to calculate the value of the multiplier for each destination and found a rise from 1.13 to 2.63 for Nkhata-bay. The calculation using base theory multipliers does not always bring correct results as they have several inherent weaknesses. All growth is treated as originating in the exogenous sectors, and the endogenous sector is composed entirely of locally produced product for local final demand. This is tantamount to proposing that growth is not possible in a closed economy, a very unrealistic assumption, which tend to ignore changes in productivity and technological improvements, although admittedly in short-run these are unlikely to have a significant effect compared with exogenous changes. More importantly is the proposition that all exogenous sectors are considered to have the same relative

influence upon the endogenous sectors. Thus, an increase of one unit of local employment created by additional government activity has the same indirect effect as a one unit increase caused by extra tourist spending. Indeed this aspect was observed in Nkhata-bay. Intuitively this seems an unsound assumption, and the employment multiplier produced by the Nkhata-bay study, described above, shows demonstrably wrong. It was, however importantly, justified by pointing out by comparing several approaches that the results obtained from (i) the economic base multiplier, after adjustment for investment and government expenditure, (ii) the input-output multiplier, inclusive of the household final demand sector and (iii) econometric multipliers are general of the same order or magnitude. This is also in line with the findings of Henry (1975) in the input – output analysis and its application study.

Nevertheless, as the section below shows, the base theory approach gave a higher employment multiplier for Nkhata-bay than one produced by a simple econometric model.

**The Nkhata-Bay Employment Multiplier**

The employment multiplier model below is adapted from the income multiplier described earlier on in the text. The proposed model is:

$$\sum_{j=1}^N \sum_{I=1}^n Q_{ij} K_{ij} A_i \left[ \sum_{j=1}^N \sum_{I=1}^n Q_{ij} K_{ij} V_j x + \sum_{L=1}^n \sum_{i=1}^n X_i Z_i \sum_{i=1}^n \right] \sum X_i B_i$$

Where the expression in brackets is the tourist destinational income multiplier, and where:

J= type of tourist accommodation, I .....n

I= types of consumer outlet, I .....n

Q= the proportions spent by each type of accommodation user

K= the proportions spent on each type of consumer outlet

N= employment created directly per MK of tourist spending

B= other destinational employment (total district employment for Nkhata-bay separately minus tourist generated employment) per MK of local household expenditure.

V= destinational value added in each category of expenditure

L= the propensity to consume

X= the pattern of consumer spending

Z= the proportion of income spent within the destination by the residents.

The concepts used and the values assigned to each of the previously used symbols are the same as for the tourist destination income multiplier. The new symbols, A and B, were evaluated as follows.

A= calculated individually for each business and then summed, was treated in some cases as a marginal item and in others as an average concept.

A<sub>1</sub> the marginal concept was used for those business for which tourist spending was marginal, i.e. they would exist without it, albeit at a lower level of turnover. A<sub>1</sub> taken as:

$$\frac{\text{Number of extra employees required in the tourist season}}{\text{Tourism spending}}$$

A<sub>2</sub>, the average concept, was used for those business to which tourist spending is essential, i.e. they would not exist without it.

$$A_2 \text{ was taken as: } \frac{\text{Total employees}}{\text{Total turnover}}$$

The B symbol was used for local business in which local people spend their income irrespective of whether or not the businesses are also patronized by tourist. B, again separately assessed for each enterprise, was taken as:

$$\frac{\text{Normal number of employees (i. e. total sales minus extra summer employees)}}{\text{Normal turnover (i. e. total sales minus sales to tourism)}}$$

In Nkhata-bay, computation, using the data, produced the following result:

- Direct employment created by MK 1 of visitor spending

$$\sum_{j=1}^N \sum_{l=1}^N Q_{ij} K_{ij} A_j = 0.0004350353$$

- Indirect employment generated by MK1 of visitor spending = 0.000048317

Individual multiplier for three of the main categories of visitors was also obtained. The employment multipliers for MK1 of expenditure by each category were

- For chalets quests 0.00049
- For caravans 0.0040
- For rest houses 0.00036

The surprisingly high magnitude of the rest houses multiplier can be explained by the fact that, whereas a smaller proportion of an average MK spent by this type of user is on accommodation, which generates hardly and direct employment in this category, a greater proportion is spent in cafes, restaurants and shops.

These multipliers relate employment creation to units of money spent and can, therefore be used in conjunction with normal tourist income surveys.

They are not, however directly comparable to other employment multipliers, which usually relate indirect employment creation to a single direct job created. Nevertheless, the Nkhata-bay multipliers can be easily converted to show direct to indirect employment from the ration.

$$\frac{0.0000481347}{0.0004350353} = 0.110645509$$

This gave the employment multiplier of 1.11, indicating that 0.11 indirect jobs were created by one direct job.

The current research used economic base multiplier, applying to Nkhata-bay destination data, and gave the following:-

$$\frac{\delta E_r}{\delta E_{tA2}} = \frac{1}{\frac{1^{-5,615}}{17.461}} = 1.47$$

The two results were not compatible and the differences reflected to a considerable extent the inherent weakness both of economic base studies and the assumptions made in the destination model.

It would be too facile to say that the truth must have lied somewhere between the two, but the assumptions made in the study model used seemed more generous than those used elsewhere and this supported the intuitive acceptance of the lower figure as more realistic.

As is the case of the income multiplier the employment model was adapted to form a general employment multiplier. The revised form of the model then became:

$$N \left[ \begin{array}{l} X_1 A_{2i} + n X_i V_i \\ 1 - L n X_i V_i Z_i \end{array} \right]_{i=1}^n \left\{ \begin{array}{l} 1 \\ \dots \end{array} \right\} \left\{ \begin{array}{l} n \\ \dots \end{array} \right\} \sum_{i=1}^n X_1 A_{2i}$$

Where the symbols used have the meanings previously ascribed to them earlier in the text.

The first expression shows the amount of direct employment created per MK1 of consumer spending. The Mk1 was proportioned into the fractions spent on each type of consumer outlet, and each fraction was then multiplied by the amount of employment created per MK1 of tourist spending in that category. Again an underlying assumption was that the fraction of employment created in each sector by the extra Mk of spending was in the same proportion as that generated by previous spending in that category.



The expression in brackets is the general multiplier described earlier on. This multiplied by  $x I - A_{2i}$  to complete the second expression and to give the indirect employment created by the initial MK1 of expenditure.

For ease of calculation the multiplier reduces to

$$N \quad X_1 A_{2i} + \left\{ \begin{array}{l} X_i A_{2i} \\ \frac{I + n}{i=1} \end{array} \right\} \left\{ \begin{array}{l} X_i Y_i \\ \frac{1}{1 - \sum_{i=1}^n X_i V_i Z_i} \end{array} \right\} n$$

The same data were used as for the tourist multiplier model and computation produced the following figures.

- direct job creation.....0.001090
- indirect job creation.....0.000049
- therefore total job creation.....**0.000239**

This implied that an extra MK10, 000 of the general spending generated 2.39 jobs compared with 4.83 jobs for MK10, 000 tourist spending. The most interesting point which emerged from these figures was that, whereas tourist spending generated approximately the same income effect as an equivalent amount of general spending, the employment created per unit of expenditure during the season by tourist spending was more than twice that created by general spending. It was also interesting to compare these results with the findings of input – output study carried for the same study.

## CONCLUSIONS AND RECOMMENDATIONS

In a traditional set-up theory, a multiplier measures the relationship between an autonomous injection of expenditure into an economy and the resultant changes in incomes which may occur. In very simple terms, if the amount of the injection is  $\Delta E$  the amount of income created within the economy of the area under study (Nkhata-bay) can be expressed as  $K \Delta E$ , where  $K$  is a coefficient representing the multiplier effect.

Turning to the Nkhata-bay research, the multiplier model was heavily used, by making use of both the macro and micro model, to discover the effects of tourist spending on direct, indirect and induced job creation in the destination area. Direct job creation by tourist spending was easily found by simply aggregation the economic data collected from tourist and tourist related establishment. Further, various multiplier model have been employed and to the amazement of the researchers high effects of tourism spending was found on indirect and induced job creation including households incomes. As you blouse through these papers you will also notice that tourism spending further acts as fuel, fuelling related and unrelated economic sectors of the economy in the region. Tourism Planner must use the multiplier effects as basis of allocation of the much need resources deal with the level of water pollution at the Nkhata –bay water intake point and treatment of sewage in Nkhata-bay District.

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