

MZUNI OCCASIONAL PAPERS IN TOURISM ECONOMICS PART ONE: THE NKHATA-BAY TOURISM RESEARCH USING TOURISM MULTIPLIERS: STATE OF THE ART

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ABSTRACT

This papers critically looked into concept of 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, Chinthече, 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. In very simple terms, if the amount of the injection is ΔE , the amount of income created within the economy of the area under study (Nkhata-bay) can be expressed as K , where K is a coefficient representing the multiplier effect.

Further, 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 in the present publication. 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. It is researchers hope that Mzuni will continue supporting future similar researches with the hope that more areas in the country be covered and researched. The series may also include adaptation of these and aid writing of dissertations by students in the Faculty of Tourism and Hospitality Management and for further contribution by academic colleagues of Mzuzu University and other Universities.

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

INTRODUCTION

Mechanism of a Tourism Multiplier: A Simplified Exposition Explanation

To commence with, it is important to say that an injection of tourism expenditure is called direct expenditure (Archer, 1977). This initial round of exogenous; for instance, that derived from outside spending creates direct revenue to the direct recipients – hoteliers, shopkeepers, service stations and many more other categories of business establishments within the economy. Thus, for example, MWK 10 million of traditional tourism expenditure forms MWK 10 million of direct revenue within the area or district under study. However, not all of this money spent, generates income to the resident population in Nkhata-bay destinations. Hoteliers, shop-keepers and others must re-stock their inventories and shelves to provide for future transactions and must also try to pay taxes to local and central governments. In addition, some profits from these firms may accrue to people and organization outside the area, in this case as most hotel owners are foreign.

Therefore, as business started re-spending the money which they received from visitors, some of this direct revenue ‘leaked out of the economy. However, again, as it was found, some money remains in the destination area. Tourism establishment pay out wages and salaries to their working staff and in addition replenish some of their shelves from local and wholesalers. Manufacturer’s turnovers are thereby increased. So, to meet this additional demand, extra employees must be taken on and higher wages must be paid to the existing workers. As the initial round of tourist spending seeps its way through its economy, the general output of the destination area rises (that is assuming that all things remain equal and sufficient resources are available), employment opportunities increase and personal or individual income rise. This results into demand rising.

It is noted that the degree of magnitude of these indirect effects is governed by the extent of the inter-industrial linkages that is the extent to which business firms within the areas of Kande Beach, Chintheche, and Chikali Beach supply each other with goods and services such as fish products, rice, maize flour and many more. In general terms, the smaller the economy the linkages between the firms and the greater may be the likelihood that replacement orders and purchase orders of new equipment will likely be given to firms outside the area. As wages and salaries within the economy rise, so local consumption expenditure increases and this provides a further impetus to economic activity and generates additional turnover, incomes and extra employment opportunities.

These so-called induced effects or impacts can be quite enormous, for example, Nkhata-bay research calculated and found that the induced effects of tourism expenditure in Nkhata-bay Central in 2008 generated district money flows over three times as great as those created by the indirect effects alone. Do not forget that together, the indirect and induced effects are sometimes called the secondary effects and the tourism multiplier is a measure of the total effects or impacts (direct plus secondary) which results from tourism expenditure.

Further, it is important also to remind readers of Mzuni Economic Occasional Papers that there are four types of tourism multipliers which are in common use in carrying or conduction research on the social-economic impact of tourism in an economy. Sometimes, a considerable confusion may be created by their misuse and incorrect application in some studies. The first type is the sales (or transactions) multiplier which is used to measure the effects of an extra unit of tourist spending upon economic activity levels in the economy. So as the name implies, this type of multiplier relates tourism expenditure to the increase in business turnover which it creates. Very similar to this model is the second type of multiplier

called output multiplier which relates a unit of tourism expenditure, say MK10,000 to the resultant increase in the level of output in the economy.

Further, however, it should be understood that the difference between the two types is that, while the sales multiplier which result from the direct and secondary impacts of tourist spending, the output multiplier takes into consideration of both the level of sales and any real charges which may occur in the level of inventories. However, few tourism researchers specify in their work whether or not inventories change have been taken into account. The term “output multiplier” is used throughout.

The third type of multiplier, is the income multiplier which shows the relationship between a unit of extra expenditure, say MK10, 000 spending, and the changes which result in the level of income. Again, confusion may rise about the nature of the income that can be measured.

In many tourism models “income” has been defined as the “disposable income” that is to say, the income which is actually received by households and is available for them to spend or save after deducting all the expenses the households might have incurred at any one time. Any income accruing to non-nationals of Nkhata-bay District in the current research has been subtracted on the basis that the incomes which they received were not benefiting the local residents of the district. Also, however, care has been taken to include within the multiplier calculations the secondary and induced impacts which resulted from the re-spending of any part of the said incomes of non-nationals within the economy.

The fourth type of multiplier is the employment multiplier which has also heavily been used to calculate the employment status and opportunities in Nkhata-bay District. This type of multiplier describes the ratio of the direct and secondary employment generated by additional tourism expenditure to direct employment alone. These models have been used in the current research and make discovery of their use as you read through Mzuni Occasional Papers Part one and two.

Problem Statement

The Government of Malawi for the past two years allocated 92million 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 with use of high income efficiency.

LITERATURE REVIEW

The Impact of Tourism on Regional Economy - Case of Nkhata-Bay District

In the winter and dry months of April to October 2008, 7,500 foreign visitor visited Nkhata-bay District (Chikale Beach/Nkhata-bay Center) and over a million domestic tourists visited the District and spent 50 million kwacha while the foreign tourist from Europe and America spent over 20 million kwacha.

In the case study that follows, the author undertook to unearth the economic impact of tourism on the District Economy. The author in this study was interested to discover the significance of the visitors' spending and whether the spending becomes a source of income to the conurbations and countryside.

The Problem of Conflicting Interests

Tourists planning and policy-making are still imbued with a confusion of purpose created by the multiplicity of affected interests. In the first place the needs of the holiday-maker have to be reconciled with the requirements of the resident's population.

Although tourists brought an injection of exogenous money into the economies of Nkhata-bay, the also imposed both social and economic costs on the residents. The local population suffered inconvenience from the overcrowding of resort facilities. Examples in the study are Chikale Beach, Chintheche and Kande Beaches in Nkhata-bay, many of which may not have been provided for both residents and visitors alike. In many cases these facilities become inadequate to deal with high levels of demand at peak periods.

If, however, the resort facilities of these places were designed to cater for peak requirements, the seasonal nature of tourism would ensure that they would be underused for several months of the year. These and similar associated problems are discussed in more detail later in Mzuni Occasional Papers in Tourism Economics both Part A and B.

Table 1: Estimated Number of Holidays by Malawians to Nkhata-Bay in Thousands

| Year | Nkhata-Bay | Total |
|------|------------|-------|
| 2003 | 4.9 | 0.9 |
| 2004 | 11.8 | 1.8 |
| 2005 | 50.8 | 50.8 |
| 2006 | 51.9 | 51.9 |
| 2007 | 60.8 | 60.8 |
| 2008 | 78.9 | 78.9 |

Notes: An error of double counting could not be avoided

Table 2: Holiday Expenditure by Foreign Visitors to Nkhata-Bay in million Malawi Kwacha

| Year | Nkhata-Bay | Total |
|------|------------|-------|
| 2003 | 4.9 | 0.9 |
| 2004 | 11.8 | 1.8 |
| 2005 | 50.8 | 50.8 |
| 2006 | 51.9 | 51.9 |
| 2007 | 60.8 | 60.8 |
| 2008 | 78.9 | 78.9 |

Secondly, there has been sometimes a clash of interest between tourism and other forms of land-use in Nkhata-bay areas. Most tourist areas in Nkhata-bay are of aesthetically pleasing landscapes or coastlines and some forms of economic activity are incompatible with the preservation of scenic beauty.

Lastly, certain forms of tourist's development in Nkhata-bay may be mutually incompatible. Some resorts in Nkhata-bay have specialized in providing almost entirely hotel and boarding house accommodation, whilst others have encouraged the expansion of caravan sites. Can resorts permit both types of development to take place or does the growth of one inhibit the expansion of the other? Are large numbers of potential hotel users discouraged from visiting a resort if conspicuous caravan sites dot the countryside and coastline? If so, is the increased income and employment generated by additional caravan usage greater or lesser than the loss of revenue by a decline in hotel trade? Again policy-makers need answers to these questions if meaningful decisions are to be made. These papers try to provide some of the answers.

The Extent of the Economic Impact

Obviously, the extent of the tourist dollar impact on the economy of the host area in Nkhata-bay is determined by: the nature of the main facility and its attractiveness to the general public. Good examples are the Kande and Chitheche Beaches, the volume of visitors, the intensity of their expenditure around the resort areas, and the degree to which their spending recirculates within the local areas of Kande and Chitheche. This research has shown that in Nkhata-bay, the ability of a tourist resource to attract visitors is a function of the attractiveness of the area and the beach and its distance from major centres of population, for example, tourist generating areas.

Very few tourist areas and recreational resources have the power to attract visitors equally from all countries and in consequence tourist centres like Kande Beach, develop market areas of their own such as Australia from which the major parts of their visitors are drawn. Therefore, knowledge of the market source is important from the point of view of promotion, advertising and publicity. The volume of visitors and the intensity of their expenditure are related to the range of tourist facilities available.

Advantages Brought By Tourism to the Area Understudy

The Effects of Tourism Spending on District Incomes (Nkhata-Bay)

Tourist spending has provided a direct ejection of money into the Nkhata-bay economies. The impact of this spending emerges most clearly in the smaller geographical areas of Kande Beach and Nkhata-bay Centre (Chikale). For example, current survey has shown that Nkhata-bay had a direct income from visitors in 2008 of over MK150, 000 per head of local population from the sale of fish and basket at Nkhata-bay Centre alone. Shop keepers in Nkhata-bay earned much more. Buying power rose by 50% over the previous year, due to visitor's spending.

The Multiplier Effect

It becomes obvious that money spent by tourists, in Nkhata-bay recirculate within the district economy generating additional incomes, and at each transaction stage 15% of money "leaked" out of the district which was used to pay for imported items and factors of production, where investors were foreign, with the result that the income creation effects of each round of expenditure was found successively reduced.

It has been discovered that the degree to which tourist spending recycled within the economy dependent primarily upon the size of the area in the district or region's economic base. The more goods and services that were imported i.e.

brought into the area from abroad, the greater was the leakages of money out of the district or area and the lower was the value of multiplier. Tourist national multipliers in this case are in consequence a poor guide to district or regional figures, since there are far more leakages out of the district economies than estimated and thought of. Thus, whilst in a national economy the repercussive effects of tourist expenditure may generate income of between 2 and 5 times the original sum, in a regional economy income rapidly leaks away to the rest of the country which is used to pay for goods and service from outside the district or region and as profits, interest and rent to owners of property living outside the areas. The research recommended that tourist facility owners should try to buy supplies locally to minimize leakages.

Table 3: Multiplier Calculated by Various Methods Gave and Results for the Areas

| Areas | Income Multiplier | Sales Multiplier |
|-------------------|-------------------|------------------|
| Nkhata-Bay Center | 0.25 to 0.33 | 1.25 |
| Chintheche | 0.44 | 1.60 |
| Kande Area | 0.52 | 1.60 |

In the less well-developed rural areas and coastal areas of Nkhata-bay tourist spending made the difference between the success and failure of many marginal business. It is precisely those service trades which frequently operate below capacity that can mostly benefit from an inflow of additional tourist money. In such business as shop, market vending areas and garages, capital is often underused relative to turnover. Sales were found to have increased by employing additional casual labour, and equipment was therefore operated nearer capacity, thus reducing overall average costs.

Employment Generation

As a result of evidence at (b) above it became obvious that as the income multiplier worked its way through Nkhata-bay economies, additional employment was being generated, for example, shopkeepers and households boomed because these establishments took on extra staff to deal with the rise of demand from accommodation sector and other tourist operators. The current research carried out in Nkhata-bay has shown that in some areas up to a quarter of the local wage bill was created by tourist spending and the tourist expenditure generated further more work in retail and service firms than could have been provided by an equivalent amount of general expenditure. The reason lied in the labour intensive nature of those forms, which cater for tourism.

The effects on local employment, however, depend also on the nature of the tourist activity. Some types of tourism were found to be more labour-intensive than others. In general, hotel-type development created more employment than caravan development, and obvious examples here being Kande Beach tourist development in Nkhata-bay. Also large-scale capital intensive schemes gave a lower employment yield per MWK1 invested than smaller scale developments, and the large reservoir's recreational projects which have found favour in Kande Beach area could only rarely be justified on the grounds of employment creation (Chilembwe, 2014).

The research also found out that the employment effects of tourist development dependent also on the types of skills available in the areas. About 60% of the type of work created by the tourist trade in the district is unskilled, and this is the type of labour most likely to be found in rural areas. Unfortunately, the managerial and skilled positions are many times and mainly given to foreigners as is the case of owner-managers establishments of Makhuzi Beach, Kande and Nkhwazi beaches in Chintheche areas of Nkhata-bay District.

The Effects on the Value of Land

Obviously increases in districts tourist trade created additional demand for land, and competition among potential land buyers increased and this forced the price of desirable sites. For example, in the past two decades after Chitheche Inn was franchised to wilderness safari's company, coastline land was raised in value by 106%, an annual compound growth of 11%, while the property tax rate dropped by about 16.95%, demand coming from both businessmen wishing to set up additional tourist facilities, shops and many more, and from tourists wishing to buy vacation homes. This formed an important source of income to local builders, estate agents and property owners (Gartner, 2008).

The research has shown by use of multiple regression analysis that the increase in value of land attributable to the construction of a proposed 19 horse launch at Kande Beach would be raised to an estimated value of MK20 Million or 84%. The use of the same regression analysis, revealed the effect on the value of land increases in demand for recreational property around Kande area. The increase in value of 1, 732 of selected piece of land was almost 140% was recorded. The opening of a new recreational facility at Kande therefore appears to increase the value of nearby land as well. Further regression analysis demonstrated that this relationship also exists in near urban neighborhood areas. The research concluded that within the zone of influence of the launch, as a parcel of land is more distant from the launch, its value decreases.

Much of the increase in land and property value in holiday resort areas of Nkhata-bay is due to the growth in demand for vacation homes. The principal economic and social aspects of second home ownership are treated in greater detail later on in these papers (and will be treated in more details in the other research of Salima District that will follow this one).

Other Economic Effects of Tourist Spending

It has been evidenced by the research that local authorities often benefit directly from Tourist spending. Entry charges to publicly owned facilities like Nyika National park, for example, are a useful source of revenue but main income in the case of Kande Beach is from horses back ride, hotel, caravans' sites, and others, all add valuable revenue to the local authority purse. Admittedly, as the research found, local authorities are also charged with the duty of providing public facilities such as car parks, information systems and public toilet. These improvements give a spin-off benefits in that they are available for local residents as well. It follows that as a development tool the benefits of tourism have frequently been exaggerated, although the industry can make a significant contribution to Nkhata-bay district economies. By drawing visitors from outside, the areas are publicised. Outside investors may decide to set up business as has happened in Nkhata-bay Kande areas. Such development is not incompatible with tourism, provided that the industry is well landscaped or seated in areas likely to be visited by tourists.

Consequently, the relationship between different forms of tourism in Kande is complex, Chitheche Inn and caravan development at Nkhwazi Beach can take place in harmony; caravans' users at Nkhwazi spend money at Chitheche Inn and Mzuzu Hotel dining rooms and the elderly members of the caravans' families sometimes stay in hotels, lodges and Inn. Caravans site operator's benefit from the publicity given to the district and region by hoteliers. Surely, large scale caravan developments can ruin the scenic appearance of the countryside, particularly if caravans are sited obtrusively, yet there is no evidence to show that well-sited caravans parks, screened by trees or hidden in natural folds in the ground detract other visitor's enjoyment. This in many ways, is in line with practices in many parts of the world,

including the United Kingdom, where Wildlife and Game parks, local nature reserves and sanctuaries have been established where the continued existence of many of these areas is dependent upon visitors spending.

Lastly, since tourism is about mixing of different races of people with different social and cultural backgrounds, it has helped to some extent to promote a better understanding amongst different people in Nkhata-bay. Urban dwellers of Mzuzu come into contact with a rural way of life in Kande which is different from their life pattern. Both the holiday-maker and the residents alike should gain a net social benefit from the mixing of races, although, admittedly, misunderstandings have created friction in some cases, where visitors may outnumber the local residents.

The Income Effects of Tourism – Nkhata-Bay

Although holiday spending forms a very important source of income to Nkhata-bay Districts in Malawi, relatively few or no attempts have been made to measure the size and composition of tourist expenditure in such small areas. In the absence of such vital information local policy decisions are likely to be based on intuitive guesswork, yet some quite straight forward accurate and inexpensive techniques are available.

For tips, before giving the real issues, let's say that tourist spending can be measured by either macro or micro methods. The micro approach involves disaggregating the areas or regional or national sales data to find the proportion attributable to tourist spending whilst the macro methods necessitates the building up of a composite picture from a sample of either tourists or retail establishments. The micro approach is usually referred to as 'indirect' measurement, although it may involve an element of sampling, whilst the macro approach is almost entirely 'direct' in that the sample itself is the main basis of the survey, although some data may have to be gathered by indirect methods.

The Present Empirical Kande and Chikali Beaches (Nkhata-Bay) –Tourist Income Model Study

In winter and dry season of 2008, the third in sequence of triennial survey was carried out. This study afforded ideal opportunity to develop and test empirically a new model for measuring the initial round of tourist spending. The survey itself was carried out employing the accommodation and leisure sectors employees.

First a pilot sample of 1,600 interviews were carried out in the streets of Nkhata-Bay Town and Villages. The number of interviews carried in each locality was made proportional to the distribution of known accommodation units.

Holiday-makers were asked to provide four pieces of information:-

- Their method or mode of transport to Chikale and Kande beaches.
- The types of accommodation they were occupying or using.
- The size and composition of their party (hopely they were in the party) and
- Where they were staying

From this sample it was found that over 80% of the holiday-makers had travelled by overland vehicles, about 10% had gone there by coach, 6% by private matola (hitch-hiking) and the rest by Ilala steamer. The main survey followed and a more detailed questionnaire was introduced and used. Holiday-makers were asked to complete and return this form at the end of their holiday. 3000 questionnaires were issued between 12th and 30th August of which 2080 were eventually returned.

Although 69% of these were only partially completed, the response rate of over 43.67% compares quite favourably with previous survey in the other areas.

A preliminary examination was made by the author of this survey and a provisional report compiled but not published in September, 2008. The analysis below describes the framework of the model used and the results obtained from the application of the Kande and Chikale data.

The basic information required, for each type of accommodation used, was

- The average expenditure obtained,
- The average length of stay in the area,
- The total number of visitors that could be accommodated in the area in each type of accommodation and
- The occupancy rates in the permanent units, such as hotels.

The formula for calculating tourist area expenditure was expressed as

$$F_j = \sum_{j=1}^M \frac{N_j H_j D_j E_j}{S_j}$$

Where j= each type of tourist accommodation, 1 --- M

N=the number of visitors that can be accommodated per day,

H=the average occupancy rate during the season,

D=the length of the season (in days),

E=the average amount spent per tourist,

S=the average length of the stay of a tourist,

F=fees by the outside owners of the tourist accommodation.

Some of the information were gathered from published sources and by interviewing hoteliers, etc., but a random sample of tourists formed the main basis of the method used.

Types of Tourist Accommodation (j)

Eleven accommodation categories, covering both permanent and temporary units, were adopted - hostels, guesthouses, bed and breakfast houses, friend or relative houses, holiday cottages, holiday – makers own caravans, rented static caravans and chalets, touring caravans, tents and campus but here day – trippers were treated as a separate additional category.

The Visitors Capacity (N)

Accurate information was both difficult and costly to obtain by directly enquiry. One must admire the tenacity of the employees for their efforts to obtain meaningful data. The Kande Survey also involved making roadside counts at dawn of the vehicles, caravans and campers to supplement the information obtained from published hotel and accommodation

sources. The research claimed to have interviewed all owners or managers of permanent tourist accommodation in the area and of many operators of temporary units. This added a new dimension to tourist research in Malawi by using this method to find the number of caravans and tents.

The research evidence showed that the most accurate method of finding the number of tourists that can be accommodated is to combine two methods:-

- An exact count of one type of accommodation and
- By taking a random sample of visitors regarding the types of accommodation they have used.

For example, an accurate count can be made of hotel bed capacity and hoteliers can also be asked to provide occupancy rates for selected periods throughout the season.

With the known hotel bed usage as a yardstick, the sample can then be proportionally grossed up for the other categories. Thus, if a large random sample of tourists contained 100 hotels, and if the hotel bed capacity X was the percentage occupancy rate during the period of the survey was 5,000, then the total number of tourists staying at the hotels would be 5,000 and the remaining categories should be multiplied by 50, i.e. $\frac{5,000}{100} \times 50 = 2500$

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, centred primarily upon the techniques of extracting tourist spending figures. Three principal methods were used each with several variants.

The Per Capita Sales Comparison

This is the least credible method. Basically, the per capita sales for various categories of retail outlets were compared in the area involved with the national averages. Adjustments were then made for various local factors which were thought to influence the district sales, and the differences between the amended districts figures and the national averages were attributed to tourist spending. In many cases, the tourist spending was clear.

However, there is a need to admit that the method has weaknesses. The main criticism of the approach being the arbitrary nature of the adjustments, which have to be made to the district figures and the consequent unreliability of the results. So far, the researchers have been unable to discover any attempt to reduce the error in the weighting factors by carrying out regression analysis which would have revealed the relative influence of the various local factors.

Even a regression analysis would, however, involve some subjective assessment, particularly in allotting values to non-economic data such as climatic figures.

The Vehicle Kilometer Approach: Identifying The Tourist Element

This method, based on travel data was also used which is almost similar to the approach above. The method involved obtaining from research work travel statistics of the total vehicle kilometers travelled in the area and converted them to a percentage of the total vehicle kilometrage travelled in the region. This percentage was then multiplied by the total regional tourist expenditure attributable to that district. The main objection to this approach is that vehicle kilometrage is not an accurate enough reflection of visitors travel. Many visitors use other forms of transport and vehicle kilometer itself reflects far more than pleasure travel movements. Admittedly, research has shown that there is a relationship between the number of tourist visiting the districts and the distance of the Districts from Centers of population. Even so, the relationship is too inexact to use vehicle kilometrage statistics as basis to break down district's tourist expenditure into district totals. Nor is it realistic to assure that the pattern of recreational travel is identical with the national pattern of all types of travel.

A more sophisticated version of this method was used by the same researcher in Nkhata-bay District, where, after roadside interviews had been conducted with 2,450 car travellers, the sample was expanded to give a figure on basis of the number of vehicles kilometer of recreational travel in relation to total vehicle kilometers travelled in the area. Total vehicle kilometer in the area was obtained from the highway survey carried out that same year and from other samples of the proportion of pleasure to non-pleasure travel. Visitors were also asked to fill in and return a pre-paid questionnaire stating, among other things, how much money they had spent in the area.

Tourist expenditure in Nkhata-bay District was then obtained from the formula.

$$\text{Tourist Expenditure X} = \frac{\text{Total District Pleasure Vehicle Kilometers}}{\text{Pleasure Vehicle – Kilometer (in sample)}}$$

The main objective to this method was the assumption that tourist expenditure was directly proportional to the Kilometer tourist travelled in the region. This would be a particularly heroic assumption in the case of district such as Nkhata-bay, where through tourist traffic makes up about 70% of the total pleasure travel.

Identifying the Tourist Element in Published Sales Figures

The researchers' also attempted to disaggregate tourist district expenditure from published turnover figure. The main sources of information was trade census of Business and tax return to the revenue authorities in Nkhata-Bay where the issue started by making an arbitrary assumption that 70% of tourist expenditure was concentrated in six Standard Industrial Classification (S.I.C) categories:-

- Commercial lodging houses
- Eating and drinking places
- Gasoline stations

- Garages
- Battery and accessory stores and amusements, other than motion pictures
- Accommodation

The flimsy justification for the figure 70% was that several other tourist surveys had given a similar percentage. No attempt was made to find whether this figure was valid, but was assumed to be near correct.

Having made this curious assumption, the researcher then attempted to find the percentage of turnover attributable to tourist in each of the six categories. In this way they were aided by a 100% survey of all operators of commercial lodging houses which had already been carried out in the area. From this it was then possible to deduce that about 93% receipts in lodging houses were attributable to tourists.

The percentages were multiplied by these sales figures for each of the six categories and the resulting figures were summed. An arbitrary amount was then added as an “allowance for tips” and the resulting figure was assumed to be 80% of tourist spending. This was divided by 8 give a 100% estimate.

On to this had to be added expenditure on accommodation by seasonal residents e.g. owners of vacations houses.

To complete the study, estimates had to be made of the expenditure of tourists, using other forms of accommodation. A series, of calculations were carried out to apportion spending to each category of tourism, but some rather generous assumptions were carried out to apportion spending to each category of tourists, it was arbitrarily estimated that tourists staying with friends and relatives spent 15% less on food and drink than other pleasure travelers. The validity of this survey may be reduced by the number of heroic assumptions that had to be made, and by the unavoidable omission of the day tripper – an important source of income to the Nkhata-Bay.

The Micro Approach

Elsewhere, researchers have used macro methods and several useful micro surveys have also been carried out in the developed world. 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.

- In view of imparting research knowledge further, we will turn to the other steps of this survey. This type of survey was based upon finding out from a sample of retail operators to find out how much income they received from tourists in a given season and then expanding the amount to give the area's total. The study was carried out in Nkhata-Bay District covering areas of Chikale Beach, Chintheche, Makhuzi (Bandawe) and Kande Beach in the period 2006 – 2008. The researchers spent days and weekends in each of the typical retail firms and on the roadsides. Some days were spent at drugstores, groceries, supermarkets, restaurants, hotels, hardware stores and more random, but unfortunately some evenings and weekend's observations were not made with a consequent loss in recording accuracy. Altogether 2,818 sales were recorded and random shoppers were asked:-
 - The value of the purchases made and,

- Whether he or she was:-

A permanent resident, ora temporary visitor (below 31 days and including day tripper)

The purchases of permanent residents gave a control figure to determine the proportion of traded attribute to tourists. Recognising the limitations of accuracy in a survey based upon a very small sample, the researcher did not attempt to gross it up into a district total, but carefully used it only to show the spending patterns, the variations in intensity of spending through in a typical week and the effects of weather conditions on visitors spending habits. The researcher's direct observation method was also used as the basis of the much larger study done elsewhere and the scope of the survey covered far more than merely the income effects of tourism, but attention here was concentrated upon this aspect. The researcher drew up a 5% random sample of the retail and service firms in each of area categories. The sample was also weighted to allow for this geographical distribution of the establishments. Over 50 firms were asked to co-operate, but unfortunately only 30 eventually returned completed forms. The survey was spread over 24 months from May, 2006 to December, 2008 and 256 survey days were selected at random, but weighted so that each day of the week, except Sundays, was represented. On the survey dates, the values of all sales were recorded, and the attendant divided them into purchases by:-

- Permanent residents
- Dry season residents and
- Other visitors

For these figures the percentage of sales created by tourists was obtained. This survey establishment also provided their total turnover figures for the period 2006 – 2008, and were found to make up to 10.3% of the district total given by the census of Business of the period. A Simple calculation then gave the total district turnover attributable to tourists. However, there were certain problems inherent in these methods that students would encounter. Apart from the difficulty of obtaining the co-operation of the businessmen in agreeing to make accurate returns, data recording itself is likely to be least accurate when the shops and accommodation units are at their busiest in the height of the tourist season. Employing research assistants to record the transaction was expensive, but this would improve the accuracy of the data.

- **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 (e.g. the amount spent on lodging, petrol, etc.)

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 not the case with the present survey.

DATA ANALYSIS AND DISCUSSIONS

This method was used for the first time in the Nkhata-Bay Tourist Survey. The researcher's assistants counted the bed –unit space in each accommodation unit in Nkhata-Bay in the year and obtained a figure of 1, 390. The figure reached by the researcher in carrying out a similar exercise during the previous survey but the difference can be accounted for partly by new hotel construction and small extension to existing hotels, and partly by the inaccuracies inherent in assessing bed –units capacity, e.g. the apparent capacity of a hotel may be X bed units, but this can further expanded by putting up additional beds at peak periods. The effects on the total tourist expenditure figure if hotel capacity were over or under-counted by 10% are shown in Table 3 in comparison with the results obtained by using 1, 390 hotel bed-units as the basis for calculation.

Table 4: Estimates of Holiday-Maker Expenditure in Nkhata-Bay, Chintcheche, and Kande 2008

| Hotel Capacity (Number of Bed-Units) | Holiday-Maker Expenditure (MWK) | |
|--------------------------------------|---------------------------------|------------------------------|
| | With Weight Length of Stay | With Unweight Length of Stay |
| 1,390 | 9, 738, 133. 00 | 7, 553, 375.00 |
| 1, 529 | 10, 708, 127,70 | 8, 304, 892. 90 |
| 1, 251 | 8, 768, 143. 10 | 6, 780, 116.80 |

NOTES: a = a 10% increases in capacity b = a 10% decreases in capacity

- The **Table 4** above shows the sensitivity of the model to changes in the level of hotel capacity and emphasizes the need to obtain an accurate figure for this part of the equation.
- The reason for weighing the length of stay is as explained in the following section of the pages.

The numbers of the hotel accommodation users counted in the Survey was 89. A sample of fifteen hoteliers was asked to provide their occupancy rates for the Survey. (For the sake of this survey every guesthouse, caravans; rest houses were regarded as hotels providing hotel accommodation). Each reported (his/her) hotel to be full or even ‘over-booked’. Initially it was therefore assumed that the hotel occupancy rate throughout the destination under this survey was 100% during the survey and the population

$1,390/89$ was used as a grossing up fraction for each of other categories.

The effect of using a 90% hotel occupancy rate was assessed and this was shown to vary the total tourist expenditure figure by approximately 5.2% (see table 5 and 6). If, however, the 2006 season followed a similar occupancy rate pattern 2007 and 2008 season, it would be extremely and unlikely that hotel occupancy rates during the latter part of

August, 2008 would have fallen below 100%. And the sample of the fifteen hoteliers was taken to represent the situation throughout the area.

The ‘‘capacity’’ number of holiday-makers in each of the other categories was therefore obtained by multiplying the number of holiday-makers using each form of accommodation by the fraction $1,^{390}/_{89}$.

The total number of day-tripper was obtained by the same method. The results are shown in the Table 3.

Table 5: Estimates of Holiday-Makers Expenditure in Nkhata-Bay, Chintheche and Kande Areas 2008 Using Weighted Length of Stay in MK’000

| Item | Type of Accommodation Used by Holiday – Makers | Holiday-Maker Expenditure with Occupancy Rate During the SURVEY | |
|---------------|---|---|--------------------|
| | | 100% | 95% |
| 1 | Hotels | 851,885 | 809,291 |
| 2 | Guesthouses | 759,156 | 721,199 |
| 3 | Bed and Breakfast houses | 846,174 | 803,865 |
| 4 | Rest houses | 845,568 | 803,865 |
| 5 | Friends and relatives | 470,364 | 446,846 |
| 6 | Holiday Cottages | 1,730,701 | 1,640,440 |
| 7 | Guest houses | 726,557 | 690,230 |
| 8 | Caravans (owned) | 642,572 | 610,444 |
| 9 | Caravan (rented) | 1,206,040 | 1,145,738 |
| 10 | Caravan (touring) | 531,354 | 504,786 |
| 11 | Tents | 273,184 | 259,525 |
| 12 | Others | 2,591 | 2,461 |
| 13 | Day-Trippers Payments made by outside owners of facilities | 739,246 | 702,284 |
| 14 | | 112,741 | 112,741 |
| Totals | | 9, 738, 133 | 9, 253, 140 |

Sources: Information obtained from completed questionnaires of survey 2008.

Notes:a). the reason for weighting the length of stay is explained later in the text.

b). the assumption is here made that 50% of those forms of accommodation is owned by outside owner (not form) the area of study

c). average occupancy rate (H) and

d). the length of season.

The Nkhata-Bay research assumed that the season lasted from May to December inclusive (34 weeks). It was further assumed that the occupancy rate in all forms of accommodation except tents was 50% during May, June and July and 100% during August, September, November and December. Occupancy rates among Campers were taken to be 25% in May, June and September and 100% in July and August.

In an attempt to obtain a more meaningful assessment of the average occupancy rates, the author examined variations in these rates in different forms of tourist accommodation. In practice it proved impracticable to assess occupancy rates in many types of accommodation, particularly holiday cottages, furnished accommodation and relatives houses. Attention was therefore focused on the categories for which more accurate data was available. An examination of the occupancy rates in fourteen accommodation types and two guest houses showed that bookings rose from low level to a

peak during Easter and declined until mid-July, after which bookings again rose to reach a new peak in August. This level was then maintained until early September, after which bookings remained steady. The length of the holiday season was therefore taken to be from Easter until early November.

Table 6: Estimates of Holiday-Makers Expenditure in Nkhata-Bay Centre Chintheche and Kande in (MWK)

| Item | Type of Accommodation | Holiday-Maker Expenditure with Occupancy Rate during the Survey at Accommodation Units | |
|--------------|--|--|------------------|
| | | 100% | 95% |
| 1 | Hotels | 564,934 | 536,688 |
| 2 | Guesthouses and Bars | 1,288,444 | 1,224,022 |
| 3 | Rest houses | 612,595 | 581,965 |
| 4 | Friends and relatives | 284,189 | 269,980 |
| 5 | Holiday Cottages | 1,418,263 | 1,343,624 |
| 6 | Caravans (owned) | 339,838 | 332,846 |
| 7 | Caravans (rented) | 994,965 | 945,216 |
| 8 | Caravans (touring) | 381,284 | 362,220 |
| 9 | Tents | 220,221 | 209,210 |
| 10 | Others | 2,590 | 2,461 |
| 11 | Day-Trippers | 1,333,311 | 1,266,646 |
| 12 | Payment made by outside Owners of facilities | 112,741 | 112,741 |
| Total | | 7,533,375 | 7,177,619 |

Source: Information obtained from the completed questionnaires of the survey

Notes: a. The reason for weighting the length of stay is explained later in the report.

- The assumption is here made that 50% of these forms of accommodation is owned by outside owner of Nkhata-bay area.

Table 7: Number of Holiday-Makers by Type of Accommodation on a Capacity in Nkhata-Bay 2008

| Type of Accommodation | Number of Holiday-Makers in the Sample | Total Number of Visitors |
|-------------------------|--|--------------------------|
| 1 Hotels | 89 | 1,390 |
| 2 Guesthouses | 215 | 3,358 |
| 3 Rest houses | 827 | 10,615 |
| 4 Friends and relatives | 278 | 4,342 |
| 5 Holiday cottages | 843 | 12,165 |
| 6 Caravans (owned) | 316 | 4,935 |
| 7 Caravans (rented) | 1,043 | 16,290 |
| 8 Caravans (touring) | 312 | 4,873 |
| 9 Tents | 244 | 3,811 |
| 10 Others | 4 | 62 |
| 11 Day-timers | 542 | 8,465 |
| Total | 4,713 | 73,606 |

Source: Information obtained from the completed questionnaires of the Nkhata-bay survey, 2008.

Notes: a). A 'capacity day' is a day on which all hotels' accommodation is fully booked

- b). The 'total number of visitor's is the number that would be present if hotel accommodation were fully booked. For each type of accommodation the number of holiday-makers in the sample is multiplied by 1,390/89.

The average occupancy rate in accommodation units during the holiday period, say during 21 weeks season was obtained by multiplying the average occupancy rate for the period in each of the sample establishments by the relevant number of bed-units and from the resultant figure deriving the average occupancy rate.

This occupancy rate, 73.39% was adopted for all forms of “permanent accommodation” (hotels guest houses, relative houses, holiday cottages, etc.). Since there were no reasons for believing that occupancy rates in these forms of accommodation differed from those in hotels.

The length of season and average occupancy rates in caravans and tent accommodation proved more difficult to assess. Few caravans and camp sites operators knew exactly how many people were living on their sites at any one period and in consequences their estimates are accurate than the figures provided by hoteliers from their registers. Nevertheless the figures are probably more meaningful than the arbitrary assessments made by many bodies.

It was decided for reasons of compatibility to adopt the same length of seasons as for permanent accommodation and to assess the average occupancy rates for caravans and tents in terms of a 21 week season. Estimates of average occupancy rates for this period were obtained from ten caravan sites, and an average overall occupancy rate was derived in the same manner as for hotels. Surprisingly the resultant figure, 74.5%, was slightly higher than the hotel occupancy rate.

The average occupancy rate for campers in relation to the peak August figure was assessed as 50% on the basis of figures provided by three site owners. The corresponding figure used by the same researcher was 48.1% based on an arbitrary assumption of 25% occupancy during May, June and September and 100% during July, August, November and December.

The Average Amount Spent Per Tourist (E)

The survey also included questions on:-

- The number of people in the party
- The amount of money spent by the party in the districts.

Both are needed as an intrinsic part of the formula, but the expenditure of the party has a wider application, since a knowledge of the distribution of tourists spending is essential to assess the overall impact of tourism, and in particular to calculate the multiplier.

Useful categories for the questionnaire are:-

- Accommodation including meals taken there,
- Food in other hotels, restaurant and cafes,
- Spending in food shops,
- Beverages,
- Souvenirs film etc.,
- Petrol and oil

- Other vehicle expenses and
- Other expenses.

The wording of the questionnaire made it quite clear that only expenditure within the districts was to be included, otherwise the tourist was likely to include all his travelling costs, which are not usually income to the district of Nkhata-Bay visited. The costs was put separately on the questionnaire if they were needed for other purposes e.g. to calculate a demand function for the destinations based on the travel there. Tourists owning their own vacation homes in the said destination areas were asked to include their rates, repairs, etc. separately.

Considerable care has been taken by the researchers in assessing the expenditure of holiday-makers using sub-let accommodation, especially where payment of the rent was made to a non-resident of the district, but may have been paid to the outside owners. For a word of caution, many tourists will, however, enter the rental charge as an accommodation cost on the questionnaire. What should be included in the model is not these payments, but the annual, or seasonal, fees paid by the outside owners to the tourist operators in the destination. These are shown separately in the formula as F_j . The most notable example of this type of payment is for hiring caravans, parking on sites within the destination, but owned by non-residents. The outside owner pays a fixed rental charge symbolized F_c to the site operator and hires out his caravan to tourist. The payment made by the tourist to the caravan owner should not be included in 'E' but the rental charge paid to the site operator is included in " F_c ". Some payments made by tourist for caravan hire do, of course, go to caravan owner living inside the destination. It was found necessary therefore to find the percentage of chalets caravans and other forms of sub-let accommodation in the destination which is owned and rented out by non-residents. This information was obtained for Nkhata-Bay areas by carrying out a survey of site operators.

Further advice is that researchers find problems when carrying out direct interviewing of the tourist. Many of these tended to supply any answer to satisfy the interviewers. To reduce the L – Scope (lie - score), the interviewer prepared varying methods in his questions and placed questions psychologically at the right moment in an interview. Certain key question was repeated and asked in different ways and answers checked. Some answers were checked for accuracy against known data, such as the price of hotel accommodation. L – Scores run high when tourists were in a hurry and this militated against the popular method of interviewing car travellers. Stopping vehicles not only aggravated traffic congestion, but also caught tourist in their least amenable attributes of mind.

It is difficult to make the random sample and also to cover all the side road approaches to the district. Expanding the survey into meaningful districts total is also impossible without additional detailed information, especially comparable data about travellers using other means of transport.

So, it became realistic to conduct the survey in the streets of the Mzuzu, to catch those going to Nkhata-Bay resort areas and on the beaches, where a truer random sample of all types of tourists were obtained, including those people who travelled by other modes such as boat, coach etc. The large sample was asked basic questions, such as mode of travel and type of accommodation. In this Nkhata-Bay survey expenditure per capita by each type of accommodation used (*see Table 8 below*) was obtained from the completed questionnaires. From the expenditure figures the rent charges paid by holiday-makers to non Nkhata-Bay owners of accommodation had to be subtracted. Many caravans, holiday cottages and rest houses are owned by people living in Nkhata-Bay and the rental fees paid by tourists using such accommodations were included as part of the tourist income to the area. In cases where chalets, complete caravan sites, etc. were owned by people

not resident in the destination, tourist expenditure on accommodation was included in the initial round of the spending and the profits accruing to owners were treated as leakages in the subsequent rounds of spending via the operation of the multiplier.

The proportion of caravans owned resident living outside Nkhata-Bay was obtained by an empirical survey and was found to be 5.5%. Hence 94.5% of the accommodation expenses incurred by people using rented caravans were included within tourist expenditure in the area.

Table 8: Expenditure per Holiday– Makers by Category of Accommodation Used in Nkhata-bay Destination

| Type of Accommodation Used by Holiday-Makers | Number of Holiday-Makers in the Sample | Expenditure in MK | |
|--|--|-------------------|----------|
| | | Total | Averages |
| Hotels | 89 | 2,611,90 | 29.35 |
| Guest houses | 225 | 9,869.8 | 47.14 |
| Friends and Relatives | 278 | 2,159.00 | 7.47 |
| Holiday Cottages | 843 | 6,541.00 | 7.47 |
| Caravans (owned) | 316 | 3,868.00 | 12.24 |
| Caravans (rented) | 1,043 | 7,430.50 | 7.12 |
| Caravans (touring) | 312 | 2,724.00 | 8.73 |
| Tents | 244 | 1,535.00 | 6.29 |
| Others | 4 | 23.25 | 5.81 |
| Day Trippers | 542 | 438.75 | 0.81 |

Source: Information obtained from the completed questionnaires of the Nkhata-bay tourist survey 2008

Notes: These figures do not include expenditures on accommodation which was calculated separately in order to take into account payments made to outside owners of holiday cottages.

These figures do not include payment of fees to the caravans' site owners. It proved impracticable, however to obtain a meaningful figure for the proportion of holiday cottages owned by people living outside the area. Little information could be obtained from the general ledgers books kept by the district councils since in many cases the owners, addresses were shown only as that of the holiday accommodation. Separate calculations were therefore made on the guest houses owned by residents which were found to be (i) 25%, (ii) 50% and 75%. The effect of increasing the percentage from 25 to 50 gave an increase of 3.8% in the Total Tourist Expenditure Figure. Raising the percentage from 50 to 75 gave a further increase of 3.7% (see notes tables 1 and 2)

Charges Paid by Outside Owners of Tourist Accommodation to Nkhata-Bay People

Although many accommodation charges incurred by holiday-makers are not paid to residents in the area and the fees are not include in the assessment of tourist expenditure, there is a back-flow of money into Nkhata-bay areas from these "outside" owners. The influx of money is of two main types. Firstly, outside owners of caravans in the areas pay an annual rent charge to the caravan site operators. Secondly, owners of holiday cottages and rented furnished accommodation pay rate to the local council and incur maintenance and repair bills in the areas.

The value of the annual outside rents was obtained from the survey of site operators. The total value of the rates and other costs incurred by holiday cottage owners was difficult to assess. Sufficient information was available from the completed questionnaires to calculate the average rates and other costs per cottage, but the difficulty of assigning the proportions of the accommodation attributable to the destination and non-destination residents remained.

The same procedure was adopted as in (d) above and the effect upon the total tourist expenditure figure was included within the percentage charged indicated.

Length of Stay(S)

The length of stay is a very sensitive part of the equation, as the example below shows. It was assumed that the numerator of the model was MWK20 Million, and that the apparent length of stay was 5 days. Then tourist spending would appear to be $\frac{20}{5} = \text{MWK}4$ Million. If, however, the true length of stay was only 4 days tourist spending would be $\frac{20}{4} = \text{MWK}5$ Million.

Many tourism studies use a statistically unsound method for calculating the length of stay, and inaccuracies are introduced into the most sensitive part of the formula. Admittedly the problem of bias does not arise if tourists are interviewed only when they leave the area at the end of their holidays (exit interviews), since each group then has an equal chance of being selected, but as section (d) above has shown, this method of interview has a number of disadvantages. If, however, the survey is carried out over a number of days and involves interviewing tourists at some place, or places within the destination the probability of any particular groups being selected is directly proportional to that group's length of stay.

The longer the group's length of stay, the greater is the probability of interview, e.g. a group staying three days is three times as likely to be selected for interview than a group staying one day. Bias is therefore introduced into the denominator expression. We therefore, would like to point out in this research that a considerable error can be created even on low figures if the rate of turnover is ignored. The usual method of finding the average length of stay is: (a) to multiply the number of visitors for each interval by the duration of their visit (b) to sum the figures and (c) to divide this amount by the total number of visitors.

Table 9: Length of Stay Calculation Using Weighting Factors for Tourist Turnover (Using the Wurst Method)

| Duration of Visit (days) | Number of visitors for Each interval | Turnover of Visitors (Total season %)(1) | Total Visitors (3) x(2) | Total Visitors (4)x(1) |
|--------------------------|--------------------------------------|--|-------------------------|------------------------|
| (1) | (2) | (3) | (4) | (5) |
| 1 | 2 | $\frac{3}{1}$ | 6 | 6 |
| 2 | 3 | $\frac{3}{2}$ | 4.6 | 9 |
| 3 | 2 | $\frac{3}{3}$ | 2 | 6 |
| Total | 7 | | 12.5 | 21 |

Source: The length of stay survey calculation.

Notes: (i) Column (3) gives the weighting factor (ii) Average length of stay = $\frac{21}{12.6} = 1.68$ days

Table 10: Length-of-Stay Calculation

| Duration of Visitors | Number of Visitors | Visitor Rate | Visitor Day | |
|----------------------|--------------------|--------------|-------------|-----------|
| Day | Day1 | Day2 | Day3 | (1) x(3) |
| | -1 | -2 | -3 | -4 |
| 1 | 2 | 2 | 6 | 6 |
| 2 | | 3 | 4.5 | 9 |
| | | 2 | 2 | 6 |
| Total | | 7 | 12.5 | 21 |

Note: The figures in this table are designed from table 9 in the example in table 9 this would give $14/6 = 2.33$ days per visitor. As this research has pointed out the true length of stay is however, given by $21/12.5 = 1.68$ days per visitor. Perhaps it can be argued by examining table 10 which is derived from table 10

Although it does in no way affect the findings, it is assumed for ease of exposition that the random survey was carried out on the second day of the three day season. The following were recorded:

- a) 2 one-day visitors. Over a three-day season, they represent a visitor-rate of 6 people, column 3 and 6 visitor days, and column 4.
- b) 3 two-day visitors. These people were either staying or completing their holiday and represent a visitor-rate of 4.5 people and 9 visitor-days.
- c) 2 three-day visitors. Over the three day season they give a visitor-rate of 2 people and 6 visitor’s days.

The sample visitor-rate is therefore 12.5 people, and the number of visitors’ day is 21 which gives an average length of stay of $21/12.5 = 1.68$

The problem can be overcomplicated by introducing the length of season into the calculation, and the research seem to show that the same result can be achieved by weighting the length of stay

Thus: “if the number and the total days stayed of the samples (groups of individuals) with a stay of x days are multiplied by $1/x$, and the products totaled, the correct frequency distribution is obtained”. This is only possible if the original sample involves replacement – that is if a group is recounted every time it falls in the sample.

Table 11: Shows the method applied to the data in table 11; Amended Length of Stay Calculation Using Weighting Factor for Tourist Turnover

| Duration of Visit (Days) (X) (1) | Number of Visitors (For Each Interval) (2) | Weighted Number of Visitors ($2x^{1/x}$) (3) | Total Days $3x(X)$ (4) |
|--|---|---|------------------------------|
| $1(1/x=1)$ | 2 | 2 | 2 |
| $2(1/x=1/2)$ | 3 | $3^{3/2}$ | 3 |
| $3(1/x=1/3)$ | 2 | $2^{2/3}$ | 2 |
| Total | | $25/6$ | 7 |

Notes: Average length of stay= $7 \div 25/6 = 1.68$ days.

For the Nkhata-bay model this was further simplified by dividing the number of visitors for each interval by the duration of their visit. The sum of the resultant figures shown in column (3) of table 12 is the turnover weighting factor, which is then divided into the number of visitors to give the true average length of stay. The adjusted and unadjusted length of stay, by category of tourist in Nkhata-bay, are given in table 3.10 whilst the results obtained by using these figures have already been shown in tables 2.2 and 2.3.

Table 11: Amended Length for Stay Calculation Using Weight Factor for Tourist Turnover (Nkhata-Bay Method)

| Duration Of Visit (X) 1 | Number of Visitors (For Each Interval) 2 | Weighted Number of Visitors (2÷1) 3 |
|----------------------------|---|--|
| 1 | 2 | |
| 2 | 3 | |
| 3 | 2 | |
| TOTAL | 7 | $\frac{25}{6}$ |

Note: Average length of stay = $7 \div \frac{25}{6} = 1.68$ days

Table 12: Length of Stay by Category of Accommodation User Nkhata-Bay 2008 Number of Days

| Type of Accommodation Used by Holiday Makers | Length of Stay | |
|--|----------------|----------|
| | Unadjusted | Adjusted |
| Hotel | 7.79 | 5.17 |
| Guesthouses | 9.45 | 8.01 |
| Rest Houses | 16.90 | 12.49 |
| Friends and relatives | 12.75 | 7.70 |
| Holiday cottages | 12.11 | 10.02 |
| Caravans (owned) | 31.51 | 20.53 |
| Caravans (rented) | 9.69 | 8.28 |
| Caravans (touring) | 12.22 | 8.77 |
| Tents | 8.00 | 6.54 |

Source: Information obtained from the completed questionnaires of the Nkhata-Bay Tourism Survey 2008.

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 E, the amount of income created within the economy of the area under study (Nkhata-bay) can be expressed as K... 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 read 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 Planners must use the multiplier effects as basis of allocation of the much need resources.

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