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## Forecasting as a Pinnacle for Rural Revitalization: Case Study of Mesowalai Homestay, Sabah State, Malaysia

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### Abstract

The rapid increase in the capacity of computers to store information has generated an abundance of data across all types of industries in the world. Tourism forecast generates thousands of series of data nearly every time when considering domestic travel, as well as numerous levels of disaggregation such as geographical regions, purpose of travel and so on. Hence, accurate forecasting techniques have become a necessity in Mesowalai Homestay due to the influx of tourists to the area & its impact on socio-economic development so as to take advantage of such a plethora of information. Many studies have used different forecasting techniques to forecast tourist arrival; therefore this study adopts the regression approach to forecast tourist arrivals in Mesowalai homestay. The data comprises of tourist arrival from the year 2000 to 2010. For the modeling, year 2000 to 2006 was used for building up the tourist arrival model and year 2006 to 2010 was used to compare the forecast. The result shows that the peak tourist arrivals to Mesowalai homestay is put at 1123.55 annually while tourist growth increases by 233.2 annually.

**Keywords:** Volunteer tourism, Forecast, Regression Approach, Tourist Arrival, Homestay

### 1. Introduction

Tourism has become the largest global industry (Goeldner & Ritchie, 2006, Choi & Sirakaya 2006) and the growth of this industry in the 20th century has been credited to the "globalization of capitalism, movement of populations, tourist's arrival, advancement in transportation and modern communication technology. In 2010, the World Travel and Tourism Council (WTTC) projected that the travel and tourism industry would generate a total of \$5,474 billion toward global gross domestic product and 219,810,000 jobs. Many communities have experienced dwindling traditional industries as a result of rural urban drift and have increasingly looked towards tourism to help fill the growing economic void (Latkova, 2008; Perdue, Long, & Allen, 1987). The travel and tourism industry has the potential to offer many benefits to these communities which include improvement in the quality of life in a host community by increasing employment opportunities, tax revenues, economic diversity, festivals, restaurants, cultural activities, and outdoor recreation opportunities (Andereck, et al., 2005). Andereck, et al., (2005) noted that tourism also has some negative impacts to the host community, such as increased crowding, traffic, crime, cost of living, parking problems, friction between residents and tourists, and changes in residents' way of life. To arrest these ugly situation, voluntourism can serve as an alternative form of tourism that aims at limiting these negative impacts while obtaining the benefits the tourism industry has to offer (Wearing, 2002; Stebbins & Graham, 2004; Stoddart & Rogerson, 2004). The Residents support of tourism has also been identified as an essential element for successful sustainable tourism development (Jurowski & Gursoy, 2004; Latkova, 2008, Awangku, 2009) and the establishment of home stay in Batu Puteh in Sabah State (Hamzah, 1986) is a good yardstick to venture into forecasting of tourist's arrival. Homestay is a place where travelers can stay and live with a local host in their family home. Homestays in Sabah provide a unique opportunity to experience the way of life of local people of an area along with their indigenous and traditional cultures. They also provide an opportunity for visitors to experience a place in an authentic, comfortable and homely setting. Homestays are not merely a place of accommodation for travelers such as a hotel, and should not be confused with "Bed and Breakfast", "Inns" or "Lodging Houses" because it is a place that usually seek to ameliorate the rural menace through the development of viable resilient sustainable diversified local economy, improve the quality of life of the area by building the community capacity to adapt to and benefit from global economic change. In a related vein, (rural revitalization) focuses on the stimulation of

opportunities that will generate additional income and jobs, while preserving and enhancing the dynamics and features that make rural life special and sustainable (Song & Li, 2008; McGehee & Santos, 2005). Therefore, tourist's arrival and its forecast are among the prerequisites of rural revitalization which is based on their economic strength and aims at improving their quality of life, living standard and general development of Batu Puteh at large.

## 2. Significance

The goal of voluntourism development is to increase the quality of life of the residents in a given host community (Um & Crompton, 1987). Results of this study act as a baseline to measure the benefits accrueable to forecasting tourist arrival in BatuPuteh. The findings may aid in the creation of a marketing campaign with a narrower focus and to increase residents' awareness of tourism . There. If the central goal of tourism development is to increase residents' quality of life, a marketing campaign strategy is needed to increase residents' knowledge (Valentine, et-al, 2005, Andreasen, 1994; Hairul & Hafizul, 2011) and awareness of trip forecast( Benson& Henderson 2011). Therefore, this study may also aid in the planning of future voluntourism development and support Batu Puteh's future tourism development plans by establishing a better understanding of the tourist arrival synergy. Other significant of tourist's arrival forecast are too numerous that one wonders why the neglect, among the merit that are deducible from adapting tourist's arrival forecast vis a vis rural revitalization are:

It guarantees moderate population increment, and increased economy in the rural areas because of enhanced increase in income through job opportunities and the re- branding of Batu Puteh

It guarantees the retention of youth back in the rural area because of the assurance that a good number of tourists will visit their community at certain period in time, thereby, empowering the youths to improve their skills in art, farming and other economic activities. It also enhances improvement in participatory approach, preservation of culture and other special affluence of rural communities, like rural pride by enhancing community capacity through established leadership strategies, asset mapping, and mobilization which later manifests into exchange of ideas, learning to weigh the success and where improvement is required. The motivations factors (Candy &Ada, 2011; Soderman& Snead, 2008) that accelerated increase in number of individuals taking part in short term organized voluntourism programme and increasing demand for volunteer tourism activity has been paralleled by increase in sending organization which promotes, sell and organize for voluntourists with variety of options (Callanan & Thomas, 2005) and the International Institute of Peace Through Tourism (2006), affirmed that travel often promotes international understanding, tolerance, cultural awareness and creates cultural dialogue thus, leading to the reduction of conflict in host community and the world at large, but this assertion depends on adequate information and enlightenment arising from voluntourist arrival forecast.

## 3. Literature review

Volunteer tourism is a type of alternative in which tourists volunteer in an organized way to undertake holiday that might involve aiding or alleviating the material needs of some groups in society, the restoration of certain environment or research into aspect of society or environment (Wearing 2001). In a similar vein, Volunteer tourism or voluntourism is defined by Broad & Jenkin, (2008), and McIntosh& Zahra (2008) as a type of tourism experience where tour operators offer travelers an opportunity to participate in an optional excursion that has a volunteer components as well as a cultural exchange with local people [host community] while McGehee and Santos (2005) conceives Volunteer tourism or voluntourism as utilizing discretionary time and income to travel out of the sphere of the regular activity to assist others in need. The increasing demand for an alternative, friendlier, non- discriminating experience has occasioned a new array of niche product amongst which voluntourism is the fastest growing and most prominent (Lyons & Wearing 2008, Mathew 2008, Coghlan 2006).

Voluntourism embraces trinity of approach in enhancing local economy, environment and the society with special reference to cultural values of the host to be able to work, live or stay and to promote pro-poor egalitarian society within a healthy natural environment. voluntourists will be aware of culture of the host, respect it norms, tradition, value and lifestyles, empowered to follow diligently throughout their stay and even learn from. The Voluntourists aims at utilizing this alternative tourism approach in a progressive and educational form which will eventually contributes to global justice, sustainability, peaceful co-existence, job creation, youth retention and above all rural revitalization as a main target. Communities should

endeavour to cultivate the attitude of forecasting the expected number of tourists through regression modeling technique as applied by the researcher. Fig 1 shows voluntourism categorization.

The multiplier effect is a concept that explains why tourists spending have a greater local economic impact than the original amount spent. Essentially the multiplier effect is the concept that every dollar spent by a tourist while in the host community will turn over several times before leaving the community, thereby, multiplying the impact of currency spent by tourists in a given host community (Goeldner & Ritchie, 2006). The indirect or multiplier impact comes into play as visitor spending circulates and re-circulates” They further break the multiplier into income multiplier and employment multiplier. More jobs are created from the tourists spending circulating and re-circulating throughout a host community. As a result, income in the host community will also grow exponentially with tourist spending. Tourist’s spending circulates within a destination so that the economic benefits are widely distributed throughout a destination.

### 3.1 *Tourism in Malaysia*

The growth of tourism in Asia and the Pacific grew more than two-fold from 57.7m to 119.1m international arrivals from 1990 to 2003. In 2003, the region achieved 17.2% of international market share, second only to Europe (57.8%), surpassing the Americas in 2001. The (SARS) epidemic “Severe Acute Respiratory Syndrome” saw a significant decline particularly in North East (-8.8%) and South East Asia (-15.4%) contributing to the overall decrease (-1.2%) in world travel from 702.6m in 2002 in to 694m in 2003 (WTO 2004)

### 3.2 *Tourism in Sabah*

The island of Borneo is politically divided into Brunei, Malaysia, and Indonesian Kalimantan. Separated from Peninsular Malaysia (PM) by the South China Sea, Sabah, one of Malaysia’s 13 States occupies the north eastern region of the island and shares terrestrial borders with the Malaysian state of Sarawak and Indonesian Kalimantan. In the eastern seas of Sulu and Sulawesi lie the international borders with the Philippines and Indonesia. Kota Kinabalu (KK), the state capital and the main port of entry is served with international and domestic linkages, which include Kuala Lumpur, Singapore, Tokyo, Brunei, Seoul, Taipei, Hong Kong, Manila, Manado (Sulawesi), Guangzhou (China), Balikpapan (Kalimantan) and Sydney. Inter-state transportation is facilitated by an efficient network of flights and bus routes operating between major towns. International sea access includes a ferry route from Southern Philippines to Sandakan and Kalimantan to Tawau (Hamza, 1986; Awangku, 2009). The differences in tourism development between Peninsular Malaysia (PM) and Sabah are based on geographical location, access, resource and foundation and world image. Reinforced by the ‘wild’ Borneo image, the cornerstone of tourism in Sabah is established on a contrasting combination of natural and wildlife attractions, set against a backdrop of terrestrial and marine landscapes ranging from the mountains, lowland forests, floodplains and the tropical islands. It is on this premises that KOPEL was set up in Batu Puteh Community to develop the poor and isolated indigenous rural areas with ecological upset, to reverse the losses, to capitalize on ancient indigenous traditional knowledge and culture. The creation of homestay in Batu Puteh fondly called Mesowalai Homestay that volunteers stay with a local host family helps provide volunteers with a fun and added cultural experience with KOPEL-MESCOT.

## 4. Forecast

The rapid increase in the capacity of computers to store information has generated an abundance of data across all types of industries. For example, Athanasopoulos et al. (2009) generated forecasts for 117 tourism demand series (including Australian domestic tourism only), disaggregated only by elected geographical areas. In total, Tourism Australia generates forecasts for thousands of series every quarter when considering inbound, outbound and domestic travel, as well as numerous levels of disaggregation such as geographical regions, purpose of travel and so on. The under listed techniques have been applied in various field of study by various scholars and researchers:

Allen and Fildes (2001) found that models with exogenous variables forecast better than extrapolating methods when ex post forecasts are used for the regressors. Athanasopoulos & Vahid (2008) also carried out study in macroeconomic. A surprising result from their study is that the forecasting performances of causal models seem to improve when using ex ante, rather than ex post, forecasts. In the tourism literature, despite strong warnings about its limitations ( Hyndman and Koehler, 2006), the MAPE remains the most commonly used forecast error measure among both academics and practitioners (see Fildes & Goodwin, 2007), and the tourism forecasting literature is no exception ( Li et al., 2005; Song & Li, 2008). The MASE

(mean absolute scaled error), that was proposed by Hyndman and Koehler (2006 ).Hence, accurate forecasting procedures have become a necessity in order to take advantage of such a plethora of information and as forecasting is the ability to project into future which is uncertain. Many studies have used different forecasting techniques to forecast tourist arrival Song, et-al, 2003; Kim et-al, 2008; Song & Li, 2008, Athanasopoulos et-al, 2009; Fildes et al 2010). This study adopts the regression approach to forecast tourist arrivals in Mesowalai Homestay. The data comprise of tourist arrival from the year 2000 to 2010, and this was equally used for building the tourist arrival model and year 2006 to 2010 was used to compare the forecast. Figure 2 shows the number of non-volunteer and volunteer tourist arrivals in Bar chart.

In forecasting the model, least squares approach was adopted with the parameters (a) and (b) estimated as follows:

$$a = \frac{\sum Y - b \sum X}{n}$$

The required sums of squares are:  $N = 11$ ,  $\sum xy = 25706$ ,  $\sum X = 0$ ,  $\sum Y = 12359$  and  $\sum X^2 = 110$

From these parameter estimates are obtained as:

$$a = 1123.55 \quad \text{and} \quad b = 233.2$$

and the fitted linear regression line is:  $y = 1123.55 + 233.2x$

The table 1 illustrates the actual and forecast values of Tourist arrivals in Mesowalia Homestay

#### 5. Discussion and Results

The homestay fitted linear regression, line  $Y = 1123.55 + 233.2X$ . From this, we deduced that there is an increase of tourist arrivals to the homestay of 233.2 annually while tourist peak to the homestay is put at 1123.55 annually. This means that if each tourist arrives the homestay with an income of RM1000 then annually this will amount to RM11235.5 and for the forecasted 10years period the homestay community will make expected or projected revenue of RM11, 235,500. The chart of actual and forecasted values of tourist arrival is as shown in figure 3.

#### 6. Recommendations and Conclusion

Based on the results of this study, it is recommended that a social marketing campaign be implemented to increase residents' awareness, tourism knowledge and expected number of tourist arrivals to their community coupled with economic benefits, and such a campaign should focus on economic advantages, knowledge gainable and general physical development . One way to offer additional information to the residents' awareness on volutourism would be to add to the existing website the positive impacts of tourist's arrival forecast. Others are to configure in to the website the impact of tourism industry's to the local economy, and community services that are partially funded by tourists spending,

The use of mass media, promo and exhibition is also recommended so as to motivate tourist to revisit as well as updating the images in order to intensify positive feeling towards the homestay because the whole world is now global village with various networks of communication and internet.

Conclusively, the prompt maintenance and the provision of necessary facilities in the Mesowalai homestay coupled with tourism potential like wildlife conservation, sea turtles, flora, fauna, proboscis monkey, outstanding stretch coral reef and the establishment of eco- nature destination. The combination of all these parameters i.e. the culture, nature and adventures fascinate potential tourist to explore the homestay. The forecast will be of greater assistance to authenticate the homestay developmental strategies so as to strengthen the attractiveness of the Mesowalai homestay which will in turn boost the economic and social activities of the residents and adjoining communities. The researcher buttressed Lankford and Howard (1994) that, "Educational programs, public meetings, and workshops can be undertaken at the local level to help residents understand the essence of tourist arrival forecast in tourism industry and its impacts.

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Table 1: The actual and forecast values of Tourist arrivals to Mesowalia Homestay

| Year     | 2006    | 07      | 08      | 09      | 10      | 11      | 12      | 13      | 14      | 15       | 16       | 17      | 18      |
|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|---------|---------|
| Actual   | 918     | 1596    | 2149    | 2943    | 1786    |         |         |         |         |          |          |         |         |
| Forecast | 1356.76 | 1589.95 | 1823.15 | 2056.35 | 2289.55 | 2522.75 | 2755.95 | 2989.15 | 3222.35 | 3455.555 | 36888.75 | 3921.55 | 4155.15 |

Source: Planning Department, Johor Bahru, 2010

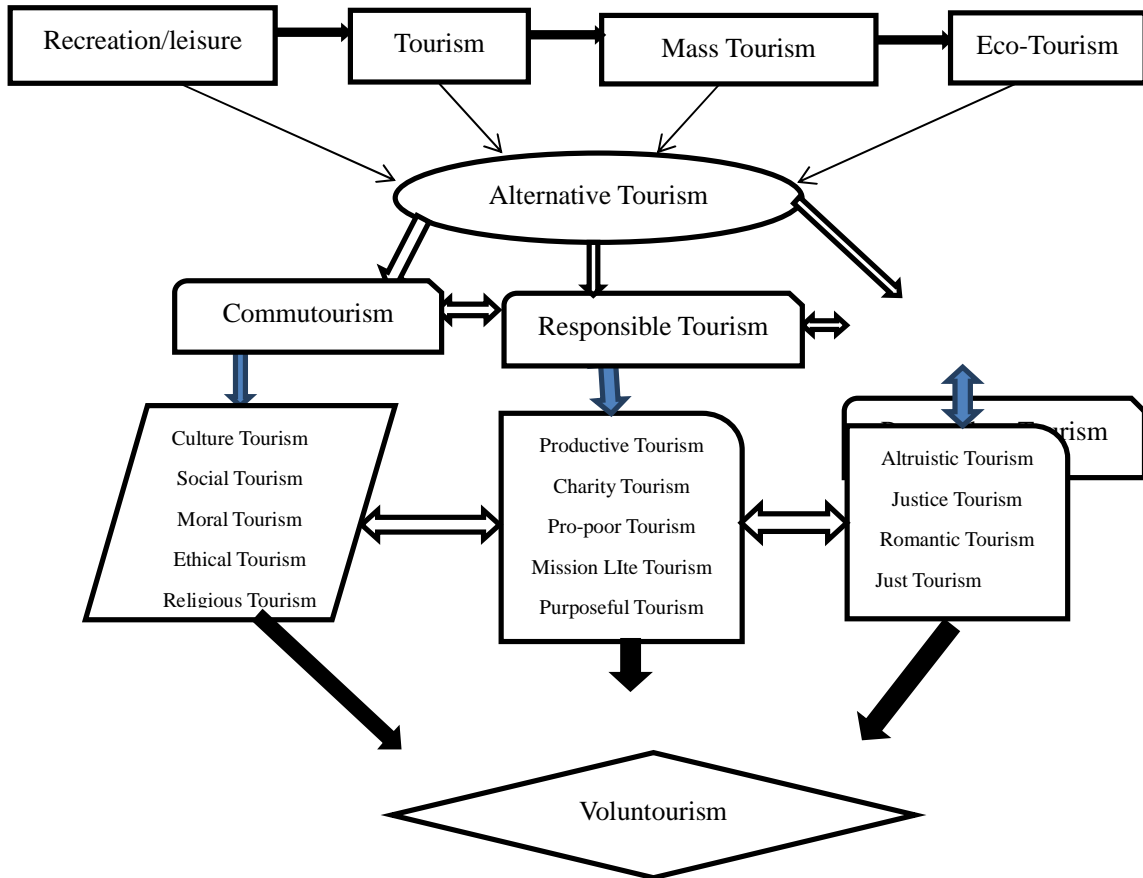


Fig.1 categorizing voluntourism (Wearing 2001) as modified by researcher

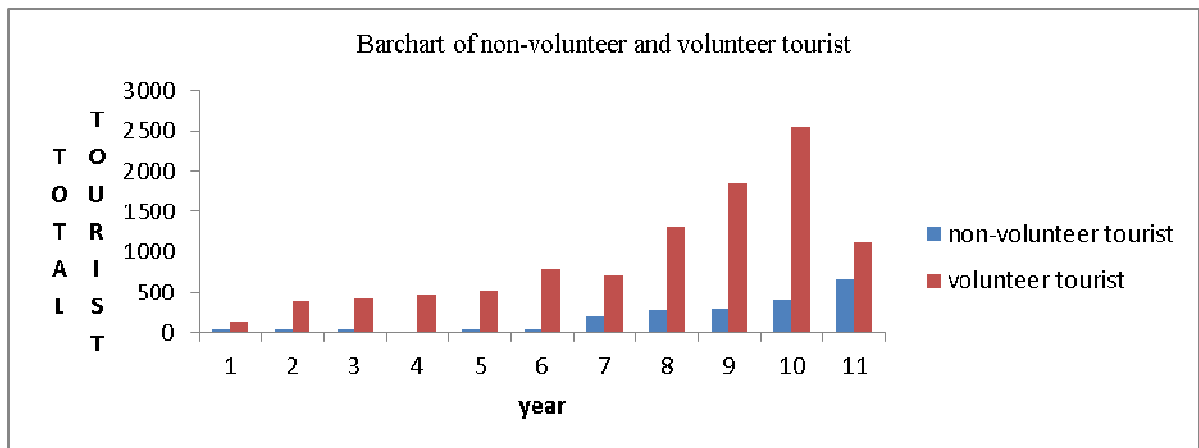


Fig. 2 the number of non-volunteer and volunteer tourist arrivals in Bar chart.

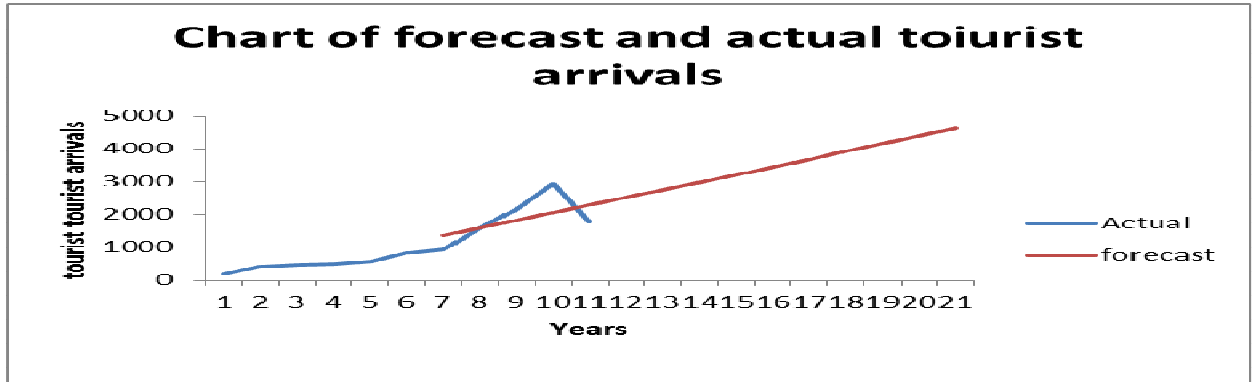


Fig. 3, The chart of actual and forecasted values of tourist arrival.



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