CHAPTER 1: INTRODUCTION

1.1 Tourism in a Global Context

Tourism activity is temporary movement of people to destinations outside their normal places of work and residence, the activities undertaken during their stay in those destinations, and the facilities created to cater to their needs (Hunt & Layne, 1991). The rapid growth of tourism in the world started only after the Second World War. The realization for the need of development in almost all countries, increasing liberalization of foreign exchange and travel restrictions, liberal policy of governments, the aspiration for international brotherhood, etc, are the main factors contributing for the rapid growth of tourism (Shrestha, 2000). Other factors responsible for the enormous growth of international tourism are: availability of leisure time with the people, the rapid growth of population, the advent of Jet travel, the creation of low cost means of transport and communications, low cost hotel and restaurants, retirement age and increasing life expectancy, desire to know and see the unique life styles, traditions and cultures of people of different places, rising standard of living and so on. In the developed countries, tourism agencies are encouraging the people to travel by providing schemes of incentive travel. Agencies also provide credit plans to the people for traveling on installment basis as, “fly now pay later” arrangement (The Encyclopedia, 1976).

Tourism is many faceted phenomena which strengthens the economy of tourist destinations and forges bonds of international-national and inter-regional relationship. Travel and tourism have taken a place in the world industries and it offers a significant share in Gross Domestic Product (GDP), employment and different opportunities of developing countries for their better growth. Tourism destinations behave as dynamic evolving complex system, encompassing numerous factors and activities which are interdependent and whose relationships might be nonlinear (Baggio, 2008). The success of tourism in any country depends on the ability of that country to sufficiently develop, manage and market the tourism facilities and activities in that country (Briassoulis & Straaten, 2000).

Tourism plays an important role especially for small countries with diversified geographical location and favorable weather conditions. Tourism, both international and domestic, brings about an intermingling of people from diverse social and cultural backgrounds, and also a considerable spatial redistribution of spending power, which has significant impact on the economy of the destination area (Ganesh & Madhavi, 2007). It includes a wide array of people, activities and facilities. Although tourism is not a distinctly identified industry, most people would agree that it is a unique grouping of industries that are tied together by a common denominator the traveling public. Tourism plays a vital role in the country's socio-economic development. Tourism has become the most important civil industry in the world.

The World Travel and Tourism Council (WTTC, 2017) published a worldwide reports of 2016 stating that the direct contribution of travel and tourism to GDP was USD 2,306 billion (3.1 % of total GDP) and the total contribution of travel and tourism to GDP was USD 7,613.3 billion (10.2 % of GDP) in the world. Similarly, the travel and tourism directly supported 108,471,000 jobs (3.6% total employment) and employment including jobs indirectly supported by the industries was 9.6% of total employment (292,220,000 jobs). Visitors' exports generated USD 1,401.5 billion (6.6% of total exports) and travel and tourism investment was USD 806.5 billion (4.4 of total investment)

In Nepalese scenarios, it is reported that the direct contribution of travel and tourism to GDP was USD 0.8 billion (3.6 % of total GDP) and the total contribution of travel and tourism to GDP was USD 1.6 billion (7.5 % of GDP). Similarly, the travel and tourism directly supported 427,000 jobs (2.9% total employment) and employment including jobs indirectly supported by the industries was 6.4% of total employment (945,000 jobs). Visitors' exports generated USD 449.8mm (17.7% of total exports) and travel and tourism investment was USD 0.2 billion (3% of total investment) (WTTC, 2017). International tourism provides valuable sources of foreign exchange earnings and income for many countries and has positive effect on balance of payments. In comparison to the world trade in goods, tourism revenue has recorded a much faster rate of growth and forms one of the largest items in the world (Tewari, 1994).

Tourism industry earns the gross revenue and foreign exchange earnings which play an important role in economic development of a nation. It is therefore, a generator of foreign exchange at the national level and also fast-growing industry in the global economy (Gill & Singh, 2013).Tourism is one of the productive business activities directed for the production of the goods and services. It provides goods and services to visitors, and employment opportunities to the local people. It increases the foreign exchange earnings generating employment opportunities.

In many countries, tourism is a fast growing industry and a valuable sector. Tourism contributes significantly to the countries' economy. Moreover, tourism plays an increasingly important role in the development of communities. The benefits of tourism include both tangible (e.g. job creation, state and local tax revenue, etc) and intangible (e.g. social structure, quality of life, etc) values to the tourist destination communities. In addition, tourism can, and often does, results in less desirable effects on the socio-economic (Aref & Redzuan, 2009). These benefits and costs provide ample opportunity for creative public policy debate (Yamauchi & Lee, 1999). In other words, tourism affects the economy and lives of communities. There are real and perceived fears that are sometimes attributed to tourism. The fears are like if the tourists' arrival may influence the native cultural trends and perceptions. Similarly, it can create a danger of cultural hybridity. These impacts of tourism on socio-economic could influence the communities' effort to develop the tourism as industry. As a result, the people could isolate their fundamental socio-cultural behaviors with the social ingredients they offer to the tourists.

Tourism has been labeled as the economic driver of 21st century due to multiplier effect of tourist spending and the linkage of this industry to many other industries (Saayman & Saayman, 2006). Mason (2003) explained residents can benefit from tourism either through direct involvement in the tourism industry, such as restaurant and guide service, or through the manufacture and sale of craft products the staging of cultural performances and food production for tourists' need.

Tourism-entrepreneurship practice's first responsibility to the society is to operate the activities with a profit motive offering some more lucrative items. Business is the wealth-

creating and wealth-producing means of society, but what is most important that management realizes is, it must consider the impact of every business policy and business action that influence the society as such. It has to consider whether the action is likely to promote the public goods to advance the basic belief systems of a society contributing society's stability maintaining strength and harmony, which is the ultimate responsibility of tourism-entrepreneurship practice in itself as an innovation in the social enterprise. It refers to new or different ways of doing things when an individual creates a new product or when he sells a current production in different approach (Fajardo, 1994). In a developing country like Nepal, tourism is one of the main sources of foreign exchange earnings. Tourism has emerged as a major job provider in Nepal with the sector accounting for 3.3 percent of the total employment in the country in 2011.The travel trade generated 412,500 direct jobs in 2011 in Nepal. The direct employment provided by the sector includes employment by hotel, travel agencies, air lines and other passenger transportation services (WTTC, 2012). With this reference, tourism became one of the top foreign currency earning sectors of Nepal. It has generated Rs 18.365 billion which was 84.2 % of the total foreign exchange earnings (Dhakal, 2010). So, Tourism is considered as an important sector for development in all parts of the world.

1.2 Tourism in Nepal

Nepal has the richest and most diversified socio-cultural landscapes. It is the holy- land of Hindus and Buddhist where they have lived together in great harmony for the centuries. It is the birth place of Lord Buddha (Lumbini) and one of the four most important shrines of Hindus (Pashupatinath). So, Nepal will turn out to be the final destination of religious tourism for Hindus and Buddhist. The country is blessed by a pleasant year-round climate, affording eye- catching mountain views for around the year. Nepal's flora and fauna are truly amazing in terms of their variety and rarity. In addition to this, country is peopled by a reliably friendly population who are generally happy to share their intrinsic hospitality as well as their customs and traditions with visitors. So, Natural beauty, socio-cultural values, social harmony, natural and archaeological beauties are the main attractions to tourists in Nepal. Although being a major tourist destination, Nepal has not been able to prioritize the promotional tactics to draw the attention of many

international tourists. Thus, Nepal needs to prioritize international publicity and promotion to promote its tourism industry more than ever. With possession of numerous attractions and motif such as mountains, lakes, religious sites, flora and fauna, architecture, cultural artifacts, folk life, intangible heritages etc. the tourism potential is incredibly high in Nepal. However, the potentiality so far does not seem to have been utilized properly in the policy level. Hence, it has been categorically imperative for Nepal to promote its touristic ingredients internationally. The tourism industry as a service sector could be established to develop skills and entrepreneurial practices that may improve the lives of people earning foreign currencies. Individuals with entrepreneurial urge in particular should be motivated towards this lucrative sector. By the same token, the main focus of this study is to identify the impact of tourism in socio-economic development in Nepal.

Nepal, 'The Land of Himalaya' was unknown to the western world before 15th century. The book *Lost Horizon* (Hilton, 1933) gave a new vision of 'Shangri-La' the world of imagination, somewhere at the Himalaya in Nepal. On the other hand, the people from this mountainous country traveled all over the world not only as a great warrior, but also to impress the world with honesty and loyalty highlighting the name of their motherland Nepal. Modern tourism had begun in Nepal after the first ascent of the highest peak Mt. Everest by Edmund Hillary and Tenzing Norgay in 1953. The publicity is earned by the historical ascent of Mt. Everest in international arena.

In this way, slowly tourism is developed as business and main source of income for the country and its people. Nepal government realized to make policy and rule to regulate the tourism in the country to fulfill tourism objectives. In the year 1957, government of Nepal formed a Tourism Board to develop the tourism activities (Satyal, 2000). In 1951, Nepal followed an open door policy after the establishment of democracy, but before that, there are no any proper records of tourism statistic in Nepal. During the period of Rana Regime, Late Mr. Tenzing Norge and Mr. Edmund Hillary with their historical climb on the summit of Mount Everest on 29th May 1953, for the first time which caught the attention of international visitors. Officially, Department of tourism in Nepal was established in 1996 under the act of tourism development and Nepal Tourism Board

(NTB). After that, Nepal got the membership of UNESCO and Nepal's heritage sites were listed in UNESCO and were known to the world. And after knowing the fact that Nepal has a tremendous future potential in tourism industry, it succeeded to get the membership of the International Union of Official Travel Organization (IUOTO), South Asian Travel for Commission, Pacific Asia Travel Association (PATA) and American Society of Travel Agents (Bhattarai, 2003).

Similarly, various efforts have been made for the development of tourism in Nepal. In 1953, Nepal got the membership of United Nations Organization (UNO), a non-aligned countries' group; it was very easy for Nepal to be introduced in the world arena. During this period, Nepal made concrete efforts to develop tourism in Nepal, created necessary institutional infrastructure needed to promote tourism, beginning from the establishment of Tourism Development Board in 1957.The Department of Tourism and Ministry of Tourism were established in 1959 and 1977 respectively. In this respect, notable efforts were the Tourism Master Plan 1972, Review of the Master Plan 1984, and defining Tourism Policy in 1995. For the planned development of tourism in Nepal, Nepal government joined hands with the German government to prepare the 20-year 'Tourism Master Plan, 1972'. According to the recommendation of this master plan, a separate Ministry of Tourism was established in 1977 with a view to enhance tourism properly in the country.

The Tourism Ministry was named Tourism and Civil Aviation Ministry in 1991, and Culture, Tourism and Civil Aviation Ministry in 2000. In between, high level bodies like Tourism Promotion Committee (1981) and Tourism Council (1992) were formed to create the necessary paraphernalia (Shrestha & Shrestha, 2012). In 1995, Nepal government announced the tourism policy for the first time in Nepalese tourism history prepared by Tourism Council. Before this, the tourism sector was basically guided by the industrial policy, industrial enterprises act and periodical plans (Shrestha, 2000).

In the real sense, the development of tourism started in Nepal from the beginning of 1960's. During the period, Nepal became a popular center for followers of Hippies. Since 1962, Nepal Government / Department of Tourism realized to take tourism statistics.

‘Visit Nepal year1998’ is a national campaign and it is the first effort of this type in the country to promote tourism with the theme “A Sustainable Habit through Sustainable Tourism’ and international marketing slogan of “Visit Nepal 98- A world of its own”. It is viewed that Visit Nepal 1998 could create awareness about the importance of tourism to government, business community and people which could encourage to provide quality services internally and better promotion marketing externally.

‘Tourism Year 2011’ launched with the theme of “Together for Tourism; Tourism for Prosperity; Prosperity for Stability” the primary goal of the campaign was to bring in one million international tourists to Nepal, almost double of the current figure of slightly over half a million tourists in a year 2011. Apart from this overarching goal, the campaign targeted to: at least 40% of the international tourists travelling beyond the present tourist sites and to encourage additional investment on tourism infrastructures by 50% and promote and maintain the records of domestic tourism (Bhandari, 2011).

Visit Lumbini Year 2012 is formally launched to aim at the comprehensive development of Lumbini, the birth place of Lord Buddha while popularizing Nepal in the world as the land of peace. A tourism perspective plan’ Vision 2020’has also launched. The plan aims to bring in 2 million foreign tourists annually by 2020 to augment economic opportunities and increase employment in the tourism sector to 1 million. In that year 120,583 Indian tourists, 136,001 others and 539,210 Nepalese visited in Lumbini (UNESCO, 2013).

Government of Nepal has also received foreign aid from the Asian Development Bank for the up-gradation of Tribhuvan International Airport and other tourism facilities and infrastructures; the high requirements of capital for the development of tourism infrastructures/facilities force the government in the destination to seek foreign capital. Some standard hotels and tourist enterprises are run by foreigners under foreign direct private investment (Paudyal, 2012). Nepal has huge potential for the tourism development. In this context, the government of Nepal itself has tried to invest on the tourism infrastructure development and institutional buildings encouraging the private sectors to invest by various policy interventions. Tourism not only contributes to the economic growth through multiplier effects but also supplies the foreign currency

required for major investment, which is used to import much needed modern technology, machines/equipments and management skills. The government, thus, has taken initiation and a leading role so as to invest in the development of tourism facilities and infrastructures which can be used by the other sectors of economy.

1.3 Trend of Tourist Arrivals in Nepal

Nepal government started to take account of the tourism data since 1962. In 1962, there were 6,179 tourist arrivals in Nepal. But in 1965, it reached 9,388, after the decade in 1975 it reached 92,440 which was an increase by 9.8 times. Similarly, in the following decades in 1985, 1995, 2005 and 2014, the number of tourist arrival increased 180,989; 363,395; 375,398; 790,118 respectively which was an increment by 19.3, 18.7, 40.0 and 84.2 times respectively in every decades in comparison to the year 1965. Before the year 2002, more than 80% tourists came to Nepal by air services while below 20% tourists came by land transport services. After the year 2002, except year 2003, below 80% tourist came by air and above 20% came by land (For detail information please see APPENDIX 2). This may be due to the increasing road and transport facilities in the country. In Nepal, the highest length of stay of tourist is recorded 13.51 days in the year 2004, and shortest is 7.92 days in 2002 during the period of 1962 to 2014 (MOTCA, 2015). According to Tourism Statistics published by MOTCA (2015), majority of tourist arrivals in Nepal for the purpose of holiday and pleasure. Since 1962, more than 75 percent tourists are arriving in Nepal with the purpose of holiday/ pleasure and it continued till 1990. The number of tourists coming for trekking /mountaineering purpose has been increasing with the share of growing from 0.4 percent in 1965 to 12.80 percent in 2014. According to data for 2014, most of tourists come for holiday/pleasure purpose (51.50%), followed by trekking/mountaineering (12.80%), religious purpose (9.0%), official purpose (4.70%), business purpose (3.50%) and remaining 18.5% for others purposes (See APPENDIX 3). The sex wise trend of tourist arrivals in Nepal shows that the number of male tourists is greater than that of female tourists excluding the year 2011. In the year 1962 around half of the tourists (47.7%) were females but in the following year it was in decreasing trend and the ratio reached at lowest 31.3% in 2005. In the year 2014 the ratio of male and female tourists' arrivals were 56.4 and 43.6

respectively of the total arrivals (See APPENDIX 4). According to age category, since 1965 to 1990, the highest share was occupied by the younger age group 16-30 years followed by the age group of 31-45, 46-60, 61+ and 0-15 except 1985 tourist arrivals trend in Nepal. But, since the year 1992 to 2014, the trend showed that the age group 31-45 has higher share and followed by 16-30, 46-60, 60+ and 0-15 age group respectively. In the year 2014, among the total tourist arrivals 59.7 percent were under the age of 45 years and 36.7 percent were over the 45 years and the rest 3.5 percent tourist has not specified the age group (See APPENDIX 4). In order to analyze the seasonal trend of tourist arrival in Nepal, there are certain periods when the influx of tourists is high. March-April of spring season and October –November of autumn season (See APPENDIX 5). The trend of tourist arrival in Nepal seems satisfactory. Tourism industry has emerged as a sector that contributes a lot to the country to remote and far off areas that has turned out a corner stone in alleviating poverty (Dhakal, 2013). Thus, it is necessary to analyze its impact in socio-economic development of Nepal.

1.4 Socio-economic Impact of Tourism

Socio-economic impact of tourism is the study of the relationship between economic activity and social life. The goal of any socio-economic impact study, in general, is to bring about socio-economic development, usually in terms of improvement in metrics such as GDP, infra-structure development, hygiene, literacy, and levels of employment. According to Ashford (2005), socioeconomic impact is dedicated to the empirical, reality testing approach to knowledge and it respects both inductive and deductive reasoning. It recognizes the policy relevance of teaching and research and seeks to be self-aware of normative implications rather than maintaining the layer of an exclusively positive science. Socio-economic does not entail a commitment to any one paradigm or ideological position, although it sees questions of value inextricably connected with individual and group economic choices. It is open to a range of paradigms that handle economic behavior as involving a person and all facets of society within a continually evolving natural context. Socio-economic provides a positive and normative approach that aspires to a factually rigorous, holistic understanding of economic behavior that is both paradigm-conscious and value-conscious yet, at the same time, largely, though not

entirely, paradigm and value-neutral (Ashford, 2005). Socio-economic impact goes beyond the income generated by a given product but also includes the contribution to local community that surrounds the tourism product (Saayman & Saayman, 2006). Supporting for tourism development can be contributed by many factors. One of most important component can be perceived as both positive and negative impacts by local residents. Under sustainable tourism framework, the impacts to be evaluated are based on the Triple Bottom Line –model which defines the impact of tourism as the mixture of the social, economic, cultural, and environmental benefits (Lundberg, 2011). Social exchange theory suggests that residents who perceive themselves as benefiting from tourism are likely to view it positively, while resident who perceive themselves as incurring costs are likely to view tourism negatively. Perceived positive and negative impacts, in turn, will affect the degree to which residents will support the development (McCool & Moisey, 2009). The number of tourists visiting in Nepal has positive relation with socio-economic factors.

The socio-economic factors might have greater impact on tourism than other climatic factors (Pokhrel at el., 2017). Tourism can exacerbate local conflict and reduce the relevance of indigenous self help mechanism. At the same time, it has promoted the formation of new institution and offers opportunities to develop and expand hierarchically extra community networks, which are an important precondition for upward economic mobility in developing countries like Nepal (Shakya, 2014). A study related to Bhaktapur (Nepal) conducted by Maharjan (2012), found that tourism has contributed significantly to local level Government's tax revenue particularly through tourist entry fees which in turn contributed in the conservation of world heritage properties. But, tourism has limited impacts in raising the standard of living, household income, skills and training, infrastructure and public facilities as well as cultural preservation.

From the view of quality of life, the economic impact of tourism contributes the residents' life easier because it creates the investment and job opportunities, which generates income as a result the standard of living of local people can be raised. Another feature of tourism is a great labour demand, which helps in reducing unemployment

problem in the local level. Similarly, from the view of social impact, the most important impact of tourism is to maintain the social harmony and improving quality education, which contributes to the improvement of quality of life of local residents. Tourism can bring socio-economic changes in the society. It is developed to generate economic benefits and through them social betterment. So, impact of tourism can be categorized by economic and social either positively or negatively.

1.4.1 Economic Impact of Tourism

The Economist's Dictionary of Economics defines economics as "the study of production, distribution and consumption of wealth in human society" (Moffatt, 2008). The economic impact entails the effect that the production, distribution and consumption of wealth in the human society have on one another. It indicates that economics is the branch of social science that studies the production, distribution, and consumption of goods and services. It involves the analysis of markets and includes four key sectors for human society (the consumer, the producer, the government and the foreign sector). The economics studies entail the satisfaction of unlimited needs, given the limited resources that exist. These resources are referred to as factor of production and include resources, labour, capital and entrepreneurship (Saayman, 2000).

The economic impact of tourism is usually perceived positively by the residents. First of all, tourism acts as an export industry by generating new revenues from external sources. A host nation will gain foreign exchange, which will contribute to improve the nation's balance of payments (Gee et al., 1997; Liu & Var, 1986; Dogan, 1987). It decreases unemployment by creating new job opportunities (Sheldon & Var, 1984). Increasing demand for tourism encourages new infrastructure investment (Inskeep, 1991), and communication and transportation possibilities (Milman & Pizam, 1988).The amount of taxes collected by government will also increase with the higher level of economic activity. Residents of a tourist center might have a better standard of living and higher income by tourism activities.

Economic impacts are often the most tangible kind of impacts. At the local level, the most important economic benefit is income generation. Tourism provides an income for

any individual or business that provides goods or services for tourists. This includes hotels, restaurants, bars, transport and entertainment, etc. All the owners and employees in these businesses gain directly from the tourism industry. Indirectly, however, many more people gain their income (partly) from the tourism industry (Telfer & Sharpley, 2008). Suppliers of food, water and electricity to hotels and restaurants, as well as construction workers, for instance, gain an income through tourism. Also those who earn their money with tourism activities might spend their money within the community again, causing the so called 'multiplier effect'. Tourism activities are mostly labour intensive and often require low levels of skills. Because of the seasonal character of tourism, many jobs might be provided to certain groups of people such as students or the elderly (Bull, 1995). Besides, foreign ownership of tourism businesses, which is often typical in developing countries, can cause high levels of leakage (Telfer & Wall, 2000; Torres, 2003; Telfer & Sharpley, 2008). Tourism industry also competes with other economic sectors, such as agriculture. While in some destinations locals might be completely dependent on the tourism industry for their income, in other places it might provide a nice way to gain some extra earnings besides regular income. Tourism development may also cause inflation. Shops and restaurants might increase their prices, and land and housing might become more expensive as well. For the local community this might result into a relative drop of purchasing power, unless the income throughout the community has increased accordingly.

However, if not well planned and controlled, tourism may lead to negative impact or reduce the effectiveness of positive ones. The prices of goods and services might go up with the increased demand from foreign customers (Liu & Var, 1986; Husbands, 1989). Increasing demand for accommodation, especially in tourism seasons, might push up the rents as well as the land prices for building new houses and hotels (Pizam, 1978; Var et al., 1985). New revenues from tourism usually flow to the landowners and business persons while the residents suffer from increasing cost of living. This might cause a disparity of income distribution offering various employment opportunities to attract people to migrate to the resort area which can create new social and cultural problems. As a result, tourism can pose a challenge to the society. Tourism has a broad effect on the economics of destination areas. International tourism contributes to national balance of

payment, while at the regional level; it helps in income and employment generation. It provides incentive to entrepreneurial activity. However, it may also affect to price-rise, seasonality of production, and over-dependence of local community on tourism.

The impacts of tourism consist not only of the economic aspects such as employment creation and generation of wealth, but also of a social component. The social benefits include modernization and exchange cultures, social change, enhance image of host community, and improve public health, social and amenity improvements, education and conservation.

1.4.2 Social Impact of Tourism

Tourism might cause a gradual change in society's values, beliefs and cultural practices. Local residents feel this impact more profoundly. By observing the tourists, local people might change their life style (dressing, eating, entertainment and recreational activities and so forth). While this influence may be interpreted positively as an increase in the standard of living, it may also be considered negatively as an indication of acculturation (Brunt & Courtney, 1999; Dogan, 1987). Tourism can contribute revitalization of arts, crafts and local culture and to the realization of cultural identity and heritage. In order to attract more tourists, architectural and historical sites are restored and protected (Inskeep, 1991; Liu & Var, 1986). Moreover, many people of different cultures come together that, facilities the exchange of cultures (Brayley et al., 1990).

In addition to its cultural impacts, tourism is perceived to contribute to change in value system, individual behavior, family relations, collective lifestyle, and moral conduct and community organizations (Ap & Crompton, 1998). These kinds of social impacts may be both positive and negative. With the development of tourism in an area, there might be changes in social structure of the community. Basically two different classes: a rich class which consists of business persons and landowners, and a lower class which contains mostly immigrants might emerge in the community (De Kadt, 1979; Dogan, 1987). It also modifies internal structure of dividing into those who have and those who have not relationship with tourism or tourists (Brunt & Courtney, 1999). Intense immigration from

different cultures of people brings about social conflict in the area. Generally, impacts of tourism on women are perceived positively such as women can work out more freely, they get more opportunities to work, increased self-work and respect, better education, higher standards of living with higher family income. However, some argues that tourism distracts family structure and values, and also leads to increase in divorce rates and prostitution (Gee et al., 1997). Tourism may lead to a decline in moral values; invokes use of alcohol and drugs; increases crime rates and creates tension in the community (Liu & Var, 1986; Milman & Pizam, 1988). Moreover, with the development of tourism, human relations are commercialized while the non-economic relations begin to lose their importance in the community (Dogan, 1989). Tourism, due to the resorts in relatively small village or towns, increases population and crowd especially in summer seasons and that cause noise, pollution and congestion in previously quiet, peaceful and hygienic places. This limits the use of public areas such as parks, gardens and beaches as well as local services by the residents, which sometimes result in negative attitudes towards tourists (Ross, 1992).

Urbanization caused by rapid development of tourism might improve governmental and local services such as fire, police and security (Milman & Pizam, 1988). In addition, the variety of social entertainment and recreational activities may increase in such cities. Unplanned and uncontrolled constructions, distorted urbanization and inadequate infrastructure damage the natural environment and wild life, and cause air and water pollution. Overuse or misuse of environmentally fragile archaeological and historical sites can lead to the damage of their features (Inskeep, 1991; Gee et al., 1997). Costs of the loss of wild life areas and natural landscape, and undertaking historical and cultural preservation are very high. However, if planned well, effort and works to historical sites, constructing recreation areas and parks, improving infrastructure system, preventing water and air pollution and waste disposals are all positive contributions to the region. Knowing that visitors prefer a clean and natural environment, the residents should be cognizant of environment and ecological issues (Liu & Var, 1986; Inskeep, 1991). Tourism is a social activity, which has an economic benefit. It is considered an activity essential for the life of nations because of its direct effects on the social, cultural,

educational and economic sectors of the nation as well as international relations. The various social and economic benefits occurring to the nation due to tourism activities include preservation and development of places of cultural interest, local area development, direct and indirect employment, increase in foreign exchange earnings for the country and better economic activity.

So, tourism is not only perceived as economic device of development but it is also a social component. The social impacts come into sight somewhat more subjective and intangible.

1.5 Statement of the Problem

The benefit of tourism cannot be evaluated merely in terms of economic advantage, but it has non-economic or social benefits like socio-cultural, educational, political significance as well. Tourism is an important medium of social and cultural development in the host country. It also aids and motivates for the preservation of cultural heritage. Visitors enjoy and learn many things about the culture and customs of the people of different countries and societies by reaching, seeing, observing and making personal contact with their area of interest. Precisely, cultural factors attract tourists to various destinations, architecture and historical monuments. The festivals get full swing exhibition and perform even more encouragingly if the number of tourists increase. In this sense, festivals too rely on visitors' traffic as a prospective audience and the tourists' presence encourage the local people further to celebrate and demonstrate their culture enthusiastically. The cultural forms such as jatra, rituals and other performances that engage tourists and there is also sense of education and cultural significance to aware and educate the tourist on the unique characteristics of the natives.

Negi (1990) explained that a country which succeeds in selling its attractions has a double gain- it earns foreign exchange for what it does not physically export and it creates a tremendous amount of goodwill in foreign countries which cannot be measured in terms of money. The intangibility is what counts most significance to the visitors/tourists.

Tourism is the largest and fasted growing industry in the world. It is a comprehensive human activity with wide ramifications and it permits virtually all sectors of national life. It is of considerable economic, social, cultural, educational and political significance. Tourism can benefit the quality life in local communities by helping to modernize utilities and transportation, providing employment, raising the educational level, maintaining social harmony of local people and broadening their world view, reviving interest and pride in a community's cultural heritage and the arts.

Various studies have been made for the economic development of tourism, tourism marketing, and tourism products of Nepal. Tourism is not only the important contributors to economic development but it is also the prominent contributors of social development of any country. In this context, it would be useful to identify the impact of tourism in socio-economic development of Nepal and this study has been conducted mainly to address this problem.

1.6 Rationale

Nepal is one of the richest countries of the world cultural community in respect to the cultural heritage. It is the homeland of 126 different caste/ethnic groups with over 123 different languages (CBS, 2011). Each ethnic tribe practices their own culture and custom that is unique in itself and distinct from another. They value their tangible and intangible heritages which are so rich as a result Nepal is known as uniquely diversified country. Thus, the differences of life style of these people, in aggregate, reflect varieties in culture, costume and tradition. Even if there is same ethnic community which live in dispersed location differ in their culture, festivals, food habit, clothing and languages. For example social activities and cultural practices of residents of the Mountain differ from those of the Terai and Hill.

In recent years, tourism is considered as the world's biggest and fastest growing industry. It has been playing a key role in the socio-economic sectors of the developed as well as developing countries. As a result, most of the nations are magnetized to this industry and they are making an effort to strengthen economic life by promoting tourism in the

country. Tourism has been identified as a main source of foreign exchange earnings, employment creating industry and generating economic growth of the country.

This study is carried out to analyze the relationship between tourism benefits towards economic development process of the nation, and to assess the residents' attitudes towards impact of tourism on economic sector and residents' perceptions towards impact of tourism on social sector in Nepal. Keeping in view of addressing these issues, this will require an enquiry into the impact of tourism in socio-economic development of Nepal. Thus, the present study is a modest attempt to highlight on impact of tourism in socio-economic development of Nepal using time series multivariate analysis based on secondary data and exploratory factor analysis based on primary sources of data. The findings of this study would be helpful for academic as well as planning prospects in the field of statistics. In order to study the impact of tourism on Nepalese economy and social issues, many studies such as Economic impact of tourism in Nepal (Burger, 1978), Economics of tourism in Nepal (Dhungel, 1981), Tourism and economic development of Nepal (Khadka,1993), Tourism in Nepal (Shrestha, 2000), Impact of tourism in world heritage site (Maharjan, 2012), Climate variability and socio-economic impact on tourism (Pokhrel et al., 2017) were conducted in the different time. With the best of the researcher's knowledge through extensive reviewed of literature, most of studies focused only on preliminary statistical analysis. Keeping view of this reality, in order to capture the issue of socio-economic impact of tourism in Nepal, the researcher recommends reasonably standard or advanced statistical techniques such as Vector Error Correction (VEC) model and Exploratory Factor Analysis (EFA) which would be immensely useful for the purpose.

1.7 Objectives

The general objective of this study is to analyze the impact of tourism in socio-economic development of Nepal and to assess the dimensionality of tourism components of the country. The general objective can be translated into the following specific objectives:

- To examine the relationship between tourism benefits towards economic development process of the nation by using Vector Error Correction (VEC) model

- To assess the residents' attitudes towards economic impact of tourism in Nepal by using Exploratory Factor Analysis (EFA)
- To assess the residents' perceptions towards social impact of tourism in Nepal by using Exploratory Factor Analysis (EFA)

1.8 Limitations

There are some limitations of the study, which include the following: Tourism has an impact on economy, society and environment (Gondus, 2014), but this study tries to explore the components of social and economic impact of tourism only. It does not deal with environmental impact such as improving the environment for future generation, making efforts for environment conservation and protecting of wild life, etc. The primary data covers up three different locations: Ghandruk (Mountain), Nagarkot (Hill) and Sauraha (Terai). Though, this study pertains to only specific locations, which may not be the representative of the country as whole. Further, this study covers three culturally diverse indigenous group of population of Nepal such as Gurung (Ghandruk), Newar (Nagarkot) and Tharu (Sauraha). Although, it does not permit to generalization, it only attempts to provide a general picture of tourism and its positive and negative impacts in socio-economic development of Nepal.

CHAPTER 2: LITERATURE REVIEW

This chapter presents a critical review of the literature on impact of tourism in socio-economic development of the nation. Relevant studies in both developing and developed countries are reviewed with particular emphasis on findings and methodological issues. This review focuses on peer reviewed articles, Ph. D. theses, books and research reports related to national and international tourism data. First, the title and abstract of the paper was examined, and then, full texts of relevant articles were subsequently retrieved for further assessment. In the process, many study reports and research papers utilizing statistical models in the area have been reviewed.

2.1 Input Output Model

This Model describes the flows of money between various economic sectors. It is a method of tabulating an economic system in matrix form (I-O table) keeping the sales made by each sector in rows and purchase made in columns. A simplified input-output (I-O) model (Leontief, 1936) can be written as:

$$X - AX = Y^{*} \quad (2.1)$$

Where X and Y are respective vectors of output and final demand and A is the matrix of technical coefficient. By restoring an identity matrix I to the equation, it can be written as

$$(I - A)^{*}X = Y \;\; or \; X = (I - A)^{-1}\mathrm{Y} \quad (2.2)$$

Where $(I\text{-}A)^{-1}$ is the "Leontief Inverse Matrix" or called "Inter- industry Interdependence Coefficient Matrix".

I-O results provide estimates with larger magnitudes whereas computable general equilibrium (CGE) model has origins in I-O methodology, accounts for resource flows between the sectors and shows price effects too.

Berger (1978) in his work, which was the first doctoral study on Nepalese tourism, confined to economic impact of tourism through an input output analysis. The main objectives of this study were to analyze the impact of tourism on economy of Nepal and to present information to Nepal's development planners which would aid them making

decision with regards to the contribution of tourism industry to national goals and in devising policies and strategies such that Nepalese society can derive the maximum benefits from this activity while minimizing effects which are often associated with tourism. The major findings of this study were:

- Tourism in Nepal was shown to be an effective and promising instrument for earning foreign exchange
- Tourism is a sector that requires high investment both from public and private while providing relatively few jobs and offering little scope for the improvement of personal and regional income distribution.

It is, therefore, suggested to promote tourism to the extent that exchange is needed for development purpose but serious concentration is needed in terms of utilization of available resources in the society and other tangible and intangible assets where benefits of developments are shared more widely.

Khadka's (1993) analyzed the outcome of tourism development in Nepal using input-out model in the late 1980s. This study was confined in two specific areas- the performance and efficiency of hotel investment in generating foreign exchange and the economic impact of tourism under limited supplying capacity. His major findings were hotel bed occupancy rate, double bed room price and marketing activities are found to be important factors for the performance of hotel industries. The economic impact of tourism was found to be lower than that of the other foreign exchange generating sectors. The net earnings from tourism were greater than some other sectors of the economy. The economic impact of tourism can be enhanced by promoting standard hotels instead of low quality hotels serving low paying tourists. Nepal must go for high –paying tourists. Impact can also be increased by developing impact substitutable industries and increasing the supplying capacity of the critical sectors. This study concluded that summer season in Nepal is less suitable for western tourists although it is appropriate for Japanese, Indians, Thai and other Asian tourists. The reason behind the appropriateness for Asian tourists is geographically close location and atmospherically similar as a result traveling cost is less and adoptability is high. Similarly, the flow of tourists from these countries could rise because most of them are growing economies.

Similarly, Pradhananga (1993) analyzed the changing pattern of tourist's consumption and its economic impacts on employment, exports and national revenue using input-out model. The basic objectives of the study were to examine the consumption pattern of tourist, to analyze the use of local resources in tourist consumption and their effects to probe into capacity utilizations of hotels in relation to the tourist's number and length of stay and to examine the change in government revenue resulting from the tourist export. This study dealt with different tourism aspects i.e. hotels and lodges, airline, travel agencies, trekking agencies, carpet, and garment industries and transport agencies working in Nepal. According to him, leakage of foreign exchange earnings, high import contents, seasonal fluctuations in demand for tourism and over dependence on seasonality factor have been the major weakness in the tourism industry. He suggested that different tourism related policies and sectors like infrastructure, open-sky policy, planning of new tourism project, opening of a new destination in the country, tourism marketing strategy, management of travel agencies, full capacity utilization of hotels etc, should be planed properly.

2.2 Simple Regression Analysis

Regression analysis (Galton, 1886) is a statistical process for estimating the relationships between dependent variable and one or more predictors. The formula for a regression line is

$$Y = \beta_o + \beta_1 x + \varepsilon \qquad (2.3)$$

Where Y is the predicted score, β_1 is the slope of line (rate of change), β_o is Y- intercept and ε is error terms.

Dungel (1981) made an attempt to analyze the economic impact of tourism in Nepal using regression analysis. The specific objective of his study was to analyze the trend, structure and composition of tourist arrival, to estimate the interdependence of the sector with some of the other sector of the economy, to estimate the leakage within the sectors in terms of impact contents of both goods and factor services and foreign currency, to estimate the item wise expenditure elastic ties of tourism expenditure in Nepal. The study has concluded that politico- economic crisis in the country as well as in the region has

been found affecting the number of tourists visiting Nepal. Seasonality factor has been found most prominent in Nepal tourism. Expenditure on food items has been found inelastic where as that of travel elastic. Weighted GDP of the tourist organizing countries is found elastic and significant. Direct, indirect and induced effects of tourism sector on value added have been relatively larger than those of the non tourism sectors.

Shrestha (2000) analyzed the marketing challenges of tourism in Nepal using simple regression analysis during the period of 1961/62 to 1996/1997. The objective of the study was to assess the existing tourism marketing and promotional efforts and its impact on tourism development in Nepal. The study concluded that tourist arrival to Nepal was significantly influenced by world tourist flow, tourist arrival in South Asia, promotional expenses made by Nepal, and income level of originating market.

2.3 Granger Causality Test

According to Granger (1969), *Y* is said to "Granger- cause" *X* if and only if *X* is better predicted by using past value of *Y* than by not doing so with the past values of *X* being used in either case. In short, if a scalar *Y* can help to forecast another scalar *X*, then *Y* Granger-causes *X*. If *Y* causes *X* and *X* does not cause *Y*, it is said that unidirectional causality exists from *Y* to *X*. If *Y* does not cause *X* and *X* does not cause *Y* then *X* and *Y* are statistically independent. If *Y* causes *X* and *X* causes *Y*, it is said that feed back exists between *X* and *Y*. Ganger causality is framed in term of predictability. To implement the Granger test, a particular autoregressive lag length *k* (or *p*) is assumed and models are assumed

$$X_t = \lambda_{1t} + \sum_{i=1}^{k} a_{11} x_{t-1} + \sum_{i=1}^{k} b_{1j}\, y_{t-1} + \mu_{1t} \quad (2.4)$$

$$Y_t = \lambda_{2t} + \sum_{i=1}^{P} a_{21}\, x_{t-1} + \sum_{i=1}^{P} b_{2j} y_{t-1} + \mu_{2t} \quad (2.5)$$

Balguer and Cantavella-Joarda (2002) examined the role of tourism in Spanish long run economic development and tested tourism led growth hypothesis in their study. Using quarterly data for the period from 1975 to 1997 and Granger causality test .They concluded that economic growth has been sensible to persistent expansion of international tourism.

Zortuk (2009) showed the economic impact of tourism on Turkey's economy using quarterly data from 1990 and 2008 to investigate the relationship between tourism expansion and economic growth by Ganger causality test. Her study discovered that unidirectional causality from tourism development to economic development exists between two variables.

Khalil et al. (2007) examined the role of tourism in economic growth of Pakistan. Using annual data for the period from 1960 to 2005, they identified empirically whether there is a unidirectional or bidirectional casual relation between tourism and economic growth. Using the concepts and methods of co-integration and Granger Causality Test, their study explored the short term dynamic relation as well as long run equilibrium conditions and concluded about the existence of co-integration between tourism and economic growth in Pakistan.

Georgantopoulos (2013) studied on tourism expansion and economic development of India using VAR (Vector Auto regression) analysis as well as Granger Casualty Test. This study analyzed leisure travel and tourism expenditure (LTE), business travel and tourism expenditure (BTE) during the period of 1998 to 2011 based on data of WTTC (World Travel and Tourism Council) and World Development Tourism Expenditure published by World Bank. This study indicated there is no casualty links between TE (total expenditure) and GDP (Gross domestic product). In short, failing to support the significance of the tourism growth nexus for the case of India in the short run. Leisure travel and tourism spending (LTS) appear significant, supporting that all variables return to their long run equilibrium. Moreover, bidirectional causal links appear significant between real output and leisure travel and tourism spending in the long run. Since both leisure travel and tourism spending and business travel and tourism spending (BTS) Granger cause India real output.

2.4 Autoregressive Distributed Lag (ARDL) Model

Autoregressive Distributive Lag Model is a multi- variable single equation model with lag variable of both dependent and independent variables. Besides, this model

incorporates several dummies to capture the instabilities that occur due to political and social disturbances. The ARDL model developed by Pesaran et al. (2001) takes the following from:

$$Y_t = \alpha_0 + \sum_{j=1}^{k} \sum_{i=0}^{l} \alpha_{ji}\, x_{it-1} + \sum_{i=1}^{l} \beta_i\, Y_{t-1} + dummies + \varepsilon_t \qquad (2.6)$$

Where *Y* and *x* are dependent (tourism demanded) and explanatory variables respectively, *l* is the lag length, *k* is the number of explanatory variables, α and β are parameters that need to be estimated.

Song et al. (2003) studied on the inbound demand for Thai tourism by seven major countries (Australia, Japan, Korea, Singapore, Malaysia, UK and USA) during the period of 1963 to 2000 using ARDL model. The study found that income is shown to be the key determinant in the case of Australia, Korea, and UK. The own price and cross price variable play important roles during the decision making process of residents from Australia, Japan, Singapore and UK. The trade volume turns out to be significant only in the case of Singapore and the USA. The directional of influence of the Asian Financial Crisis (1997-1998) on tourism demand differs from origin. Singapore seems to gain from the cheaper price due to the relatively huge currency devaluation in Thailand, while Korea and UK suffer from the crisis. The impact took effect in Korea in 1997 and continued into 1998. As for Singapore, a significant impact could be seen only in 1998, while in the case of UK the effect was more evident at the beginning of the crisis.

Similarly, Chaitip and Chaiboonsri (2008) used ARDL model for estimating tourism demand in Thailand during the period 1997 to 2005. The study found that exchange rate is an important determiner of international tourist's behavior. It concluded that an increasing the real value of exchange rate between the country of origin (Taiwan, Korea, England) has negative impact on the number of international visitor arriving to Thailand.

Paudyal (2012) analyzed the international demand for Nepalese tourism from the selected eight major markets such as Australia, France, Germany, India, Japan, Spain, UK, and USA using time series data from 2006 to 2010. In this article Autoregressive distributed lagged (ARDL) models are applied as tool of estimation. Estimating tourism demand for

each individual market, general ARDL model was used. The tourism demand in Nepal is highly governed by short term social and political events within the country in route countries like India and South-East Asia. He concluded that among the major eight markets, majority are found to be at long run equilibrium path since the short run fluctuations are found the least influential. Only two markets: France and Spain- such fluctuations are found to be significant in the short run. It indicates that it will take longer time to adjoin the long run equilibrium path in case of these markets.

2.5 Almost Ideal Demand System (AIDS) Model

Almost ideal demand system (Deaton & Muellbauer, 1980) is a consumer demand model which is used to study of consumer behavior. It gives an arbitrary first order approximation to any demand system and has many desirable qualities of demand system. It incorporates both the axiom of consumer choice and the stage budgeting process. It is the basis of many applied studies of consumer behavior which use time series data. The AIDS model is expressed as

$$\omega_i = \alpha_i + \sum_{ij} \gamma_{ij} \log(p_j) + \beta_i \log\left(\frac{x}{P}\right) \quad (2.7)$$

Where $i=j=1 \ldots\ldots n$ and $\log P = \alpha_0 + \sum_k \alpha_k \log(p_k) + \frac{1}{2}\sum_k \sum_j \gamma_{kj} \log(p_k) \log(p_j)$

Where ω_i is share of tourism expenditure allocated in destination *1* to total tourism expenditure in n destinations, p is the price of tourism, x is total per capita expenditure allocated in all n destinations, P is a price index and α, β and γ are parameters that need to be estimated.

Durbarry (2001) explored tourism demand system of some Organization and Economic Co-operation and Development (OECD) member countries using AIDS model. This study concluded that UK and Spain can be regarded as substitute destinations of France, while UK and Italy would be complementary destination. The UK and Italy unrelated destination as cross price elasticity are low and insignificant. In the all three destination, the coefficients of own price elasticity are greater than unity i.e. there are highly price elastic. France, being the UK's main tourist generating country has important effects on the amount of tourism receipts employment, hotel booking, and tax revenue and so on.

The coefficients of expenditure/income elasticity are all positive and around one, implying that one percent increase in real expenditure would lead to a proportionate increase in demand. Among the three destinations, the UK would be ranked as first choice destination followed by Spain and Italy.

Mello et al. (2002) analyzed the UK tourism demand in neighboring country, France, Spain and Portugal using AIDS model during the period of 1969 to 1980 and 1980 to 1997. This is due to the structural break that occurred between 1979 and 1980; concurrent with Spain and Portugal's more towards integration with European community. In this study, dependent variable is the share of the origin's tourism budget allocated the set of destination. Independent variables are tourism price, per capita expenditure and price index. Data are based on the World Tourism Organization. The result of study showed the extent to which the cross-country behavior of demand becoming more or less similar over time with respect to changes in expenditure and effective prices. The coefficients of expenditure elasticity are greater for Spain than France during the initial period. Portugal had low initial expenditure elasticity and Spain's relatively high expenditure elasticity. Destination sensitivity changes in their own and competitors prices can also change over time as indicated by the increase in the own and cross price elasticity for Spain, compared with the decreases for France and Portugal. The cross price elasticity estimates indicate substitutability between the immediate neighbors, Portugal and Spain; France and Spain.

2.6 Poisson Regression Model / Negative Binomial Regression Model

Poisson regression model is used to predict a dependent variable that consists "count data" given one or more independent variables. In Poisson regression, the Poisson incidence rate μ is determined by a set of k regressor variables ($X's$). The expression relating these quantities is

$$\mu_i = t_i \, exp(\beta_1 X_{1i} + \beta_2 X_{2i} + \cdots + \beta_k X_{ki}) \qquad (2.8)$$

Note that often $X_1=1$ and β_1 is called the intercept. The regression coefficients $\beta_1, \beta_2, \ldots \beta_k$ are unknown parameters that are estimated from a set of data.

Negative binomial regression is generalization of Poisson regression which loosens the restrictive assumption that the variance is equal to the mean made by the Poisson model.

In negative binomial regression, the mean μ is determined by the exposure time (t) and a set of k regressor variables(X's). The expression relating these quantities is

$$\mu_i = exp[\, ln(t_i) + \beta_1 X_{1i} + \beta_2 X_{2i} + \cdots + \beta_k X_{ki} \,] \quad (2.9)$$

Often, $X_1=1$ in which case β_1 is called the intercept. The regression coefficients β_1, $\beta_2, \ldots \beta_k$ are unknown parameters that are estimated from a set of data.

Chaiboonsri and Chaitip (2012) studied the modeling of international tourism demand for length of stay of India on the basis of social and economic development based on count model estimation both Poison regression analysis and negative binomial analysis, taken 242 sample sizes from international tourists' arrival in India during the 2010-2011. The information's collected from international tourist arrivals to India consisting of England, America, France, Australia, Italy, Japan, Malaysia, Singapore, Nepal, Sri Lanka, Netherlands, China and South Korea. The survey was conducted of 242 international tourist arrivals in India. In this study, tourism demand for length of stay has taken as dependent variable where as socio-demographic profiles trip attributes. Sustainability practices and destination images are independent variables. The Poisson regression result was shown that 4 of the 24 repressors are statistically significant at the conventional significant level.

2.7 Probabilistic Travel Model

The probabilistic travel model is an approach to study the nature and preference to different tourist spots of the domestic and foreign tourists.

Utility of tourism product is expressed as:

$$U_j = \frac{S_j}{D_{ij}} \quad (2.10)$$

Where U_j is the utility of tourism product measure, S_j is attractiveness of Destinations, D_{ij} is the distance between starting point and tourism destination.

Then $P_{ij} = \frac{U_j}{\sum U_j}$ (2.11)

Where P_{ij} is the measure of probabilistic travel attitude of tourists.

Suman (2013) analyzed the tourism attractiveness in Gangtok using probabilistic travel model taking the sample size 371 during the period of March- May 2012 based on primary data to find out the nature of seasonal arrival of tourists and develop the probabilistic travel model on the basis of tourist perceptions. He concluded that tourists usually visit Gangtok March to May during the summer season. Second peak season is October for domestic tourists whereas the month of October and November for foreign tourists. Both domestic and foreign tourists preferred Tsomgo Lake and Nathola Pass for its natural picturesque, it is also depended on the distance.

2.8 Conjoint Analysis

The conjoint analysis (Green & Rao,1969) is based on estimate the structure of a consumers preferences, given his/her overall evaluations of a set of alternative that are pre-specified in terms of levels of different attributes are taken as predicted (dependent) variables. The socio-economic characteristics like age, gender, marital status, annual income, profession are the explanatory variables.

The basic Conjoint Analysis model is represented as (Carrol & Green 1995: Haaijer et al., 2000):

$$U(x) = \sum_{i=1}^{m} \sum_{j=1}^{k_i} \alpha_{ij}\ x_{ij} \qquad (2.12)$$

Where $U(x)$ = over all utility (importance) of an attribute

α_{ij} = part worth utility of j^{th} level of i^{th} attribute

$i = 1,2,3\ldots\ldots m \qquad j=1,2,3\ldots\ldots\ldots k_i$

$X_{ij} = 1$, if j^{th} level of i^{th} attribute is present

=0, otherwise

Tripathi. and Siddiqui (2010) studied the tourist preferences in Utter Pradesh, India using Conjoint analysis taking sample size of 1080. This study found that among the six attributes like information, security, choice, access, complaint redressal and value of money, the tourist accorded the maximum utility /importance to attributes such as value of money, sight-seeing and comfortable lodging as attributes rank very high as per tourist preference. The second most important attribute in the desirable tourism –package in

security expected during the visit. The third is attributes of information, fourth is choice offered, fifth is complaints handling and mechanism, and sixth is access of travel like road accessibility and transport facilities.

2.9 Deterministic Model in a Time Series

Deterministic model in a Time Series *(γ_t)* can be modeled as:

$$\gamma_t = \alpha_0 + \alpha_1 D_1 + \alpha_2 D_2 + \alpha_3 D_3 + \hat{y}_t \quad (2.13)$$

Where D_1, *D2, D3* are quarterly seasonal dummies such that $D_i=1$ for season 1 and 0 for other seasons. The residuals *($\hat{y}_t$)* can be viewed as the deseasonlized value of γ_t.

Selvanathan et al. (2009) studied the causality between foreign direct investment and tourism of India using the time series quarterly data under the period of 1995 to 2007 for two variables in log form, namely the number of foreign tourist arrival in India and the foreign direct investment into India collected from various issues of the Reserve Bank of India Bulletins and India Stats. In this study, authors deseasonalized the time series data assuming the seasonal pattern to be purely deterministic model in a Time Series**.** The analysis revealed that the number of foreign tourist arrival in India and foreign direct investment are not co-integrated. By ARDL system in the first difference of two variables to investigate the causality between foreign tourist arrival and foreign direct investment i.e. there is only causal relationship from FDI to tourism. It indicates FDI has a causal effect on the number of tourist arrival in India.

2.10 Multiple Regression Analysis

Harun (2012) analyzed the development of tourism in Thailand focusing on increasing number of tourist visit that contributes a significant source of tourism sector's income and its role to generate the Thai's Gross Domestic Product (GDP). The study based on primary and secondary data (1995-2008) using multiple regression analysis:

$$GDP = \mu_0 + \mu_1(ImT) + \mu_2(AgriT) \quad (2.14)$$

Where *ImT* is tourism sector income and

AgriT is is agriculture sector income.

Similarly,

$$ImT = \beta_0 + \beta_1(HoT) + \beta_2(TouT) \quad (2.15)$$

Where *HoT* is the total income of hotel sector and

TouT is number of tourists' arrival in Thailand

Again,

$$TouT = \alpha_0 + \alpha_1(ExqT) + \alpha_2(CosT) \quad (2.16)$$

Where *ExqT* represents Thai government expenditure to the tourism sector and *CosT* represents the cost of leaving in Thailand.

This study found that the tourist sector income and agriculture sector income are significant with dependent variable (GDP). The elasticity is more than one i.e. the dependent variable (GDP) very sensitive with independent variables (tourism sector income and agriculture sector income). The hotel sector incomes in Thailand are very important sources to Thai economy income. Hotel sector income has influenced tourism sector income, the sensitivity more than one i.e. elastic. The tourism sector income is very sensitive with hotels revenue and number of tourists' arrival. Government expenditure has influenced the dependent variable (total number of tourist to visit). The sensitivity or elasticity is less than one i.e. inelastic. It means that dependent variable (number of tourists) is not sensitive with cost of living. The standard of living in Thailand does not influence the total number of tourist visiting Thailand.

2.11 Multivariate Analysis

Ishii (2012) studied economic benefits of working in ethnic tourism industry to show how it affects households in the local community (Akha) with a special focus on the division of labor and power dynamics of gender using linear regression model based on primary data of the sample size 382 of Akha residents residing within the inner-city area of Chiang Mai during the period of Feb. 2008 to March 28, 2008. The dependent variable was the monthly log earnings.

From tourism related occupation the independent variables are age, gender, education, and legal status using multivariate method:

$$\gamma_{ij} = \alpha_j + \beta_j X_{ij} + \varepsilon_j, \quad j = 0, 1, 2, 3 \quad (2.17)$$

$$\gamma_{ij} = \alpha_j + \beta_j m_{ij} + \varepsilon_j, \quad j = 0,1,2,3 \tag{2.18}$$

$$\gamma_{ij} = \alpha_j + \beta_j X\eta_{ij} + \varepsilon_j, \quad j = 0,1,2 \tag{2.19}$$

Where γ_{ij} is log monthly income of ith individual belonging to the jth group, X_{ij} is age at date of investigation, *mij* is education status at date of investigation each legal status and $X\eta_{ij}$ is the gender status with each legal status.

$$\gamma_{ij} = \alpha_j + \beta_j{}^1\eta_{ij} + \beta_j{}^2 g_{ij} + \varepsilon_j, \quad j = 0,1,2, \& \, g = 0,1,2 \tag{2.20}$$

Where 0 is nationality holder, 1 is resident card holder and 2 is undocumented.

This study concluded that the education background has effects on the earning ability of people depending on their legal status. As for citizens the years of schooling and income have a positive effect. However, in contrast, for those with only resident cards or those who are undocumented education experience had no statistically significant effect on the monthly log income. Age has negative implications for all target residents regardless of legal status. This outcome differs from the education effect which is beneficial only for those who are citizens. The effect of age is more crucial than the effect of education. Regardless of the legal status, a decrease in income due to age is more substantial for males than for females. Undocumented couples and women are more likely to gain higher income than men. The citizen's average earnings are higher than those of resident aliens and that are higher than those of undocumented residents. The earning of an undocumented male is the lowest. There was multi-collinearity between nationality status and education.

2.12 Autoregressive Integrated Moving Average (ARIMA) Model

The ARIMA model (Box & Jenkins, 1968) is applied for forecasting of dependent variable which follows the standard expression of:

$$(1 - \sum_{i=1}^{p} \varphi_i L^i)(1 - L)^d \gamma_t = (1 + \sum_{j=1}^{q} \theta L^j)\, \varepsilon_t \tag{2.21}$$

In the expression (2.21), the ARIMA model is (*p*,*d*,*q*), in which *p* is the order of autoregressive(AR) process, *d* is the number of difference or integrations, and *q* is the order of the moving average (MA) process.

Loganathan and Yahaya (2010) applied ARIMA model for forecasting international tourism demand in Maaysia. Similarly, Akuno et al. (2013) predicted tourists' arrival in Kenya. Likewise, Singh (2013) predicted tourist inflow in Bhutan. Thoplan (2014) envisaged tourist arrival in Mauritius, Peiris (2016) for Sri Lanka and Petrevska (2017) for Macedonia.

2.13 Vector Error Correction (VEC) Model

Vector Error Correction (VEC) Model is used to test the long run relationship between target variables and explanatory variables. Consider a Vector Autoregressive (VAR) with lags orders k,

$$Y_t = V + A_1 Y_{t-1} + A_2 Y_{t-2} + A_3 Y_{t-3} + \cdots + A_p Y_{t-p} + \varepsilon_t \quad (2.22)$$

Where Y_t is a kx1 vector of variable, V is a kx1 vector of parameters, A_I, A_2, A_3 ,……A_p are k x k matrices of parameters, ε_t is a kx1 vector of disturbances having mean 0 and sum of covariance matrix is i.i.d. normal over a time. Any VAR (p) can be rewritten as Vector Error Correction by using some algebra, which can be expressed as:

$$\Delta Y_t = V + \Pi Y_{t-1} + \sum_{i=1}^{P-1} \phi_i \, \Delta Y_{t-1} + \varepsilon_t \quad (2.23)$$

Where $\Pi = \sum_{j=1}^{P} A_j - I_k$ and $\phi_i = -\sum_{j=i+1}^{P} A_j$

If co-integration has been detected between the series, there exists a long term equilibrium relationship between them, and VEC model is applied in order to evaluate the short run properties of the co-integrated series. In case of no co-integration VEC model is no longer required and directly proceeds to Granger causality test to establish causal links between variables.

Balaguer and Cantavilla (2002) investigated the direction of relationship between tourism and economic growth using error correction model and found that the long run causality goes from tourism to economic growth of Spain. Dritsakis (2004) for Greece and Durbarry (2004) for Mauritius found bidirectional causality between tourism development and economic growth using error correction model. Gunduz and Hatemi-J (2005) located unidirectional causality from tourism to Turkeys' economic growth using

leveraged bootstrap causality test for the period of 1963 to 2002. On the other hand, Ongan and Demiroz (2005) suggested bidirectional causality between international tourism and economic growth in Turkey for the period of 1980- 2004 using Granger causality test. Oh (2005) got a relation from only economic growth to tourism development for Korea using Granger causality test. Kim et al. (2006) found out the bidirectional causality between tourism expansion and economic growth in Taiwan for the period of 1971-2003 using Granger causality. Lee and Chang (2008) found unidirectional causality relationship from tourism development to economic growth in Organization and Economic Co-operation and Development (OECD) countries and bidirectional relationship in non-OECD countries, but only weak relationship in Asia for the period of 1990-2002. Kreishan (2011) found that there exists unidirectional relationship from tourism development to economic growth of Jordan for the period of 1970-2009 using Granger causality. Georgantopoulos (2013) explained relationship between tourism expansion and economic development during the period of 1988-2011 for India and found out bidirectional strong causal links between economic growth and leisure travel and tourism expenditures.

2.14 Factor Analysis

In the 'classical factor analysis' mathematical model, p denotes the number of variables $(X_1, X_2, \ldots . X_p)$ and m denotes the number of latent (i.e. underlying, unobserved variables) factors $(F_1, F_2, \ldots . . F_m)$. X_j is the variable represented in latent factors. Hence, this model assumes that there are m underlying factors whereby each observed variables is a linear function of these factors together with a residual variate. This model intends to reproduce the maximum correlations (Yong & Pearce, 2013).

$$X_j = \lambda_{j1}F_1 + \lambda_{j2}F_2 + \lambda_{j3}F_3 + \cdots + \lambda_{jm}F_m + \varepsilon_j \qquad (2.24)$$

Where $j=1, 2, 3, \ldots \ldots \ldots . . p$.

The factor loadings are $\lambda_{j1}, \lambda_{j2}, \lambda_{j3}, \ldots \ldots . . \lambda_{jm}$ which denotes that λ_{j1} is the factor loading of j^{th} variable on the 1^{st} factor. The specific or unique factor (i.e., measurement error for Xj) is denoted by ε_j.

Numerous academic studies have been performed to identify residents' attitude towards impact of tourism. Some of the significant analysis on residents' perceptions are Ross (1992) for Australia; Mason and Cheyne (2002) for New Zealand; Ritchie and Inkari (2006) for England; Sanchez et al. (2011) for Spain; Duran and Ozkul (2012) for Turkey; Stylidis and Terrzidou (2014) for Greece; Liu and Var (1986) and, Wang and Chen (2015) for USA; Xue et al. (2015) and, Zuo et al. (2017) for China. The several studies illustrated that the respondents are facing both positive and negative impact of tourism.

To summarize, this brief literature review is based on the conceptualization and previous empirical and theoretical studies that have been undertaken for confining to enquire economic and social impacts of tourism. While there could be others factors such as economic activities of people and social life that could affect the quality of life through tourism development. On the basis of carrying out review of literature especially in context of Nepal in the area of statistics, most of the studies are focused only on the descriptive issues through different statistical analysis. Hence, reasonably standard statistical methods such as Vector Error Correction (VEC) model and Exploratory Factor Analysis (EFA) would be expected very useful to look into the existing issues in the area of Nepalese tourism. Thus, in view of the importance of reasonably standard statistical analysis especially in context of Nepal to go to extensive statistical study on impact of tourism in socio-economic development of Nepal using multivariate approaches, the present study has been initiated.

2.15 Conceptual Framework

On the basis of some empirical studies and theories, conceptual frameworks has been developed for secondary and primary data and shown in the following manners.

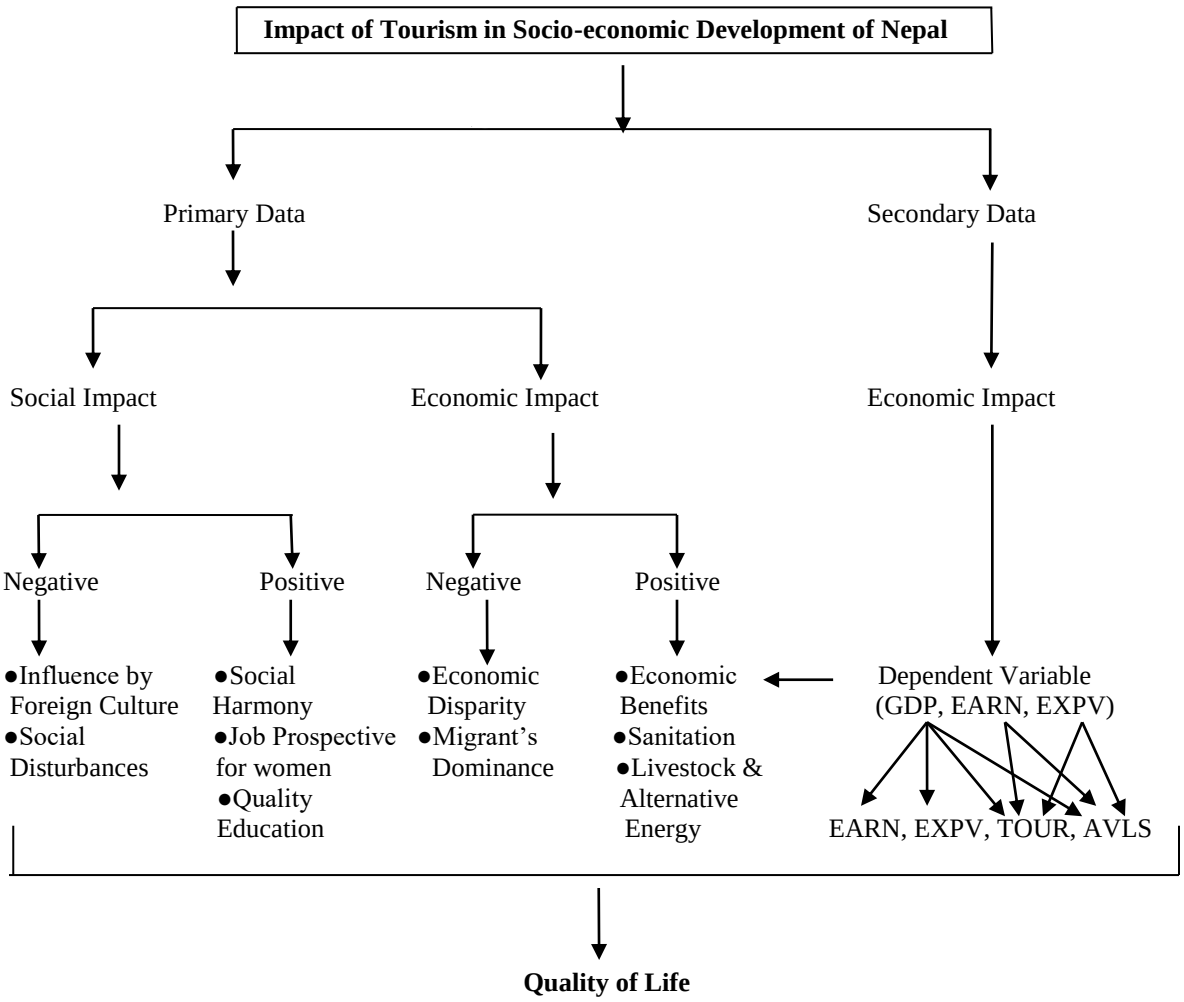

Figure 1: Framework for Impact of Tourism in Socio-economic Development of Nepal

Note: GDP=Share of Gross Domestic Product from Tourism, EARN=Foreign Exchange Earnings from Tourism, EXPV=Average Expenditure of International Tourists, TOUR=Number of International Tourists, and AVLS= Average Length of Stay of International Tourists.

2.16 Research Questions

The present research on impact of tourism in socio-economic development of Nepal has attempted to address the following research questions:

a. Do tourism benefits play significantly positive role in economic development process of Nepal?
b. Are the relationship between economic impact of tourism and its dimensions significant?
c. Are the relationship between social impact of tourism and its dimensions significant?

CHAPTER 3: MATERIALS AND METHODS

The objective of this study is to analyze impact of tourism in socio-economic development of Nepal and to assess the dimensionality of tourism components of the country. As per needs of the objectives of the study, both secondary and primary data have been used. The secondary data has been used for analyzing the effect of tourism on economic development process of country by using Vector Error Correction (VEC) model. Similarly, primary data has been used for examining the relationship of tourism components to the social and economic system of the nation by using Exploratory Factor Analysis (EFA). The data analysis based on secondary data has attempted to look into the issue in macro level whereas the statistical analysis based on primary data has attempted to explore the tourism scenario in association with different variables in micro level.

3.1 Secondary Data

All analysis and discussion for this study are based on published sources of secondary data from the period of 1990/91 to 2014/15 obtained from Nepal tourism Statistics, MOTCA (2009, 2010, 2011, 2012, 2013, 2014, 2015) published by Ministry of Tourism and Civil Aviation, Government of Nepal (See APPENDIX 6). Augmented Dickey Fuller (ADF) test has been used to test the stationary or non-stationary of the data. The time series multivariate data are very sensitive to lag length of order. So Akaike Information Criteria (AIC) or Schwartz Bayesian Information Criteria (SBIC) has been used to determine the optimal specification of lag length. Johansen Co-integration test has been used to determine the number of co-integrating vectors among the variables. It derives two likelihood estimators for determining the number of co-integration vectors: a trace test and a maximum Eigen value test. Vector Error Correction (VEC) model has been used to test the long run relationship between target variables and explanatory variables in terms of magnitude and direction. Granger causality has been used to test the short run causality between bivariate variables. Lagrange-Multiplier test has been used to test for autocorrelation as well as test for stability of the model. Jarque-Bera test has been applied for normality distributed disturbances.

In order to examine the relationship among share of gross domestic product (GDP), number of international tourist (TOUR) and average length of stay of tourist in Nepal, the following model is specified.

$U = (GDP, TOUR, AVLS)$

Where *GDP* is dependent variable and *TOUR* and *AVLS* are explanatory variables.

In order to examine the relationship among foreign exchange earnings from tourism (EARN), number of international tourist (TOUR) and average length of stay of tourist in Nepal (AVLS), the following model is specified.

$U = (EARN, TOUR, AVLS)$

Where *EARN* (in million Rs) is dependent variable and *TOUR* and *AVLS* are explanatory variables.

In order to examine the relationship among average expenditure per visitor (EXPV), number of international tourist (TOUR) and average length of stay of tourist in Nepal (AVLS), the following model is specified.

$U = (EXPV, TOUR, AVLS)$

Where *EXPV* (in US$) is dependent variable and *TOUR* and *AVLS* are explanatory variables.

In order to examine the relationship among the share of gross domestic product (GDP), foreign exchange earnings from tourism, (EARN) and average expenditure per visitor (EXPV), the following model is specified.

$U = (GDP, EARN, EXPV)$

Where *GDP* is dependent variable, *EARN* (million Rs) and *EXPV* (US$) are explanatory variables.

3.1.1 Stationary Test

Stationary of a series is an important phenomenon because it is the statistical characteristics of a series such as its mean and variance over time. If mean and variance both are constant over time then the series is said to be stationary process (i.e. is not a random walk/has no unit root), otherwise, the series is described as being a non stationary

process (i.e. random walk/ has unit root). So, many macroeconomic time series contain unit roots dominated by stochastic trends as developed by Nelson and Plosser (1982). Unit roots are important in examining the stationary of time series because a non-stationary regressor invalids standard empirical results. The presence of a stochastic trend is determined by testing the presence of unit roots in time series data. In this study, unit root is tested using Augmented Dickey-Fuller test (Dickey & Fuller 1979, 1981).

3.1.2 Augmented Dickey-Fuller Test

The augmented Dickey-Fuller (1979) test is referred to the t-statistics of δ_2 coefficient on the following regression:

$$\Delta Y_t = \delta_0 + \delta_{1t} + \delta_{2t} Y_{t-1} + \sum_{i=1}^{k} \alpha_i \Delta Y_{t-1} + \varepsilon_t \quad (3.1)$$

The ADF regression tests for the existence of unit root of Y_t namely in the logarithm of all model variable at time t, variable ΔY_{t-1} expresses the first difference with k lags and final ε_t is the variable that adjust the errors of autocorrelation. The coefficients δ_o, δ_1, δ_2 and α_i are being estimated. The null hypothesis and alternative hypothesis for the existence of unit root in variable Y_t are Null hypothesis (H_0): $\delta_2 = 0$ against alternative hypothesis (H_1): $\delta_2 \neq 0$.

3.1.3 Determination of Lags Order

It is essential at the set of co-integration analysis because multivariate co-integration is very sensitive to lag length selection. There are several ways of selection of lag length order. But this study has used Akaike Information Criteria (AIC) or Schwartz Bayesian Information Criteria (SBIC) for selecting lags order to determine the optimal specification of equations. The appropriate order of the model is determined by computing co-integrating equation over a selected grid of values of the number of lags k and finding that value of k at which the AIC or SBIC attain the minimum (Mukhtar & Rasheed, 2010).

$$AIC = T \ln(sum\ of square\ of\ residuals) + 2n \quad (3.2)$$

$$SBIC = T \ln(sum\ of square\ of\ residuals) + n \ln T \quad (3.3)$$

Where n is number of parameters estimated and T is number of usable variables.

3.1.4 Co-integration Test

Co-integration rank (rank of Matrix) is estimated using Johansen's methodology (Johansen, 1988). Allowing for a constant and linear trend and assuming that there is r co-integrating relation, and then the Johansen VEC model framework can be expressed as:

$$\Delta Y_t = V + \alpha\beta' Y_{t-1} + \sum_{i=1}^{k} \phi_i \, \Delta Y_{t-1} + \delta_i + \varepsilon_t \quad (3.4)$$

Where δ is the kx1 vector of parameter that implies the quadratic time trend. Similarly, β is coefficient of co-integrating equation and α is the adjustment coefficient. *V* is a *kx1* vector of parameters.

Johansen's approach derives two likelihood estimators for determining the number of co-integration vectors: a trace test and a maximum Eigen value test The Maximum Eigen value statistic tests the null hypothesis of r co-integrating relations against the alternative of *r+1* co-integrating relations for *r = 0,1,2……,n-1*. It is computed as

$$R_{max}\left(\frac{r}{n}+1\right) = -T * ln(1-\lambda) \quad (3.5)$$

Where λ is the maximum Eigen value and T is the sample size.

Trace statistics investigates the null hypothesis of *r* co-integrating relations against the alternative of *n* co-integrating relations, where n is the number of variables in the system for *r=0,1,2……..n-1* . Its equation is computed according to the following formula

$$R_{trace}\left(\frac{r}{n}\right) = -T * \sum_{i=r+1}^{n} ln\,(1-\lambda_i) \quad (3.6)$$

In this test, the null hypothesis of r co-integrating vectors is tested against the alternative hypothesis of *r+1* co-integrating vectors.

Thus, the null hypothesis (H_0): *r = 0* against the alternative hypothesis (H_1): *r = 0+1*

Null hypothesis (H_0): *r = 1* against alternative hypothesis (H_1): r = *1+1*.

3.1.5 Multivariate Vector Error Correction (VEC) Model

Consider a Vector Autoregressive (VAR) with lags orders *k,*

$$Y_t = V + A_1 Y_{t-1} + A_2 Y_{t-2} + A_3 Y_{t-3} + \cdots\ldots\ldots\ldots\ldots + A_p Y_{t-p} + \varepsilon_t \quad (3.7)$$

Where Y_t is a *kx1* vector of variable, V is a *kx1* vector of parameters; A_I, A_2, A_3 ,……A_p are *k x k* matrices of parameters and ε_t is a *kx1* vector of disturbances having mean 0 and sum of covariance matrix is i.i.d. normal over a time. Any VAR (*p*) can be rewritten as Vector Error Correction by using some algebra, which can be expressed as (Johansen, 1995):

$$\Delta Y_t = V + \Pi Y_{t-1} + \sum_{i=1}^{P-1} \phi_i \, \Delta Y_{t-1} + \varepsilon_t \quad (3.8)$$

Where $\Pi = \sum_{j=1}^{P} A_j - I_k$ and $\phi_i = -\sum_{j=i+1}^{P} A_j$ (3.9)

If co-integration has been detected between the series, there exists a long term equilibrium relationship between them and VEC model is applied in order to evaluate the short run properties of the co-integrated series. In VEC model, the co-integration rank shows the number of co-integrating vector. For instant, a rank of two indicates that two linearly independent combinations of the non stationary will be stationary. A negative and significant coefficient of the ECM indicates that any short term fluctuations between the independent variables and the dependent variable will give rise to stable long run relationship between the variables. If co-integration has been detected between the series, there exists a long term equilibrium relationship between them, and VEC model is applied in order to evaluate the short run properties of the co-integrated series. In case of no co-integration, VEC model is no longer required and directly proceeds to Granger causality test to establish causal links between variables (Becketti, 2013).

3.1.6 Granger-Causality Test

A general specification of the Granger causality test in bi-variate (X, Y) context can be expressed as (Granger, 1969):

$$X_t = \lambda_{1t} + \sum_{i=1}^{k} a_{11} x_{t-1} + \sum_{i=1}^{k} b_{1j} \, y_{t-1} + \mu_{t1} \quad (3.10)$$

$$Y_t = \lambda_{2t} + \sum_{i=1}^{P} a_{21} \, x_{t-1} + \sum_{i=1}^{P} b_{2j} y_{t-1} + \mu_{2t} \quad (3.11)$$

In this model, *t* denotes time periods, μ is a error and λ is constant parameters.

The null hypothesis and alternative hypothesis for the existence of Granger causality in variables X_t and Y_t expressed as:

H_0 : X_t does not Granger cause of Y_t against H_1: X_t Granger causes of Y_t.

H_0: Y_t does not Granger cause of X_t against H_1: Y_t Granger causes of X_t.

In this model, two tests of analysis can be obtained: the first examines the null hypothesis that the *X* does not Granger cause *Y* and second test examines the null hypothesis that *Y* does not Granger cause *X*. Bidirectional causality will occur between two variables if both null hypotheses are rejected. Unidirectional causality will occur between two variables if either null hypothesis are rejected, and no causality exists if neither null hypothesis is rejected. In this study, Granger causality has been used to test the causality between GDP and TOUR, GDP and AVLS, GDP and EARN, GDP and EXPV, EARN and TOUR, EARN and AVLS, EXPV and TOUR, EXPV and AVLS, TOUR and AVLS.

3.1.7 Lagrange Multiplier Test of Autocorrelation

Lagrange Multiplier test is particularly useful because it is not only suitable for testing for autocorrelation of any order but also suitable for models with or without lagged dependent variables (Breusch & Pagan, 1980). The formula for L-M test statistic of lag p (Johansen, 1995) is:

$$LM = (T - d - 0.5)\, ln[\frac{|\sum c|}{|\sum s|}] \qquad (3.12)$$

Where *t* is the number of observations and *d* is the number of coefficients estimated in augmented VAR; $\sum$ is the variance-covariance matrix of the disturbances from VAR, $\sum_c$ is the maximum likelihood estimate of variance-covariance matrix $\sum$ of the disturbances: $\sum_s$ is the maximum likelihood estimate of $\sum$ from the augmented vector autoregressive (Davidson & Mackinnon, 1993).

Null hypothesis (H_0): There is no autocorrelation at lag orders against the alternative hypothesis (H_1): There is no autocorrelation at lag orders.

3.1.8 Jarque – Bera Test for Normally Distributed Disturbances

Jarque-Bera test (Jarque, & Bera, 1987) is a goodness of fit test of whether sample data have the skewness and kurtosis matching a normal distribution. So, it has been applied to

test normality of disturbances distribution. The formula of *J B* test for normally distributed disturbances is:

$$JB = \frac{n-k}{6}[(skew)^2 + \frac{(Kurt-3)^2}{4}] \quad (3.13)$$

Where *n* is number of observations and *k* is number of regressors.

Null hypothesis (H_0): The residuals are normally distributed against alternative hypothesis (H_1): The residuals are not normally distributed.

3.2 Primary Data

In this section of study, all analysis and discussion are based on unpublished source of primary data. Factor analysis has been used to measure the attitudes of local residents towards the impact of tourism in socio-economic development of Nepal. The positive impact of tourism on economy has been measured by thematic areas such as economic benefits (job opportunity, investment opportunity and increasing income level), infrastructure development (development of local road and reducing drinking water problem), sanitation (construction of private toilet and awareness hygiene), livestock product and alternative energy (increasing livestock product in local level and uses of biogas/solar energy). Likewise, negative impact of tourism on economy has been measured by thematic areas such as economic disparity (rise in price of land and housing, rise in price of goods, disparity of people income and loss of arable land) and migrant's dominance (outsiders dominance in tourism investment and lower wage of local employee). On the other hand, the positive social impact of tourism has been measured by thematic areas such as social harmony (cultural restoration and conservation, unity of various group, reduction of local burglary and rowdyism), job prospective for women (job opportunity for local women, promotion of handicraft business and local organic agro-farming) and quality education (decreasing cast based discrimination or bigotry and feeling of importance of quality education). Similarly, negative social impact of tourism has been measured by thematic areas such as social disturbances (ignoring each others, increasing social problem and disorder, creating noisy and crowded situation) and influenced by foreign culture (imitation of foreign style and culture, direct impact of foreign languages and crisis of local identity). (For details please see APPENDIX 1).

3.2.1 Sample Selection and Data Collection

Geographically, Nepal is divided by three ecological zones: Mountain, Hill and Terai/Inner Terai. The study has been conducted in Annapurna Base Camp rout (Gandruk VDC), Bhaktapur (Nagarkot VDC) and Chitwan Wildlife Conservation Center Chitwan (Bachhayli VDC Ward numbers 1-4)) located in Mountain, Hill and Terai/Inner Terai respectively. A sample of 655 residents has been randomly drawn from local electoral rolls based on Constitution Assembly Election II, 2013 provided by Election Commission of Nepal using randomization technique. A questionnaire is developed on the basis of previous studies (Wang,2006; Munhurrun & Naidoo, 2011; Golzadi et al., 2012; Homsud & Promsaard, 2015; Muresan et al., 2016) related to socio-economic impact of tourism and consulted with the Research Committee of Central Department of Statistics, T U and experts in the related field, then modified it in Nepalese context according to suggestions of research committee members. The enumerators visited in the households of selected respondents for their better response and this method was chosen because of its higher response rate than other methods (Andereck & Nicksrson, 1997). The questionnaire comprised of five sections (respondents' demographic profile, positive economic impact, negative economic impact, positive social impact and negative social impact) in Nepali/English Language (Please see APPENDIX 1). The face to face sample survey has been chosen as an effective way of primary data collection because it is less time consuming with higher response rate. If an individual is refused to participate or could not meet in his/her resident, then next member of neighboring household is intercepted and is asked to participate. Trained interviewers gathered data in four-week-period (mid January to mid February) 2017. Interviewers were undertaken during both the day and the morning, and all days of week so as to obtain a more representative sample within households.

Six Hundred and One respondents completed the survey, with a response rate 91.76%. The respondents who did not response (n=54) was not statistically significant on the basis of their age and sex with the respondents who were completed the questionnaire.

3.2.2 Population and Sampling Frame

This study has attempted to examine residents' attitudes towards socio-economic impact of tourism in Nepal by conducting face to face field survey of 601 respondents from certain tourist destinations with response rate 91.76%. A questionnaire was designed to collect the data and the respondents' level of agreement has been measured by five point Likert scale. Park and Jung (2009) have provided a method for determining a sample size under certain assumptions when the quantity of interest is measured by Likert scale.

$$n = Z^2\alpha/2\,.\frac{C^2}{KD^2}[1 + (K - 1)\rho] \qquad (3.14)$$

Where *n* represents the sample size, *K* represents the number of items used for Likert scale which varies from 1 to 10. D represents the relative tolerable error bounds from 1% to 10%. *C* represents the coefficients of variation of a population which varies from 0.1 to 1.0 and ρ represents pair-wise correlation coefficient which varies from 0.1 to 0.7(Park & Jung, 2009). This study has been applied above formula of estimating sample size assuming *K*=10, *D* = 5%, *C* = 1.0 and ρ = 0.3.

$$n = (1.96)^2 x \frac{(1)^2}{10(0.05)^2}[1 + (10 - 1)0.3] = 568.56 \simeq 569$$

The actual population number in every location has been based on National Population and Housing Census of Nepal 2011, CBS. The sampling frame has been designed to obtain a greater degree of representativeness from local residents to achieve a broad range of representation from the whole population. The strata wise distribution of population and sample proportionate distribution are as per the population distribution; and the number of completed questionnaire are shown in table 1.

Table 1: Population and Sampling Frame

Location	Population (%)	Strata- wise Distribution of Samples	Samples with Complete Information
ABC Rout (Ghandruk VDC)	4265 (31%)	$655x\frac{4265}{13742} = 203$	192
Bhaktapur (Nagarkot VDC)	4571 (33%)	$655x\frac{4571}{13742} = 216$	201
WCC Chitwan (Bachhauli VDC, ward no. 1-4)	4906 (36%)	$655x\frac{4906}{13742} = 236$	208
Total	13742 (100%)	655	601

Table 1 shows that 203 questionnaires have been distributed among the randomized residents of Ghandruk Village Development Committee, only 192 numbers of respondents gave complete information. Similarly, 216 questionnaires have been distributed among the randomized residents of Nagarkot Village Development Committee; only 201 numbers of respondents gave complete information. In Bachhauli Village Development Committee (Ward number 1-4), there are 236 questionnaires have been distributed among the randomized residents but only 208 numbers of respondents gave complete information.

Data analysis was carried out by using descriptive statistics such as mean, standard deviation. An exploratory factor analysis was performed to reduce the number of host community attributes to few correlated dimension and Varimax rotation methodology was used. The factor loading can be defined as the correlations between factors and their underlying variables. A factor loading matrix is a key output of the factor analysis and further analysis can be done to the factors through rotations (Kim & Muller, 1978). Since five point Likert scale questionnaires were designed for collecting information about impact of tourism on the socio-economic development from perceptions of local residents. This study, measures residents' attitudes and perceptions towards positive and negative impact of tourism designed as 1 = strongly disagree; 2 = disagree; 3= neither disagree nor agree; 4 = agree and 5 = strongly agree.

3.2.3 Exploratory Factor Analysis

Exploratory factor analysis uses mathematical procedures for the simplification of interrelated measures to discover patterns in a set of variables (Child, 2006). The discovery of the simplest method of interpretation of observed data is known as parsimony, and this is essentially the aim of factor analysis (Harman, 1976). Factor analysis operates on the notion that measurable and observable variables can be reduced to fewer latent variables that share a common variance and are unobservable, which is known as reducing dimensionality (Bartholomew et al., 2011). These unobservable factors are essentially hypothetical constructs that are used to represent variables (Cattell, 1973). The two main factor analysis techniques are Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). CFA attempts to confirm hypothesis and uses path analysis diagrams to represent variables and factors; whereas, EFA tries to uncover complex patterns by exploring the data set and testing prediction (Child, 2006). So, it has been conducted to assess the dimensionality of the observed items. Exploratory factor analysis is used to discover the number of factors influencing variables and to analyze which variables 'go together' (DeCoster, 1998). So, this study has adopted exploratory factor analysis to assess the relationship of tourism components to the social and economic system of nation. A basic hypothesis of EFA is that there are m common 'latent' factors to be discovered in the dataset, and the goal is to find the smallest number of common factors that will account for the correlations (McDonald, 1985), Another way to look at factor analysis is to call the dependent variables 'surface attributes', and the underlying structures (factors) 'internal attributes' (Tucker & McCallum, 1997). Common factors are those that affect more than one of surface attributes, and specific factors are those which only affect a particular variable (Tucker & McCallum, 1997). To perform a factor analysis, there has to be univariate and multivariate normality within the data (Child, 2006). It is also important that there is an absence of univariate and multivariate outliers (Field, 2009). Also, a determining factor is based on the assumption that there is a linear relationship between the factors and the variables when computing the correlations (Gorsuch, 1983). The recommended sample size is at least 300 participants, and the variables that are subjected to factor analysis each should have at

least 5 to 10 observations (Comrey & Lee, 1992). A larger sample size will diminish the error in data and so EFA generally works better with larger sample sizes. However, Guadagnoli & Velicer (1998) proposed that if the dataset has several high factor loading scores (> 0.80), then a smaller size (n > 150) should be sufficient. Next, the correlation must be 0.30 or greater since anything lower would suggest a really weak relationship between the variables (Tabachnick & Fidell, 2007). It is also recommended that a heterogeneous sample is used rather than a homogeneous sample (Kline, 1994). Factor analysis is usually performed on ordinal or continuous variables, although it can also be performed on categorical and dichotomous variables (Mislevy, 1986). If the dataset contains missing values, that will have considered the sample size and if the missing values occur at a nonrandom pattern. Generally speaking, cases with missing values are deleted to prevent over estimation (Tabachnik & Fidell, 2007). Finally it is important that an absence of multicollinearity and singularity within the dataset has been observed by looking at the Squared Multiple Correlation (SMC), (Tabachnik & Fidell, 2007). Variable that has issues with singularity (SMC close to 0) and multi-collinearity (SMC close to 1.0) should be removed from the dataset (Yong & Pearce, 2013).

This study has been applied the extraction method based on Principal Component analysis. The Principal Component analysis is used to extract maximum variance from the data set with each component thus reducing a large number of variables into smaller number of components (Tabachnik & Fidell, 2007). Principal Component analysis is a data reduction technique and the issues of whether it truly a factor analysis technique has been raised (Costello & Osborne, 2005). Similarly, this study has been applied the rotation method based on Varimax with Kaiser Normalization (Orthogonal rotation). In the analysis, factors are rotated for better explanation but unrotated factor are ambiguous. The goal of rotation is to attain an optimal simple structure which attempts to have each variable load on as few factors as possible, but maximizes the number of high loadings on each variable (Rummel, 1970). So, the Varimax criterion minimizes the number of variables that have high loadings on each factor and works to make small loadings even smaller. The diagonal elements of anti-image correlation have been displayed for

sampling adequacy of each and every item that must be greater than 0.5, otherwise distinct and reliable factors cannot be produced.

To perform a factor analysis, there has to be univariate and multivariate normality within the data (Child, 2006). It is also important that there is an absence of univariate and multivariate outliers (Field, 2009). Also, a determining factor is based on the assumption that there is a linear relationship between the factors and the variables when computing the correlation (Gorsuch, 1983). In the factor analysis model, *p* denotes the number of variables ($X_1, X_2, \ldots, X_P$) and m denotes the number of underlying factors ($F_1, F_2, \ldots, F_m$). X_j is the variable represented in the latent factors. Factor analysis model assumes that there are m underlying factors whereby each observed variables is a linear function of these factors together with a residual variate. This model intends to reproduce the maximum correlations (Yong & Pearce, 2013):

$$X_j = \lambda_{j1} F_1 + \lambda_{j2} F_2 + \lambda_{j3} F_3 + \cdots \ldots\ldots + \lambda_{jm} F_m + \varepsilon_j \qquad (3.15)$$

Where $j = 1, 2, 3, \ldots\ldots\ldots p$.

The factor loadings are $\lambda_{j1}, \lambda_{j2}, \lambda_{j3}, \ldots\ldots\ldots \lambda_{jm}$ which denote that λ_{j1} is the factor loading of j^{th} variable on the 1st factor. The specific or unique factor (i.e., measurement error for X_j) is denoted by ε_j. The factor loadings gives an idea about how much the variable has contributed to the factor; the larger the factor loading the more the variable has contributed to the factor (Harman,1976). Factor loadings are very similar to weights in multiple regression analysis, and they represent the strength of the correlation between the variable and the factor (Kline, 1994). The basic statistics used in factor analysis is the correlation coefficient which determines the relationship between two variables. Researchers cannot run a factor analysis until 'every possible correlation' among the variables has been computed (Cattel, 1973). The researcher examines if variables have some features in common and then computes a correlation or covariance matrix (Rummel, 1970). Generally, a factor analysis performed using a correlation matrix produces standardized data, thus, it is recommended for variables that are not meaningfully comparable (e.g., items from different scales). On the other hand, factor analysis performed using a covariance matrix is conducted on variables that are similar (e.g., items from the same scales). The correlation matrix is often used because it is easier

to interpret compared to the covariance tables, although there is not a strict requirement for which matrix to use (Fung, 1995).

The communality is the variance in the observed variables which are accounted by a common factor or common variance (Child, 2006). The Communality is the summation of squared correlations of the variable with the factors (Cattel, 1973).It can be expressed in the following form:

$$h_j{}^2 = \lambda_{j1}{}^2 + \lambda_{j2}{}^2 + \ldots + \lambda_{jm}{}^2 \quad (3.16)$$

Where h_j^2 is communality and $\lambda_{j1}, \lambda_{j2}, \ldots\ldots\lambda_{jm}$ is the factor loadings for j variables which shows the how much the variable contributes to each factor.

3.2.4 Assumptions of Factor Analysis

Measurement error has constant variance and its average value is zero i.e. $Var(\varepsilon_j) = \delta_j{}^2$ and $E(\varepsilon_j) = 0$

There is no association between the factor and measurement error i.e. $Cov(F, \varepsilon_j) = 0$

There is no association between error terms i.e. $Cov(\varepsilon_j\, \varepsilon_k) = 0$

Conditional dependence: Given the factor, observed variables are independent of one another i.e. $Cov(X_j\, X_k | F) = 0$

3.2.5 Kaisor – Meyer - Olkin (KMO) Measure of Sampling Adequacy

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy has been computed to quantify the degree of inter-correlation among the variables. The KMO statistic varies from 0 to 1.The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Cerny & Kaiser, 1977) for variable X_j is given by the formula:

$$KMO_j = \frac{\sum_{i \neq j} R_{ij}{}^2}{\sum_{i \neq j} R_{ij}{}^2 + \sum_{i \neq j} U_{ij}{}^2} \quad (3.17)$$

Where R_{ij} = correlation matrix and U_{ij} = partial covariance matrix.

3.2.6 Bartlett's Test of Sphericity

The Bartlett's test of Sphericity (Snedecor & Cochran, 1989) has been used for testing the null hypothesis that the original correlation matrix is an identity matrix. The Bartlett's test of Sphericity is given as:

$$\chi^2 = [1 + \frac{2p+5}{6} - n]\, In(1 - |R|) \quad (3.18)$$

Where p = number of variables, n = total sample size and R = correlation matrix. Multi-collinearity can be detected by looking at determinant score of correlation matrix. If correlation is singular, the determinant $|R| = 0$. The determinant score has been computed for testing the problem multicollinearity. A simple heuristic is to make sure that determinant $R > 0.00001$(Haitovsky, 1969).

3.2.7 Bivariate Correlation Analysis

The Pearson correlation coefficient (Pearson, 1895) is most popular statistics measuring the association between two variables is shown as:

$$r = \frac{\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^{n}(x_i - \bar{x})^2}\sqrt{\sum_{i=1}^{n}(y_i - \bar{y})^2}} \quad (3.19)$$

Where $\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i \;\; and \;\; \bar{y} = \frac{1}{n}\sum_{i=1}^{n} y_i$

3.2.8 Cronbach Alpha

Cronbach alpha (1951) has been computed for testing the internal consistency or reliability, $\alpha > 0.5$ (Nunnally & Bernstein, 1994). It provided the measure of scale reliability, which can be expressed as:

$$\alpha = \frac{n^2(\overline{COV})}{\sum S^2 + \sum COV} \quad (3.20)$$

Where n is number of sample, S^2 is variance within the items, COV is covariance between a particular item and any other item on the scale, and $\overline{COV}$ is average covariance between the items.

3.3 Data Analysis Software

Data analysis and subsequent model building is carried out with the help of several statistical computer software packages such as IBM*SPSS*statistics version 20 for analyzing primary data and STATA 9.0, college station, Texas, USA for analyzing secondary data.

CHAPTER 4: RESULTS AND DISCUSSION

This chapter presents results and Discussion. The results related to relationship between tourism benefits towards economic development process of the nation based on secondary data using Vector Error Correction (VEC) model, and residents' attitudes and perceptions towards economic and social impact of tourism in Nepal based on primary data using Exploratory Factor Analysis (EFA).

4.1 Results based on Secondary Data

This section deals with the results and discussions based on published source of secondary data from the period of 1990/91 to 2014/15, obtained from Nepal Tourism Statistics, Ministry of Tourism and Civil Aviation (MOTCA, 2011-2014).

4.1.1 Relationship between Number of International Tourist and their Average Length of Stay towards Share of GDP of Tourism in Nepal

The annual data from the period of 1990/91 to 2014/15 has been taken from Nepal Tourism Statistics available in Ministry of Tourism and Civil Aviation (MOTCA). Data set has been converted into logarithmic return form in order to achieve the long run and short run relationship and to make statistical test procedure valid. In order to examine the relationship among share of gross domestic product (GDP), number of international tourist (TOUR) and average length of stay of tourist (AVLS) in Nepal, the following model is specified:

$U = (GDP, TOUR, AVLS)$

Where *GDP* is dependent variable and *TOUR* and *AVLS* are explanatory variables.

In order to test relationship among the variables, Vector Error Correction (VEC) model has been used. Several tools and techniques have been used for statistical analysis. First of all, Augmented Dickey Fuller test has been used to assess the stationary or non-stationary of the individual series of data. To determine the correct specification of unit root test, Akaike Information Criteria (AIC) or Schwartz Bayesian Information Criteria

(SBIC) has been used for selecting lag length. To determine the most stationary linear combination of the time series variables, Johansen co-integration test has been used. VEC model has been applied to test the long run relationship between dependent and explanatory variables. Granger causality analysis has been used to test the unidirectional or bidirectional causality among the variables. Lagrange Multiplier test has been used to test for autocorrelation as well as test for stability of the model. Finally, Jarque-Bera test has been applied to examine the normality of disturbances distribution.

4.1.1.1 Augmented Dickey Fuller Test

The first step in co-integration analysis is to test the unit roots in each variable. For this purpose, Augmented Dickey Fuller (ADF) test is applied on *GDP*, *TOUR* and *AVLS*.

Table 2: Results of ADF Test on *GDP*, *TOUR* and AVLS

Before first differenced (at level)				After first differenced		
Variable	Test Statistics	5% critical value	p value	Test Statistics	5% critical value	p value
ln (GDP)	-1.997	-3.00	0.288	-4.444	-3.000	< 0.001
ln (TOUR)	-0.693	-3.00	0.849	-3.876	-3.000	< 0.001
ln (AVLS)	-4.394	-3.00	< 0.001	-6.746	-3.000	< 0.001

Table 2 reports the results of the ADF test for the level (before first differenced), as well as for the first differenced of the relevant variables. The results show that unit root test applied to the variables at level fail to reject the null hypothesis of non stationary of all the variables used. It implies that the variables are non-stationary of all at level except *AVLS*. The null hypothesis is rejected when the series are first differenced i.e. all variables are first differenced stationary. This implies that all the variables in the series are integrated of order one, i.e. I (1).

4.1.1.2 Lag Order Selection Criteria

For getting optimal lag length for co-integrating analysis, two criteria: Akaike Information Criteria (AIC) and Schwarz Bayesian Information Criteria (SBIC) have been adopted.

Table 3: Results of Lag Order Selection

Lag	df	P value	AIC	SBIC
0	.	.	-0.599	-0.449
1	9	< 0.001	-2.720	-2.123*
2	9	0.019	-2.814	-1.769
3	9	0.357	-2.410	-0.917
4	9	< 0.001	-3.829*	-1.888

* Lag order selected by the criteria

Table 3 shows that SBIC suggests a lag length of 1 as optimal, while AIC indicates 4 as optimal lag length. But, this study of series (*GDP, TOUR,* and *AVL*S) for co-integration analysis, 4 lag length has been adopted because 1 lag length could not be found the co-integrating vector under both trace and maximum Eigen value statistics. While lag length 4 could be found one co-integrating vector under both statistics.

4.1.1.3 Johansen Test of Co-integration

Co-integration relationship among *GDP, TOUR* and *AVLS* has been investigated using the Johansen technique.

Table 4: Results of Johansen Test of Co-integration

Null Hypothesis	Eigen value	Trace statistic criteria		Max statistic criteria	
		Trace	5% critical value	Max.	5% critical value
$H_0 : r = 0$	.	48.133	29.68	40.055	20.97
$H_0 : r \leq 1$	0.865	8.078*	15.41	6.669*	14.07
$H_0 : r \leq 2$	0.284	1.409	3.76	1.409	3.76

* Co-integration vector

Table 4 reports the results of co-integration test based on Johansen's Maximum likelihood method. Both trace statistic (λ trace) and maximum Eigen value statistics indicate that there is at least one co-integrating vector among *GDP, TOUR* and *AVLS*. It can reject the null hypothesis of no co-integrating vector against under both test statistics at 5 % level of significant. It also can not reject the null hypothesis of at most one co-integration vector against the alternative hypothesis of two co-integrating vectors for both trace and max Eigen value test statistics. Consequently, it can be concluded that there is

only one co-integrating relationship among *GDP, TOUR* and *AVLS*. This implies that *GDP, TOUR* and *AVLS* establish a long run relationship.

4.1.1.4 Co-integration Equation

The summary of relationship between *TOUR* and *AVLS* towards *GDP* under the vector error correction (VEC) model can be displayed as:

Table 5: Long Run Relationship between *GDP, TOUR* and *AVLS*

Variable	Beta Coefficient	Standard Error	Z	p value	95% C.I.
ln (GDP)	1				
ln (TOUR)	2.167	0.159	13.54	< 0.001	(1.853 2.479)
ln (AVLS)	-7.429	0.566	-13.13	< 0.001	(-8.538 -6.321)
CONS.	-11.059				

The long run relationship between number of international tourists and their average length of stay towards share of gross domestic products of tourism for one co-integrating vector for Nepal in the period of 1990/91- 2014/15 is modeled below (Standard errors are displayed in parenthesis):

$$ln(GDP) = 2.167\, ln(TOUR) - 7.429\, ln(AVLS) - 11.059$$

(0.159) (0.566)

The co-integration equation has been normalized for *ln (GDP)* just to get meaning from the coefficients. As all variables are logarithmic, it may interpret the coefficients in terms of elasticity. So, it seems that increasing *TOUR* by 100% produces an increment of almost 216.7% of *GDP*. Similarly increasing *AVLS* by 100% produces an increment of almost 742.9% of *GDP*. Thus *GDP* elasticity with respect to *AVLS* is more elastic as compared to *GDP* elasticity with respect to *TOUR*. It means that the role of *AVLS* towards increasing *GDP* is greater than TOUR.

4.1.1.5 Error Correction Terms

All the variables have been established in the model with I(1) and co-integrated , the VEC model with one co-integrating relation and 4 lags in each equation has been estimated. The VEC model allows the long run behavior of the endogenous variables to

converge to their long run equilibrium relationship, while allowing a wide range of short run dynamics.

Table 6: Summary of Error Correction Terms (ECT)

Variable	Error Correction Terms (ECT-1)	Standard Error	Z	p value	95% C.I.
Δ_ln (GDP)	-0.907	0.250	-3.62	< 0.001	(-1.398 -0.417)
Δ_ln (TOUR)	-0.219	0.273	-0.80	0.421	(-0.755 0.316)
Δ_ln AVLS	0.333	0.128	-2.59	< 0.001	(0.080 0. 589)

The coefficient of error correction term of *GDP* variable has the speed of convergence towards equilibrium of 90 percent. The short run *GDP* are adjusted by 90 percent of past years deviation from equilibrium. As large absolute value of the coefficient on the error correction term with one co-integrating vector (ECT-1) shows equilibrium agents remove a large percentage of disequilibrium in each period i.e. the speed of adjustment is very rapid. While low absolute values indicate of slow speed of adjustment towards equilibrium. It proves that speed of adjustment of *TOUR* towards equilibrium is slow.

The error correction term of *GDP* has negative sign and it is statistically significant at 5% level. It implies that the system converges towards equilibrium and is stable due to any disturbance in the system. The coefficient of error correction term of *TOUR* carries negative sign and it is not significant at 5% level. It depicts the system convergence towards equilibrium path, but unstable in case of any disturbance in the system. The coefficient of error correction term of *AVLS* is positive and statistically significant at 5% level. It implies that the system diverges from the equilibrium path and it will be stable due to any disturbance.

4.1.1.6 Granger Causality Test

Finally, in order to analyze bidirectional and unidirectional causal relationship among *GDP*, *TOUR* and *AVLS* for each equation in the VEC model, Granger Casualty Wald test is used for the significance of the lagged endogenous variables in that equation.

Table 7: Results of Granger Causality Test

Null Hypothesis(H_0)	Chi square	df	p value
GDP does not Granger cause *TOUR*	40.031	4	< 0.001
GDP does not Granger cause *AVLS*	47.891	4	< 0.001
TOUR does not Granger Causes *GDP*	6.612	4	0.158
TOUR does not Granger causes *AVLS*	11.818	4	0.019
AVLS does not Granger cause *GDP*	30.761	4	< 0.001
AVLS does not Granger cause *TOUR*	56.252	4	< 0.001

Table 7 reports the results of short run causality among the variable *GDP*, *TOUR* and *AVLS*. *GDP* Granger causes *TOUR* but *TOUR* does not Granger causes *GDP*. So, unidirectional Granger causality exists from *GDP* to *TOUR*. It implies that the past values of *GDP* have predictive ability to determine the present value of *TOUR*. Similarly, *GDP* Granger causes *AVLS* and *AVLS* also Grange *GDP*. So, bidirectional Granger causality exists between *GDP* and *AVLS*. It signifies that the past values *GDP* have predictive ability to determine the present value of *AVLS* and vice versa. In the same way, *AVLS* Granger causes *TOUR* and *TOUR* also Granger causes *AVLS*. So, bidirectional Granger causality exists between *AVLS* and *TOUR* (Dhakal, et al., 2016a). It signifies that the past values *TOUR* have predictive ability to determine the present value of *AVLS* and vice versa. It clears that the increasing average length of stay of tourist (*AVLS*) plays positive role to increase *GDP* and vice versa and large number of international tourist (*TOUR*) plays the affirmative role to increase their length of stay. Similarly, the findings of a study conducted by Sumei at al. (2012), found that there is bidirectional causal relationship between *GDP* and number of tourist arrival in China for the period of 1999-2005. Unlikely, Kasimati (2011) for Greece and Katircioglu (2009) for Turkey concluded that there is no causal relationship between international tourist arrivals and real *GDP*.

4.1.1.7 Lagrange- Multiplier (L-M) Test of Autocorrelation

H_0: There is no autocorrelation at lag order.

H_1: There is autocorrelation at lag order.

Table 8: Results of L - M Test of Autocorrelation

Lag	Chi square	df	p value
1	7.259	9	0.610
2	18.681	9	0.128
3	14.269	9	0.113
4	10.386	9	0.320

Table 8 shows that Lagrange Multiplier test concludes that it does not reject the null hypothesis of no residual autocorrelation at lag order 1 through 4, so there is no evidence to contradict the validity of the model.

4.1.1.8 Jarque – Bera Test for Normally Distributed Disturbances

H_0: The disturbances are normally distributed.

H_1: The disturbances are not normally distributed.

Table 9: Results of Jarque-Bera Test for Normality

Variable	Chi square	df	p value
ln (GDP)	0.985	2	0.611
ln (TOUR)	1.636	2	0.440
ln (AVLS)	0.409	2	0.815
ALL	3.029	6	0.805

Table 9 shows that Jarque-Bera test concludes the disturbances distributed normally.

4.1.2 Relationship between Number of International Tourists and their Average Length of Stay towards Foreign Exchange Earnings from Tourism

The annual data from the period of 1990/91 to 2014/15 has been taken from Nepal Tourism Statistics available in Ministry of Tourism and Civil Aviation (MOTCA). Data set has converted into logarithmic return form in order to achieve the long run and short run relationship and to make statistical test procedure valid. In order to examine the relationship among foreign exchange earnings from tourism (EARN), number of international tourist (TOUR) and average length of stay of tourist in Nepal (AVLS), the following model is specified:

$U = (EARN, TOUR, AVLS)$

Where *EARN* (in million Rs) is dependent variable and *TOUR* and *AVLS* are explanatory variables.

In order to test relationship among the variables, Vector Error Correction (VEC) model has been used. Several tools and techniques have been used for statistical analysis. First of all, Augmented Dickey Fuller test has been used to assess the stationary or non-stationary of the individual series of data. To determine the correct specification of unit root test, Akaike Information Criteria (AIC) or Schwartz Bayesian Information Criteria (SBIC) has been used for selecting lag length. To determine the most stationary linear combination of the time series variables, Johansen co-integration test has been used. VEC model has been applied to test the long run relationship between dependent and explanatory variables. Granger causality analysis has been used to test the unidirectional or bidirectional causality among the variables. Lagrange Multiplier test has been applied to test for autocorrelation as well as test for stability of the model. Finally, Jarque-Bera test has been applied for examine the normality of disturbances distribution.

4.1.2.1 Augmented Dickey Fuller Test

The first step in co-integration analysis is to test the unit roots in each variable. For this purpose, Augmented Dickey Fuller (ADF) test is applied on *EARN*, *TOUR* and *AVLS.*

Table 10: Results of ADF Test on *EARN, TOUR* and *AVLS*

Before first differenced (at level)				After first differenced		
Variable	Test Statistics	5% critical value	p value	Test Statistics	5% critical value	p value
ln (EARN)	-0.985	-3.00	0.759	-4.912	-3.000	< 0.001
ln (TOUR)	-0.693	-3.00	0.849	-3.876	-3.000	< 0.001
ln (AVLS)	-1.883	-3.00	< 0.001	-6.746	-3.000	< 0.001

Table 10 reports the results of the ADF test for the level as well as for the first difference of the relevant variables. The results show that unit root test applied to the variables at level (before first differenced), fail to reject the null hypothesis of non stationary of all the variables used. It implies that the variables are non-stationary of all at level, except

AVLS. The null hypothesis is accepted when the series are first difference i.e. all variables are first difference stationary. This implies that all the variables in the series are integrated of order one, i.e. I (1).

4.1.2.2 Lag Order Selection Criteria

For getting optimal lag length for co-integrating analysis, two criteria: Akaike Information Criteria (AIC) and Schwarz Bayesian Information Criteria (SBIC) have been adopted.

Table 11: Result of Lag Order Selection Criteria

Lag	df	p value	AIC	SBIC
0	.	.	-0.810	-0.661
1	9	< 0.001	-2.648	-2.050*
2	9	0.015	-2.778	-1.732
3	9	0.150	-2.542	-1.732
4	9	< 0.001	-3.389*	-1.447

* Lag order selected by the criteria

Table 11 shows that SBIC suggests a lag length of 1 as optimal, while AIC indicates 4 as optimal lag length. But, this study of series (*EARN*, *TOUR*, and *AVLS*) for co-integration analysis, 4 lag length has been adopted because 1 lag length could not be found the co-integrating vector under both trace and maximum Eigen value statistics. While lag length 4 could be found one co-integrating vector under both statistics.

4.1.2.3 Johansen Test of Co-integration

Co-integration relationship among *EARN*, *TOUR* and *AVLS* has been investigated using the Johansen technique.

Table 12: Results of Johansen Test of Co-integration

Null Hypothesis	Eigen value	Trace statistic criteria		Max Eigen value criteria	
		Trace Statistic	5% critical value	Max. Statistic	5% critical value
H0: r = 0	.	43.754	29.68	33.324	20.97
H0: r ≤ 1	0.811	10.430*	15.41	10.198*	14.07
H0: r ≤ 2	0.399	0.233	3.76	0.233	3.76

* Co-integration vector.

Table 12 reports the results of co-integration test based on Johansen's Maximum likelihood method. Both trace statistic and maximum Eigen value statistic indicate that there is at least one co-integrating vector among *EARN, TOUR* and *AVLS*. It can reject the null hypothesis of no co-integrating vector against under the both test statistics at 5 % level of significant. It also can not reject the null hypothesis of at most one co-integration vector against the alternative hypothesis of two co-integrating vectors for both trace and max Eigen value test statistics. Consequently, it can be concluded that there is one co-integrating relationship among *EARN, TOUR* and *AVLS*. This implies the *EARN, TOUR* and *AVLS* establish a long run relationship.

4.1.2.4 Co-integration Equation

The summary of relationship between *TOUR* and *AVLS* towards *EARN* under the vector error correction (VEC) model can be displayed as:

Table 13: Long Run Relationship between *EARN, TOUR* and *AVLS*

Variable	Beta Coefficient	Standard Error	Z	p value	95% C.I.
ln (EARN)	1				
ln (AVLS)	3.957	0.669	5.92	< 0.001	(2.647 5.267)
ln (TOUR)	-2.946	0.188	-15.67	< 0.001	(-3.315 -2.578)
CONS.	19.239				

The long run relationship between number of international tourists and average length of stay towards foreign exchange earnings from tourism for one co-integrating vector for Nepal in the period 1990/91-2014/15 are displayed below(Standard errors are displayed in parenthesis):

$$ln\ (EARN) = 3.957\ ln\ (AVLS) - 2.946\ ln\ (TOUR) + 19.239$$
$$\text{(0.669)} \qquad \text{(0.188)}$$

The co-integration equation has been normalized for *ln (EARN)* just to get meaning from the coefficients. As all variables are logarithmic, the coefficients can be interpreted in terms of elasticity. So, it may say increasing *EARN* by 100% produces an increment of almost 395.7% of *AVLS*. Similarly, increasing *EARN* by 100% produces an increment of almost 294.6% of *TOUR*. Thus, *EARN* elasticity with respect to *AVLS* is more elastic as

compared to *EARN* elasticity with respect to *TOUR*. It means that the role of *AVLS* towards increasing *EARN* is greater than *TOUR*.

4.1.2.5 Error Correction Terms

All the variables have been established in the model with I (1) and co-integrated, the VEC model with one co-integrating relation and 4 lags in each equation has been estimated. The VEC model allows the long run behavior of the endogenous variables to converge to their long run equilibrium relationship, while allowing a wide range of short run dynamics.

Table 14: Result of Coefficient of Error Correction Terms (ECT)

Variable	Error Correction Terms (ECT_1)	Standard Error	Z	p value	95% C.I.
Δ_ln (EARN)	0.389	0.485	0.80	0.423	(-0.562 1.340)
Δ_ln (AVLS)	-0.103	0.169	-0.61	0.545	(-0.435 0.230)
Δ_ln (TOUR)	0.681	0.185	3.68	< 0.001	(0.318 1.044)

The coefficient of error correction term of *EARN* variable has the speed of divergence from equilibrium of 38.9 percent. The short run are adjusted by 38.9 percent of past years deviation from equilibrium. As large absolute value of the coefficient on the error correction terms with one co-integrating vector (ECT_1) shows that equilibrium agents remove a large percentage of disequilibrium in each period i.e. the speed of adjustment is very rapid. While low absolute values indicate slow speed of adjustment towards equilibrium. It means that the speed of adjustment of *AVLS* towards equilibrium is slow. The coefficient of error correction term of *EARN* has positive sign, and it is statistically not significant at 5% level. It implies that the system diverge from equilibrium but is unstable due to any disturbance in the system. The coefficient of error correction term of *AVLS* carries negative sign but it is not significant at 5% level. It depicts that the system converges towards equilibrium path, but it is unstable in case of any disturbance in the system. The coefficient of error correction term of *TOUR* is positive and statistically significant at 5% level. It implies that the system divergence from the equilibrium path and is stable due to any disturbance in the system.

4.1.2.6 Granger Causality Test

Finally, in order to analyze bidirectional and unidirectional causal relationship among *EARN, TOUR* and *AVLS* for each equation in the VEC model, Granger Casualty Wald test is used for the significance of the lagged endogenous variables in that equation.

Table 15: Results of Granger Causality Test

Null hypothesis (H_0)	Chi square	df	p value
EARN does not Granger cause *TOUR*	4.545	4	0.337
EARN does not Granger cause *AVLS*	4.135	4	0.388
TOUR does not Granger cause *EARN*	34.780	4	< 0.001
TOUR does not Granger cause *AVLS*	24.257	4	< 0.001
AVLS does not Granger cause *EARN*	22.572	4	< 0.001
AVLS does not Granger cause *TOUR*	34.807	4	< 0.001

Table 15 reports the results of causal relationship among the variable *EARN, TOUR* and *AVLS*. It shows that *TOUR* Granger causes *AVLS* and *AVLS* also Granger causes *TOUR.* So, bidirectional Granger causality exists between *TOUR* and *AVLS*. It signifies that the past values of *TOUR* have predictive ability to determine the present value of *AVLS* and vice versa. Similarly, *TOUR* Granger causes *EARN*, but *EARN* does not Granger cause *TOUR*. So, unidirectional Granger causality exists from *TOUR* to *EARN*. In addition, *AVLS* Granger Causes *EARN*, but *EARN* does not Granger cause *AVLS*. So, unidirectional Granger causality exists from *AVLS* to *EARN.* It implies that the past values of *TOUR* and *AVLS* have predictive ability to determine the present value of *EARN*. It indicates that the large number of international tourist (*TOUR*) and their average length of stay (*AVLS*) play positive role to increase foreign exchange earnings (*EARN*). Similarly, the large number of international tourist (*TOUR*) plays the affirmative position to expand their average length of stay (*AVLS*) and vice versa. The findings of this study matches with Tang (2011), he explained that there is bidirectional causal relationship between tourism development and economic growth in Malaysia for the period of 1989-2010. Similarly, Kreishan (2011) concluded that there is unidirectional causal relationship from tourism development to economic growth in Jordan for the period of 1970-2009. Likewise, Tang and Tan (2013) found that there is unidirectional causal relationship from tourism development to economic growth in Malaysia for the period of 1975 -2011.

4.1.2.7 Lagrange – Multiplier Test of Autocorrelation

H_0: There is no autocorrelation at lag order.

H_1: There is autocorrelation at lag order.

Table 16: Results of L- M Test of Autocorrelation

Lag	Chi square	df	p value
1	6.768	9	0.661
2	11.411	9	0.249
3	11.453	9	0.246
4	15.004	9	0.091

Table 16 shows that Lagrange Multiplier test concludes that it does not reject the null hypothesis of no residual autocorrelation at lag order 1 through 4, so there is no evidence to contradict the validity of the model.

4.1.2.8 Jarque –Bera Test for Normally Distributed Disturbances

H_0: The disturbances are normally distributed.

H_1: The disturbances are not normally distributed.

Table 17: Results of Jarque –Bera Test for Normality

Variable	Chi square	df	p value
ln (EXPV)	0.302	2	0.860
ln (AVLS)	0.943	2	0.624
ln (TOUR)	1.184	2	0.553
ALL	1.934	6	0.876

Table 17 shows that Jarque-Bera test concludes the disturbances distributed normally.

4.1.3 Relationship between Number of International Tourists and their Average Length of Stay towards Average Expenditure per Visitor

The annual data from the period of 1990/91 to 2014/15 has been taken from Nepal Tourism Statistics available in Ministry of Tourism and Civil Aviation (MOTCA). Data set has converted into logarithmic return form in order to achieve the long run and short run relationship and to make statistical test procedure valid. In order to examine the relationship among average expenditure per visitor (EXPV), number of international tourist (TOUR) and average length of stay of tourist in Nepal (AVLS), the following model is specified:

$U = (EXPV, TOUR, AVLS)$

Where *EXPV* (in US$) is dependent variable and *TOUR* and *AVLS* are explanatory variables.

In order to test relationship among the variables, Vector Error Correction (VEC) Model has been used. Several tools and techniques have been used for statistical analysis. First of all, Augmented Dickey Fuller test has been used to assess the stationary or non-stationary of the individual series of data. To determine the correct specification of unit root test, Akaike Information Criteria (AIC) or Schwartz Bayesian Information Criteria (SBIC) has been used for selecting lag length. To determine the most stationary linear combination of the time series variables, Johansen co-integration test has been used. VEC model has been used to test the long run relationship between dependent explanatory variables. Granger causality analysis has been used to test the unidirectional or bidirectional causality among the variables. Lagrange Multiplier test has been used to test for autocorrelation as well as test for stability of the model. Finally, Jarque-Bera test has been applied for examine the normality of disturbances distribution.

4.1.3.1 Augmented Dickey Fuller Test

The first step in co-integration analysis is to test the unit roots in each variable. For this purpose, Augmented Dickey Fuller (ADF) test is applied on *EXPV, TOUR* and *AVLS*.

Table 18: Results of ADF Test on *EXPV, TOUR* and *AVLS*

Before first differenced (at level)				After first differenced		
Variable	Test Statistics	5% critical value	p value	Test Statistics	5% critical value	p value
EXPV	-1.883	-3.00	0.288	-4.503	-3.000	< 0.001
TOUR	-0.693	-3.00	0.849	-3.876	-3.000	< 0.001
AVLS	-4.394	-3.00	< 0.001	-6.746	-3.000	< 0.001

Table 18 reports the results of the ADF test for the level (before first differenced) as well as for the first differenced of the relevant variables. The results show that unit root test applied to the variables at level fail to reject the null hypothesis of non stationary of all the variables used. It implies that the variables are non-stationary of all at level, except *AVLS*. The null hypothesis is rejected when the series are first difference i.e. all variables are first difference stationary. This implies that all the variables in the series are integrated of order one, i.e. I (1).

4.1.3.2 Lag Order Selection Criteria

For getting optimal lag length for co-integrating analysis, two criteria: Akaike Information Criteria (AIC) and Schwarz Bayesian Information Criteria (SBIC) have been adopted.

Table 19: Results of Lag order Selection Criteria

Lag	df	p value	AIC	SBIC
0			-1.290	-1.141
1	9	< 0.001	-3.047	-2.449*
2	9	0.025	-3.096	-2.050
3	9	0.113	-2.909	-1.415
4	9	< 0.001	-3.662*	-1.721

* Lag order selected by the criteria

Table 19 shows that SBIC suggests a lag length of 1 as optimal, while AIC indicates 4 as optimal lag length. But, this study of series (*EXPV, TOUR*, and *AVLS*) for co-integration analysis, 4 lag length has been adopted because 1 lag length could not be found the co-

integrating vector under both trace and maximum Eigen value statistics. While lag length 4 could be found one co-integrating vector under both statistics.

4.1.3.3 Johansen Test of Co-integration

Co-integration relationship among *EXPV*, *TOUR* and *AVLS* has been investigated using the Johansen technique.

Table 20: Results of Johansen Test of Co-integration

Null Hypothesis	Eigen value	Trace statistic criteria		Max statistic criteria	
		Trace	5% critical value	Max.	5% critical value
H0: r = 0	.	43.419	29.68	32.428	20.97
H0: r ≤ 1	0.802	10.992*	15.41	6.769	14.07
H0: r ≤ 2	0.287	4.222	3.76	4.222	3.76

*Co-integration vector

Table 20 reports the results of co-integration test based on Johansen's Maximum likelihood method. Both trace statistic and maximum Eigen value statistics indicate that there is at least one co-integrating vector among *EXPV*, *TOUR* and *AVLS.* It can reject the null hypothesis of no co-integrating vector against under the both test statistics at 5 % level of significant. It also can not reject the null hypothesis of at most one co-integration vector against the alternative hypothesis of two co-integrating vectors for both trace and max Eigen value test statistics. Consequently, it can be concluded that there is one co-integrating relationship among *EXPV, TOUR* and *AVLS.* This implies the *EXPV*, *TOUR* and *AVLS* establish a long run relationship.

4.1.3.4 Co-integration Equation

The summary of relationship between *TOUR* and *AVLS* towards *EXPV* under the vector error correction (VEC) model can be displayed as:

Table 21: Long Run Relationship between *EXPV, TOUR* and *AVLS*

Variable	Beta Coefficient	Standard Error	Z	p value	95% C.I.
ln (EXPV)	1				
ln (TOUR)	-2.209	0.192	-11.5	< 0.001	(-2.586 -1.833)
ln (AVLS)	6.406	0.663	9.60	< 0.001	(5.106 7.706)
CONS	7.000				

The long run relationship between number of international tourists and their average length of stay towards expenditure per visitor for one co-integrating vector for Nepal in the period of 1990/91-2014/15 are displayed below (Standard errors are displayed in parenthesis):

$$ln(EXPV) = -2.209\, ln(TOUR) + 6.406\, ln(AVLS) + 7.000$$
$$\text{(0.192)} \qquad \text{(0.663)}$$

The co-integration equation has been normalized for *ln (EXPV)* just to get meaning from the coefficients. As all variables are in logarithmic form, the coefficients can be interpreted in terms of elasticity. So, it seems that increasing *EXPV* by 100% produces an increment of almost 220.9% of *AVLS*. Similarly, increasing *EXPV* by 100% produces an increment of almost 640.6% of *TOUR*. Thus, *EXPV* elasticity with respect to *AVLS* is more elastic as compared to *EXPV* elasticity with respect to *TOUR*. It means that the role of *AVLS* towards increasing *EXPV* is greater than *TOUR*.

4.1.3.5 Error Correction Terms

All the variables have been established in the model with I(1) and co-integrated , the VEC model with one co-integrating relation and 4 lags in each equation has been estimated. The VEC model allows the long run behavior of the endogenous variables to converge to their long run equilibrium relationship, while allowing a wide range of short run dynamics.

Table 22: Results of Coefficient of Error Correction Terms (ECT)

Variable	Error Correction Terms (ECT-1)	Standard Error	Z	p value	95% C.I.
Δ_ln (EXPV)	-0.099	0.330	-0.30	0.765	(-0.753 0.553)
Δ_ln (TOUR)	0.258	0.292	0.89	0.375	(-0.313 0.829)
Δ_ln (AVLS)	-0.427	0.123	-3.47	< 0.001	(-0.669 -0.186)

The coefficient of error correction term of *EXPV* variable has the speed of convergence towards equilibrium of 9.9 percent. The short run are adjusted by 9.9 percent of past years deviation from equilibrium. As large absolute value of the coefficient on the error correction terms with one co-integrating vector (ECT_1) shows that equilibrium agents remove a large percentage of disequilibrium in each period i.e. the speed of adjustment is very rapid. While low absolute values indicate of slow speed of adjustment towards equilibrium. It means that the speed of adjustment of *EXPV* towards equilibrium is slow.

The coefficient of error correction term of *EXPV* has negative sign but it is statistically not significant at 5% level. It implies that the system converges towards equilibrium path but unstable due to any disturbance in the system. Similarly, the coefficient of error correction term of *TOUR* carries positive sign, but it is not significant at 5% level. It depicts that the system divergence from equilibrium path but is unstable in case of any disturbance in the system.

The coefficient of error correction term of *AVLS* is negative and statistically significant at 5% level. It implies that the system converges towards the equilibrium path and stable due to any disturbance in the system.

4.1.3.6 Granger Causality Test

Finally, in order to analyze short run causal relationship among *EXPV*, *TOUR* and *AVLS* for each equation in the VEC model, Granger Casualty Wald test is used for the significance of the lagged endogenous variables in that equation.

Table 23: Results of Granger Causality Test

Null Hypothesis(H_0)	Chi square	df	p value
EXPV does not Granger cause *TOUR.*	0.463	4	0.977
EXPV does not Granger cause *AVLS.*	18.308	4	< 0.001
TOUR does not Granger cause *EXPV.*	4.825	4	0.306
TOUR does not Granger cause *AVLS.*	7.892	4	0.096
AVLS does not Granger cause *EXPV.*	39.856	4	< 0.001
AVLS does not Granger cause *TOUR.*	124.65	4	< 0.001

Table 23 reports the results of short run causality among the variable *EXPV, TOUR* and *AVLS*. It shows that *EXPV* Granger causes *AVLS* and *AVLS* also Granger causes *EXPV.* So, bidirectional Granger causality exists between *EXPV* and *AVLS*. It signifies that the past values of *EXPV* have predictive ability to determine the present value of *AVLS* and vice versa. Similarly, *AVLS* Granger causes *TOUR* but *TOUR* does not Granger cause *AVLS*. So, unidirectional Granger causality exists from *AVLS* to *TOUR*. It signifies that the past values of *AVLS* have predictive ability to determine the present value of *TOUR.* Likewise *EXPV* does not Granger cause *TOUR* and *TOUR* also does not Granger cause *EXPV*. No direction Granger causality between *EXPV* and *TOUR*. It clarifies that the increasing average length of stay (*AVLS*) of tourist takes part in affirmative position to increases expenditure of visitor (*EXPV*) and vice versa. The large number of international tourist (*TOUR*) plays the positive role to increase their average length of stay (*AVLS*). A study conducted by Dristakis (2004) also found that there is strong causality between international tourism earnings and economic growth for the economy of Greece for the period of 1960 – 2000, which is in the similar direction of this study. Similarly, Balagur and Cantavella-Jorda (2002) found that there is unidirectional causal relationship from tourism development to economic growth in Spain for the period of 1975-1997.

4.1.3.7 Lagrange Multiplier (L-M) Test of Autocorrelation

H_0: There is no autocorrelation at lag order.

H_1: There is autocorrelation at lag order.

Table 24: Results of L - M Test of Autocorrelation

Lag	Chi square	df	p value
1	7.231	9	0.613
2	9.878	9	0.360
3	11.847	9	0.220
4	6.152	9	0.725

Table 24 shows that Lagrange Multiplier test concludes it does not reject the null hypothesis of no residual autocorrelation at lag order 1 through 4, so there is no evidence to contradict the validity of the model.

4.1.3.8 Jarque –Bera Test for Normally Distributed Disturbances

$H_{0:}$ The disturbances are normally distributed.

$H_{1:}$ The disturbances are not normally distributed.

Table 25: Results of Jarque –Bera Test for Normality

Variable	Chi square	df	p value
ln (EXPV)	0.802	2	0.669
ln (TOUR)	0.355	2	0.837
ln (AVLS)	1.418	2	0.492
ALL	2.575	6	0.860

Table 25 shows that Jarque-Bera test concludes the disturbances distributed normally.

4.1.4 Relationship between Foreign Exchange from Tourism and Average Expenditure per Visitor towards Share of GDP from Tourism

The annual data from the period of 1990/91 to 2014/15 has been taken from Nepal Tourism Statistics available in Ministry of Tourism and Civil Aviation (MOTCA). Data set has converted into logarithmic return form in order to achieve the long run and short run relationship and to make statistical test procedure valid. In order to examine the relationship among the share of gross domestic product (GDP), foreign exchange earnings from tourism, (EARN) and average expenditure per visitor (EXPV), the following model is specified:

$U = (GDP, EARN, EXPV)$

Where *GDP* is dependent variable, *EARN* (million Rs) and *EXPV* (US$) are explanatory variables.

In order to test relationship among the variables, Vector Error Correction (VEC) Model has been used. Several tools and techniques have been used for statistical analysis. First of all, Augmented Dickey Fuller test has been used the stationary or non-stationary of the individual series of data. To determine the correct specification of unit root test, Akaike Information Criteria (AIC) or Schwartz Bayesian Information Criteria (SBIC) has been used for selecting lag length. To determine the most stationary linear combination of the time series variables, Johansen co-integration test has been used. VEC model has been used to test the long run relationship between dependent and explanatory variables. Granger causality analysis has been used to test the unidirectional or bidirectional causality among the variables. Lagrange Multiplier test has been used to test for autocorrelation as well as test for stability of the model. Finally, Jarque-Bera test has been applied for examine the normality of disturbances distribution.

4.1.4.1 Augmented Dickey Fuller Test

The first step in co-integration analysis is to test the unit roots in each variable. For this purpose, Augmented Dickey Fuller (ADF) test is applied on *GDP*, *EARN* and *EXPV*.

Table 26: Results of ADF Test on *GDP*, *EARN* and *EXPV*

Before first differenced (at level)				After first differenced		
Variable	Test Statistics	5% critical value	p value	Test Statistics	5% critical value	p value
ln (GDP)	-1.997	-3.00	0.288	-4.444	-3.000	< 0.001
ln (EARN)	-0.985	-3.00	0.759	-4.912	-3.000	< 0.001
ln (EXPV)	-1.883	-3.00	0.340	-4.503	-3.000	< 0.001

Table 26 depicts the results of the ADF test for the level (before first differenced) as well as for the first differenced of the relevant variables. The results show that unit root test applied to the variables at level fail to reject the null hypothesis of non stationary of all the variables used. It implies that all the variables are non-stationary of all at level. The null hypothesis is rejected when the series are first difference i.e. all variables are first

differenced stationary. This implies that all the variables in the series are integrated of order one, i.e. I (1).

4.1.4.2 Lag Order Selection Criteria

For getting optimal lag length for co-integrating analysis, two criteria: Akaike Information Criteria (AIC) and Schwarz Bayesian Information Criteria (SBIC) have been adopted.

Table 27: Results of Lag Order Selection

Lag	df	p value	AIC	SBIC
0	.	.	1.738	1.888
1	9	< 0.001	-4.453	-3.855*
2	9	0.029	-4.481	-3.436
3	9	0.078	-4.357	-2.863
4	9	< 0.001	-5.487*	-3.546

* Lag order selected by the criteria

Table 27 shows that SBIC suggests a lag length of 1 as optimal, while AIC indicates 4 as optimal lag length. But, in this study of series (*GDP*, *EARN*, and *EXPV*) for co-integration analysis, 4 lag length has been adopted because 1 lag length could not be found the co-integrating vector under both trace and maximum Eigen value statistics. While lag length 4 could be found one co-integrating vector under both statistics.

4.1.4.3 Johansen Test of Co-integration

Co-integration relationship among *GDP*, *EARN* and *EXPV* has been investigated using the Johansen technique.

Table 28: Results of Johansen Test of Co-integration

Null Hypothesis	Eigen value	Trace statistic		Max Eigen value statistic	
		λ trace	1% critical value	λ max.	1% critical value
H_0: r = 0	.	61.602	35.65	41.674	25.52
H_0: r ⩽ 1	0.875	19.929*	20.04	18.129*	18.63
H_0: r ⩽ 2	0.596	1.800	6.65	1.800	6.65

*Co-integration vector.

Table 28 provides the results of co-integration test based on Johansen's Maximum likelihood method. Both trace statistic (λ trace) and maximum Eigen value statistics indicate that there is at least one co-integrating vector among *GDP*, *EARN* and *EXPV*. It can reject the null hypothesis of no co-integrating vector against under the both test statistics at 1 % level of significant. It also can not reject the null hypothesis of at most one co-integration vector against the alternative hypothesis of two co-integrating vectors for both trace and max Eigen value test statistics. Consequently, it can be concluded that there is one co-integrating relationship among *GDP*, *EARN* and *EXPV*. This implies the *GDP*, *EARN* and *EXPV* establish a long run relationship.

4.1.4.4 Co-integration Equation

The summary of relationship between *EXPV* and *EARN* towards *GDP* under the vector error correction (VEC) model can be displayed as:

Table 29: Long Run Relationship between *EARN* and *EXPV* towards *GDP*

Variable	Beta Coefficient	Standard Error	Z	p value	95% C.I.
ln (GDP)	1				
ln (EARN)	-0.0064	0.107	-0.06	0.952	(-0.216 0.203)
ln (EXPV)	1.428	0.181	7.90	< 0.001	(1.073 1.782)
CONS.	-9.983				

The long run relationship between earnings from international tourism and expenditure per visitor towards , percentage share of gross domestic product of tourism for one co-integrating vector for Nepal in the period 1990/91-2014/15 are displayed below (Standard errors are displayed in parenthesis):

$$ln(GDP) = -0.0064\, ln(EARN) + 1.428\, ln(EXPV) - 9.983$$
$$\textit{(0.107)} \qquad \textit{(0.181)}$$

The co-integration equation has been normalized for *ln (GDP)* just to get meaning from the coefficients. As all variables are logarithmic, it may interpret the absolute value of coefficients in terms of elasticity (Gwartney, et al., 2008). So, it seems that increasing *EARN* by 100% produces an increment of almost 0.64% of *GDP*. Similarly, increasing *EXPV* by 100% produces an increment of almost 142.8% of *GDP*. Thus, *GDP* elasticity

with respect to *EXPV* is more elastic as compared to *GDP* elasticity with respect to *EARN*. It means that the role of *EXPV* towards increasing *GDP* is greater than *EARN*.

4.1.4.5 Error Correction Terms

All the variables have been established in the model with I(1) and co-integrated , the VEC model with one co-integrating relation and 4 lags in each equation has been estimated. The VEC model allows the long run behavior of the endogenous variables to converge to their long run equilibrium relationship, while allowing a wide range of short run dynamics.

Table 30: Results of Coefficient of Error Correction Terms (ECT)

Variable	Error Correction Terms (ECT_1)	Standard Error	Z	p value	95% C.I.
Δ_ln (GDP)	-0.566	0.382	-1.48	0.139	(-1.315 0.183)
Δ_ln (EARN)	-0.519	0.406	-1.28	0.201	(-1.316 0.276)
Δ_ln (EXPV)	-1.036	0.156	-6.66	< 0.001	(-1.341 0.731)

The coefficient of error correction term of *GDP* variable has the speed of convergence towards equilibrium of 56.6 percent. The short run GDP are adjusted by 56.6 percent of past years deviation from equilibrium. As large absolute value of the coefficient on the error correction term with one co-integration vector (ECT_1) shows equilibrium agents remove a large percentage of disequilibrium in each period i.e. the speed of adjustment is very rapid. While low absolute values indicate slow speed of adjustment towards equilibrium. It means that speed of adjustment of *EARN* towards equilibrium is slow. The error correction term of *GDP* has negative sign and it is statistically not significant at 5% level. It implies that the system convergence towards equilibrium, but it is unstable due to the any disturbance in the system. The coefficient of error correction term of *EXPV* carries negative sign and it is significant at 5% level. It depicts stability of the system and convergence towards equilibrium path in case of any disturbance in the system. The coefficient of error correction term of *EARN* is negative, but statistically insignificant at 5% level. It implies that due to any disturbance in the system convergence towards the equilibrium path and the system will be unstable.

4.1.4.6 Granger Causality Test

Finally, in order to analyze short run causal relationship among *GDP*, *EARN* and *EXPV* for each equation in the VEC model, Granger Casualty Wald test is used for the significance of the lagged endogenous variables in that equation.

Table 31: Results of Ganger Causality Test

Null Hypothesis(H_0)	Chi square	df	p- value
GDP does not Granger cause *EARN*	2.321	4	0.677
GDP does not Granger cause *EXPV*	13.744	4	< 0.001
EARN does not Granger cause *GDP*	13.597	4	< 0.001
EARN does not Granger cause *EXPV*	9.409	4	0.052
EXPV does not Granger cause *GDP*	76.144	4	< 0.001
EXPV does not Granger cause *EARN*	34.967	4	< 0.001

Table 31 provides the results of short run causality among the variable *GDP*, *EARN* and *EXPV*. *GDP* Granger causes *EXPV* and *EXPV* also Granger causes *GDP*. So, bidirectional Granger causality exists between *GDP* and *EXPV*. It signifies the past values of *GDP* have predictive ability to determine the present value of *EXPV* and vice versa. Similarly, *EARN* Granger causes *GDP*, but *GDP* does not Granger cause *EARN*. So, unidirectional Granger causality exists from *EARN* to *GDP*. It signifies the past values of *EARN* have predictive ability to determine the present value of *GDP*. Similarly, *EXPV* Granger causes *EARN*, but *EARN* does not Granger cause *EXPV* i.e. there is unidirectional Granger causality from *EXPV* to *EARN* (Dhakal et al., 2016b). It signifies the past values of *EXPV* have predictive ability to determine the present value of *EARN*.

It clears that increasing expenditure per visitor (*EXPV*) plays positive role to increase *GDP* and vice versa. Similarly, foreign exchange earnings (*EARN*) also facilitate the expansion of GDP. The studies conducted by Oh (2005) for Korea and Lorde et al. (2011) for Barbados also found that the causal relationship between two variables is unidirectional from international tourist expenditure to GDP, which is in the similar direction of this study. Similarly, Brida et al. (2008) found that there is unidirectional

causal relationship from tourism expenditure to real GDP in Mexico for the period of 1980-2007.

4.1.4.7 Lagrange Multiplier Test of Autocorrelation

H_o: There is no autocorrelation at lag order.

H_1: There is autocorrelation at lag order.

Table 32: Results of L - M Test of Autocorrelation

Lag	Chi square	df	p value
1	14.163	9	0.117
2	8.296	9	0.505
3	8.683	9	0.468
4	13.120	9	0.157

Table 32 shows that Lagrange Multiplier test concludes that it does not reject the null hypothesis of no residual autocorrelation at lag order 1 through 4, so there is no evidence to contradict the validity of the model.

4.1.4.8 Jarque –Bera Test for Normally Distributed Disturbances

H_0: The disturbances are normally distributed.

H_1: The disturbances are not normally distributed.

Table 33: Results of Jarque –Bera Test for Normality

Variable	Chi square	df	p value
ln (EARN)	0.459	2	0.797
ln (GDP)	0.289	2	0.866
ln (EXPV)	0.574	2	0.750
ALL	0.316	6	0.970

Table 33 shows that Jarque-Bera test concludes the disturbances distributed normally.

4.2 Results based on Primary Data

This study has attempted to examine residents' attitudes and perceptions towards economic and social impact of tourism in Nepal by conducting face to face field survey

of 601 respondents from certain tourist destinations with response rate 91.76%. An effective questionnaire was designed for collecting primary data (see questionnaire in Appendix I). The questionnaire primarily includes questions related to socio-economic and demographic characteristics of respondents and 32 declarative statements for measuring positive and negative impacts of residents on the economic and social sector. Response of each resident is measured on a 5-point disagree-agree scale defined by 1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree, and 5 =strongly agree. This is a standard Likert technique use for measuring attitudes and perceptions of respondents. During data collection, stratified random sampling approach has been used to select the respondents that represent the whole group of population that live in three tourist destinations: Annapurna Base Camp Rout (Ghandruk VDC), Bhaktapur (Nagarkot VDC), Wildlife Conservation Center Chitwan (Bachhauli VDC, ward number 1-4). Nepal is divided into three ecological zones: Mountain, Hill and Teari/Inner Terai. So, Ghandruk is taken as Mountain, Nagarkot is taken as Hill and Bachhauli is taken as Terai/Inner Terai. Assuming that 15% non-response rate, a sample of 655 residents has been randomly drawn from electoral rolls based on Constitution Assembly Election II, 2013 provided by Election Commission of Nepal (ECN, 2013) using randomization technique.

All adult members (21years and above) of the household were approached. The enumerators visited in the households of selected respondents for their better response and this method was chosen because of its higher response rate than other methods (Andereck, & Nickerson, 1997). If an individual refused to participate or could not be met in his/her resident, next member of same or neighboring household was intercepted and was asked to participate (Munhurrun & Naidoo, 2011). The data gathered in four weeks period (mid January to mid February), 2017, which is low tourists arrival season in Nepal. Altogether 601 respondents completed the survey, with a response rate 91.76%. The sampling frame has been designed to obtain a greater degree of representativeness from local residents to achieve a broad range of representation from the whole population. The actual population number in every location has been based on National Population and Housing Census of Nepal 2011(CBS, 2011).

4.2.1 Socio-demographic Profile of Respondents

The respondents' gender, religion, marital status, cast/ethnicity, education status, age in year, entrepreneur types and income level are shown in table 34:

Table 34: Socio-demographic Profile of Respondents (n=601)

	Number	%		Number	%
Sex:			Religion:		
Male	327	54.4	Hindu	430	71.5
Female	274	45.6	Buddhist	136	22.6
			Christian	35	5.8
Marital status:			Caste /Ethnicity:		
Married	468	77.9	Brahmin/Chhetry/Dashanami	150	24.9
Unmarried	116	19.3	Madeshi/ Janjati/Adibashi	422	70.2
Widow/widower	17	2.8	Dalit group	29	4.9
Education Status**:**			Age (year):		
Illiterate	57	9.5	21-29	230	38.3
Literate without going			30-39	173	28.8
school	103	17.1	40-49	132	21.9
Primary	113	18.8	50 & over	66	10.9
Secondary	159	26.5			
Higher secondary	111	18.5			
Bachelor and above	58	9.7			
Entrepreneur type:			Income per Month (000NRS):		
Home stay	45	7.5	<20	268	44.6
Trader	135	22.5	20-40	239	39.8
Hotel /guest house	153	25.5	40-60	54	8.9
Restaurant	45	7.5	60 and above	40	6.7
Agriculture & Animal			Family Size:		
farming	150	25.0	≤4	217	36.1
Travel & tour agent and			5-6	243	40.4
Handicraft business	37	6.2	7& above	141	23.5
Others	36	6.0			

Table 34 shows the distribution of men respondents and women respondents were 54.4% and 45.6% respectively. Most of the respondents were married with 77.9%, while 19.3%

were still unmarried and 2.8% were widows/widowers. With regard to education background, 9.5% were still illiterate, 17.1% were literate without going school, 18.8% had completed primary education, 26.5% had completed secondary education, 18.5% had completed higher secondary, and 9.7% respondents had university degrees. Similarly, 7.5% respondents were involved in home stay, 22.5% respondents were traders, 25.5% respondents were involved in hotels/guest houses, 7.5 % respondents were involved in restaurant, 25% respondents were involved in agriculture and animal farming, 6.2% respondents were involved in travel & tour agency and handicraft business, 6% respondents were not involved in tourism business. Most of the respondents were Hindus (71.5%) while Buddhists were 22.6% and Christians were 5.8%. With regard to cast/ethnicity status, 24.9% respondents were in Brahmin/Chhetry/Dashanami groups, 70.2% respondents were in Madhesi/Janjati/Adibashi groups and only 4.9% were in Dalit groups. The age group of 38.3% respondents was in 21 - 29 years old, 28.8% respondents was in 30 - 39 years old, 21.9% respondents was in 40 - 49 years old and 10.9% respondents was in 50 years and over. The income level of 44.6% respondents was less than Rs. 20 (in thousands), 39.8% of respondents earned Rs.20 - Rs.40 (in thousands), 8.9% of respondents earned Rs.40 - Rs.60 (in thousands) and 6.7% of respondent earned more than Rs 60 (in thousands). Similarly, 36.1% respondents had less than or equal 4 family members, 40.4% respondents had 5 to 6 family members and 23.5% respondents had more than 7 family members.

The average age of respondents was 34.92 years with standard deviation of 10.75, those who did not response in the study (n=54) whose average age was represented to be 35.35 years with standard deviation 9.09. The respondents who did not response in the study were not statistically significant with respect to their age (p value =0.78). Similarly, the sex wise respondents (male =327 and female =274) also were not statistically significant with those who did not response (male =30 and female = 24) in the study (p value = 0.87).

4.2.2 Exploratory Factor Analysis for Residents' Attitudes towards Socio-economic Impact of Tourism

Exploratory factor analysis (EFA) is employed in order to explore the latent dimensions (factors) of each of the following four constructs and ultimately construct the corresponding four summated scales for further analysis.

1. Positive Impact of Tourism on Economic Sector (PIE),
2. Negative Impact of Tourism on Economic Sector (NIE),
3. Positive Impact of Tourism on Social Sector (PIS), and
4. Negative Impact of Tourism on Social Sector (NIS).

EFA is carried out in each of the above four cases using principal component method as an extraction method subject to the following conditions: communality of each item is > 0.5 and anti-image correlation value of each item is > 0.5 since communality value (< 0.5) or anti-image correlation value (< 0.5) is deciding rule of thumb to exclude an item from the factor analysis. The number of factors to be extracted in each case is determined by the number of Eigen values greater than 1. Finally, in each case Varimax rotation method is used to reduce the problem of cross-loading.

4.2.2.1 Positive Impact of Tourism on Economic Sector

In order to assess the positive impact of tourism on economic sector, a total of nine declarative statements (hereafter refer to as items) were developed (Appendix-I). During the preliminary phase of EFA, two items (Q_{2e} and Q_{2f}) were excluded from the list of further analysis since each of their communality is being < 0.5. The list of seven retained items for EFA is presented in Box-I.

Box-1: Retained Seven Items for Assessing Positive Impact on Economic Sector

Q_{2a}: Tourism creates job opportunities for local people
Q_{2b}: Tourism has created opportunity for investment in various sectors
Q_{2c}: Tourism has increased the income level of local people
Q_{2d}: Increasing livestock product in local level due to development of tourism
Q_{2g}: Increasing uses of solar energy/bio gas in the local level due to development of tourism
Q_{2h}: Increasing the construction of private toilets in the local level due to development of tourism
Q_{2i}: Tourism has increased the awareness of hygiene

The correlation matrix of retained items is displayed in Table 35 where all correlations are positive, implying that the retained items are all moving in the same positive direction and consistently measuring the same latent variable which in the current situation is the positive impact of tourism on economic sector. The determinant of the correlation matrix turned out to be 0.287 > 0.00001(Haitovsky, 1969), indicating that there will be no problem of multicollinearity in EFA.

Table 35: Correlation Matrix of Retained Items for Positive Impact of Tourism on Economic Sector

	Q_{2a}	Q_{2b}	Q_{2c}	Q_{2d}	Q_{2g}	Q_{2h}	Q_{2i}
Q_{2a}	1.000						
Q_{2b}	0.567	1.000					
Q_{2c}	0.532	0.582	1.000				
Q_{2d}	0.182	0.181	0.200	1.000			
Q_{2g}	0.112	0.066	0.096	0.252	1.000		
Q_{2h}	0.080	0.181	0.111	0.075	0.159	1.000	
Q_{2i}	0.153	0.143	0.158	0.167	0.160	0.347	1.000

A set of minimum standards should pass the submitted data before qualifying for factor analysis. The two such minimum standards are: Kaiser-Mayer-Olkin (KMO) measure of sampling adequacy (Cerny, & Kaiser, 1977) should be greater 0.5 and Bartlett's test of sphericity should be significant (p-value < 0.05). The submitted data of seven items passes the minimum standards as can be seen in Table 36, where KMO = 0.708 and p-value of the Bartlett's test of sphericity < 0.001. KMO varies from 0 to 1, whereas the values between 0.5 to 0.7 are mediocre, between 0.7 to 0.8 are good, 0.8 to 0.9 are great and above 0.9 are superb (Hutcheson & Sofroniou, 1999).

Table 36: KMO and Bartlett's Test for Positive Impact of Tourism on Economic Sector

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.708
Bartlett's Test of Sphericity	Approx. Chi-Square	745.707
	df	21
	p value	<0.001

One more minimum standard should pass the submitted data is that the measure of sampling adequacy of each item as measured by the diagonal elements of anti-image correlation matrix should be greater than 0.5. The submitted data of seven items also pass

this minimum standard, since the minimum value of the diagonal elements of anti-image correlation matrix turned out to be 0.59.

Among the seven Eigen values of the correlation matrix, three of them are greater than 1, indicating that the construct "positive impact of tourism on economic sector" made up of three factors. The three Eigen values greater than 1 are 2.13, 1.36 and 1.26 whose sum is 4.75 which is around 67.84% of the total of the seven Eigen values, indicating that the three factors pull out around 67.84% of the total variance of the 7 items. Scree plot is a graphical representation of the Eigen values associated with each of the factor extracted, against each other that have been included in the analysis. The scree plot also shows that there are three factors in which the Eigen value is greater than one.

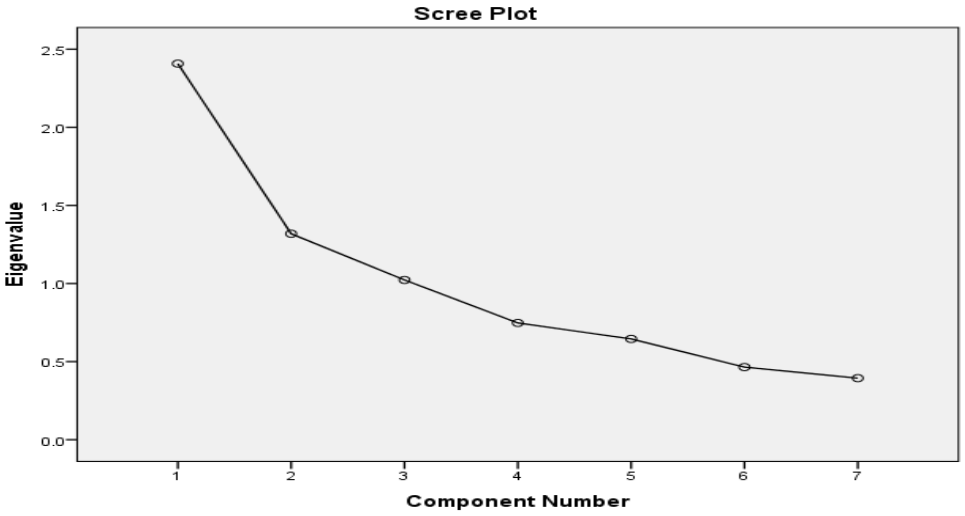

Figure 2: Scree Plot for Positive Impact of Tourism on Economic Sector

The rotated factor solution of positive impact of tourism on economic sector is presented in Table 37 where factor loadings < |0.4| are suppressed. The communality is the variance in the observed variables which are accounted by a common factor or common variance (Child, 2006). It is the summation of squared correlations of the variable with the factors (Cattel, 1973). Note that the minimum value of communality is 0.627 and the maximum value is 0.734. Clearly, three factors F_1, F_2 and F_3 as factor solution have appeared where they correspondingly extracted around 30.4%, 19.4% and 18.0% of the total variance of the seven items. The three factors altogether extracted around 67.8% of the total variance.

The three items defining the first factor "F_1" are directly related to the development of the current and future economy of residents, so the first factor is named as "Economic Benefits". Similarly, looking at the nature of the items defining the second factor "F_2" and third factor "F_3", they are correspondingly named as "Sanitation" and "Livestock and Alternative Energy"

Table 37: Rotated Factor Solution of Positive Impact of Tourism on Economic Sector

Items	F_1	F_2	F_3	Communalities
Tourism creates job opportunities for local people	0.820			0.686
Tourism has created opportunity for investment in various sectors	0.846			0.734
Tourism has increased the income level of local people	0.828			0.699
Increasing livestock product in local level due to development of tourism			0.776	0.641
Increasing uses of solar energy/bio gas in the local level due to development of tourism			0.781	0.642
Increasing the construction of private toilets in the local level due to development of tourism		0.845		0.719
Tourism has increased the awareness of hygiene		0.768		0.627
Variance extracted by factors (Eigen Value)	2.129	1.359	1.261	4.748
% of total variance extracted by factors	30.412	19.415	18.01	67.837

Note: Factor loadings < 0.4 are suppressed.

Stevens (2002) recommended interpreting only factor loadings with an absolute value greater than 0.4 which explain around 16% of the variance in the variable. Factor loading scores expresses the relationship of each variable to the underlying factor. So, it indicates that the dimensions of the factors are better accounted for by the variable. The variables like, job opportunity, investment opportunity and increasing income level have a correlation of 0.820, 0.846 and 0.828 with F_1 (Economic Benefits) respectively. The variables construction of private toilets and awareness of hygiene have a correlation of 0.845 and 0.768 with F_2 (Sanitation) respectively. The variables of livestock products and uses of biogas / solar energy have correlation of 0.776 and 0.781 with F_3 (Livestock and Alternative Energy) respectively.

The first factor (F_1), named "Economic Benefits" contains 3 perception items such as job opportunity; investment opportunity and increasing the income level of local people have a tendency to strongly agree according to their mean score of scales. The second factor (F_2) labeled "Sanitation" contains 2 perception items, such as construction of private toilets and awareness of hygiene, have a tendency to strongly agree according to their mean score of scale. The third factor (F_3) named "Livestock and Alternative Energy" contained 2 perception items, such as increasing livestock products and uses of alternative energy, have a propensity to scale of agree according to their mean score of scales.

Table 38: Mean Score of Scale for Positive Impact of Tourism on Economic Sector

Positive Impact of tourism on Economic Sector	Mean	Standard Deviation	95% Confidence Interval
Factor 1: Economic Benefits			
•Tourism creates job opportunities for local people.	4.199	0.926	(4.126 4.274)
•Tourism has created opportunity for investment in various sectors.	4.243	0.835	(4.176 4.309)
•Tourism has increased the income level of local people.	4.135	0.849	(4.067 4.203)
Factor 2: Sanitation			
•Increasing the construction of private toilets in the local level due to development of tourism.	4.586	0.645	(4.534 4.637)
• Tourism has increased the awareness of hygiene.	4.349	0.755	(4.287 4.408)
Factor 3: Livestock and Alternative Energy			
•Increasing livestock product in local level due to development of tourism.	3.434	1.009	(3.353 3.515)
•Increasing uses of biogas / solar energy in the local level due to development of tourism.	3.494	1.087	(3.400 3.581)

Note: strongly disagree =1, disagree = 2, neither agree nor disagree = 3, agree =4, strongly agree = 5.

Convergent validity is a method to test construct validity. Convergent validity is assessed by factor loading, composite reliability and average variance extracted (Fornell & Larcker, 1981). According to Hair et al. (2010), an acceptable factor loading value is more than 0.5, when it is equal to 0.7 and above it is considered good for one indicator. Table 37 shows that the factor loadings of all variables have greater than 0.5.

Similarly, the Cronbach's alpha coefficient has been computed for testing the internal consistency or reliability.

Table 39: Reliability Statistics for Positive Impact of Tourism on Economic Sector

Cronbach's Alpha	Cronbach's Alpha based on Standardized items	Number of items
0.646	0.656	7

Table 39 shows that Cronbach's alpha coefficient for the factors with total scale reliability is 0.646 > 0.5 (Nunnally and Bernstein, 1994). It indicates that the variables exhibit a correlation with their factor grouping, and thus, they are internally consistent.

The results of this study demonstrate that at a community level there is a strong support for tourism development. The host community perceived that tourism development helps to enhance economic benefits, improving sanitation and hygiene; and increasing livestock product and uses of alternative energy. A study conducted by Phoummasak et al. (2014), also found that local people perceive that tourism brings more economic benefit to the people and the community than the disadvantage side affected on a few part of the local residents. Similarly, Sitikarn (2007) found that local residents' perceived tourism as a contributor to generate income and indirectly helped local to have an education.

4.2.2.2 Negative Impact of Tourism on Economic Sector

However, if tourism is not well planned and controlled, it may lead to negative impact such as economic disparity and migrant's dominance or reduce the effectiveness of positive ones. Because of tourism, there is high possibility of rising price of land, housing and goods as well as loss of arable land and disparity in the income levels of people. In order to assess the negative impact of tourism on economic sector, a total of six declarative statements (hereafter refer to as items) were developed (Appendix-I). During the preliminary phase of EFA, all items (Q_{3a} to Q_{3f}) were included in the list of further analysis since each of their communality is being > 0.5. The list of six retained items for EFA is presented in Box-II.

Box-II: Retained Seven items for assessing Negative Impact on Economic Sector

Q_{3a}: There is dominance of outsiders in tourism investment in local level
Q_{3b}: There is significant rise in price of land and housing due to tourism
Q_{3c}: There is significant rise in price of goods due to tourism
Q_{3d}: Due to tourism there is disparity of people income
Q_{3e}: Due to tourism there is loss of arable land property
Q_{3f}: Lower wage of local employees in comparison to outsiders

The correlation matrix of retained items is displayed in Table 40 where all correlations are positive, implying that the retained items are all moving in the same positive direction and consistently measuring the same latent variable which in the current situation is the negative impact of tourism on economic sector. The determinant of the correlation matrix turned out to be 0.321 > 0.00001(Haitovsky, 1969), indicating that there will be no problem of multicollinearity in EFA.

Table 40: Correlation Matrix of Retained Items for Negative Impact of Tourism on Economic Sector

	Q_{3a}	Q_{3b}	Q_{3c}	Q_{3d}	Q_{3e}	Q_{3f}
Q_{3a}	1.000					
Q_{3b}	0.272	1.000				
Q_{3c}	0.245	0.411	1.000			
Q_{3d}	0.418	0.305	0.364	1.000		
Q_{3e}	0.345	0.304	0.437	0.448	1.000	
Q_{3f}	0.334	0.86	0.263	0.211	0.263	1.000

A set of minimum standards should pass the submitted data before qualifying for factor analysis. The two such minimum standards are: Kaiser-Mayer-Olkin (KMO) measure of sampling adequacy (Cerny, & Kaiser, 1977) should be greater 0.5 and Bartlett's test of sphericity should be significant (p-value < 0.05). The submitted data of six items passes the minimum standards as can be seen in Table 41, where KMO = 0.767 and p-value of the Bartlett's test of sphericity is < 0.001. KMO varies from 0 to 1, whereas the values between 0.5 to 0.7 are mediocre, between 0.7 to 0.8 are good, 0.8 to 0.9 are great and above 0.9 are superb (Hutcheson & Sofroniou, 1999).

Table 41: KMO and Bartlett's Test for Negative Impact of Tourism on Economic Sector

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.767
Bartlett's Test of Sphericity	Approx. Chi-Square	678.005
	df	15
	p value	<0.001

One more minimum standard should pass the submitted data is that the measure of sampling adequacy of each item as measured by the diagonal elements of anti-image correlation matrix should be greater than 0.5. The submitted data of six items also pass this minimum standard, since the minimum value of the diagonal elements of anti-image correlation matrix turned out to be 0.727.

Among the six Eigen values of the correlation matrix, three of them are greater than 1, indicating that the construct "negative impact of tourism on economic sector" made up of two factors. The two Eigen values greater than 1 are 2.60 and 1.02 whose sum is 3.62 which is around 59.4% of the total of the six Eigen values, indicating that the two factors pull out around 59.4% of the total variance of the 6 items.

The rotated factor solution of negative impact of tourism on economic sector is presented in Table 42 where factor loadings < |0.4| are suppressed. Note that the minimum value of communality is 0.518 and the maximum value is 0.731. Clearly, two factors F_1 and F_2 as factor solution have appeared where they correspondingly extracted around 33.7% and 25.7% of the total variance of the six items. The two factors altogether extracted around 59.4% of the total variance. Scree plot is a graphical representation of the Eigen values associated with each of the factor extracted, against each other that have been included in the analysis. The scree plot also shows that there are two factors in which the Eigen value is greater than one.

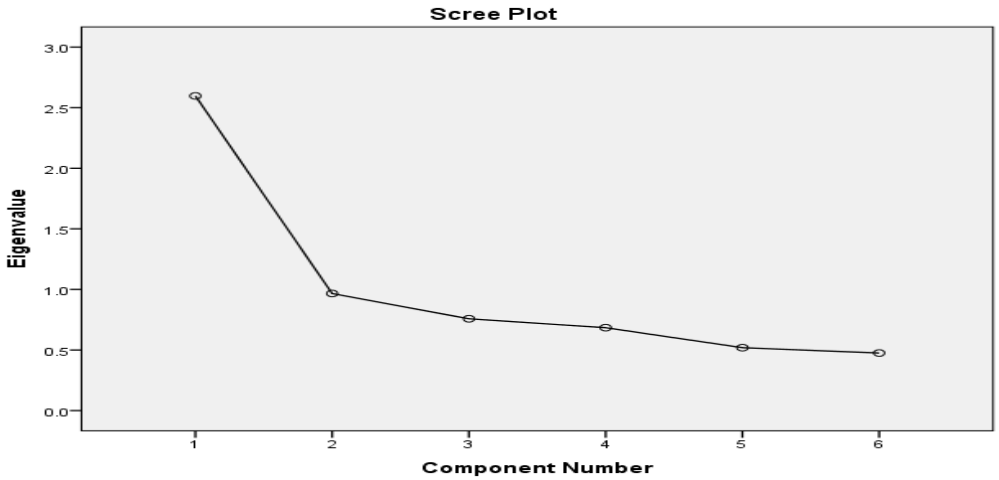

Figure 3: Scree Plot for Negative Impact of Tourism on Economic Sector

The rotated factor solution of negative impact of tourism on economic sector is presented in Table 42 where factor loadings < |0.4| are suppressed. Note that the minimum value of communality is 0.518 and the maximum value is 0.731. Clearly, two factors F_1 and F_2 as factor solution have appeared where they correspondingly extracted around 33.7% and 25.7% of the total variance of the six items. The two factors altogether extracted around 59.4% of the total variance.

The four items defining the first factor "F_1" are directly related to the economic discrepancy of residents, so the first factor is named as "Economic Disparity". Similarly, looking at the nature of the items defining the second factor "F_2" is named as "Migrant's Dominance".

Table 42: Rotated Factor Solution of Negative Impact of Tourism on Economic Sector

Items	F_1	F_2	Communalities
There is significant rise in price of land and housing due to tourism	0.807		0.659
There is significant rise in price of goods due to tourism	0.724		0.565
Due to tourism there is disparity of people income	0.596		0.518
Due to tourism there is loss of arable land property	0.616		0.540
There is dominance of outsiders in tourism investment in local level		0.663	0.550
Lower wage of local employees in comparison to outsiders		0.855	0.731
Variance extracted by factors (Eigen Value)	2.597	1.021	3.618
% of total variance extracted by factors	33.658	25.728	59.386

Note: Factor loadings < 0.4 are suppressed.

Table 42 shows that first factor (F_1) named "Economic Disparity" explains 33.66% of the total variance with Eigen value 2.597. First factor ($F_{1)}$ contains 4 perception items such as rising price of land and housing, rising price of goods, disparity of people income, loss of arable land. Similarly, second factor (F_2) labeled "Migrant's Dominance", explains 25.73 % variance with Eigen value 1.021. Second Factor ($F_{2)}$ contains 2 perception items, such as outsider dominance in tourism investment and lower wage of local employees.

Factor loading expresses the relationship of each variable to the underlying factor. So, the variables increasing price of land and housing, increasing price of goods, disparity of people income and loss of arable have a correlation of 0.807, 0.724, 0.596 and 0.616 with F_1 (Economic Disparity) respectively. The variables indicate that outsiders' dominance in tourism investment and lower wage of local employees have a correlation of 0.663 and 0.855 with F_2 (Migrants' Dominance) respectively.

First factor (F_1) contains 4 perception items such as rising price of land and housing, rising price of goods, disparity of people income, loss of arable land whereas rising price of land and hosing, and loss of arable land property have a tendency towards agree according to their mean score of the scale; rise in price of goods and disparity of people income tend towards strongly agree. Similarly, second factor contains 2 perception items, such as outsider dominance in tourism investment and lower wage of local employees whereas outsider's dominance in tourism investment tends to agree, but lower wage of local employees tends to neither agree nor disagree according to their mean score of the scale.

Table 43: Mean Score of Scale for Negative Impact of Tourism on Economic Sector

Negative Impact of Tourism on Economic Sector	Mean	Standard Deviation	95% Confidence Interval
Factor 1: Economic Disparity			
• There is significant rise in price of land and housing due to tourism.	3.09	1.465	(2.97 3.21)
•There is significant rise in price of goods due to tourism.	4.06	1.066	(3.97 4.14)
• Due to tourism there is disparity of people income.	4.16	0.919	(4.09 4.24)
• Due to tourism there is loss of arable land property.	3.46	1.316	(3.36 3.57)
Factor 2: Migrant's Dominance			
•There is dominance of outsiders in tourism investment in local level.	3.52	1.210	(3.42 3.62)
•Lower wage of local employees in comparison to outsiders.	2.76	1.271	(2.66 2.86)

Note: strongly disagree =1, disagree = 2, neither agree nor disagree = 3, agree =4, strongly agree = 5.

Convergent validity is a method to test construct validity. Convergent validity is assessed by factor loading, composite reliability and average variance extracted (Fornell & Larcker, 1981). According to Hair et al. (2010), an acceptable factor loading value is more than 0.5, when it is equal to 0.7 and above it is considered as good for one indicator. Table 42 shows that the factor loadings of all variables have greater than 0.5.

The Cronbach's alpha coefficient has been computed for testing the internal consistency or reliability.

Table 44: Reliability Statistics for Negative Impact of Tourism on Economic Sector

Cronbach's Alpha	Cronbach's Alpha based on Standardized items	Number of items
0.726	0.733	6

Table 44 shows that Cronbach's alpha coefficient for the factors with total scale reliability is 0.726 > 0.5 (Nunnally & Bernstein, 1994). It indicates that the variables exhibit a correlation with their factor grouping, and thus, they are internally consistent. The results of this study reveal the host community perceives that tourism development negatively impacts on the price of land and housing, price of goods, distribution of people income, arable land property and tourism investment in local level.

The studies conducted by Allen et al. (1993), Fredline (2000) and Dyer et al. (2007) also supported the negative impact when they stated that price inflation on goods and services could be experienced as a result of tourism growth in an area, which is in the similar direction of this study. Similarly, Feng (2008) stated that along with increasing income, there comes the widening gap of social inequality, as well as the intensified social conflicts among different stakeholders in the local tourism industry.

4.2.2.3 Positive Impact of Tourism on Social Sector

The impacts of tourism consist not only of economic benefits such as employment creation, opportunity of investment and generation of wealth, but also of a social component. There are several positive social impacts of tourism such as maintaining social harmony, job prospective for women and improving quality education. In order to assess the positive impact of tourism on social sector, a total of nine declarative statements (hereafter refer to as items) were developed (Appendix-I). During the preliminary phase of EFA, one item (Q_{4f}) was excluded from the list of further analysis since its value of communality is being < 0.5. The list of eight retained items for EFA is presented in Box-III.

Box-III: Retained Items for Assessing Positive Impact of Tourism on Social Sector

Q_{4a}: Tourism has contributed to the decrease of caste based discrimination or bigotry
Q_{4b}: Tourism has made local residence to feel importance of quality education
Q_{4c}: Tourism helps to promote cultural restoration and conservation
Q_{4d}: Tourism has contributed to the unity of various groups in the community
Q_{4e}: Tourism has contributed to the creation of job opportunities for local women
Q_{4g}: Tourism has reduced local burglary and rawdyism
Q_{4h}: Tourism has promoted local organic agro- farming business
Q_{4i}: Tourism has promoted indigenous handicraft businesses

The correlation matrix of retained items is displayed in Table 45 where all correlations are positive, implying that the retained items are all moving in the same positive direction and consistently measuring the same latent variable which in the current situation is the positive impact of tourism on social sector. The determinant of the correlation matrix turned out to be 0.435> 0.00001(Haitovsky, 1969), indicating that there will be no problem of multicollinearity in EFA.

Table 45: Correlation Matrix of Retained Items for Positive Impact of Tourism on Social Sector

	Q_{4a}	Q_{4b}	Q_{4c}	Q_{4d}	Q_{4e}	Q_{4g}	Q_{4h}	Q_{4i}
Q_{4a}	1.000							
Q_{4b}	0.190	1.000						
Q_{4c}	0.051	0.299	1.000					
Q_{4d}	0.081	0.173	0.200	1.000				
Q_{4e}	0.095	0.188	0.096	0.252	1.000			
Q_{4g}	0.120	0.176	0.111	0.075	0.159	1.000		
Q_{4h}	0.019	0.132	0.158	0.167	0.160	0.347	1.000	
Q_{4i}	0.065	0.145	0.247	0.086	0.327	0.033	0.310	1

A set of minimum standards should pass the submitted data before qualifying for factor analysis. The two such minimum standards are: Kaiser-Mayer-Olkin (KMO) measure of sampling adequacy (Cerny, & Kaiser, 1977) should be greater 0.5 and Bartlett's test of sphericity should be significant (p-value < 0.05). The submitted data of eight items passes the minimum standards as can be seen in Table 46, where KMO = 0.685 and p-value of the Bartlett's test of sphericity is < 0.001. KMO varies from 0 to 1; whereas the values between 0.5 to 0.7 are mediocre, between 0.7 to 0.8 are good, 0.8 to 0.9 are great and above 0.9 are superb (Hutcheson & Sofroniou, 1999).

Table 46: KMO and Bartlett's Test for Positive Impact of Tourism on Social Sector

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.685
Bartlett's Test of Sphericity	Approx. Chi-Square	495.905
	df	28
	p value	<0.001

One more minimum standard should pass the submitted data is that the measure of sampling adequacy of each item as measured by the diagonal elements of anti-image correlation matrix should be greater than 0.5. The submitted data of eight items also pass this minimum standard, since the minimum value of the diagonal elements of anti-image correlation matrix turned out to be 0.620.

Among the eight Eigen values of the correlation matrix, three of them are greater than 1, indicating that the construct “positive impact of tourism on social sector” made up of three factors. The three Eigen values greater than 1 are 2.343, 1.201 and 1.061 whose

sum is 4.605 which is around 56.319% of the total of the eight Eigen values, indicating that the three factors pull out around 56.311% of the total variance of the 8 items. Scree plot is a graphical representation of the Eigen values associated with each of the factor extracted, against each other that have been included in the analysis. The scree plot also shows that there are three factors in which the Eigen value is greater than one.

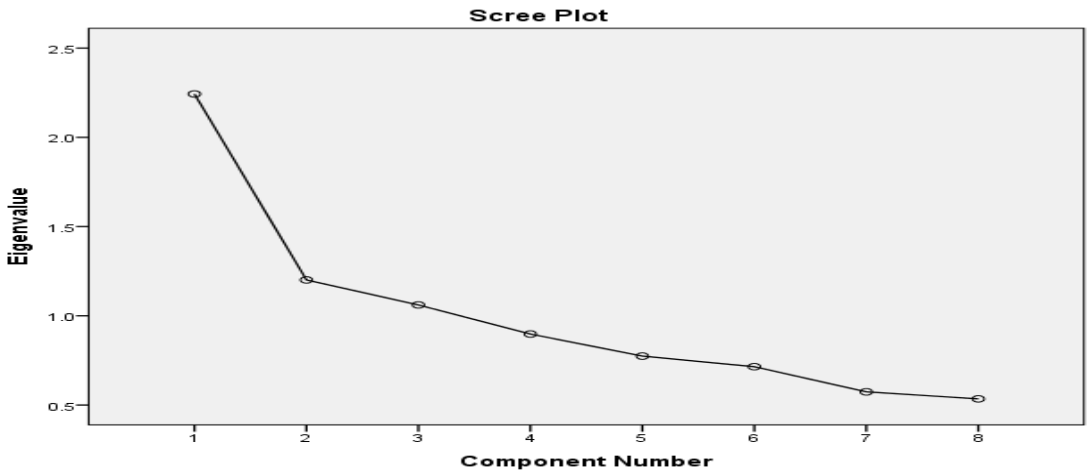

Figure 4: Scree Plot for Positive Impact of Tourism on Social Sector

The rotated factor solution of positive impact of tourism on social sector is presented in Table 47 where factor loadings < |0.4| are suppressed. Note that the minimum value of communality is 0.501 and the maximum value is 0.686. Clearly, three factors F_1, F_2 and F_3 as factor solution have appeared where they correspondingly extracted around 21.739 %, 19.73% and 14.85% of the total variance of the eight items. The three factors altogether extracted around 56.311% of the total variance (Table 47).

The three items defining the first factor "F_1" are directly related to the social synchronization of residents, so the first factor is named as "Social Harmony". Similarly, looking at the nature of the items defining the second factor "F_2" and third factor "F_3", they are correspondingly named as "Job Prospective for Women" and "Quality Education".

Table 47: Rotated Factor Solution of Positive Impact of Tourism on Social Sector

Items	F_1	F_2	F_3	Communalities
Tourism helps to promote cultural restoration and conservation	0.636			0.540
Tourism has contributed to the unity of various groups in the community	0.756			0.576
Tourism reduced local burglary and rowdyism	0.714			0.531
Tourism has contributed to the creation of job opportunities for local women		0.665		0.545
Tourism has promoted local organic agro-farming business		0.513		0.502
Tourism has promoted indigenous handicraft business		0.827		0.686
Tourism has contributed to decrease of caste based discrimination or bigotry			0.828	0.687
Tourism has made local residence to feel importance of quality education			0.559	0.501
Variance extracted by factors (Eigen Value)	2.343	1.201	1.061	4.605
% of total variance extracted by factors	21.739	19.73	14.85	56.319

Note: Factor loadings < 0.4 are suppressed.

Table 47 displays the first factor (F_1) named "Social Harmony" explains 21.74% of the total variance with Eigen value 2.343. This factor (F_1) contains 3 perception items, such as the promotion of cultural restoration and conservation, unity of various groups in the community, and reduces local burglary and rowdyism. The second factor (F_2) labeled "Job Prospective for Women" explains 19.73 % variance with Eigen value is 1.201. This factor contains 3 perception items such as contribution to job opportunity for local women, promotion of indigenous handicraft business and promotion of local organic agro-farming business. The third factor (F_3) labeled "Quality Education" explains 14.85% variance with Eigen value 1.061. This factor (F_3) contains 2 perception items such as contribution to reduce the cast based discrimination and feeling importance of quality education.

Factor loading expresses the relationship of each variable to the underlying factor. So, the variables promotions of cultural restoration and conservation, unity of various groups and reduction of local burglary and rowdyism have a correlation of 0.636, 0.756 and 0.714 with F_1 (Social Harmony) respectively. The variables for job opportunity for local

women, promotion of local organic agro-farming business and promotion of handicraft business have correlation of 0.665, 0.513 and 0.827 with F_2 (Job Prospective for Women) respectively. The variable contribution to the decrease of caste based discrimination or bigotry and feeling of importance of quality education have correlation of 0.828 and 0.559 with F_3 (Quality Education).

Table 48: Mean Score of Scale for Positive Impact of Tourism on Social Sector

Positive Impact of Tourism in Social Sector	Mean	Standard Deviation	95% Confidence Interval
Factor 1: Social Harmony			
• Tourism helps to promote cultural restoration and conservation.	3.822	1.098	(3.734 3.91)
• Tourism has contributed to the unity of various groups in the community.	4.083	0.844	(4.016 4.15)
• Tourism has reduced local burglary and rowdyism.	3.211	1.209	(3.113 3.308)
Factor 2: Job Prospective for Women			
•Tourism has contributed to the creation of job opportunities for local women.	4.022	0.941	(3.945 4.097)
•Tourism has promoted indigenous handicraft businesses.	3.739	1.119	(3.649 3.829)
•Tourism has promoted local organic agro-farming business.	3.446	1.069	(3.360 3.532)
Factor 3: Quality Education			
•Tourism has contributed to the decrease of caste based discrimination or bigotry	3.98	1.074	(3.894 4.066)
•Tourism has made local residence to feel importance of quality education	4.475	0.686	(4.423 4.533)

Note: strongly disagree =1, disagree = 2, neither agree nor disagree = 3, agree =4, strongly agree = 5.

Table 48 displays the first factor (F_1) named "Social Harmony" contains 3 perception items, such as the promotion of cultural restoration and conservation, unity of various groups in the community, and reduce local burglary and rowdyism; whereas contribution of the unity of various groups tends to strongly agree according to its mean score of scale. But promotion of cultural restoration and conservation; and reduction of local burglary and rowdyism have a tendency towards agree according to their mean score of the scale.
Similarly, the second factor (F_2) labeled "Job Prospective for Women" contains 3 perception items such as contribution to job opportunity for local women, promotion of

indigenous handicraft business and promotion of local organic agro-farming business whereas contribution to job opportunity for local women tends to strongly agree but promotion of indigenous handicraft business and local organic agro-farming business tend to agree according to their mean score of scale. It clearly indicates that the females were observed to be more likely to get job opportunity in the area of tourism. The third factor (F_3) labeled "Quality Education" contains 2 perception items such as contribution to reduce the cast based discrimination or bigotry and feeling of importance of quality of education whereas contribution to reduce the cast based discrimination or bigotry tends to agree and feeling of quality of education tends to strongly agree according to their mean score of scale.

Convergent validity is a method to test construct validity. Convergent validity is assessed by factor loading, composite reliability and average variance extracted (Fornell & Larcker, 1981). According to Hair et al. (2010), an acceptable factor loading value is more than 0.5, when it is equal to 0.7 and above it is considered as good for one indicator. Table 47 shows that the factor loadings of all variables have greater than 0.5. The Cronbach's alpha coefficient has been computed for testing the internal consistency or reliability.

Table 49 : Reliability Statistics for Positive Impact of Tourism on Social Sector

Cronbach's Alpha	Cronbach's Alpha based on Standardized items	Number of items
0.608	0.612	8

Table 49 shows that Cronbach's alpha coefficient for the factors with total scale reliability is 0.608 > 0.5 (Nunnally and Bernstein, 1994). It indicates that the variables exhibit a correlation with their factor grouping, and thus, they are internally consistent. The results of this study reveal that at a community level there is a positive social impact towards tourism development. The host community perceives that tourism development creates positive social impact towards social harmony and job opportunity for women as well as improvement of quality education. The results reported here is consistent with the study of Meleghy et al. (1985), implied that a harmonious relationship could exist between tourism and local culture. Similarly, Pizam (1978) found that residents perceived tourism as having a positive impact on cultural identity. Likewise, Feng (2008)

stated that the role of local women is expanding from the domestic arena to a much broader public domain, transforming them from household wives and guardians of their traditional handicraft heritage to becoming active moneymakers in the local tourism industry.

4.2.2.4 Negative Impact of Tourism on Social Sector

Tourism might cause a gradual change in society's values, beliefs, language and life styles. It may lead negative impact to the society. Because of the development of tourism, human relations are more commercialized and people are ignoring each others. In order to assess the negative impact of tourism on social sector, a total of eight declarative statements (hereafter refer to as items) were developed (Appendix-I). During the preliminary phase of EFA, two items (Q_{5a} and Q_{5f}) were excluded in the list of further analysis since each of their communality is being < 0.5. The list of six retained items for EFA is presented in Box-IV.

Box-IV: Retained Six Items for Assessing Negative Impact of Tourism on Social sector

Q5b: Imitation of foreign life style and culture has increased due to tourism
Q5c: Tourism entrepreneurs have so busy that trend of ignoring each other has increased
Q5d: Tourism has increased social problems and disorder
Q5e: Tourism has created noisy and crowded situation in local level
Q5g: Direct impact of foreign language on the local languages and words due to tourism
Q5h:Crisis in the feeling of local identity due to tourism

The correlation matrix of retained items is displayed in Table 50 where all correlations are positive, implying that the retained items are all moving in the same positive direction and consistently measuring the same latent variable which in the current situation is the negative impact of tourism on social sector. The determinant of the correlation matrix turned out to be 0.322 > 0.00001(Haitovsky, 1969), indicating that there will be no problem of multicollinearity in EFA.

Table 50: Correlation Matrix of Retained Items for Negative Impact of Tourism in Social Sector

	Q_{5b}	Q_{5c}	Q_{5d}	Q_{5e}	Q_{5g}	Q_{5h}
Q_{5b}	1.000					
Q_{5c}	0.172	1.000				
Q_{5d}	0.349	0.377	1.000			
Q_{5e}	0.361	0.230	0.461	1.000		
Q_{5g}	0.479	0.089	0.234	0.226	1.000	
Q_{5h}	0.356	0.143	0.333	0.246	0.409	1.000

A set of minimum standards should pass the submitted data before qualifying for factor analysis. The two such minimum standards are: Kaiser-Mayer-Olkin (KMO) measure of sampling adequacy (Cerny, & Kaiser, 1977) should be greater 0.5 and Bartlett's test of sphericity should be significant (p-value < 0.05). The submitted data of six items passes the minimum standards as can be seen in Table 51, where KMO = 0.746 and p-value of the Bartlett's test of sphericity is < 0.001. KMO varies from 0 to 1; whereas the values between 0.5 to 0.7 are mediocre, between 0.7 to 0.8 are good, 0.8 to 0.9 are great and above 0.9 are superb (Hutcheson & Sofroniou, 1999).

Table 51: KMO and Bartlett's Test for Negative Impact of Tourism on Social Sector

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.746
Bartlett's Test of Sphericity	Approx. Chi-Square	677.115
	df	15
	p value	< 0.001

One more minimum standard should pass the submitted data is that the measure of sampling adequacy of each item as measured by the diagonal elements of anti-image correlation matrix should be greater than 0.5. The submitted data of six items also pass this minimum standard, since the minimum value of the diagonal elements of anti-image correlation matrix turned out to be 0.706.

Among the six Eigen values of the correlation matrix, two of them are greater than 1, indicating that the construct “negative impact of tourism on social sector” made up of two factors. The two Eigen values greater than 1 are 2.521 and 1.102 whose sum is 3.623 which is around 60.388% of the total of the six Eigen values, indicating that the two

factors pull out around 60.388% of the total variance of the 6 items. Scree plot is a graphical representation of the Eigen values associated with each of the factor extracted, against each other that have been included in the analysis. The scree plot also shows that there are two factors in which the Eigen value is greater than one.

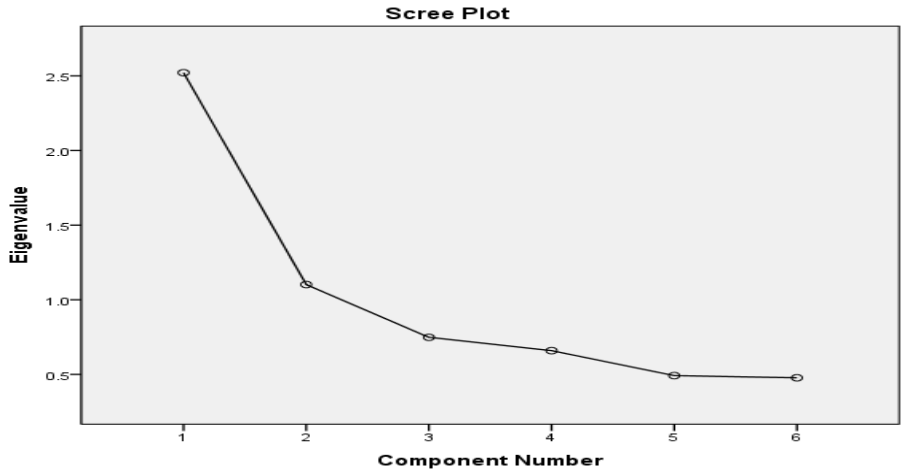

Figure 2: Scree Plot for Negative Impact of Tourism on Social Sector

The rotated factor solution of negative impact of tourism on social sector is presented in Table 52 where factor loadings < |0.4| are suppressed. Note that the minimum value of communality is 0.506 and the maximum value is 0.696. Clearly, two factors F_1 and F_2 as factor solution have appeared where they correspondingly extracted around 32.014% and 28.374% of the total variance of the six items. The two factors altogether extracted around 60.388% of the total variance.

The three items defining the first factor "F_1" are directly related to imitation of foreign life style culture, direct impact on local languages and crisis of local identity of residents, so the first factor is named as "Influence by Foreign Culture". Similarly, looking at the nature of the items defining the second factor "F_2" is named as "Social Disturbances".

Table 52: Rotated Factor Solution of Negative Impact of Tourism on Social Sector

Items	F_1	F_2	Communalities
Imitation of foreign life style and culture has increased due to tourism	0.732		0.605
Direct impact of foreign language on the local languages and words	0.834		0.696
Crisis in the feeling of local identity due to tourism	0.698		0.521
Tourism entrepreneurs have so busy that trend of ignoring each other		0.790	0.629
Tourism has increased social problems and disorder		0.761	0.667
Tourism has created noisy and crowded situation in local level		0.631	0.506
Variance extracted by factors (Eigen Value)	2.521	1.102	3.623
% of total variance extracted by factors	32.014	28.374	60.388

Note: Factor loadings < 0.4 are suppressed.

The first factor (F_1) named "Influenced by Foreign Culture", explains 32.014% of the total variance with Eigen value 2.521 and the second factor (F_2) labeled "Social Disturbances" explained 28.37 % variance with Eigen value is 1.102

Factor loading expresses the relationship of each variable to the underlying factor. So, the variables imitation of foreign life style and culture, impact of foreign language on local language and words, and crisis of feeling of local identity have a correlation of 0.732, 0.834 and 0.698 with F_1 (Influence by Foreign Culture) respectively. The variables entrepreneurs ignoring each other, increasing social problem and disorder, and created noisy and crowded situation have a correlation of 0.790, 0.761 and 0.631 with F_2 (Social Disturbances) respectively.

Table 53: Mean Score Scale for Negative Social Impact of Tourism

Negative Social Impact of Tourism	Mean	Standard deviation	95% Confidence Interval
Factor 1: Influence by Foreign Culture			
• Imitation of foreign life style and culture has increased due to tourism.	3.50	1.25	(3.40 3.60)
•Direct impact of foreign language on the local languages and words due to tourism.	3.27	1.20	(3.18 3.37)
• Crisis in the feeling of local identity due to tourism.	2.92	1.34	(2.81 3.03)
Factor 2: Social Disturbance			
•Tourism entrepreneurs have been so busy that trend of ignoring each other has increased.	2.91	1.27	(2.81 3.02)
•Tourism has increased social problems and disorder.	2.93	1.20	(2.84 3.03)
•Tourism has created noisy and crowded situation in local level.	3.03	1.21	(2.93 3.12)

Note: strongly disagree =1, disagree = 2, neither agree nor disagree = 3, agree =4, strongly agree = 5.

The first factor (F_1) named "Influenced by Foreign Culture" contained 3 perception items such as imitation of foreign life style and culture, impact of foreign language on the local language, and crisis in the local identity whereas imitation of foreign life style and culture, impact of foreign language on the local language have a tendency towards agree, but crisis in the feeling local identity tends to neither agree nor disagree according to their mean score of the scale.

The second factor (F_2) labeled "Social Disturbances" contains 3 perception items such as entrepreneurs ignoring each other, increasing social problem and disorder, and created noisy and crowded situation whereas entrepreneurs ignoring each other, increasing social problem and disorder have a tendency towards neither agree nor disagree but created noisy and crowded situation tends to agree according to their mean score of scale.

Convergent validity is a method to test construct validity. Convergent validity is assessed by factor loading, composite reliability and average variance extracted (Fornell & Larcker, 1981). According to Hair et al. (2010), an acceptable factor loading value is more than 0.5, when it is equal to 0.7 and above it is considered as good for one indicator. Table 52 shows that the factor loadings of all variables have greater than 0.5. The Cronbach's alpha coefficient has been computed for testing the internal consistency or reliability.

Table 54: Reliability Statistics for Negative Impact of Tourism on Social Sector

Cronbach's Alpha	Cronbach's Alpha based on Standardized items	Number of items
0.716	0.718	6

Table 54 shows that Cronbach's alpha coefficient for the factors with total scale reliability is 0.716 > 0.5 (Nunnally and Bernstein, 1994). It indicates that the variables exhibit a correlation with their factor grouping and thus, they are internally consistent.

The results of this study reveal that at a community level there is a positive social impact towards tourism development of Nepal. The host community perceived that tourism development creates positive social impact towards social harmony, job perspective for women, and quality education. Similarly, they did not perceive that tourism development

creates negative social impact with local identity, entrepreneurs' business and social synchronization to the natives. The results of factor analysis found that three positive factors named as social harmony, job perspective for women, and importance of quality education explained 56.31% variance of perception of residents. Similarly, two negative factors named as influence by foreign culture and social disturbance explained 60.39% variance of perception of residents. The host community perceived that tourism development creates positive social impact towards social harmony, job perspective for women and reduction of bigotry (Dhakal et al., 2017). The results reported here is consistent with tourism of Egypt conducted by Eraqi (2007), mentioned that there are some negative effects such as negative impact on cultural identity of local communities, unpleasant overcrowded beaches, hiking trail, parks and museums. Similarly, King et al. (1993) suggested that residents of communities dependent on tourism can clearly differentiate between the economic benefits and the social costs, and that awareness of certain negative consequences does not lead to opposition towards further tourism development of Fiji.

4.2.2.5 Scale Evaluation

Summated scales of positive impact of tourism in economic sector (PIE), negative impact of tourism in economic sector (NIE), positive impact of tourism in social sector (PIS) and negative impact of tourism in social sector (NIS) were created for scale evaluation which confirms the validity of scale in the research work. Table 55 shows the evaluation of summated scales of PIE, NIE, PIS and NIS.

Table 55: Summary Measures of PEI, NEI, PIS and NIS

	PIE	NIE	PIS	NIS
Number of items	7	6	8	6
Reliability	0.646	0.726	0.608	0.716
Mean	28.4	21.1	30.78	18.6
Standard Deviation	3.5	4.76	4.21	4.8
Median	29	22	31	19
Minimum	13	7	19	8
Maximum	35	30	40	30
Sub-scales	3	2	3	2

The correlation coefficients between summated scales of positive impact of tourism on economic sector (PIE), negative impact of tourism on economic sector (NIE), positive impact of tourism on social sector (PIS) and negative impact of tourism on social sector (NIS) are shown in Table 56.

Table 56: Correlation Matrix of Summated Scale for PIE, NIE, PIS and NIS

	PIE	PIS	NIE	NIS
PIE	1	0.490**	- 0.126**	- 0.146**
PIS	0.490**	1	- 0.332**	- 0.334**
NIE	- 0.126**	- 0.332**	1	0.622**
NIS	- 0.146**	- 0.344**	0.622**	1

** Correlation is significant at the 0.01 level (2-tailed).

The correlation matrix of summated scale (Table 56) displays that correlation between PIE and PIS, and NIE and NIS are positive, implying that the summated scales such as PIE and PIS, and NIE and NIS are moving in the same positive direction. Similarly, correlation between PIE and NIE, and PIS and NIS are negative, implying that the summated scales such as PIE and NIE, and PIS and NIS are moving in the opposite direction. These results to great extent meet the criteria of convergent and divergent validity of scales.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

This chapter presents the conclusion arising from the discussion of the results and the recommendations, which are based in the findings of the study and aspects for the future research.

5.1 Conclusion

This study was based on secondary and primary data. In this research an attempt has been made to examine the relationship between tourism benefits towards economic development process of the nation using secondary data; and assess the residents' attitudes and perceptions towards economic and social impact of tourism respectively using primary data.

Vector error correction (VEC) model and Exploratory Factor Analysis (EFA) were used to meet the study objectives. Vector error correction model was carried out to examine the relationship between number of international tourist and their average length of stay towards share of gross domestic product of tourism, relationship between Number of international tourist and their average length of stay towards foreign exchange earnings from tourism, relationship between number of international tourist and their average length of stay towards average expenditure per visitor, and relationship between foreign exchange from tourism and average expenditure per visitor towards share of gross domestic product from tourism. For VEC model, Johansen co-integration analysis, error correction terms and Granger causality have been used to find out the long run and casual relationship among the variables.

The relationship between number of international tourist (TOUR) and their average length of stay (AVLS) towards share of gross domestic product of tourism (GDP) suggested that increasing TOUR by 100% produces an increment of almost 216.7% of GDP. Similarly, increasing AVLS by 100% produces an increment of almost 742.9% of GDP. Thus GDP elasticity with respect to AVLS is more elastic as compared to GDP elasticity with respect to TOUR. It means that the role of AVLS towards increasing GDP

is greater than TOUR. The error correction term of GDP has negative sign and it is statistically significant at 5% level (p value < 0.001). It implies that the system convergence towards equilibrium and stable due to any disturbance in the system. The coefficient of error correction term of TOUR carries negative sign and it is not significant at 5% level (p value > 0.001). It depicts the system convergence towards equilibrium path but unstable in case of any disturbance in the system. The coefficient of error correction term of AVLS is positive and statistically significant at 5% level (p value < 0.001). It implies that the system divergence from the equilibrium path and the system will be stable due to any disturbance. It means that there exists long run relationship between AVLS and TOUR towards GDP in terms of magnitude and direction.

The Granger causality test illustrated that there is unidirectional Granger causality exists from GDP to TOUR. It implies that the past values of GDP have predictive ability to determine the present value of TOUR. Similarly, GDP Granger causes AVLS and AVLS also Grange GDP. So, bidirectional Granger causality exists between GDP and AVLS. It signifies the past values GDP have predictive ability to determine the present value of AVLS and vice versa. In the same way, AVLS Granger causes TOUR and TOUR also Granger causes AVLS. So, bidirectional Granger causality exists between AVLS and TOUR. It signifies the past values TOUR have predictive ability to determine the present value of AVLS and vice versa. It clears that the increasing average length of stay of tourist (AVLS) plays positive role to increase GDP and vice versa and large number of international tourist (TOUR) plays the affirmative role to increase their average length of stay (AVLS).

The relationship between number of international tourist (TOUR) and their average length of stay (AVLS) towards foreign exchange earnings from Tourism (EARN) suggested that increasing EARN by 100% produces an increment of almost 395.7% of AVLS. Similarly increasing EARN by 100% produces an increment of almost 294.62% of TOUR. Thus EARN elasticity with respect to AVLS is more elastic as compare to EARN elasticity with respect to TOUR. It means that the role of AVLS towards increasing EARN is greater than TOUR.

The coefficient of error correction term of EARN has positive sign and it is not significant at 5% level (p value > 0.001). It implies that the system divergence from equilibrium but unstable due to any disturbance in the system. The coefficient of error correction term of AVLS carries negative sign but it is not significant at 5% level (p value > 0.001). It depicts that the system convergence towards equilibrium path but unstable in case of any disturbance in the system. The coefficient of error correction term of TOUR is positive and statistically significant at 5% level (p value < 0.001). It implies that the system divergence from the equilibrium path and stable due to any disturbance in the system. It means that there exists long run relationship between AVLS and TOUR towards EARN in terms of magnitude and direction.

The Granger causality test illustrated that there is bidirectional Granger causality exists between TOUR and AVLS. It signifies the past values of TOUR have predictive ability to determine the present value of AVLS and vice versa. Similarly, TOUR Granger causes EARN but EARN does not Granger cause TOUR. So, unidirectional Granger causality exists from TOUR to EARN. In addition, AVLS Granger Causes EARN but EARN does not Granger cause AVLS. So, unidirectional Granger causality exists from AVLS to EARN. It implies that the past values of TOUR and AVLS have predictive ability to determine the present value of EARN. It indicates that the large number of international tourist (TOUR) and their average length of stay (AVLS) play positive role to increase foreign exchange earnings (EARN). Similarly, the large number of international tourist (TOUR) plays the affirmative position to expand their average length of stay (AVLS) and vice versa. It clarifies that expansion of foreign exchange earnings (EARN) will lead to the expansion of tourists' average length of stay (AVLS) on the one hand and it further incorporates to attract number of international tourists (TOUR) to Nepal.

The relationship between number of international tourist (TOUR) and their average length of stay (AVLS) towards average expenditure per visitor (EXPV) suggested that increasing EXPV by 100% produces an increment of almost 220.9% of AVLS. Similarly increasing EXPV by 100% produces an increment of almost 640.6% of TOUR. Thus EXPV elasticity with respect to AVLS is more elastic as compared to EXPV elasticity

with respect to TOUR. It means that the role of AVLS towards increasing EXPV is greater than TOUR.

The coefficient of error correction term of EXPV has negative sign but it is not statistically significant at 5% level (p value > 0.001). It implies that the system convergence towards equilibrium path but unstable due to the any disturbance in the system. Similarly the coefficient of error correction term of TOUR carries positive sign but it is not significant at 5% level (p value > 0.001). It depicts that the system divergence from equilibrium path but unstable in case of any disturbance in the system. The coefficient of error correction term of AVLS is negative and statistically significant at 5% level (p value < 0.001) . It implies that the system convergence towards the equilibrium path and stable due to any disturbance in the system. It means that there exists long run relationship between AVLS and TOUR towards EXPV in terms of magnitude and direction.

The Granger causality test illustrated that there is bidirectional Granger causality exists between EXPV and AVLS. It signifies the past values of EXPV have predictive ability to determine the present value of AVLS and vice versa. Similarly, AVLS Granger causes TOUR but TOUR does not Granger cause AVLS. So, unidirectional Granger causality exists from AVLS to TOUR. It signifies the past values of AVLS have predictive ability to determine the present value of TOUR. Likewise EXPV does not Granger cause TOUR and TOUR also does not Granger cause EXPV. No direction Granger causality between EXPV and TOUR. It clarifies that the increasing average length of stay (AVLS) of tourist takes part in affirmative position to increases expenditure of visitor (EXPV) and vice versa. The large number of international tourist (TOUR) plays the positive role to increase their average length of stay (AVLS).

The relationship between foreign exchange from tourism (EARN) and average expenditure per visitor (EXPV) towards share of gross domestic product from tourism (GDP) suggested that increasing EARN by 100% produces an increment of almost 0.64% of GDP. Similarly increasing EXPV by 100% produces an increment of almost 142.7% of GDP. Thus GDP elasticity with respect to EXPV is more elastic as compared to GDP

elasticity with respect to EARN. It means that the role of EXPV towards increasing GDP is greater than EARN.

The error correction term of GDP has negative sign and it is not significant at 5% level (p value > 0.001). It implies that the system convergence towards equilibrium but unstable due to the any disturbance in the system. The coefficient of error correction term of EXPV carries negative sign and it is significant at 5% level (p value < 0.001). It depicts stability of the system and convergence towards equilibrium path in case of any disturbance in the system. The coefficient of error correction term of EARN is negative but it is not significant at 5% level (p value > 0.001). It implies that due to any disturbance in the system convergence towards the equilibrium path and the system will be unstable. It means that there exists long run relationship between EXPV and EARN towards GDP in terms of magnitude and direction.

The Granger causality test illustrated that there is bidirectional Granger causality exists between GDP and EXPV. It signifies the past values of GDP have predictive ability to determine the present value of EXPV and vice versa. Similarly, EARN Granger causes GDP, but GDP does not Granger cause EARN. So, unidirectional Granger causality exists from EARN to GDP. It signifies the past values of EARN have predictive ability to determine the present value of GDP. Similarly, EXPV Granger causes EARN, but EARN does not Granger cause EXPV i.e. there is unidirectional Granger causality from EXPV to EARN. It signifies the past values of EXPV have predictive ability to determine the present value of EARN. It clears that increasing expenditure per visitor (EXPV) plays positive role to increase GDP and vice versa. Similarly, foreign exchange earnings (EARN) also facilitate the expansion of GDP.

Exploratory Factor Analysis (EFA) based on primary data was carried out to identify and examine the relationship of tourism component to social and economic system of the nation. For Exploratory Factor Analysis (EFA), the principal component analysis was used to extract maximum variance from the data set with each component, thus reducing a large number of variables into smaller number of components. Similarly, this study has been applied the rotation method based on Varimax with Kaiser Normalization

(Orthogonal rotation). The diagonal elements of anti-image correlation have been displayed for sampling adequacy of each and every item. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy has been computed to quantify the degree of inter-correlation among the variables. The Bartlett's test of sphericity has been used for testing the null hypothesis that the original correlation matrix is an identity matrix. The determinant score has been computed for testing the problem multi-collinearity. Cronbach's alpha coefficient has been used to measure of scale reliability and internal consistency.

For positive impact of tourism on economy, the communality indicates that 69.0% of the variance associated with statement first is common. Similarly, 73.0%, 70.0%, 64.0%, 64.0%, 72.0% and 63.0% of the common variance associated with statements second, third, fourth, fifth, sixth and seventh respectively. It means that there are distinct and reliable factors are produced.

The values of factor loadings illustrate that the variables such as job opportunity, investment opportunity and increasing income level have a correlation of 0.82, 0.85 and 0.83 with factor1 (Economic Benefits) respectively. The variables such as construction of private toilet and awareness of hygiene have a correlation of 0.85 and 0.77 with factor 2 (Sanitation) respectively. The variables such as livestock product and uses of biogas / solar energy have correlation of 0.78 and 0.78 with factor 3 (Livestock and Alternative Energy) respectively.

The first factor named "Economic Benefits" explained 30.41% of the total variance with Eigen value 2.13. This factor contained 3 perception items such as job opportunity, investment opportunity and increasing the income level of local people have a tendency to strongly agree according to their mean score of scales. The second factor labeled "Sanitation" explained 19.42% variance with Eigen value 1.36. This factor contained 2 perception items such as construction of private toilets and awareness of hygiene has a tendency to strongly agree according to their mean score of scale. The third factor named "Livestock and Alternative Energy" explained 18.01% total variance with Eigen value 1.26. This factor contained 2 perception items such as increasing livestock products and uses of alternative energy have a propensity to scale of agree according to their mean

score of scales. The Cronbach's alpha coefficient for the factors with total scale reliability is 0.65 > 0.5. It indicates that the variables exhibit a correlation with their factor and thus they are internally consistent. The results of this study demonstrated that at a community level there is a strong support for tourism development i.e. the host community perceived that tourism development helps to enhance their economic benefits, improving sanitation; and increasing livestock product and uses of alternative energy. It shows that tourism industries of Nepal have great potentiality for further development.

For negative economic impact of tourism, the communality shows that 66.0% of the variance associated with statement first is common. Similarly, 57.0%, 52.0%, 54.0%, 55.0%, and 73.0% of the common variance associated with statements second, third, fourth, fifth and sixth respectively. It means that distinct and reliable factors are produced.

The factor loadings illustrate the relationship of each variable to the underlying factors. So, the variables such as increasing price of land and housing, increasing price of goods, disparity of people income and loss of arable lands have a correlation of 0.81, 0.72 ,0.60 and 0.62 with factor1 (Economic Disparity) respectively. The variables such as outsiders' dominance in tourism investment and lower wage of local employees have a correlation of 0.66 and 0.86 with factor 2 (Migrants' Dominance) respectively.

The first factor named "Economic Disparity" explained 33.66% of the total variance with Eigen value is 2.60. This factor contained 4 perception items such as rising price of land and housing, rising price of goods, disparity of people income, loss of arable lands whereas rising price of land and hosing, and loss of arable land have a tendency towards agree according to their mean score of the scale; disparity of people income and rising price of goods tend towards strongly agree. The second factor labeled "Migrant's Dominance" explained 25.73 % variance with Eigen value is 1.02. This factor contained 2 perception items such as outsider dominance in tourism investment and lower wage of local employees whereas outsiders' dominance in tourism investment tends to agree but lower wage of local employees tends to neither agree nor disagree according to their mean score of the scale. This study illustrated that the respondents are facing some

negative impacts of tourism on economy. They perceived that tourism development negatively impacts on the price of land and housing, price of goods, disparity of income, and dominance of outsider in tourism development. The local residents have neutral perceptions about lower wage of local employees in tourism development. It shows that tourism industries of Nepal are not still well planed and controlled although it has a great potentiality for further development.

For positive social impact of tourism, communalities reflect the common variance in the data structure. It can say that 54% of the variance associated with statement first is common. Similarly, 58%, 53%, 55%, 50%, 69%, 69% and 50% of the common variance associated with statements second, third, fourth, fifth, sixth and seventh respectively. It means that there are distinct and reliable factors are produced.

Factor loading expressed the relationship of each variable to the underlying factor. So, the variables promotions of cultural restoration and conservation, unity of various groups and reduction of local burglary and rowdyism have a correlation of 0.64, 0.77 and 0.71 with factor 1 (Social Harmony) respectively. The variables job opportunity for local women, promotion of handicraft business and promotion of local organic agro-farming business have correlation of 0.66, 0.83 and 0.51 with factor 2 (Job Prospective for Women) respectively. The variable contribution to the decrease of cast based discrimination or bigotry and importance of quality education have a correlation of 0.83 and 0.56 with factor 3 (Quality Education).

The first factor named “Social Harmony” explained 21.74% of the total variance with Eigen value (E.V.) 2.34. This factor contained 3 perception items such as promotion of cultural restoration and conservation, unity of various groups in the community and reduce local burglary and rowdyism whereas contribution of the unity of various groups tends to strongly agree according to its mean score of scale. But promotion of cultural restoration and conservation; and reduction of local burglary and rowdyism have a tendency towards agree according to their mean score of the scale.

The second factor labeled “Job Prospective for Women” explained 19.73 % variance with Eigen value (E.V.) is 1.20. This factor contained 3 perception items such as job

opportunity for local women, promotion of indigenous handicraft business and local organic agro-farming business whereas contribution job opportunity for local women tends to strongly agree but promotion of indigenous handicraft business and local organic agro-farming business tend to agree according to their mean score of scale.

The third factor labeled “Quality Education” explained 14.85% variance with Eigen value 1.06. This factor contained two perception items such as contribution to reduce the cast based discrimination and importance of quality education whereas reducing caste based discrimination tends to agree according to its mean score of scale and importance of quality education tends to strongly agree. The Cronbach’s alpha coefficient for the factors with total scale reliability is 0.61 > 0.5. It indicates that the variables exhibit a correlation with their factor and thus they are internally consistent. The results of this study revealed that at the community level there is a positive social impact towards tourism development of Nepal. The host community perceived that tourism development creates positive social impact towards Social Harmony, Job Prospective for Women, and Quality Education.

For negative social impact of tourism, communalities reflect the common variance in the data structure. It can say that 61% of the variance associated with statement first is common. Similarly, 70%, 52%, 63%, 67%, and 51% of the common variance associated with statements second, third, fourth, fifth and sixth respectively. It means that distinct and reliable factors are produced.

Factor loading expressed the relationship of each variable to the underlying factor. So, the variables imitation of foreign life style and culture, impact of foreign language on local language and words, and crisis of feeling of local identity have a correlation of 0.73, 0.83 and 0.70 with factor1 (Influence by Foreign Culture) respectively. The variables entrepreneurs ignoring each other, increasing social problem and disorder, and created noisy and crowded situation have a correlation of 0.79, 0.76 and 0.63 with factor 2 (Social Disturbance) respectively.

The first factor named “Influenced by Foreign Culture” explained 32.01% of the total variance with Eigen value (E.V.) 2.52. This factor contained 3 perception items such as imitation of foreign life style and culture, impact of foreign language on the local

language, and crisis in the local identity whereas imitation of foreign life style and culture, impact of foreign language on the local language have a tendency towards agree but crisis in the feeling of local identity tends to neither disagree nor agree according to their mean score of the scale.

The second factor labeled "Social Disturbance" explained 28.37 % variance with Eigen value (E.V.) is 1.10. This factor contained 3 perception items such as entrepreneurs ignoring each other, increasing social problem and disorder, and created noisy and crowded situation whereas entrepreneurs ignoring each other, increasing social problem and disorder have a tendency towards neither disagree nor agree but created noisy and crowded situation tends to agree according to their mean score of scale. The Cronbach's alpha coefficient for the factors with total scale reliability is 0.72 > 0.5. It indicates that the variables exhibit a correlation with their factor and thus they are internally consistent. This study demonstrated that the local community did not perceive that tourism development creates negative social impact with local identity, entrepreneurs' business and social synchronization to the natives.

The results based on primary data revealed that tourism has the positive effect on quality of life of local residents. According to the perceptions of respondents, high impacts are found to be linked with emotional well-being (pride of local identity, maintaining social harmony and, cultural restoration and conservation), community well-being (unity of various groups, improving quality education and job prospective for women) and economic well-being (job opportunity, investment opportunity and reducing unemployment problem).

5.2 Recommendations

Tourism is one of the productive business activities directed for the production of the goods and services. It provides goods and services to visitors, and employment opportunities to the local people. It increases the foreign exchange earnings generating employment opportunities. Tourism is a fast growing industry and a valuable sector of economy of any country. Moreover, tourism plays an increasingly important role in the development of communities. The benefits of tourism include both tangible (e.g. job

creation, investment opportunity and infrastructure development, etc) and less tangible (e.g. social structure, quality of life etc). The recommendations based on the findings of this study are listed below:

1. In this study based on secondary data, the long run relationship based on Vector Error Correction (VEC) model has indicated that GDP elasticity with respect to average length of stay is more elastic as compared to GDP elasticity with respect to number of international tourists' arrivals in Nepal. It means that the contribution of average length of stay of tourist towards increasing GDP is greater than number international tourists' arrivals in Nepal. On the other hands, the results of Granger causality analysis have depicted that there exists bidirectional causal relationship between number of international tourist and their average length of stay, and GDP and average length of stay of tourist. It means that the past values average length of stay provide statistically significant information about the present values of GDP and vice versa. The past values of number of international tourist provide statistically significant information about present value of their average length of stay and vice versa. Similarly, unidirectional causal relationship exists from GDP to number of international tourist arrival in Nepal i.e. the past values of GDP provide statistically significant information about present value of international tourist. It clears that the increasing length of stay of tourist increases GDP and vice versa and large number of international tourist plays the positive role to increase their length of stay. The effort should be made to take into account the role of average length of stay of tourist in Gross Domestic Product of the country, not only focus on the total number of tourist arrival in the country. So, it should be developed the appropriate necessary environment for extending the average length of stay of international tourist in Nepal.

2. The long run relationship based on Vector Error Correction (VEC) model has indicated that the coefficient of elasticity of foreign exchange earnings from tourism with respect to average length of stay is relatively more elastic as compared to coefficient of elasticity of foreign exchange earnings from tourism

with respect to number of international tourists' arrival in Nepal. It means that the contribution of average length of stay of tourist towards increasing foreign exchange earnings is greater than number of international tourists' arrivals in Nepal. Similarly, the results of Granger causality test depicts that the unidirectional causal relationship from number of international tourists' arrivals as well as their average length of stay to foreign exchange earnings from tourism. It means that the past values of number of international tourist and their average length of stay provide statistically significant information about the present value of foreign exchange earnings from tourism. In addition, there exists bidirectional causal relationship between international tourists' arrivals in Nepal and their average length of stay i.e. the past values of number of international tourist provide statistically significant information about the present value of their average length of stay and vice versa. It indicates that increasing the number of international tourist and their length of stay of tourist increase foreign exchange earnings. Similarly, the increased number of international tourist plays the positive role to expand their length of stay and vice versa. It clarifies that expansion of foreign exchange earnings will lead to the expansion of tourists' length of stay on the one hand and it further incorporates to attract number of international tourists to Nepal. Focusing on foreign exchange earnings from tourism activities in Nepal, this study offers that more efforts should be concentrated on upgrading tourism related facilities such as accommodation, transportation, promotion and communication for increasing number of international tourists and their length of stay.

3. The long run relationship based on Vector Error Correction (VEC) model has indicated that coefficient of visitors' expenditure elasticity with respect to average length of stay is more elastic as compared to coefficient of visitors' expenditure elasticity with respect to number of international tourist arrival in Nepal. It means that the contribution of average length of stay of tourists towards visitors' expenditure is greater than number of international tourists' arrivals in Nepal. On the other hands, the results of Granger causality analysis have depicted that there exists bidirectional causal relationship between expenditure per visitor and their

average length of stay i.e. the past values of expenditure per visitor provide statistically significant information about present value of their average length of stay and vice versa. Similarly, there exists unidirectional causality exists from average length of stay to number of international tourists' arrival i.e. the past values of average length of stay provide statistically significant information about the present value of number of international tourist. It clarifies that the increasing average length of stay of tourist increases expenditure visitor and vice versa. The large number of international tourist plays the positive role to increase their length of stay. The findings suggest that the expenditure per visitor of Nepal positively relates to their length of stay in terms of short run as well as long run causality. Hence, policy makers should pay critical and sustained attention towards promoting cultural and natural resources, improving the infrastructure of tourism industry and employing the tourism marketing skills. So, it should be developed the appropriate necessary environment as well as initiate focused plan for the synergic development to extend the length of stay of tourists' arrival in Nepal for increasing their average expenditure.

4. The long run relationship based on Vector Error Correction (VEC) model has indicated that coefficient of GDP elasticity with respect to average expenditure per visitor is more elastic as compare to coefficient of GDP elasticity with respect to foreign exchange earnings from tourism. It means that the contribution of average expenditure per visitor towards GDP is greater than foreign exchange earnings from tourism. On the other hands, the results of Granger causality analysis have depicted that there exists bidirectional causal relationship between GDP and expenditure per visitor i.e. the past values of expenditure per visitor provide statistically significant information about the present value of GDP and vice versa. Similarly, unidirectional causal relationship exists between GDP and foreign exchange earnings from tourism i.e. the past values of GDP provide statistically significant information about present value of foreign exchange earnings. It clears that increasing expenditure per visitor increases GDP and vice versa. Similarly, foreign exchange earnings also facilitate the expansion of GDP.

The effort should be made to take into account the significant role of foreign exchange earning in Gross Domestic Product of the country, not only focus on the total number of tourist arrival in the country. So, it should be upgraded the infrastructure and other specific facilities related to tourism such as hotel and restaurants, tourist resorts, entertainment centers, transportation services, sales outlet of curios, handicraft, amusement parks, cultural activities etc. for increasing the expenditure per international visitor.

5. This study based on primary data illustrated that the respondents are facing with both positive and negative impacts of tourism on economy. The results of Exploratory Factor Analysis (EFA) found that three positive factors named as economic benefits, sanitation, and livestock product and alternative energy explained 67.84% variance of perception of residents. Similarly, two negative factors named as economic disparity and migrant's dominance explained 59.39% variance of perception of residents. The results also indicated that the host community perceived that tourism development helps to enhance their economic benefits, improving sanitation; and increasing livestock product and uses of alternative energy. Similarly, they perceived that tourism development negatively impacts on the price of land and housing, price of goods, disparity of people income, use of arable lands, and dominance of outsiders in tourism investment The local residents have neutral perceptions about lower wage of local employees in comparison to outsiders. It shows that tourism industries of Nepal still are not well planed and controlled but it has great potentiality for further development. So, effort should be made to promote tourism industry as one of the most important industries which may play major economic role for local community.

6. The results of this study reveal that at the community level there is a positive social impact towards tourism development of Nepal. The results of Exploratory Factor Analysis (EFA) found that the host community perceived that tourism development creates positive social impact towards social harmony, job prospective for women, and quality education. Similarly, they did not perceive that tourism development creates negative social impact with local identity,

entrepreneurs' business and social synchronization to the natives. The results also found that three positive factors named as social harmony, job prospective for women, and quality education explained 56.32% variance of perception of residents. Similarly, two negative factors named as influence by foreign culture and social disturbance explained 60.39% variance of perception of residents. The local residents have neutral perceptions towards crisis of local identity, ignoring each other and social problem. Tourism development strategy needs to depend on new policies for sustaining the Nepali social assets. Tourism strategy should concentrate on activities that help in improving the skill of local residents that has created positive attitudes towards social impacts.

7. For the further research work: this study is an attempt to analyze the impact of tourism in socio-economic development of Nepal has been made to apply different statistical methods/ models using two different set of data namely secondary time series data and primary data through cross-sectional study design. Vector error correction (VEC) model has been used to analyze the secondary data and Exploratory Factor Analysis (EFA) has been used to analyze the primary data. For which the further investigation from secondary data, different statistical methods such as ARIMA, ARDL, and ARCH/GARCH etc would also be explored as a further research works. Similarly, for analyzing primary data confirmatory factor analysis though structural equation model would also be explored.

CHAPTER 6: SUMMARY

This research work has been carried out to analyze the relationship between tourism benefits towards economic development process of the nation, to assess the residents' attitudes towards economic impact of tourism and residents' perceptions towards social impact of tourism in Nepal. Keeping in view of addressing these objectives, an attempt has been made to examine impact of tourism in socio-economic development of Nepal and assess the dimensionality of tourism components of the country. This study has been based on secondary and primary data. The secondary data has been taken from Nepal Tourism Statistics published by Ministry of Tourism and Civil Aviation (MOTCA, 2011-2015). Vector error correction (VEC) model has been used to analyze the secondary data for estimating long run and short run relationship among the economic variables. Augmented Dickey Fuller (ADF) test has been used to test the stationary or non-stationary of the data. Akaike Information Criteria (AIC) or Schwartz Bayesian Information Criteria (SBIC) has been used for selecting lags order to determine the optimal specification of equations. Johansen Co-integration test has been used to determine the number of co-integrating vectors among the variables. If co-integration has been detected between the series, there exists a long term equilibrium relationship between them, and Vector Error Correction (VEC) model is applied in order to evaluate the short run and long run properties of the co-integrated series. In case of no co-integration, Vector Error Correction (VEC) model is no longer required and directly proceeds to Granger causality test to establish causal links between variables.

The primary data has been used to examine residents' attitudes towards economic and social impact of tourism in Nepal by conducting face to face field survey of 601 respondents from certain tourist destinations with response rate 91.76%. A questionnaire was designed to collect the data and the respondents' level of agreement has been measured by five point Likert scale. During data collection, stratified random sampling approach has been used to select the respondents that represent the whole group of population that lives in three tourist destinations: Annapurna Base Camp Rout (Ghandruk VDC), Bhaktapur (Nagarkot VDC), Wildlife Conservation Center Chitwan (Bachhauli

VDC, ward number 1-4). Nepal is divided into three ecological zones: Mountain, Hill and Teari/Inner Terai. So, Ghandruk is taken as Mountain, Nagarkot is taken as Hill and Bachhauli is taken as Terai/Inner Terai. Assuming that 15% non-response rate, a sample of 655 residents has been randomly drawn from electoral rolls based on Constitution Assembly Election II, 2013 provided by Election Commission of Nepal using randomization technique. All adult members of the household were approached. The enumerators visited in the households of selected respondents for their better response and this method was chosen because of its higher response rate than other methods. If an individual refused to participate or could not meet in his/her resident, then next member of same or neighboring household was intercepted and ask to participate. The data gathered in four week period (mid January to mid February), 2017. In this study, Exploratory Factor Analysis (EFA) has been used to analyze the primary data to assess residents' attitude and perception towards the impact of tourism in economic and social development of Nepal respectively. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy has been intended to check the suitability of data set for factor analysis. The Bartlett's test of Sphericity has been used for testing the null hypothesis that the original correlation matrix is an identity matrix. The determinant score has been computed for testing the problem of multi-collinearity. Cronbach's alpha coefficient has been computed for testing the internal consistency or reliability.

Regarding fitting the Vector Error Correction (VEC) model of relationship between number of international tourist (TOUR) and their average length of stay (AVLS) towards share of Gross Domestic Product (GDP) of tourism in Nepal, the following are summarized:

- The results of ADF test explained that unit root test applied to the variables: GDP, TOUR and AVLS at level fail to reject the null hypothesis of non stationary of all the variables except AVLS. It clearly entailed that all the variables are found non-stationary at level except AVLS. When the series are first differenced then all variables are stationary which indicated that all the variables in the series are integrated of order one.

- Johansen test of co-integration explained that both trace statistic and maximum Eigen value statistics indicate that there is at least one co-integrating vector among GDP, TOUR and AVLS. It rejects the null hypothesis of no co-integrating vector under both test statistics at 5 % level of significance. Consequently, it can be concluded that there is one co-integrating relationship among GDP, TOUR and AVLS. This implies the GDP, TOUR and AVLS establish a long run relationship in the data set.

- The results of long run relationship based on VEC Model elucidated that increasing TOUR by 100% produces an increment of almost 216.7% of GDP. Similarly increasing AVLS by 100% produces an impact of almost 742.9% of GDP. Thus coefficient of GDP elasticity with respect to AVLS is more elastic as compared to coefficient GDP elasticity with respect to TOUR. It means that the role of AVLS towards increasing GDP is greater than TOUR.

- The error correction term of GDP has negative sign and it is statistically significant at 5% level. It implies that the system convergence towards equilibrium and stable due to any disturbance in the system. The coefficient of error correction term of TOUR carries negative sign and it is not significant at 5% level. It depicts the system convergence towards equilibrium but unstable in case of any disturbance in the system. The coefficient of error correction term of AVLS is positive and statistically significant at 5% level which signifies that the system divergence from the equilibrium path and the system will be stable due to any disturbance.

- The results of Granger causality test reported that GDP Granger causes TOUR but TOUR does not Granger causes GDP. So, unidirectional Granger causality exists between GDP and TOUR. Similarly, GDP Granger causes AVLS and AVLS also Granger causes GDP. So bidirectional Granger causality exists between GDP and AVLS. Similarly, AVLS Granger causes TOUR and TOUR also Granger causes AVLS. So, bidirectional Granger causality exists between AVLS and TOUR. It clears that the increasing average length of stay of tourist (AVLS) plays positive

role to increase GDP and vice versa and large number of international tourist (TOUR) plays the affirmative role to increase their average length of stay (AVLS).

- Lagrange multiplier test of autocorrelation confirmed that there is no evidence to contradict the validity of the model and J-B test clearly indicated that the disturbances are distributed normally.

Regarding fitting the Vector Error Correction (VEC) model for relationship between number of international tourist (TOUR) and their average length of stay (AVLS) towards foreign exchange earnings from tourism (EARN) in Nepal, the following are summarized:

- The results of the ADF test indicated that the series of variables such as EARN and TOUR are not stationary in their level (before the first difference) but they all (EARN,TOUR and AVLS) are stationary after the first difference. It means that all variables are free from unit roots after the first difference. This entailed that all the variables in the series are integrated of order one.

- The results of Johansen co-integration test reported that both trace statistic and maximum Eigen value statistic indicate that there is at least one co-integrating vector among EARN, TOUR and AVLS. It rejects the null hypothesis of no co-integrating vector under both test statistics at 5 % level of significant. Consequently, it can be concluded that there is one co-integrating relationship among EARN, TOUR and AVLS. This implies the EARN, TOUR and AVLS establish a long run relationship.

- The results of long run relationship based on VECM elucidated that increasing EARN by 100% produces an increment of almost 395.69% of AVLS. Similarly increasing EARN by 100% produces an impact of almost 294.62% of TOUR. Thus EARN elasticity with respect to AVLS is more elastic as compared to EARN elasticity with respect to TOUR. It means that the role of AVLS towards increasing EARN is greater than TOUR.

- The coefficient of error correction term of EARN has positive sign and it is statistically insignificant at 5% level. It implies that the system divergence from equilibrium but unstable due to the any disturbance in the system. The coefficient of error correction term of AVLS carries negative sign but it is not significant at 5% level. It depicts that the system convergence towards equilibrium but unstable in case of any disturbance in the system. The coefficient of error correction term of TOUR is positive and statistically significant at 5% level. It implies that the TOUR divergence from the equilibrium and stable due to any disturbance in the system.

- The results of Granger causality test reported that TOUR Granger causes AVLS and AVLS also Granger causes TOUR. So bidirectional Granger causality exists between TOUR and AVLS. It signifies the past values of TOUR have predictive ability to determine the present value of AVLS and vice versa. Similarly, TOUR Granger causes EARN but EARN does not Granger cause TOUR. So, unidirectional Granger causality exists from TOUR to EARN. In addition, AVLS Granger Causes EARN but EARN does not Granger cause AVLS. So, unidirectional Granger causality exists from AVLS to EARN. It implies that the past values of TOUR and AVLS have predictive ability to determine the present value of EARN. It indicates that the large number of international tourist (TOUR) and their average length of stay (AVLS) play positive role to increase foreign exchange earnings (EARN). Similarly, the large number of international tourist (TOUR) plays the affirmative position to expand their average length of stay (AVLS) and vice versa.

- Lagrange multiplier test of autocorrelation confirmed that there is no evidence to contradict the validity of the model and J-B test clearly indicated that the disturbances are distributed normally.

Regarding fitting the Vector Error Correction (VEC) model for relationship between number of international tourist (TOUR) and their average length of stay (AVLS) towards expenditure of tourist arrival (EXPV) in Nepal, the following are summarized:

- ADF test demonstrated that the variables EXPV and TOUR are not stationary but AVLS is stationary at level (before first difference). After the first difference all variables are stationary i.e. do not have unit root. It can reject the null hypothesis of non- stationary after the first difference at 5% level of significant.

- Johansen test of co-integration explained that both trace statistic and maximum Eigen value statistics indicate that there is at least one co-integrating vector among EXPV, TOUR and AVLS. It rejects the null hypothesis of no co-integrating vector under both test statistics at 5 % level of significant. Consequently, it can conclude that there is one co-integrating relationship among EXPV, TOUR and AVLS.

- The results of long run relationship based on VEC model elucidated that increasing EXPV by 100% produces an increment of almost 640.6% of AVLS. Similarly increasing EXPV by 100% produces an impact of almost 220.9% of TOUR. Thus coefficient of EXPV elasticity with respect to AVLS is more elastic as compared to coefficient of EXPV elasticity with respect to TOUR. It means that the role of AVLS towards increasing EXPV is greater than TOUR.

- The coefficient of error correction term of EXPV has negative sign but it is not statistically significant at 5% level. It implies that the system convergence towards equilibrium path but unstable due to the any disturbance in the system. Similarly, the coefficient of error correction term of TOUR carries positive sign but it is not significant at 5% level. It depicts that the system divergence from equilibrium path but unstable in case of any disturbance in the system. The coefficient of error correction term of AVLS is negative and statistically significant at 5% level. It implies that the system convergence towards the equilibrium path and stable due to any disturbance in the system.

- The results of Granger causality test reported that EXPV Granger causes AVLS and AVLS also Granger causes EXPV. So bidirectional Granger causality exists between EXPV and AVLS. Similarly, AVLS Granger causes TOUR but TOUR does not Granger cause AVLS. So, unidirectional Granger causality exists from

AVLS to TOUR. EXPV does not Granger cause TOUR and TOUR also does not Granger cause EXPV. No direction Granger causality between EXPV and TOUR i.e. they are statistically independent. It clarifies that the increasing average length of stay (AVLS) of tourist takes part in affirmative position to increases expenditure of visitor (EXPV) and vice versa. The large number of international tourist (TOUR) plays the positive role to increase their average length of stay (AVLS).

- Lagrange multiplier test of autocorrelation confirmed that there is no evidence to contradict the validity of the model and J-B test clearly indicated that the disturbances are distributed normally.

Regarding fitting the Vector Error Correction (VEC) model for relationship between foreign exchange from tourism (EARN) and average expenditure per visitor (EXPV) towards share of gross domestic product (GDP) from tourism in Nepal, the following are summarized:

- The results of ADF test demonstrated that unit root test applied to the variables (GDP, EARN & EXPV) at level fail to reject the null hypothesis of non stationary of all the variables used. It implies that all the variables are non-stationary at level. When the series are first differenced then all variables are stationary which indicated that all the variables in the series are integrated of order one. This implies that all the variables in the series are integrated of order one.

- Johansen test of co-integration explained that both trace statistic and maximum Eigen value statistics indicate that there is at least one co-integrating vector among GDP, EARN and EXPV. It rejects the null hypothesis of no co-integrating vector under both test statistics at 1 % level of significant. Consequently, it can conclude that there is one co-integrating relationship among GDP, EARN and EXPV. This implies the GDP, EARN and EXPV establish a long run relationship.

- The results of long run relationship based on VEC model elucidated that increasing EARN by 100% produces an impact of almost 0.64% of GDP. Similarly increasing EXPV by 100% produces an increment of almost 142.7% of GDP. Thus coefficient of GDP elasticity with respect to EXPV is more elastic as compare to coefficient of GDP elasticity with respect to EARN. It means that the role of EXPV towards increasing GDP is greater than EARN.

- The coefficient of error correction term of GDP has negative sign and it is not statistically significant at 5% level. It implies that the system convergence towards equilibrium but unstable due to the any disturbance in the system. The coefficient of error correction term of EXPV carries negative sign and it is significant at 5% level. It depicts stability of the system and convergence towards equilibrium path in case of any disturbance in the system. The coefficient of error correction term of EARN is negative but it is not significant at 5% level. It implies that the system convergence towards the equilibrium path and the system will be unstable due to any disturbances.

- The results of Granger causality test reported that GDP Granger causes EXPV and EXPV also Granger causes GDP. So bidirectional Granger causality exists between GDP and EXPV. Similarly, EARN Granger causes GDP but GDP does not Granger cause EARN. So, unidirectional Granger causality exists between EARN and GDP. Similarly, EXPV Granger causes EARN but EARN does not Granger cause EXPV i.e. there is unidirectional Granger causality between them. It clears that increasing expenditure per visitor (EXPV) plays positive role to increase GDP and vice versa. Similarly, foreign exchange earnings (EARN) also facilitate the expansion of GDP.

- Lagrange multiplier test of autocorrelation confirmed that there is no evidence to contradict the validity of the model and J-B test clearly indicated that the disturbances are distributed normally.

While applying the Exploratory Factor Analysis (EFA) for residents' attitudes towards positive economic impact of tourism, the following are summarized:

- The values of communality indicated that 69.0% of the variance associated with statement first is common. Similarly, 73.0%, 70.0%, 64.0%, 64.0%, 72.0% and 63.0% of the common variance associated with statements second, third, fourth, fifth, sixth and seventh respectively. The communalities > 0.5 indicate that there are distinct and reliable factors can be produced.

- The factor loadings illustrated that the variables such as job opportunity, investment opportunity and increasing income level have a correlation of 0.82, 0.85 and 0.83 with factor1 (Economic Benefits) respectively. The variables such as construction of private toilet and awareness of hygiene have a correlation of 0.85 and 0.77 with factor 2 (Sanitation) respectively. The variables such as livestock product and uses of biogas / solar energy have correlation of 0.78 and 0.78 with factor 3 (Livestock and Alternative Energy) respectively.

- The first factor named "Economic Benefits" explained 30.41% of the total variance with Eigen value (E.V.) 2.13. This factor contained 3 perception items such as job opportunity, investment opportunity and increasing the income level of local people have a tendency to strongly agree according to their mean score of scales. The second factor labeled "Sanitation" explained 19.42% variance with Eigen value (E.V.) 1.36. This factor contained 2 perception items such as construction of private toilets and awareness of hygiene has a tendency to strongly agree according to their mean score of scale. The third factor named "Livestock and Alternative Energy" explained 18.01% total variance with Eigen value (E.V.) 1.26. This factor contained 2 perception items such as increasing livestock products and uses of alternative energy have a propensity to scale of agree according to their mean score of scales.

- The Cronbach's alpha coefficient for the factors with total scale reliability is 0.65 > 0.5. It indicated that the variables exhibit a correlation with their factor and thus they are internally consistent. The results of this study demonstrated that at a community level there is a strong support for tourism development i.e. the host community perceived that tourism development helps to enhance their economic

benefits, improving sanitation; and increasing livestock product and uses of alternative energy.

While applying the Exploratory Factor Analysis (EFA) for residents' attitudes towards negative economic impact of tourism, the following are summarized:

- The values of communality explained that 66.0% of the variance associated with statement first is common. Similarly, 57.0%, 52.0%, 54.0%, 55.0%, and 73.0% of the common variance associated with statements second, third, fourth, fifth and sixth respectively. The communalities > 0.5 indicate that there are distinct and reliable factors can be produced.

- The factor loadings illustrated the relationship of each variable to the underlying factors. So, the variables such as increasing price of land and housing, increasing price of goods, disparity of people income and loss of arable have a correlation of 0.81, 0.72, 0.60 and 0.62 with factor1 (Economic Disparity) respectively. The variables such as outsiders' dominance in tourism investment and lower wage of local employees have a correlation of 0.66 and 0.86 with factor 2 (Migrants' Dominance) respectively.

- The first factor named "Economic Disparity" explained 33.66% of the total variance with Eigen value (E.V.) 2.60. This factor contained 4 perception items such as rising price of land and housing, rising price of goods, disparity of people income, loss of arable land whereas rising price of land and hosing, and loss of arable land property have a tendency towards agree according to their mean score of the scale; disparity of people income and rising price of goods tend towards strongly agree. The second factor labeled "Migrant's Dominance" explained 25.73 % variance with Eigen value (E.V.) 1.02. This factor contained 2 perception items such as outsider dominance in tourism investment and lower wage of local employees whereas outsiders dominance in tourism investment tends to agree but lower wage of local employees tends to neither disagree nor agree according to their mean score of the scale.

- The Cronbach's alpha coefficient for the factors with total scale reliability is 0.726 > 0.5. It indicates that the variables exhibit a correlation with their factor and thus they are internally consistent. This study illustrated that the respondents are facing with both positive and negative impacts of tourism on economy. They perceived that tourism development negatively impacts on the price of land and housing, price of goods, and income distribution and tourism investment. The local residents have neutral perceptions about lower wage of local employees in comparison to outsiders in tourism development.

While applying the Exploratory Factor Analysis (EFA) for residents' perceptions towards positive social impact of tourism, the following are summarized:

- The values of communality reflected that 54 % of the variance associated with statement first is common. Similarly, 58%, 53%, 55%, 69%, 50%, 69% and 50% of the common variance associated with statements second, third, fourth, fifth, sixth, seventh and eighth respectively.

- Factor loading expressed the variables promotions of cultural restoration and conservation, unity of various groups and reduction of local burglary and rowdyism have a correlation of 0.64, 0.76 and 0.71 with factor1 (Social Harmony) respectively. The variables job opportunity for local women, promotion of handicraft business and promotion of local organic agro-farming business have correlation of 0.67, 0.83 and 0.51 with factor 2 (Job Prospective for Women) respectively. The variable contribution to the decrease of cast based discrimination or bigotry and importance of quality education have a correlation of 0.83 and 0.56 with factor 3 (Quality Education).

- The first factor named "Social Harmony" explained 21.74% of the total variance with Eigen value (E.V.) 2.34. This factor contained 3 perception items such as promotion of cultural restoration and conservation, unity of various groups in the community and reducing local burglary and rowdyism whereas contribution of the unity of various groups tends to strongly agree according to its mean score of scale. But promotion of cultural restoration and conservation; and reduction of

local burglary and rowdyism have a tendency towards agree according to their mean score of the scale. The second factor labeled "Job Prospective for Women" explained 19.73 % variance with Eigen value (E.V.) is 1.20. This factor contained 3 perception items such as job opportunity for local women, promotion of indigenous handicraft business and local organic agro-farming business whereas contribution job opportunity for local women tends to strongly agree but promotion of indigenous handicraft business and local organic agro-farming business tend to agree according to their mean score of scale. The third factor labeled "Quality Education" explained 14.85% variance with Eigen value 1.06. This factor contained 2 perception item such as contribution to reduce the cast based discrimination or bigotry and feeling of importance of quality education whereas reducing cast based discrimination tends to agree and feeling of quality education tends to strongly agree according to their mean score of scale.

- The Cronbach's alpha coefficient for the factors with total scale reliability is 0.61 > 0.5. It indicates that the variables exhibit a correlation with their factor and thus they are internally consistent. The results of this study revealed that at a community level there is a positive social impact towards tourism development of Nepal. The host community perceived that tourism development creates positive social impact towards social harmony, job perspective for women, and importance of quality education.

When applying the Exploratory Factor Analysis (EFA) for residents' attitudes towards negative social impact of tourism, the following are summarized:

- The values of communality reflected that 61% of the variance associated with statement first is common. Similarly, 70%, 52%, 63%, 67%, and 51% of the common variance associated with statements second, third, fourth, fifth and sixth respectively.

- Factor loading expressed the variables such as imitation of foreign life style and culture, impact of foreign language on local language, words and phrases, and crisis of feeling of local identity have a correlation of 0.73, 0.83 and 0.70 with

factor1 (Influence by Foreign Culture) respectively. The variables such as entrepreneurs ignoring each other, increasing social problem and disorder, and created noisy and crowded situation have a correlation of 0.79, 0.76 and 0.63 with factor 2 (Social Disturbance) respectively.

- The first factor named "Influenced by Foreign Culture" explained 32.01% of the total variance with Eigen value (E.V.) 2.52. This factor contained 3 perception items such as imitation of foreign life style and culture, impact of foreign language on the local language, and crisis in the local identity whereas imitation of foreign life style and culture, impact of foreign language on the local language have a tendency towards agree condition but the crisis in the feeling of local identity tends to neither disagree nor agree according to their mean score of the scale. The second factor labeled "Social Disturbance" explained 28.37 % variance with Eigen value (E.V.) is 1.10. This factor contained 3 perception items such as entrepreneurs ignoring each other, increasing social problem and disorder, and created noisy and crowded situation where as entrepreneurs ignoring each other, increasing social problem and disorder have a tendency towards neither disagree nor agree but created noisy and crowded situation tends to agree according to their mean score of scale.

- The Cronbach's alpha coefficient for the factors with total scale reliability is 0.72 > 0.5. It indicates that the variables exhibit a correlation with their factor and thus they are internally consistent. This study demonstrated that the local community did not perceive that tourism development creates negative social on local identity, entrepreneurs' business and social synchronization to the natives.

The strength of present study was to analyze the impact of tourism in socio-economic development of Nepal and to assess the dimensionality of tourism components of the country using Vector Error Correction (VEC) model based on secondary data and Exploratory factor Analysis (EFA) for attitudes of respondents towards economic and social impacts of tourism in Nepal. Several studies carried out about economic and social impact of tourism in Nepal using preliminary statistical analysis. But in this study, VEC model has been used to analyze the secondary data to find out the magnitude as well as

direction of the target variables. Similarly, Exploratory Factor Analysis (EFA) has been used for primary data to find out the dimensionality of tourism components based on residents' attitudes towards social and economic impact of tourism in Nepal.

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PUBLICATIONS/ SEMINAR PRESENTAION

List of published papers based on Ph D research work:

Published papers:

1. Dhakal, B., Sthapit, A. B., & Khanal, S. P. (2016b). Investigating Nepal's gross domestic product from tourism: Vector error correction model approach. *American Journal of Theoretical and Applied Statistics,* 5(5), 311-316.doi: 10.11648/j.ajtas.20160505.20

2. Dhakal, B., Sthapit, A. B., & Khanal, S. P. (2016). Relationship between international tourist and their length of stay towards share of gross domestic product of Nepalese tourism: Vector error correction model approach. *International Journal of Research in Engineering and Applied Sciences,* 6(8), 35-44.

3. Dhakal, B., Sthapit, A. B., & Khanal, S. P. (2017). Factor analysis of local residents' perceptions towards social impact of tourism in Nepal. *International Journal of Statistics and Applied Mathematics*. 2(6), 1-8.

Seminar Presentation:

List of papers presented in conference:

1. Presented a paper entitled *"Vector Error Correction model Approach between International Tourist and their Length of Stay towards Share of Gross Domestic Product of Nepalese Tourism* "in 7th National Conference on Science, Technology and Innovation for Nepal's Graduation to Developing Country Status organized by Nepal Academy of Science and Technology (NAST), Kathmandu, March 29-31,2016.

2. Presented a paper entitled "*Long-run Relationship between International Tourist and their Length of Stay towards Nepal's Foreign Exchange Earnings from Tourism: Vector Error Correction Model Approach*" in 7th National Conference on Operational Research and Development organized by Operation Research Society of Nepal (ORSN), Lalitpur, February ,1-2, 2017.

3. Presented a paper entitled *"Impact of Tourism in Economic Development of Nepal using Factor Analysis"* in 2nd National Conference on Statistics and its Applications organized by Central Department of Statistics (CDS), T.U. Kirtipur, September. 3-4, 2017.

APPENDIX 1: QUESTIONNAIRES (प्रश्नावलीहरु)

Legal Declaration:-

The following questionnaire is designed to Ph.D. research entitled **"Impact of Tourism in Socio-economic Development of Nepal: A Multivariate Approach."** Please tick (√) in the appropriate place according to your perception and fill in the blanks. The perception of respondents must be confidential and only used in purposed research.

(तल दिइएका प्रस्नावलीहरु **"नेपालको सामाजिक अर्थब्यवस्थामा पर्यटनको प्रभाव : बहुचरीय तथ्यांक विश्लेषण"** विषयक विधावारिधि अनुसन्धानका लागि तयार पारिएका हुन्। कृपया तपाईंको अनुभुति सँग मिल्ने ठाउँमा ठीक चिन्ह (√) लगाइदिनुहोला र आवस्यक स्थानमा खाली ठाउँ भरीदिनुहोला। साथै यसप्रश्नावलीका लागि लिइएका जवाफहरु अतिगोप्य हुनेछन्र अनुसन्धान प्रायोजनका लागि मात्र प्रयोग हुनेछन भनी अनुरोध गर्दछु।)

शोधकर्ता : वसन्त ढकाल, तथ्यांकशास्त्र केन्द्रीय बिभाग, त्रि. बि.कीर्तिपुर

1. Socio-demographic information

1(a) Name (**नाम**):-

1(b) Gender (लिङ्ग):- (i)Male (पुरुष) (ii) Female (महिला) (iii) Others (अन्य)

1(c) Marital status (बैबाहिक स्थिति):-(i)Unmarried (अविवाहित) (ii) Married (विवाहित)

(iii) Divorcee (पारपाचुके) (iv) Widow/Widower (बिधवा/बिदुर) ……

1(d) Education status (शैक्षिक स्थिति):-(i)Illiterate (अशिक्षित) **(ii)** Literate without schooling (घरेलुशिक्षा) (iii)Primary (प्राथमिक) (iv) Secondary (माध्यमिक) (v)Higher secondary (उच्च माध्यमिक)

(vi) Bachelor and above (स्नातक वा सो भन्दामाथि)

1(e) Entrepreneur type involved in :- (सङ्गलग्न ब्यबशायको प्रकार):-

(i) Home stay (होमस्टे) (ii) Trader (खुद्राब्यापारी)

(ii) Hotel / Guest House (होटल/ गेस्टहाउस) (iv) Restaurant (रेस्टुरेन्ट)

(v)Travel & Tour Agent (ट्रावल/ टुरएजेन्ट) (vi) Others (अन्य भए उल्लेख गर्ने)……

1(f) Designation:- (पद) (i) Owner (साहु /मालिक) (ii) Employee (कामदार) (iv) Others (अन्य भए उल्लेख गर्ने)……

1(g) Age in year (उमेर)……

1(h) Monthly family Income (मासिक आम्दानी)……

1(i) Cast/Ethnicity (जातजाती)……1(j) District (जिल्ला)……

1(k) Religion (धर्म)…….

2	**Positive impact of tourism on economic sector (आर्थिक अबस्थामा पर्यटनको सकारात्मक असर)**	Strongly disagree (पूर्ण असहमत 1	Disagree (असहमत) 2	Neither agree nor disagree (सामान्य) 3	Agree (सहमत) 4	Strongly agree (पूर्ण सहमत) 5
Q_{2a}	Tourism creates job opportunities for local people. पर्यटनले स्थानीय बासिन्दाहरुलाई रोजगारीको अवसर सिर्जना गरेको छ।					
Q_{2b}	Tourism has created opportunity for investment in various sectors. पर्यटनका कारणले बिभिन्न क्षेत्रमा लगानीको अबसर बढेको छ।					
Q_{2c}	Tourism has increased the income level of local people. पर्यटनले गर्दा स्थानीयबासीहरुको आम्दानी मा बृदि भएको छ।					

Q_{2d}	Increasing livestock product in local level due to development of tourism. पर्यटनका कारणले स्थानीयस्तर मा पशुपालन सम्बन्धी उत्पादनमा बृदि भएकोछ।					
Q_{2e}	Tourism has contributed to the development of local road. पर्यटनका कारणले स्थानीय स्तरका बाटो/ घाटोको विकास भएको छ।					
Q_{2f}	Reducing the drinking water problem in local level due to development of tourism. पर्यटनका कारणले स्थानीयस्तरमा खानेपानीको समस्या घटेको छ।					
Q_{2g}	Increasing uses of solar energy/bio gas in the local level due to development of tourism. पर्यटनका कारणले स्थानीय स्तरमा सोलार शक्ति/ गोबर ग्यासको उपयोग बढेको छ।					
Q_{2h}	Increasing the construction of private toilets in the local level due to development of tourism. पर्यटनको बिकासले गर्दा स्थानीय स्तरमा ब्यक्तिगत चर्पी बनाउने क्रम बढेको छ।					
Q_{2i}	Tourism has increased the awareness of hygiene. पर्यटनका कारणले स्थानीय स्तरमा सरसफाइ सम्बन्धी जन चेतनाबढेको छ।					

3	**Negative impact of tourism on economic sector (आर्थिक अबस्थामा पर्यटनको नकारात्मक असर)**	Strongly disagree (पूर्ण असहमत 1	Disagree (असहमत) 2	Neither agree nor disagree (सामान्य) 3	Agree (सहमत) 4	Strongly agree (पूर्ण सहमत) 5
Q_{3a}	There is dominance of outsiders in tourism investment in local level. पर्यटन सम्बन्धी लगानीकाक्षेत्रमा स्थानीयबासी भन्दाबाहिरी जिल्लाबासीहरु को बोलबालाछ।					
Q_{3b}	There is significant rise in price of land and housing due to tourism. पर्यटनका कारणले जमीनको मुल्य र घरभाडा उल्लेखनीय रुपमा बृदि भएको छ।					
Q_{3c}	There is significant rise in price of goods due to tourism. पर्यटनका कारणले सरसामानको मुल्यबृदि भएको छ।					
Q_{3d}	Due to tourism there is disparity of people income. पर्यटनका कारणले गरीब र धनी बिचको खाडल बढ्दो छ।					
Q_{3e}	Due to tourism there is loss of arable land property. पर्यटनका कारणले खेतीयोग्य जमिन नासिदै गएको छ।					
Q_{3f}	Lower wage of local employees in comparison to outsiders. अन्य ठाउँबाट यहाँ आएर काम गर्नेको भन्दा स्थानीय कामदारहरु को ज्यालादर कम छ।					

4	**Positive impact of tourism on social sector (सामाजिक अबस्थामा पर्यटनको सकारात्मक असर)**	Strongly disagree (पूर्ण असहमत) 1	Disagree (असहमत) 2	Neither agree nor disagree (सामान्य) 3	Agree (सहमत) 4	Strongly agree (पूर्ण सहमत) 5
Q_{4a}	Tourism has contributed to the decrease of caste based discrimination or bigotry. पर्यटन का कारणले छुवाछुत र जातिय वा अन्य भेदभाव घट्दो छ।					
Q_{4b}	Tourism has made local residence to feel importance of quality education. पर्यटनले स्थानीयहरु माझ गुणस्तरीय शिक्षाको महत्वको महसुस बढाएको छ।					
Q_{4c}	Tourism helps to promote cultural restoration and conservation. पर्यटनले सास्कृतिक सम्बर्धन र प्रबर्धनको संरक्षण गर्न सहयोग गरेको छ।					
Q_{4d}	Tourism has contributed to the unity of various groups in the community. पर्यटनले समुदाय भित्रका बिभिन्न जातजातिहरु बिच एकता कायम गर्न सहयोग गरेको छ।					
Q_{4e}	Tourism has contributed to the creation of job opportunities for local women. पर्यटनका कारणले गर्दा स्थानीय महिलाहरुका लागि रोजगारीको अबसर बढेको छ।					
Q_{4f}	Tourism has reduced internal migration in local people. पर्यटनका कारणले गर्दा स्थानीयहरुको बसाइसराइको क्रम घटेको छ।					
Q_{4g}	Tourism has reduced local burglary and rawdyism. पर्यटनका कारणले गर्दा स्थानीय स्तरमा चोरी/ठगी रगुण्डागर्दी घटेकोछ।					
Q_{4h}	Tourism has promoted local organic agro- farming business. पर्यटनका कारणले स्थानीय प्राङ्गरिक (अर्गानिक) कृषि प्रणालीको बजार बिस्तार भएको छ।					
Q_{4i}	Tourism has promoted indigenous handicraft businesses. पर्यटनका कारणले स्थानीय स्तरमा निर्मित हस्तकलाका सामानहरुको बजार बढेको छ।					

5	**Negative impact of tourism on social sector (सामाजिक अबस्थामा पर्यटनको नकारात्मक असर)**	Strongly disagree (पूर्ण असहमत) 1	Disagree (असहमत) 2	Neither agree nor disagree (सामान्य) 3	Agree (सहमत) 4	Strongly agree (पूर्ण सहमत) 5
Q_{5a}	The tourism development has forced poor people to sell their ancestral land and property. पर्यटनको बिकासले गर्दा बिपन्नबर्गले आफ्नो पुख्यौंली जग्गा जमीन बेच्दै गएकाछन्।					
Q_{5b}	Imitation of foreign life style has increased due to tourism. पर्यटनका कारणले स्थानीयहरु माझ बिदेशी संस्क्रितिको अनुकरण बढ्दोछ।					
Q_{5c}	Tourism entrepreneurs have been so busy that trend of ignoring each other has increased. ब्यस्ततताको कारणले पर्यटन ब्याबसायीहरु बिच समुदायमा एकअर्कालाई बेवास्ता गर्ने प्रचलन बढेको छ।					
Q_{5d}	Tourism has increased social problems and disorder. पर्यटनका कारणले सामाजिक समस्या र अनुशासनहीनता बढ्दो छ।					
Q_{5e}	Tourism has created noisy and crowded situation in local level. पर्यटनका कारणले स्थानीय स्तरमा अनाबस्यक होहल्ला र भिडभाड बढेको छ।					
Q_{5f}	Tourism has promoted use of drugs in local level. पर्यटनका कारणले स्थानीय स्तरमा लागुऔषधको प्रयोग बढ्दो छ।					
Q_{5g}	Direct impact of foreign language on the local languages and words due to tourism. पर्यटनका कारणले स्थानीय भाषा र शब्दहरुमा बिदेशीभाषाको प्रत्यक्ष असर परेको छ।					
Q_{5h}	Crisis in the feeling of local identity due to tourism. पर्यटनका कारणले स्थानीय पहिचान संकटमा पर्दै गएको छ।					

Thank you for kind cooperation

(सहयोगका लागि धन्यबाद)

APPENDIX 2: Tourist Arrival and Average Length of Stay (1962-2014)

Year	Total		By Air		By Land		Average Length of Stay
	Number	Annual Growth Rate	Number	%	Number	%	
1962	6,179	-	-	-	-	-	
1965	9,388	-1.4	8,303	88.4	1,085	11.6	
1970	45,970	31.7	36,508	79.4	9,462	20.6	
1975	92,440	2.9	78,995	85.5	13,445	14.5	13.05
1980	162,897	0.4	139,387	85.6	23,510	14.4	11.18
1985	180,989	2.5	151,870	83.9	29,119	16.1	11.30
1990	254,884	6.2	226,421	88.8	28,464	11.2	12.00
1995	363,395	11.3	325,035	89.4	38,360	10.6	11.27
2000	463,395	-5.7	376,914	81.3	86,732	18.7	11.88
2005	375,398	-2.6	277,346	73.9	98,052	26.1	9.09
2010	602,867	18.2	448,800	74.4	154,067	25.6	12.67
2014	790,118	-0.9	585,981	74.2	204,137	25.8	12.44

Source: Nepal Tourism Statistics, 2015.

APPENDIX 3: Tourist Arrivals by Purpose of Visit (1962-2014)

Year	Holiday	Trekking Mountain.	Business	Pilgrimage	Official	Conv. Conf.	Other	Not Specified	Total
1962									6,179 (100)
1965	8,815 (93.9)	40 (0.4)	160 (1.7)		372 (4.0)		1 (0.0)		9,388 (100)
1970	41,881 (91.1)	556 (1.2)	918 (2.0)		1,528 (3.3)		1,082 (2.4)		45,970 (100)
1975	20,124 (75.9)	12,587 (13.6)	4,911 (5.3)		4,277 (4.6)		591 (6.6)		92,440 (100)
1980	130,600 (80.2)	19,302 (11.8)	5,491 (3.4)		4,654 (2.9)		2,850 (1.7)		162,897 (100)
1985	128,217 (70.8)	28,707 (15.9)	10,416 (5.8)		9,230 (5.1)		4,419 (2.4)		180,989 (100)
1990	161,839 (63.5)	39,999 (15.7)	11,728 (4.6)	6,713 (2.6)	26,578 (5.5)	2,838 (1.1)	26,578 (10.4)		254,885 (100)
1995	183,207 (50.4)	84,787 (23.3)	21,829 (6.0)	5,257 (1.4)	20,040 (4.5)	5,272 (1.5)	42,953 (11.8)		363,395 (100)
2000	255,889 (55.2)	118,780 (25.6)	29,454 (6.4)	15,801 (3.4)	20,832 (4.5)	5,599 (1.2)	17,291 (3.7)		463,646 (100)
2005	160,259 (42.7)	61,488 (41.4)	21,377 (5.9)	47,621 (12.7)	16,859 (4.5)	-	67,179 (17.9)		375,398 (100)
2010	263,938 (43.8)	70,218 (11.6)	70,218 (3.5)	101,335 (16.8)	26,374 (4.4)	9,627 (1.6)	109,998 (18.24)	57,651 (9.6)	602,867 (100)
2014	305,849 (50.1)	97,185 (12.3)	24,494 (3.1)	98,765 (12.5)	32,395 (4.1)	13,432 (1.7)	53,728 (6.8)	74,271 (9.4)	790,118 (100)

Figure in parenthesis represent percentage of the total

Source: Nepal Tourism Statistics, 2015.

APPENDIX 4: Tourist Arrivals by Sex and Age Group (1962-2014)

Year	Sex		Age Group(Year)					
	M ale	Female	0-15	16-30	31-45	46-60	61+	Not Specified
1962	3,231 (52.3)	2,948 (47.7)	-	-	-	-	-	-
1965	5,226 (55.7)	4,146 (44.3)	150 (1.6)	2,563 (27.3)	2,375 (25.3)	2,272 (24.2)	2,028 (21.6)	-
1970	26,157 (56.9)	19,813 (43.1)	1,613 (3.5)	16,302 (35.5)	11,240 (24.5)	9,559 (20.8)	7,256 (15.7)	-
1975	55,741 (60.3)	36,699 (39.7)	2,958 (3.2)	36,514 (39.5)	27,177 (29.4)	16,824 (18.2)	8,976 (9.7)	-
1980	100,061 (61.4)	62,891 (38.6)	6,914 (4.2)	59,724 (36.7)	48,786 (29.9)	31,544 (19.4)	15,429 (9.8)	-
1985	113,862 (62.8)	67,426 (37.2)	9,497 (5,2)	58,681 (32.5)	61,528 (34.0	33,520 (18.6)	17,583 (9.7)	-
1990	155,311 (60.9)	99,574 (39.1)	10,620 (4.2)	85,903 (33.7)	82,292 (32.3)	49,388 (19.4)	26,682 (10.4)	-
1995	224,769 (61.9)	138,626 (38.1)	22,878 (6.3)	106,603 (29.5)	120,212 (33.1)	76,647 (21.1)	37,055 (10.2)	-
2000	266,937 (57.6)	196,709 (42.4)	19,136 (4.1)	119,816 (25.8)	148,063 (31.9)	125,140 (27.0)	51,491 (11.1)	-
2005	257,972 (68.7)	117,426 (31.3)	30,429 (8.1)	57,115 (21.2)	114,103 (30.4)	106,077 (28.3)	67,674 (18.4)	-
2010	361,611 (60.0)	241,256 (40.0)	41,156 (6.8)	120,395 (20.0)	189,852 (31.5)	172,800 (28.7)	64,593 (10.7)	14,071 (2.3)
2014	445,527 (56.4)	344,491 (43.61)	50,441 (6.4)	185,685 (23.5)	235,738 (29.8)	183,582 (23.2)	106,666 (13.5)	28,007 (3.5)

Figure in parenthesis represent percentage of the total

Source: Nepal Tourism Statistics, 2015.

APPENDIX 5: Tourist Arrivals by Month (1962-2014)

Year	January	February	March	April	May	June
1962	489 (6.8)	569 (9.2)	787 (12.7)	829 (13.4)	486 (7.9)	237 (3.8)
1965	768 (8.2)	1,053 (11.2)	1,317 (14.0)	1,225 (13.0)	716 (7.6)	433 (4.6)
1970	2,755 (6.0)	2,816 (6.1)	3,957 (8.6)	3,603 (7.8)	3,463 (7.5)	2,236 (4.9)
1975	6,895 (7.5)	6,114 (6.6)	11,415 (12.3)	7,610 (8.2)	8,641 (9.3)	4,141 (4.5)
1980	10,913 (6.7)	14,431 (8.9)	17,483 (10.7)	14,658 (9.0)	11,308 (6.9)	7,938 (4.9)
1985	10,478 (5.8)	13,751 (7.6)	17,768 (9.8)	14,681 (8.1)	13,248 (7.3)	9,997 (5.5)
1990	19,647 (7.7)	23,828 (9.3)	28,480 (11.1)	18,101 (7.1)	13,584 (5.3)	11,619 (4.6)
1995	22,207 (6.1)	28,240 (7.8)	34,219 (9.4)	33,994 (9.3)	27,843 (7.7)	25,650 (7.1)
2000	25,307 (5.5)	38,959 (8.4)	44,944 (9.7)	43,635 (9.4)	28,363 (6.1)	26,933 (5.8)
2005	25,477 (6.8)	20,338 (5.4)	29,875 (7.9)	23,414 (6.2)	25,541 (6.8)	22,608 (6.0)
2010	33,645 (5.6)	49,264 (8.2)	63,058 (10.5)	45,509 (7.5)	32,542 (5.4)	33,263 (5.5)
2014	70,196 (8.9)	69,009 (8.7)	79,914 (10.1)	80,053 (10.1)	62,558 (7.9)	50,731 (6.4)

Figure in parenthesis represent percentage of the total

Source: Nepal Tourism Statistics, 2015.

APPENDIX 5: Tourist Arrivals by Month (1962-2014) Contd.

Year	July	August	September	October	November	December
1962	440 (7.1)	284 (4.6)	328 (5.3)	616 (9.9)	590 (9.5)	497 (8.0)
1965	730 (7.8)	839 (8.9)	337 (3.6)	704 (7.5)	680 (7.2)	586 (6.2)
1970	4,160 (9.0)	5,042 (10.9)	3,533 (7.7)	4,535 (9.9)	4,518 (9.8)	5,332 (11.6)
1975	4,528 (4.9)	8,501 (9.1)	5,718 (6.2)	11,277 (12.2)	9,626 (10.4)	9,774 (10.6)
1980	10,264 (6.3)	14,134 (8.7)	9,876 (6.0)	18,318 (11.2)	17,055 (10.5)	16,519 (10.1)
1985	7,901 (4.4)	11,588 (6.4)	14,248 (7.9)	24,187 (13.4)	21,048 (11.6)	22,094 (12.2)
1990	13,803 (5.4)	20,179 (7.9)	21,824 (8.6)	34,975 (13.7)	23,177 (9.1)	22,666 (8.9)
1995	23,980 (6.6)	27,686 (7.6)	30,569 (8.4)	46,845 (12.9)	35,782 (9.8)	26,380 (7.3)
2000	24,480 (5.3)	34,670 (7.5)	43,523 (9.4)	59,195 (12.8)	52,993 (11.4)	40,644 (8.8)
2005	23,996 (6.4)	36,910 (9.8)	36,066 (9.6)	51,498 (13.7)	41,505 (11.0)	38,170 (10.2)
2010	38,991 (6.5)	54,672 (9.0)	54,848 (9.1)	79,130 (13.1)	67,537 (11.2)	50,408 (8.4)
2014	46,546 (5.9)	59,761 (7.6)	52,894 (6.7)	80,993 (10.3)	76,305 (9.7)	61,158 (7.7)

Figure in parenthesis represent percentage of the total

Source: Nepal Tourism Statistics, 2015.

APPENDIX 6: Earnings from Tourism

Year	Foreign Exchange Earningsfrom Tourism	Av.Expenditure per visitor	Av.Length of Stay	%Share of GDP	Number of Tourists
1990/91	3,587.60	326.50	12.00	3.20	254,885
1991/92	5,016.90	292.10	9.25	3.60	292,995
1992/93	5,966.00	268.20	10.14	3.70	334,353
1993/94	8,251.70	315.60	11.94	4.10	293,567
1994/95	8,973.20	393.70	10.00	4.10	326,531
1995/96	9,521.20	474.50	11.27	3.80	363,395
1996/97	8,523.00	430.30	13.50	3.00	393,613
1997/98	9,881.60	401.90	10.49	3.30	421,857
1998/99	12,167.80	475.80	10.76	3.60	463,684
1999/00	12,073.90	479.10	12.28	3.20	491,504
2000/01	11,717.00	453.70	11.88	2.90	463,646
2001/02	8,654.30	472.40	11.93	2.10	361,237
2002/03	11,747.70	512.00	7.92	2.60	275,468
2003/04	18,147.40	765.90	9.60	3.70	338,132
2004/05	10,464.00	609.80	13.51	1.80	385,297
2005/06	9,556.00	532.00	9.09	1.50	375,398
2006/07	10,125.00	561.00	10.20	1.40	383,926
2007/08	18,653.00	535.00	11.96	2.30	526,705
2008/09	27,960.00	860.30	11.78	2.80	500,277
2009/10	28,139.00	798.90	11.32	2.40	509,956
2010/11	24,611.00	578.60	12.67	1.80	602,867
2011/12	30,703.80	522.90	13.12	2.00	736,215
2012/13	34,210.60	440.80	12.16	2.00	803,092
2013/14	46,374.90	538.00	12.60	2.60	797,616
2014/15	34,313.30	597.60	12.44	2.80	790,118

Source : Nepal Tourism Statistics 2015, Nepal Rastra Bank 2015