

Rural Tourism, Income and Rapid Urbanization: Exploring the Nexus Using A Multi-Disciplinary Approach for Hunza, Pakistan

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Abstract: Serving the purpose of an early warning, this paper provides a multidisciplinary analysis of how the changing dynamics of tourist arrivals can lead to rapid and unplanned urbanization. The improvements in infrastructure and communication systems under the aegis of China Pakistan Economic Corridor (CPEC) in Gilgit Baltistan have led to exponential increase in tourists arrival in the recent years. Does this trend lead to increase in incomes and spurring an unplanned and rapid urbanization? To examine this question, we take District Hunza as a case study on the basis of evidence suggesting that around 70 percent of total tourists to Gilgit-Baltistan visit Hunza. To explore the relationship between tourists arrival and rapid urbanization, three types of data were used: survey data collected via questionnaires, secondary data from government sources, and Google images, Landsat 7 and Landsat 8 from remotely sensed data. Using cross tabulations, this study suggests that tourists arrival led to increase in incomes, which were then spent on building commercial infrastructure. To cross check these results, land use land change study using GIS mapping was conducted for the last ten years period. It shows that rapid and unplanned urbanization has profound social and environmental implications for Hunza, if not managed properly and timely.

Keywords: Rural tourism, urbanization, income, CPEC, infrastructure, land use, Hunza.

Introduction

Rapid and unplanned urbanizations have the potential to create risks related to social sustainability, economic sustainability, and environmental sustainability (Jarrah et al. 2019). Understanding and considering solutions to these risks require baseline information on the existing patterns of tourism and urbanization. As there exists no data and literature on the topic for the regions in northern Pakistan, this paper aims at filling that gap. The argument of increase in rural-tourism and urbanization nexus is based on the thesis that tourism enhances income of the host communities and thus influences spatial change (Brooks, 2018). By highlighting the tourism-income-urbanization relation ship, this research serves the purpose of an early warning rather than delving deep into the implications. It is an established fact now that the tourism especially the rural tourism as well as nature-based tourism provides enormous livelihood opportunities for the communities associated with it. This study has highlighted that the income earned by the host communities from tourism and allied industries were then spent on building commercial infrastructure.

Some researchers consider outside leisure and tourism activities in national parks and rough country areas constitute rural tourism (Ladki 1993; Owens 1984; Oppermann, 1996). Likewise, OECD (1994) has described rural tourism as all those activities of

tourism which are performed in lightly populated areas of countryside. Even though, rural tourism is normally meant to be a particular type of tourism and product, a common description of rural tourism has not yet originated. Simply rural tourism is defined as the tourism occurring in rural areas (Davidson, 1992; OECD, 1994). For the host communities, rural tourism is an important sector as it generates income and job opportunities. However, Rang (2004) has warned that if the rural aspect of the rural tourism is neglected, potential problems in the form of unplanned urbanization can arise. Thus, managing rural tourism is crucial for tapping sustainable benefits. In the contemporary Hunza, the area under study, is undergoing unmanaged phase of increase in rural tourism. The discussion in this paper suggests that increase in rural tourism in Hunza is associated with increase in income that has resulted in development of commercial infrastructure, which is not only rapid but unplanned as well.

The rural tourism in mountainous regions has yet its own characteristics. As Messerli and Ives, (1997) argue that the mountainous areas are home to rural and fragile people, the areas are difficult to access, delicate, peripheral and home to one of the poorest communities on the earth. According to Mostowfi (2000) rural communities having the advantage of cultural resources, historical heritage, natural beauty and social attraction are more likely to attract tourists Kammani (2005) considers this act can contribute in

rural area development through generating revenue. Likewise, rural tourism offers different incentives to go directly on cultural, natural, social and economic events by offering new financial prospects (Sharpley, 2001). Similarly, Crouch and Ritchie (1999) argue that tourism development and planning is not achievable without developing tourism infrastructure. It is also argued that the slow development of tourism industry will affect the economic and employment side of the destination (Dallas, 2001). If inward tourism grows, the demand will also be increased for accommodation facilities like hotels and restaurants (Louca, 2006). It is a recent phenomenon in Hunza. Studies like Khanaliz-adeh et al., (2018), Attila, (2016); Ra'edMasa'deh et al., (2017) suggest that the development of hotel industry has positive long run and short run relationship with tourism industry and having an influence on increasing the arrival of tourists. On one hand, these studies highlight the importance of tourism infrastructure for making rural tourism attractive. On the other hand, studies such as (Rang, 2014; Khan et al. 2019) have warned that neglecting the rural aspect of the rural tourism in favor of more urbanized infrastructure has the potential to decrease the tourists arrival, economic development, and environmental degradation of the host communities. There is the importance of providing eco-friendly services by hotels in order to minimize environmental impacts (e.g Siti-Nabiha et al., 2014; Mensah, 2006; Granter, 1996). The local people are using tourism industry as an alternate source for their income to meet their needs, Lee (2013) suggests that without the participation or involvement of local communities, tourism cannot become sustainable. Similarly, studies such as Erdogan, (2007), Cummings, (1997), Enz and Siguaw, (1999), Kirk, (1998), Scheuer et al., 2003) have highlighted the environmental, ecological, and safety related issues of tourism.

In the backdrop of the discussion in the preceding paragraphs, the objective of this study is twofold. First, to show that increase in tourists arrival is associated with an increase in income of host communities. Secondly increase in income is associated to spending on commercial infrastructure. In doing so, the focus remains on 'land use land change; (LULC). The biggest limitation of carrying out this research was availability of time-series and cross-sectional data. Data for tourists arrival were available for the years 2000 to 2017 from the Department of Tourism, Government of Gilgit-Baltistan. However, no time-series data are available for infrastructure development and income. Given this limitation, it is not possible to examine correlation using econometric models. To overcome this limitation, we relied on cross-tabulations. Three different sources were used for data collected. Data for tourists arrival was obtained from the secondary sources. While information on change in income due to increase in tourists and data on spending patterns of the increased income was collected via a tailored

questionnaire. For cross-validation of these findings, land use land change (LULC) technique using GIS mapping was used for the last ten years period.

Materials and Methods

Study Area

The study was conducted in Hunza district of Gilgit-Baltistan in northern Pakistan (Fig. 1). Hunza is famous globally for its eye-catching landscape, natural scenic beauty and for hosting some of world's highest mountains. It is also known for its unique culture, heritage and language. Rural tourism is the major source of livelihood for communities in Hunza. Majority of those living there are associated with tourism or its allied industries in one way or another.

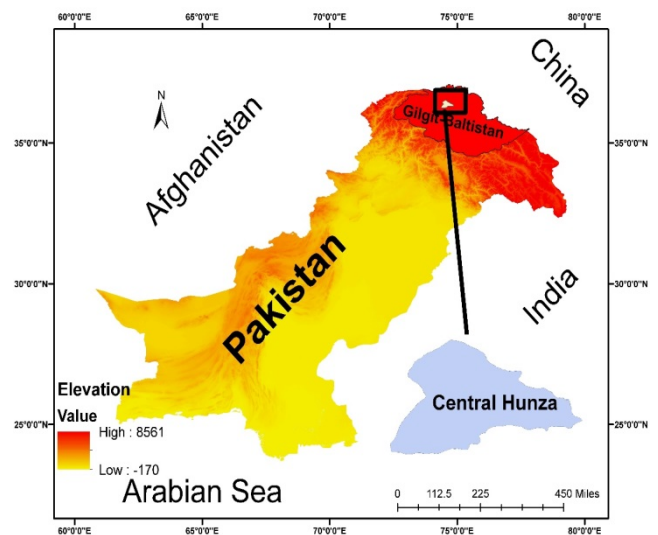


Fig. 1 Study area (Central Hunza).

Due to improved road connectivity and communications systems under the investments of China-Pakistan Economic Corridor (Alam et al, 2019, Baig and Hamid, 2019), the region has seen exponential increase in tourists arrival since the year 2014 (Fig. 2). In this context, it has been observed that local communities in Hunza are constructing different accommodation facilities like hotels, guest houses, camping sites and huts as well as other facilities such as restaurant and shops on their agricultural lands giving rise to deforestation. On one hand the increase in commercial constructions reflect increase in income and increase in tourism demand. On the other hand, these unplanned developments pose a threat to the natural landscape, which is the reason for huge inflow of rural tourism to Hunza. If the trend of rapid and unplanned constructions is not tackled timely and properly, rural tourism may decline in the years to come. This poses a real challenge to the sustainable development of Hunza.

The data for domestic and international tourists arrival were collected from Department of Tourism, and police registration office, Government of Gilgit-

Baltistan, respectively. To find changes in income and spending patterns of the increase in income, depended on the field survey conducted by using a closed-ended questionnaire for a sample of 410 individuals. The data were made available at Mendeley data (Baig and Imtiaz, 2019; Baig and Shabnam, 2019). The unit of analysis in the research is individuals. Data on the number of hotels and rooms were obtained from some existing literature as well as the Tourism Department of Gilgit-Baltistan. For the cross validation of our findings, the Google images, Landsat-7, and Landsat-8 data were used.

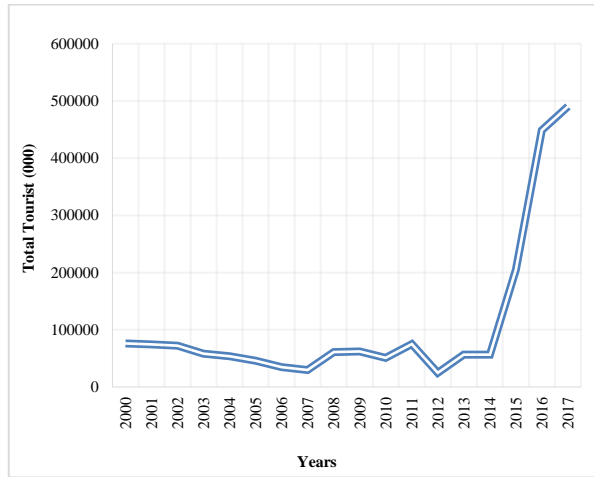


Fig. 2 Shows annual total tourist fluctuations in Gilgit-Baltistan.

Table 1 Description of the data and sources.

S.no	Type of Dataset	Source	Resolution
1	Domestic Tourist Arrivals Data	Department of Tourism, Gilgit-Baltistan Government.	
2	International Tourist Arrivals Data	Police Registration Office, Department of Gilgit-Baltistan Government.	
3	Questionnaire Survey	Survey Participants, Authors of this paper	
4	Landsat-8 Images	USGS	30 m
5	Google Earth Images	Google Inc.	2.5 m

Hunza is geographically diverse. Thus, two stage cluster stratified sampling approach was used. Firstly, Central Hunza was clustered by region---Aliabad, Karimabad and Hyderabad. Aliabad is the commercial whereas Karimabad is the historical capital of Hunza with several heritage sites. Hyderabad is off the main commercial area. The clustering of villages this way gives the advantage of considering Land Use Land Change (LULC) as tool of Randomized Control Trials (RCTS). In this case, the village of Hyderabad serves as the control village. Once the clustering was done, different strata were defined according to income and scale of business. In the final stage, sample of 410

individuals was chosen via systematic random sampling. A close-ended questionnaire was designed keeping in view the objectives of the study. The 5 questions are related to change in tourist arrivals, change in income, and information on spending patterns. A pilot test was conducted to check the reliability and validity of the questionnaire.

Results and Discussion

The availability of both time-series and cross-sectional data remains a constraint to examine the nexus between tourist arrivals, income and urbanization using an econometric model. Although, data for tourist arrivals is available for the last seventeen years, information on commercial infrastructure development is not available except for the years 2010 and 2018. Given that the region under study is not covered in any household survey, the data on per capita income is also not available. A time-series estimation strategy or mediation and moderation analysis could not be opted if the data were available. As there are no control variables, the change in commercial infrastructure may be attributed to some other variables. However, there is no industrial base, or large agri-business that could provide an explanation for the rapid change in urbanization. Most importantly, the urbanization phenomenon was preceded by increase in tourist arrivals and initiation of the CPEC. In this context, tourism seems to be the major, if not the sole factor in contributing to the recent phenomenon of urbanization.

This is the backdrop; the analysis in section relies on cross-tabulation analysis from the questionnaire reveals. The information on the relationship between tourist arrivals and income. The question asked was, has the inflow of tourists increased their household income?

Table 2. Tourists arrival and income

	Frequency	Percent
Yes	377	91.8
No	34	8.2
Total	410	100.0

Table 2 shows that 92% of the respondents consider increase in tourists arrival is associated to increase in their household income. This response is quite huge, and margin of error is less than three percent. Another question from the respondents increase in their incomes due to tourists arrival was based on.

The results suggest that around 44 percent of respondents consider an increase in their incomes by around Rs. 30,000 (Table 3). Likewise, results suggest that 30 percent of the respondents income has increased between Rs. 30000 to Rs. 60000. Similarly, the 9 percent of the respondents suggest the increase in

their incomes was between Rs. 600000 to Rs. 100000. Around 17 percent individuals in the sample had an increase of over Rs. 100,000.00 in their incomes (Table 3).

Table 3. Tourists arrival and increase in income.

	Frequency	Percent
Less than 30,000	179	43.6
Between 30,000 to 60,000	123	30.0
Between 60,000 to 100,000	37	9.1
Above 100,000	71	17.3
Total	410	100.0

For an insolated region that had seen a few thousand visitors in the years before 2014, the change in their incomes is not that small. Next, the spending patterns of the respondents who had experienced increase in their incomes was explored that at least 50 percent of respondents in the sample have invested in education whereas 30 percent have invested in tourism related businesses and 19% have spent their income, on household consumption (Table 4).

Table 4. Spending patterns of the respondents.

	Frequency	Percent
Education	205	50.0
Health	7	1.8
Household Consumption	71	17.3
Invest in business	123	30.0
Private Consumption	4	.9
Total	410	100.0

In the final question, the respondents were asked about the type of business investment they made. The responses suggest that around 42 percent of those spent on hotel businesses and 23% invested on small businesses and 18% have spent on hotel services (Table 5). From the above analysis and results of responses it can be concluded that most of the people's income has increased due to tourists inflow and most of them have reinvested in hotel construction businesses. These results are consistent with the official number of increases in hotels in Hunza (Fig. 3).

Table 5. Types of investments.

Response	Frequency	Percent
Small business	29	23.6
Investing in hotels	52	42.7
Investing in restaurants	2	.9

Transportation	8	6.4
Service providing to tourists	22	18.2
Producing local food	10	8.2
Total	123	100.0

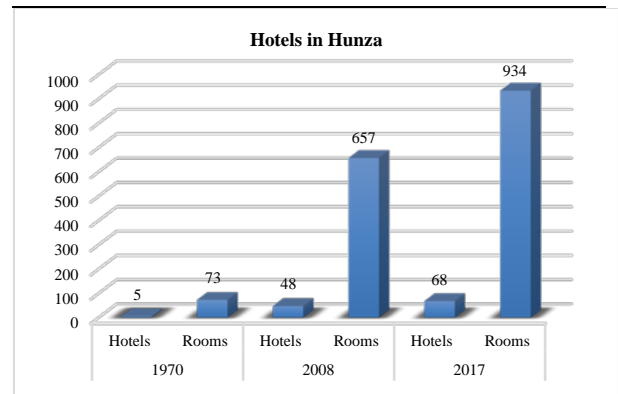


Fig. 3 Shows hotel facilities in Hunza valley, Gilgit-Baltistan..

Land Use Land Change

The landsat 7 and 8 data for the study area were processed for the month of September. After preprocessing of images which include atmospheric corrections and conversion from digital numbers to radians of band ranges, the classification was carried out to observe the changes over the 10 years period. However, after careful supervised classification of images into five classes (cultivated land, uncultivated land, bare land, built-up area, water), the ground truthing was carried out, it was noticed that the accuracy was very less at 40% due to high resolution of images i.e., 30 m and small study area. To overcome this problem, the digitalization of the study area was carried out using google earth images of September 2010 and September 2018. The group of 8 had computer science experts and were carried out the initial digitalization process. After the digitalization process, the maps were validated with three independent experts in remote sensing and GIS, who identified some errors, which were rectified and maps were categorized into correct classes. At the end, maps were developed with accuracy of 90% for the years 2010 and 2018 containing five classes each: built-up area, cultivated land, uncultivated land, commercial area (shops, hotels and restaurants), roads and barren land. The uncategorized/classified land is barren land. After having classified maps of the study area, the change in classes during the benchmarks were observed.

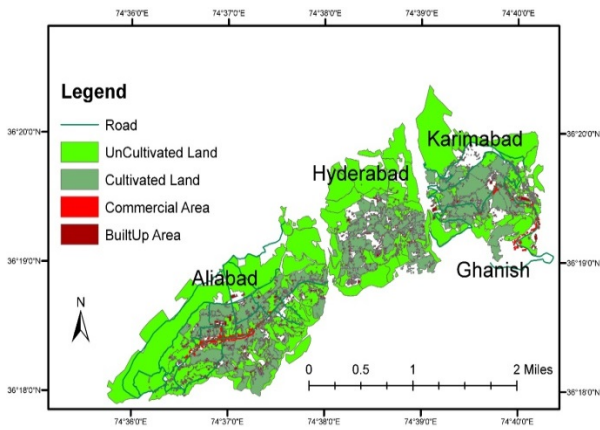


Fig. 4. Map of the study area for the year 2010.

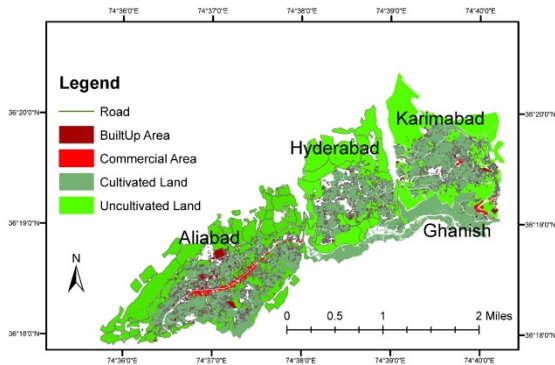


Fig. 5 Map for the study area for the year 2018.

After analysis of the results shown in figure 6, it can be noticed that there is variation of change in classes in different towns of central Hunza. As we already mentioned that Karimabad town is famous for its cultural heritage so most of the tourists are visiting Karimabad to visit the 900 years old Baltit, which is considered to be the epitome of the cultural heritage of Hunza. On the other hand, Aliabad town is commercial hub where most of the commercial and trading activities of the Hunza take place. Similarly, Hyderabad town is off the main Karakorum highway and there is no such noticeable commercial or cultural attraction for foreigners and domestic tourists. Observing the land use land change (LULC) over the eight years period suggests that the most considerable change in LULC occurred in Aliabad town where the increase in commercial and built-up areas are 10 percent and 13 percent, respectively. On the other hand, there is also increase in cultivated land by 30%, however uncultivated land decreased by 40%.

Almost the same pattern of change was noticed in Karimabad town and Ghanish village. In contrast, the data for Hyderabad show nominal change in different classes. The data further suggest no change in uncultivated land and minor changes in cultivated land, built-up and commercial areas. Figure 7 data reveal that changes in uncultivated land, commercial area has been doubled and also there has been a drastic increase in built-up area. However, cultivated area has increased that is due to increase of plantation in uncultivated lands. From the overall results of LULC

through digitalization and mapping, that there is drastic change in built-up and commercial areas due to investments done by the residents in recent years.

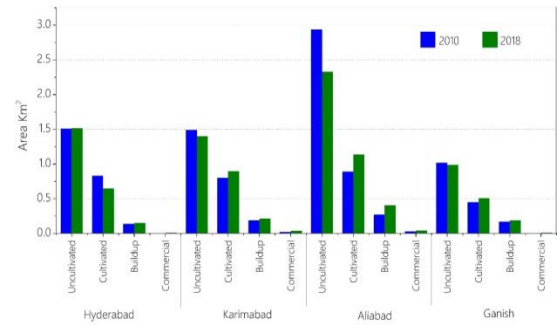


Fig. 6 Change in classes during 2010 to 2018 in each town of study area.

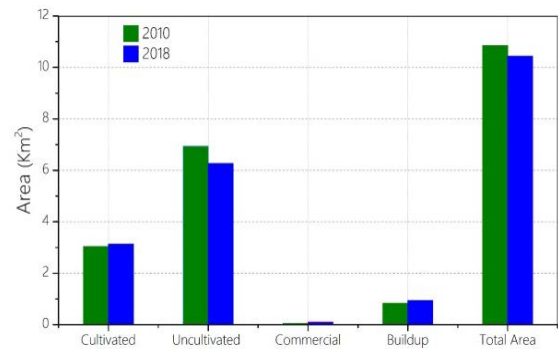


Fig. 7 Change in classes during 2010 to 2018 in whole study area.

Conclusion

This paper highlights the recent phenomenon of rapid and unplanned urbanization due to an unprecedented increase in tourists arrival in Hunza. In rapid urbanization may lead to social, political, environmental threats and tackling them early seems imperative for the policymakers. Clearly, rural tourism is an important source for income and employment generation of the local community. However, it is not so easy to do so in a way that benefits the region and the environment. There are potential problems in increasing urbanization and damaging the environment if schemes are mismanaged. Though Land Change Land Use findings are in harmony, suggesting that increase in rural tourism has led to increase in the income of the host community, which in turn gave rise to rapid and unplanned urbanization. If rural tourism is a source of increased opportunities for income and businesses but making it sustainable is imperative. Counter-urbanization is a threat to the sustainability of the rural tourism. It may lead to issues of social, political and environmental sustainability. Managing the counter-urbanization and sustaining rural tourism is conditional for introducing proper zoning procedures and ensuring their implementation.

References

Attila, A.T. (2016). The impact of the hotel industry on the competitiveness of tourism destinations in

- Hungary. *Journal of Competitiveness*, **8** (4). 85–104. DOI: 10.7441/joc.2016.04.06.
- Alam, K..M., Li, X., Baig, S. (2019). Impact of transport cost and travel time on trade under China-Pakistan Economic Corridor (CPEC). *Journal of Advanced Transportation*. Online First: <https://doi.org/10.1155/2019/7178507>.
- Brooks, S. (2018). Growth of tourism urbanization and implications for the transformation of Jamaica's Rural Hinterlands. In *Emerging Urban Spaces*. Horn P., Alfaro d'Alencon P., Duarte Cardoso A. (Eds). *The Urban Book Series*. Springer.
- Baig, S., Hussain, H. (2020). Do shocks have permanent or transitory effects on tourist inflow? An application of stationarity test with structural breaks: Evidence Reexamined for Gilgit-Baltistan, Pakistan. *Asia Pacific Journal of Tourism Research*, **25** (2), 120-130.
- Crouch, G., Ritchie, J.R.B. (1999). Tourism, competitiveness, and societal prosperity. *Journal of Business Research*, **4** (2), 137-152
- Cummings, L.E. (1997). Waste minimization supporting urban tourism sustainability: A Mega-resort case study. *Journal of Sustainable Tourism*, **5** (2), 93–108.
- Dallas, J. (2001). Hawaii hotels and tourism industry could lose \$1 billion', *Ernst & Young Report Business Wire*.
- Enz, C., Siguaw, J. A. (1999). Best hotel environment practices. *Cornell Hotel and Restaurant Administration Quarterly*, **40** (5), 72–77.
- Erdogan, N., Baris, E. (2007). Environmental protection programs and conservation practices of hotels in Ankara, Turkey. *Tourism Management*, **28** (2), 604–614.
- Kanaani, E. (2005). Tourism and impact on rural societies. *Dahati journal*, **70** (2), 38-42.
- Khanalizadeh, B., Kakaei, H., Daneshzad, A. (2018). The effects of hotel development on tourism industry: Evidence from Iran. Online at <https://mpr.aub.uni-muenchen.de/88837/> MPRA Paper No. 88837, posted 14 September.
- Khan, A. A., ul Hassan, S. N., Baig, S., Khan, M. Z., Muhammad, A. (2019). The response of land surface temperature to the changing land-use land-cover in a mountainous landscape under the influence of urbanization: Gilgit city as a case study in the Hindu Kush Himalayan Region of Pakistan. *International Journal of Economic and Environmental Geology*, **10** (3), 40-49.
- Kirk, D. (1998). Attitudes to environment management held by a group of hotels managers in Edinburgh. *International Journal of Hospitality Management*, **17** (1), 33–47.
- Ladki, S., M. (1993). An evaluation of tourists' experiences in rural northern west Virginia. In proceedings of the Society of Travel and Tourism Educators Conferenc, **5** (1), 90-102.
- Lee, T. (2013). Influence analysis of community resident support for sustainable tourism development. *Tourism Management*, **34** (3), 37-46. <https://doi.org/10.1016/j.tourman.2012.03.007>
- Louca, C. (2006). Income and expenditure in the tourism industry: Time series evidence from Cyprus. *Tourism Economics*, **12**(4), 603–617.
- Messerli, B., Ives, J. D. (Eds) (1997). *Mountains of the World: A Global Priority*. Carnforth:Parthenon.
- Mitchell, M., Hall, D. (2005). Rural tourism as sustainable business: key themes. In *Rural Tourism and Sustainable Business*. D. Hall, I. Kirkpatrick, & M. Mitchell (Eds.), Bristol, UK: Channel View Publications.
- Mostowfi, B. (2000). Agro tourism and sustainable development, case study: Landscape design for Karyak village, MSc thesis, Environment Faculty of Tehran. 170 pages.
- OECD (1994). Tourism strategies and rural development. *Organization for Economic Co-operation and Development*. Retrieved from <http://www.oecd.org/industry/tourism/2755218.pdf>
- OECD (1994). Les Stratégies du tourisme et le développement rural. In *Politiques du Tourisme et Tourisme International dans les Pays de l'OECD*. OECD (Eds), Paris: OECD.
- Oppermann, M. (1996). Rural tourism in southern Germany. *Annals of Tourism Research*, **23** (1), 86-102.
- Owens, P. L. (1984). Progress in human geography. *Rural Leisure and Recreation Research*, **8** (2), 157-188.
- Rand, D. (2014). Rural tourism – economic benefits. tourism Review news. Available online at: <https://www.tourism-review.com/travel-tourism-magazine-the-economic-and-social-benefits-of-rural-tourism-article2508>
- Sharpley, R. R. (2001). Rural tourism and the challenge of tourism diversification: the case of Cyprus. *Tourism Management*, **23** (3), 233-244.

Siti-Nabiha, A. K., George, R. A., Wahid, N., Amran, A., Mahadi, R., Abustan, I. (2014). The development of a green practice index for the Malaysian hotel Industry. *Issues in Social and Environmental Accounting*, **8** (1), 23-47. <https://doi.org/10.22164/isea.v8i1.88>

World Tourism Organization, (2004). Rural tourism in Europe: Experiences, development and perspectives. Madrid, Spain: World Tourism Organization. Retrieved from <http://www.idestur.org.br/download/20120219145557.pdf>.