The Real and Actual Tourism Accessibility in Protected Areas

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Abstract. Mass tourism in conservation areas creates a problem because of tourists' environmental negligence. Accessibility factor is known as one of the essential factors that cause mass tourism. The accessibility factor emerges due to a difference between the perceived accessibility (actual accessibility) by tourists and the accessibility of the actual conservation area (real accessibility). Conservation areas that have limited accessibility are perceived to have open and free accessibility similar to other general tourism areas accessibility. This paper was written to explain the concept of tourism accessibility to conservation areas as one of the causes of the entry of mass tourists whose behaviours are not in accordance with conservation goals. The complexity of accessibility is explained through influential components as well as stimulus variables that cause bias on the perception of accessibility. The literature review approach was carried out by analysing 11 related articles. Accessibility of tourist areas is divided into real accessibility which describes the real conditions of geographical elements, tourists, and tourist destinations; and perceived/actual accessibility, namely accessibility perceived by tourists and influenced by stimulus factors. Both types of accessibility consist of geographical, individual/personal, and destination components. The elaboration of accessibility elements and interaction models between accessibility components will contribute to the accessibility theory of geographical and psycho-social approaches.

Keywords: Mass tourists, protected area, tourism accessibility.

1. Introduction
Mass tourism in conservation areas is a problem in many countries actively developing their tourism sector.¹, ² Mass tourists with their self-centeredness can cause high pressure on natural destinations because of their neglectful behaviour towards environmental sustainability [3]. The fact shows that many psychocentric and mid-centric tourists visit the national park only to satisfy their self-esteem.[⁴, ⁵] As a result, many of them do activities that are not aligned with the goals of conservation areas [⁶,³] such as littering, carrying and disposing of plastic waste, feeding wild animals, smoking in savanna fields, taking pictures on steep cliffs, taking beach sand, and other activities that endanger themselves as well as the biota and environment.

On the other hand, conservation areas actually have limited accessibility. The limitations are due to the enactment of zoning regulations and space restrictions, visit permits, restrictions on tourist activities and length of visit, coupled with climate patterns or protected animal behaviour which at certain times cannot be disturbed by human activities, and a high enough risk of natural disaster.[⁷] Limitations can also occur because the areas are often geographically remote from city centres, a phenomenon called distance decay.[⁸, ⁹] These
management limitations indicate that conservation areas have a limited function in tourism because their primary function is for area preservation and protection.

The fact that mass tourists still flock to limited conservation areas indicates a misperception of accessibility, where conservation destinations that have low accessibility are perceived by tourists as tourist areas with high accessibility. The tourists have no understanding of the limitations of space and activities, so their motivation for recreation is just to have fun and to find personal or group satisfaction with minimal awareness of the environment. Misperception towards real accessibility occurs at least due to two factors, namely the currently high accessibility to information [10] and the management of tourist experience in such a way that access becomes part of the attractions.[11] As a result, the actual accessibility to the conservation area becomes blurred.

This paper aims to explain the concept of tourism accessibility to conservation areas as one of the causes of the entry of mass tourists whose behaviours are not in accordance with conservation goals. The complexity of accessibility is explained through influential components as well as stimulus variables, namely physical and nonphysical factors. The elaboration of the accessibility elements and the interaction model between the accessibility components will contribute to the accessibility theory of the geographical approach, whereas access management and access to information will be new variables that cause a bias in tourists’ perceptual, psychological accessibility. Practically, this research will be useful for planners and managers of tourist areas, especially in developing effective tourism accessibility strategies in an attempt of achieving environmental sustainability goals.

2. Literature Review
Theoretically, accessibility is a complex concept, not only stating physical affordability related to transportation networks, but also the psycho-social factors related to perceptions, motivations, and travel decision.[12, 13] Its definition, scope, methods of measurement, and implications in management, are some of the many components and attributes of accessibility that need to be studied more deeply.[23] Hence, there is much space unexplored in the study of accessibility, especially concerning tourism accessibility [14, 2] because the characteristics of tourism travels are very different from those of the ordinary travels.[9]

The studies of accessibility in the context of tourism are scarce [11, 9], with most of them being conducted with a geographical approach and a focus on physical elements that analyse patterns and behaviours of human travel.[15, 16] The method for analysing accessibility is often based on spatial logic, by looking at the extent to which distance barriers can form mobility and shape urban forms through location and travel decision making, a method alternatively known as place accessibility approach.[17] The physical approach began to experience a shift along with the development of technology and information. Traditional patterns were no longer observed in human travel behaviour, which seeks time, distance, and cost efficiency.[16, 18] Kwan and Weber noted that it is essential to consider individual accessibility variables because the relationship between the spatial logic of the traditional urban model and the notions of accessibility is becoming increasingly blurred.[10] Long ago, Oppermann argued for the importance of considering aspects of markets and individuals in travel behaviour.[19] Their argument sparked a new interest in the psycho-social approach to accessibility studies.

However, the place accessibility and individual accessibility approaches have not been able to explain the phenomenon of mass tourist in conservation areas. Both approaches still focus on potentials and obstacles at the point where individuals and destinations are located and see places and individuals as points related to spatial spaces with routine movements that are identified as actual movements. Meanwhile, there is a possibility that the movements do not describe the individuals’ preferences, but because of other needs [18]. Therefore, it is necessary to consider accessibility using a perception approach based on individual motivations and preferences [10,20].
The geographical approach is used in explaining accessibility components based on their positions on the surface of the earth. Accessibility is a link between tourists’ place of origin and the destination [21, 13]. Hence, elements of accessibility will be derived from the components of destination, tourists, and the network that connects the destination with the place of origin of the tourists. Meanwhile, the psycho-social approach will be used as a measurement to assess the gap in tourist perceptions and the interactions between physical and non-physical components of accessibility, given that decision making is based on intrinsic and extrinsic factors [5, 22] that affect motivation levels.

3. Methodology
This paper is a part of a literature review of the concept of tourism accessibility. The role and function of accessibility in general in determining travel decisions and travel behaviour have been investigated through geographical approaches and transportation planning in several studies from 1976 to 2019. However, studies that focus on the accessibility of tourist areas are still scarce. From the search of journal articles using the keywords "accessibility and tourism", "tourism mobility", "transport and tourism", only 15 articles were found that discuss the accessibility of tourist or recreational areas. Some of these articles address “accessible tourism,” which is a study of specific accessibility for people with disabilities.

On the other hand, the search for articles on the theme of accessibility, in general, relating to travel decisions and behaviour generated 28 articles. The articles were then sorted based on accessibility attributes related to travel decision, especially the physical and non-physical aspects. The search for a research gap was focused on 11 selected articles through such databases as Google Scholar and Web of Science and journal portals: Science Direct, SAGE, and Emerald Insight, published between 2007 and 2019.

4. Findings and Discussion
a. Tourism accessibility models
The authors conducted a review on the accessibility model in 11 articles, as summarised in table 1. The findings show that there are physical and non-physical factors that influence the perception of accessibility. Physical factors are related to real accessibility and are highly considered by someone when travelling (actual accessibility); While non-physical factors are associated to factors that are not real but still describe the actual accessibility to the conservation areas (real accessibility).
| No | Authors | Theory | Physical Factors (Actual) | Non Physical Factors (Real) |
|----|---------|--------|---------------------------|-----------------------------|
|    |         |        | Distance | Cost | Time | Transport mode | Travel route | Space capacity | Physical barrier | Tourist facility | Attractiveness | Climate | Psychology | Services | Information | Safety | Disaster risk | Leisure time | Activity | Social | demography | Environment | Sensitivity | Regulation |
| 1  | Celata, F (2007) [9] | Destination competitiveness | V | V | V | V | | | | | | | | | | | | | | | | | | | | |
| 2  | Nyaupane & Graefe (2008) [8] | Countering the gravity model using inertia concept | V | | | | | | | | | | | | | | | | | | | | |
| 3  | G. To’th, I. Da’vid (2010) [10] | Landuse transport system | V | V | V | | | | | | | | | | | | | | | | | | | |
| 4  | Manning et al (2013) | Sustainable tourism | V | | V | V | | | | | | | | | | | | | | | | | |
| 5  | Zajadacz, A Mickiewicz, A (2014) | Geographic perspective | V | V | V | V | V | V | V | V | | | | | | | | | | | | |
| 6  | Al Kahtani (2015) [22] | Destination accessibility | V | V | V | V | | | | | | | | | | | | | | | | | |
| 7  | Wang, Brown & Liu (2015) [23] | Social economic status/ SES | V | V | V | V | V | V | V | V | V | | | | | | | | | | | |
| 8  | Apollo, M. (2017) [15] | Destination accessibility model | V | V | V | V | V | V | V | V | | | | | | | | | | | | |
| 9  | Tverijonaitėa et al,2018 [2] | Purism scale | V | V | V | | | | | | | | | | | | | | | | | |
| 10 | Chikuta et al (2018) | Accessible tourism | V | V | V | V | | | | | | | | | | | | | | | | | |
| 11 | Cole et al (2019) | Self-determined theory | V | V | V | V | V | V | V | V | V | | | | | | | | | | | |
The literature review shows that there are not many accessibility models developed. Only three articles were found concerned with accessibility models, namely one article on access to urban parks (recreational perspective), and two articles addressing access to tourist areas. Wang, Brown and Liu [22] began by clearly classifying access to city parks based on physical and non-physical factors. They explained that physical access is indeed more straightforward in the operations of accessibility. AlKahtani also developed an accessibility model, which is dominated by the influence of individual characteristics on access to tourist areas.[21] Their research indicates that socio-demographic and distance factors are not the main determinants of accessibility quality. Instead, the diversity of attractiveness, management and operation of the attraction, infrastructure used to mobilise visitors (connectivity of network) are considered as highly instrumental components. Furthermore, Apollo conducted a study on the accessibility model towards mountain tourist destinations with unique natural characteristics, environment, and skills needs. In his study, non-physical elements are essential for accessibility and determine the affordability of mountain destinations for tourists. [14]

b. Components of Tourism Accessibility
Based on the tourism system approach [23], Accessibility of a tourism area is divided into three components: 1) personal accessibility that describes the element of origin, 2) Geographic accessibility that describes the relationship between the origin and destination, and 3) destination accessibility, that depicts the access to the tourism destinations. A further detail on the three components are explained in the following definitions and illustrated in Figure 1:

Geographical accessibility is access related to the position of two or more places on the surface of the earth. This access is considered and measured by tourists' travel (accessibility in the strict sense). The measurements of geographical accessibility include time, distance, cost, and modes of transportation.

Personal accessibility captures self-affordability related to personal or individual capacity and physical abilities. This accessibility is rarely well-considered by tourists, causing a higher risk of accidents when travelling. It consists of socio-demographic factors, health and physical conditions, and skills.

Destination accessibility describes the affordability of a place/destination as a tourist area. Destination accessibility is considered in terms of the availability and comfort of tourist facilities, such as accommodation, restaurants, activities, and supporting facilities. However, in terms of tourism regulations, natural obstacles are often overlooked in the tourists’ process of finding information. Destination accessibility comprises natural factors such as tourist attractions, natural physical characteristics, and the presence of protected animals or vegetation. It also includes management factors such as policies and area management (regulation) relating to zoning, carrying capacity, rules of travel, customs/social rules of society, and the availability of tourist facilities.

Tourists generally consider physical accessibility, as an actual access that can be directly experienced and has a real impact on their journey [14, 3] This kind of expectation caused the tourists to neglect the real accessibility that should be considered when entering conservation areas. Real accessibility illustrates some of the barriers to conservation areas because of their natural conditions, as well as conservation functions that serve as the main objectives of their management. Consequently, the travel arrangement of a conservation area tour program must consider the real accessibility factor, so that tourists can behave appropriately during the tour.
Figure 1. Accessibility model in a protected area

References

[1] Elmahdy, Y. M., Haukeland, J. V., & Fredman, P. (2017). Tourism megatrends, a literature review focused on nature-based tourism. Norsk Institutt for Bioøkonomi (NIBIO). MINA fagrapport, 42.

[2] Tverijonaite, E., Ólafsdóttir, R., & Thorsteinsson, T. (2018). Accessibility of protected areas and visitor behaviour: A case study from Iceland. Journal of Outdoor Recreation and Tourism, 24, 1-10.

[3] Xu, H., Zhu, D & Bao, J. (2015). Sustainability and nature-based mass tourism: lessons from China’s approach to the Huangshan Scenic Park. Journal of Sustainable Tourism. DOI: 10.1080/09669582.2015.1071381

[4] Butzmann, E., & Job, H. (2017). Developing a typology of sustainable protected area tourism products. Journal of Sustainable Tourism, 25(12), 1736-1755.

[5] Shi, F., Weaver, D., Zhao, Y., Huang, M. F., Tang, C., & Liu, Y. (2019). Toward an ecological civilization: Mass comprehensive ecotourism indications among domestic visitors to a Chinese wetland protected area. Tourism Management, 70, 59-68.

[6] Eagles, P., & McCool, S. (2002). Tourism in national parks and protected areas: Planning and management. Wallingford, UK: CABI.

[7] Mellon, V., & Bramwell, B. (2016). Protected area policies and sustainable tourism: Influences, relationships and co-evolution. Journal of Sustainable Tourism, 24(10), 1369-1386.

[8] Celata, F. (2007). Geographic marginality, transport accessibility and tourism development. Global Tourism and regional competitiveness. Bologna.

[9] Nyaupane & Graefe. (2008). Travel distance: A tool for nature-based tourism market segmentation. Journal of Travel & Tourism Marketing, 25, 3-4, 355-366, DOI: 10.1080/10548400802508457

[10] Lyu, S. O., & Hwang, J. (2015). Are the days of tourist information centers gone? Effects of the ubiquitous information environment. Tourism Management, 48, 54-63.

[11] Mossaz, A., & Coghlan, A. (2017). The role of travel agents’ ethical concerns when brokering information in the marketing and sale of sustainable tourism. Journal of Sustainable Tourism, 25(7), 989-1006.

[12] Huang, S., & Hsu, C. H. (2009). Effects of travel motivation, past experience, perceived constraint, and attitude on revisit intention. Journal of Travel Research, 48(1), 29–44.

[13] Seyidov, J., & Adomaitienė, R. (2016). Factors influencing local tourists’ decision-making on choosing a destination: a case of Azerbaijan. Ekonomika (Economics), 95(3), 112-127.

[14] Apollo, M (2017). The true accessibility of mountaineering: The case of the High Himalaya. Journal of Outdoor Recreation and Tourism 17 (2017) 29–43. http://dx.doi.org/10.1016/j.jort.2016.12.001

[15] Distance
[16] Time
[17] Cost
[18] Transport mode
[19] Transport route
[20] Physical barrier
[21] Geographical accessibility
[22] Physical condition
[23] Leisure time
[24] Social demography
[25] Personal Accessibility
[26] Climate
[27] Capacity
[28] Tourist facility
[29] Attractiveness
[30] Disaster risk
[31] Services
[32] Information
[33] Safety
[34] Activity
[35] Regulation
[36] Sensitivity
[37] Destination accessibility

Actual Accessibility

Real Accessibility

Distance

Time

Cost

Transport mode

Transport route

Physical barrier

Geographical accessibility

Physical condition

Leisure time

Social demography

Personal Accessibility

Climate

Capacity

Tourist facility

Attractiveness

Disaster risk

Services

Information

Safety

Activity

Regulation

Sensitivity

Destination accessibility
[15] Handy and Niemeier (1997) *Measuring accessibility: an exploration of issues and alternatives.* Environment and Planning A vol. 29, pp. 1175-1194.

[16] Kwan, M. P., & Weber, J. (2003). Individual accessibility revisited: implications for geographical analysis in the twenty-first century. *Geographical analysis, 35*(4), 341-353.

[17] Makri, M. C., & Folkesson, C. (1999). Accessibility measures for analyses of land use and travelling with geographical information systems. *Department of Technology and Society, Lund Institute of Technology, Sweden, 1.*

[18] Litman, T. (2018). Evaluating Accessibility for Transport Planning: Measuring People’s Ability to Reach Desired Goods and Activities. http://www.vtpi.org/access.pdf.

[19] Oppermann, M. (1997). First-time and repeat visitors to New Zealand. *Tourism management, 18*(3), 177-181.

[20] Páez, A., Scott, D., & Morency, C. (2012). Measuring accessibility: positive and normative implementations of various accessibility indicators. *Journal of Transport Geography, 25,* 141–153

[21] AlKahtani, S.J., Xia, J.C., Veenendaal, B., Caulfield, C., Hughe, M. (2015). Building a conceptual framework for determining individual differences of accessibility to tourist attractions. Tourism Management Perspectives 16 (2015) 28–42

[22] Wang, Brown & Liu (2015). The physical and non-physical factors that influence perceived access to urban parks Landscape and Urban Planning 133 (2015) 53–66

[23] Leiper, N. (1979). The framework of tourism: Towards a definition of tourism, tourist, and the tourist industry. *Annals of tourism research, 6*(4), 390-407.