Faculty of Economics and Business

Hard and Soft Infrastructure as Determinants of Destinations’ Competition: The Moderating Effect of Mobile Technology

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Hard and Soft Infrastructure as Determinants of Destinations’ Competition: The Moderating Effect of Mobile Technology

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DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Malaysia Sarawak. Except where due acknowledgements have been made, the work is that of the author alone. The thesis has not been accepted for any degree and is not concurrently submitted in the candidature of any other degree.

........................................
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ABSTRACT

The tourism industry involves a wide range of industry and has undergone extraordinary growth for the past 50 years. To this, measuring destination competitiveness has become a substantial interest for the tourism stakeholders. Hard and soft infrastructure as critical determinants of destination competitiveness is an important topic to study and improve. Besides, adopting new technology like mobile technology by the tourism service provider can enhance the travel experience of tourists. However, Malaysia currently faces several problems regarding destination competitiveness and infrastructure development, such as diminishing destination competitiveness ranking, poor hard infrastructure development in Sarawak, and limited study on soft infrastructure toward destination competitiveness. Hence, the main objective of this study is to investigate the importance of hard and soft infrastructures as determinants to destination competitiveness with the moderating effect of ICT tool (mobile technology) from the perspective of visitors. The research was conducted at ecotourism sites: Bako National Park, Semenggoh Nature reserve, Matang Wildlife Centre, Gunung Mulu National Park, and Niah National Park. A total of 194 sets of data were collected from these selected ecotourism sites. After preliminary data analysis, only 190 sets of data are valid for further analysis. For the statistical analysis of this study, software such as SPSS 26.0 and WarpPLS 7.0 were utilized. SPSS 26.0 was used to perform preliminary analysis, and WarpPLS 7.0 to perform partial least square structural equation modelling (PLS-SEM) and estimate the relationships between the constructs. The findings revealed that five out of twelve of the proposed hypotheses were found to be supported. Three of the hard and soft infrastructure, transportation, accommodation, and health services, were found to have a significant and positive relationship toward destination competitiveness. Besides, mobile technology
moderates the relationship between telecommunication infrastructure and government tourism policy toward destination competitiveness. The discoveries of the current study contributed to the scholars and practitioners by equipping valuable information supported by empirical evidence on the moderating effect of mobile technology and the direct relationship between infrastructures and destination competitiveness.

**Keywords:** Hard infrastructure, soft infrastructure, destination competitiveness, mobile technology, Sarawak
Infrastruktur Keras dan Lembut Sebagai Penentu Persaingan Destinasi: Impak Penyederhana Teknologi Mudah Alih

ABSTRAK

Industri pelancongan melibatkan pelbagai industri lain dan telah mengalami pertumbuhan yang luar biasa selama 50 tahun. Oleh sebab yang demikian, pengukuran daya saing destinasi menjadi minat yang besar bagi pihak berkepentingan pelancongan. Infrastruktur keras dan lembut adalah topik penting untuk dikaji dan diperbaiki kerana mereka berperanan sebagai penentu daya saing destinasi. Selain itu, penggunaan teknologi moden seperti teknologi mudah alih yang disediakan oleh pihak perkhidmatan pelancongan dapat meningkatkan pengalaman pelancong. Namun begitu, Malaysia menghadapi beberapa masalah yang berkaitan dengan daya saing destinasi dan pembangunan infrastruktur seperti penurunan daya saing destinasi, pembangunan infrastruktur keras yang kurang maju di Sarawak, dan kajian yang terhad mengenai impak infrastruktur lembut terhadap daya saing destinasi. Justifikasinya, objektif utama kajian ini adalah untuk menyelidik kepentingan infrastruktur keras dan lembut sebagai penentu daya saing destinasi dengan kesan penyederhana alat ICT (teknologi mudah alih) dari perspektif pelawat. Penyelidikan ini dilaksanakan di lokasi ekopelancongan: Taman Nasional Bako, Cagar Alam Semenggoh, Pusat Hidupan Liar Matang, Taman Nasional Gunung Mulu, dan Taman Nasional Niah. Sebanyak 190 set data telah dikumpulkan dari lokasi ekopelancongan yang disenaraikan. Selepas analisis data awal, hanya 190 set data yang sah untuk dimasukkan dalam analisis selanjutnya dua jenis perisian telah digunakan untuk melaksanakan analisis statistik kajian ini. SPSS 26.0 diperlukan untuk melakukan analisis awal, malah WarpPLS 7.0 untuk melakukan pemodelan persamaan struktur separa terkecil (PLS-SEM) dan pengiraan hubungan antara konstruk. Hasil kajian menunjukkan lima daripada dua
belas hipotesis yang dicadangkan didapati disokong. Tiga dari infrastruktur keras dan lembut, pengangkutan, penginapan, dan perkhidmatan kesihatan, didapati mempunyai hubungan yang signifikan dan positif terhadap daya saing destinasi. Di samping itu, teknologi mudah alih menyederhanakan hubungan antara telekomunikasi dan dasar pelancongan kerajaan terhadap daya saing destinasi. Penemuan kajian semasa memberi sumbangan kepada para sarjana dan pengamal dengan melengkapi mereka melalui maklumat berharga yang disokong oleh bukti empirikal mengenai kesan penyederhanaan teknologi mudah alih dan hubungan langsung antara infrastruktur dan daya saing destinasi.

**Kata kunci:** Infrastruktur keras, infrastruktur lembut, daya saing destinasi, teknologi mudah alih, Sarawak
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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

The tourism industry is one of the fastest-growing industries, which has undergone remarkable growth for the past 50 years. It is becoming one of the primary economic sectors globally (Kubickova & Smith, 2019; Nilashi et al., 2019). Tourism can be defined as the phenomenon of cultural, social, and economical which involves people move away from their usual environment to other places in the world for personal or professional purposes (Baggio, 2019). Tourism activities involve many aspects that impact the economy, natural and built environment, residents, and visitors. Due to the wide range of industries involved, many products and services are needed by the visitors while travelling to other places. Hence, an extensive spectrum of stakeholders will be affected by tourism (Li & Wu, 2019).


**Figure 1.1:** International Visitors Arrival
Figure 1.2: Tourist Arrival of Each Continent in Percentage

Globally, the international tourist arrival is increasing over the past nine consecutive years. Since 2010 from 940 million (UNWTO, 2011) to 2019 at 1.5 billion (UNWTO, 2020) of international tourist arrival. Figure 1.1 demonstrates the growth of global international visitor arrival from year 2015 at 1,186 million (UNWTO, 2016), 2016 at 1,235 million (UNWTO, 2017), 2017 at 1,326 million (UNWTO, 2018), 2018 at 1,401 million (UNWTO, 2019) and 2019 at 1,461 million (UNWTO, 2020). As illustrated in Figure 1.2, according to UNWTO (2020), in the year 2019, Europe has the highest tourist arrival of 742.3 million (50.8%), followed by the Asia Pacific at 363.6 million (24.9%), Americas at 220.1 million (15.1%), Africa at 71.2 million (4.9%) and lastly the Middle East at 63.9 million (4.4%). The performance of global tourism is bringing evidence that it is one of the most impactful economic sectors in the world, which drives economic growth in most countries.

Tourism has differentiated its contribution into direct contribution, indirect and induced contribution. The direct contribution refers to the resident or non-residents
invested in tourism for business or leisure purposes and the government’s spending directly relating to visitors. The investments include transportation, accommodation, attraction, entertainment, etc. Indirect contribution comprises investment spending related to tourism, collective government spending, and the supply chain of goods and services from local tourism sectors. The induced contribution refers to the employment spending that is directly or indirectly employed by the tourism industry. In 2018, the global GDP growth of tourism sectors concluded at 3.9%, where the total contribution of tourism industry toward GDP is 10.4% (USD 8.8 trillion). The total contribution includes 3.2% (USD 2,750.7 billion) of the direct contribution of tourism toward GDP. To breakdown, visitors export, domestic spending, leisure spending, business spending, and capital investment generated 6.5% (USD 1,643.2 billion), 4.8% (USD 4,060.1 billion), 2.5% (USD 4,475.3 billion), 0.7% (USD 1,228 billion) and 4.4% (USD 940.9 billion) respectively. In terms of employment rate, it contributed 10% (318,811,000 jobs) to global employment, which consists of 3.2% (122,891,000 jobs) contribution directly from the tourism industry (World Travel and Tourism Council, 2019).

In the era of globalization, measuring destination competitiveness is a dominant theme within the tourism industry. Due to the excellent performance of the tourism sector in the global economy, countries are investing more into the development of destinations (Zehrer et al., 2017). Thus, the ever-growing numbers of destinations are competing in the same market to attract the same visitors. This phenomenon leads to relatively fierce competition among the global tourism market, and therefore destination competitiveness becomes a substantial interest for policy makers and practitioners (Drakulić Kovačević et al., 2018). Past literature has introduced the importance of destination competitiveness in increasing tourist arrivals and tourism development (Crouch & Ritchie, 1999; Abreu et al.,
2018; Carayannis et al., 2018; Goffi et al., 2019). Thus, to be outstanding in the competitive tourism marketplace, the marketing and management of destinations should be driven by a thorough analysis of the motivational factors for the tourists.

One of the primary considerations by tourists before deciding on the destination is the overall experience of the trip. Besides, many industries are involved in the tourism sector, including businesses, authority, charitable bodies, government, etc., contributing to the tourist experience in different ways. Therefore, a competitive tourist destination focuses not only on its attractions but also on other supporting sectors such as infrastructure, transportation, hospitality, etc. (Kozak & Rimmington, 1999; Chambers, 2010; Fernández et al., 2020). According to Catudan (2016), the local investment by the government, such as peace and order, health services and facilities, transportations, infrastructures, etc., can attract direct foreign investment and cultivate good tourism.

Infrastructure plays a vital role in the development of destination competitiveness. Continuous improvement and development of infrastructures are necessary as this allows a destination to stay competitive (Mustafa et al., 2020). When visitors travel to a destination, many infrastructures are needed, which includes transportation to move from one place to another or for sightseeing, accommodation for resting purposes, telecommunication to enable communication with the locals or family and friends back home, health services to cater for emergencies or ensuring good health condition during travel, and many more other infrastructures are needed during the trip. The diversification level of infrastructure qualitatively and quantitatively is strongly linked to the attractiveness of the destination (Herman et al., 2020). However, infrastructure has been classified into two major infrastructure categories: hard infrastructure and soft infrastructure (Baskakova & Malafeev, 2017). Thus, hard and soft infrastructure are critical factors in order to achieve
destination competitiveness as tourists are not only experiencing the main attractions of the destination but also the basic necessities such as transportation, telecommunication, safety, health services, etc. while having their visit at the destination.

In this new era of technology, the change of technology is driving the development of the economy. Competitive advantages are no longer based on natural resources but driven by science, technology, information, and innovation due to information sensitivity. Many businesses employ technological innovation to sustain their business competitiveness (Hojeghan & Esfangareh, 2011; Ferreira et al., 2019). Eventually, Information and Communication Technology (ICT) has transformed the environment of global tourism due to the growth of a technology-based service environment that increases the desire of self-service consumers in various customer segments and reduces the industry's cost (Pierdicca et al., 2019). The tourism industry has also been affected by ICT with tools provided, enabling consumers to identify, customize, and purchase the products, which simultaneously promotes globalization in the industry (Bethapudi, 2013). According to Palumbo (2015), to develop a high-quality tourism experience, a trending and efficient facilitator is needed to enhance accessibility and mobility. New smart technology should chip in as an innovation of the tourism industry to improve and elevate the experience of tourists. Digital technology has pushed tourism and its related industries to a new stage of development, such as smart destinations, smart cities, smart airports, seaports, etc. (Pranita, 2018). ICT tools can enhance the phenomenon of the tourism industry (Bethapudi, 2013). When talking about trending technology, mobile phones are one of the most ubiquitous ICT tools nowadays (Singh at al., 2016). Majority of the tourists will think of mobile technology when the idea of travelling came across due to its convenience and easy access to information. Travelling related application is the 7th most downloaded application in the
major application market. About 60% of smartphone users have downloaded the travel-related application, and 45% of these users have used it to plan their trip (Yang, 2019).

Since the end of year 2019, the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) has outbroken to all over the world, which causes the pandemic of Coronavirus disease (COVID-19). The pandemic causes a drop-off of the economic and tourism activities in most countries throughout the world due to the strict policy of transporting people domestically and internationally (Inam et al., 2020). Nonetheless, the pandemic will not last forever. The post-pandemic period will come, and the tourism industry will recover gradually. Digital technology such as mobile technology would help in the recovery stage of the pandemic in the tourism industry because mobile technology can equip rigorous prior information about the COVID-19 at the destination from anywhere and anytime in the trip. It is indispensable for the tourism industry to recover; otherwise, the global economy market may face financial collapse (Dobrescu & Mazilu, 2020).

1.2 Malaysia Scenario

Malaysia is the top 5 destination country in Asia-Pacific, and the government has made serious efforts to boost the tourism industry to diversify the economy (Al-Mulali et al., 2019). According to the Department of Statistics Malaysia Official Portal (2019), in 2018, the tourism industry contributed 15.2% of the Gross Value Added of Tourism Industries (GVATI) and 6.5% of Tourism Direct Gross Domestic Product (TDGDP) to Malaysia Gross Domestic Product (GDP). The statistic released by Malaysia Tourism Promotion Board (2019) shows that, in 2018, Malaysia received a total of 25.8 million international tourists and revenue of RM 84.1 billion from the tourism industry, which indicates tourism is one of the critical source of income in Malaysia.