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ASSESSING THE INFLUENCE OF HARD AND SOFT INFRASTRUCTURE ON PERCEIVED DESTINATION COMPETITIVENESS: PERSPECTIVE FROM VISITORS IN SARAWAK

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ABSTRACT

Tourism is one of the rapid growing economic sectors in the world. Destination competitiveness became an imperative aspect for every country as it determines the tourism revenue of the country. Infrastructure is one of the determinants of destination competitiveness. There are two kinds of infrastructure namely hard infrastructure and soft infrastructure. The current study investigated the impact of hard infrastructure (transportation, telecommunication, accommodation) and soft infrastructure (government tourism policy, health services, and safety and security) on perceived destination competitiveness from tourists' points of view. The study was conducted based on quantitative research. A PLS-SEM analysis was performed by using WarpPLS. The result indicated that transportation, accommodation, and health services have a significant relationship with perceived destination competitiveness. This study is expected to benefit policymakers and industry players in terms of decision-making. Besides, this study will equip more literature and evidence for scholars to perform further studies in the field.

Keywords: *Transportation, accommodation, telecommunication, government tourism policy, health services, safety and security, Sarawak*[1]

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1. INTRODUCTION

Tourism is increasingly dominating the global economy (Irgashevich et al., 2022). Tourists require various goods and services while traveling to other places. Consequently, tourism affects a wide range of stakeholders (Khan et al., 2020). Countries are investing more in the development of destinations due to the tourism sector's strong success in the global economy (Irani et al., 2022). Subsequently, the ever-increasing number of destinations compete in the same market. Destination competitiveness becomes a major concern for policymakers and practitioners due to the intense competition (Rheeders, 2022). One of the crucial aspects that travelers consider before deciding on a destination is the vacation experience. Therefore, a competitive destination pays attention to other supporting industries in addition to its attractions (Gulati, 2022). According to Catudan (2016), peace and order, health services, transportation, and other local government investments can draw direct foreign investment and promote quality tourism. The significance of destination competitiveness in boosting visitor numbers and tourism growth has been discussed in past literature (Murayama et al., 2022).

The development of a destination's competitiveness partly depends on the destination's infrastructure. For a location to stay competitive, infrastructure development and upgrading must be ongoing (Mustafa et al., 2020). Many infrastructures are required when tourists visit a place, including transportation, accommodation, telecommunication, health services, and many more. The appeal of the destination is closely correlated with the extent of infrastructural diversification, both qualitatively and quantitatively (Herman et al., 2020). There are two types of infrastructure: hard and soft infrastructure (Lu & Lu, 2022). The physical infrastructure required to conduct economic activities and maintain a country's functionality are referred to as hard infrastructure (Harris & De Leeuw, 2022). Furthermore, the public institutions required to maintain society are referred to as "soft infrastructure" (Biriş, 2021).

The infrastructure of Malaysia is inconsistent between the West and the East. East Malaysia's Sarawak state is lagged behind West Malaysia in terms of infrastructural development for far too long, according to Sarawak Premier Tan Sri Datuk Patinggi Abang Johari Tun Openg, and this has hampered Sarawak's overall development (Aga, 2019; Dayak Daily, 2020). One of the reasons for Malaysia's declining destination competitiveness ranking is the insufficient and inconsistent infrastructure development among all the states in Malaysia. As a result, from 2017 to 2019, the travel and tourism competitiveness ranking fell to three positions, from No. 26 to No. 29 (Calderwood & Soshkin, 2019; Crotti & Misrahi, 2017). Reduced tourist numbers, poorer community well-being, and a shift in natural capital will result from a lower destination competitiveness ranking, which is a major issue for the nation's economy and community income. The drop in destination competitiveness ranking causes competitive advantage losses. Thus, tourists are attracted by other destinations. As a result, Malaysia's annual visitor arrivals have decreased from 26,76 million in 2014 to 25,83 million in 2019 (Ahmad et al., 2020). This is a huge threat to the domestic tourism industry as lesser tourists lead to lesser tourism income, which directly impacts the overall income of the nation and community. However, there is little research on perceived destination competitiveness is impacted by hard and soft infrastructures in Malaysia, specifically in Sarawak. Therefore, research into hard and soft infrastructure affects perceived destination competitiveness in the context of Sarawak, Malaysia is imperative.

This study's objective is to bridge the knowledge gaps on infrastructure and perceived destination competitiveness. Previous studies such as the research of Chin et al. (2014), Lo et al. (2019), and Thong et al. (2020) are focused on tourism infrastructure as a whole, the current study has broken down the infrastructure into two categories which are hard and soft infrastructure, and further investigation on the elements of each category (transportation, telecommunication, accommodation, government tourism policy, health services, and safety and security) .

The competitiveness theory is the underlying theory to explain how comparative advantages — accommodation, transportation, and telecommunication infrastructure, and competitive advantages — government tourism policies, health services, and safety and security, can affect the destination competitiveness. These variables are anticipated in the study since it is firmly held that they have a significant impact on destination competitiveness. Besides, practically, it is anticipated to have an impact on policy-maker in terms of decision-making of infrastructure and tourism development, as well as benefited the practitioners by assisting them to generate revenue. Therefore, the current study is important for scholars by adding more evidence to the literature and industry players in developing tourism competitiveness.

2. LITERATURE REVIEW

2.1. Competitiveness theory

According to Ritchie and Crouch (2003), competitiveness theory is a theory that takes into account comparative advantages and competitive advantages. It is frequently used to guide the theoretical foundation of literature for constructing destination competitiveness models. Comparative advantage is defined as the factor endowments (such as facilities and natural resources) that are present at the destination, whereas competitive advantage is defined as making effective long-term use of these resources (Crouch & Ritchie, 1999). Numberous past research used the competitiveness theory to study the critical factor of destination competitiveness from both inherited (comparative advantage) and created (competitive advantage) resources of the destination (Ching et al., 2019; Thong et al., 2020).

2.2. Destination competitiveness

The ability to increase tourism expenditure by drawing in more visitors, ensuring their satisfaction and wonderful experience while enhancing the welfare of residents and safeguarding the destination's natural resources for future generations can be characterized as destination competitiveness (Cronjé & du Plessis, 2020). Destinations can be identified by their resources, which might be either natural, cultural, or man-made. However, it is up to public and private organizations to manage the activities and enhance the visitor experience. The destination acquires a competitive advantage if the tourism operators develop the tourism activities that tourists desire. Therefore, actions made by tourism businesses are essential for boosting competition (Happ, 2021). Destination competitiveness affects tourist arrivals and tourism revenue directly and indirectly through employment, infrastructure, commercial, public institutions, and so on (Costea et al., 2017; Lušticky & Štumpf, 2021).

2.3. Hard and soft infrastructure in tourism

To manage the nation's economy, hard infrastructures are needed (Tonny & Wulan, 2020). Due to the physical facilities that travelers require throughout their trip, hard infrastructure is crucial in fostering the growth of the tourism industry (Nguyen, 2021). To accommodate the demand of high-end tourists, the government keep on upgrading the country's hard infrastructure (Seetanah et al.,

2016). Tourists experience the destination's hard infrastructure as they landed to the destination. Thus, tourists' experience of hard infrastructure becoming imperative in tourism research as it impacts many aspects. Additionally, the visitor will unavoidably encounter hard infrastructure while traveling to the destination, making calls, or using the internet, as well as accommodation at the destination during the stay. Therefore, transportation, telecommunication, and accommodation infrastructure are important to the study as these are the basic needs of tourists.

The social, political, or cultural institution that offers services to a community or nation is known as soft infrastructure (Cantú, 2017; Nguyen, 2021). When it comes to attracting foreign direct investment (FDI), soft infrastructure can attract twice-as-high return on investment and creates economic reforms, hence, it is more crucial than hard infrastructure (Nguea, 2021; Ogunjimi & Amune, 2019). Soft infrastructure is vital for tourism because visitors' experiences rely on the social encounters, and interpersonal experiences (Wilopo et al., 2020). Besides, Seetanah et al. (2016) noted that soft infrastructure is a key component of tourism since it influences travelers' decisions on destination, attractiveness, and competitiveness.

2.3.1. Transportation infrastructure

One of the critical forms of hard infrastructure is transportation (Nguyen, 2021). Moving from one location to another is referred to as transportation. Transportation is the structural and physical installations required for transportation activities. Roads, terminals, airports, railroads, and canals are a few examples of transportation infrastructure. Transportation enables trade between people of different countries or local enterprises to occur, hence it is essential for economic growth and the convenience of the general public and, inadvertently, for the establishment of civilization (Alex-Onyeocha et al., 2015; Kanwal et al., 2020). Transportation is a crucial environmental component of sustainable tourism (Martín et al., 2019). Tourism requires extensive travel which necessitates transportation to get from one location to another (Zhang & Zhang, 2022). There is various form of transportation, including air travel, railroads, waterways, and highways, all of which are important to travelers (Ruziyev & Bakhriddinova, 2022).

Manrai et al. (2018) mentioned that to attain adequate accessibility, transportation must be effective and efficient, which will have a direct impact on the competitiveness of the destination. Besides, many scholars have determined that an easy-to-reach destination performs better in terms of visitor arrivals and destination competitiveness (Manrai et al., 2018; Ramos et al., 2020). Hence, a hypothesis is formed as below:
H1: Transportation infrastructure positively related to perceived destination competitiveness.

2.3.2. Telecommunication infrastructure

Many experts classify telecommunications as one of the hard infrastructures (Cantú, 2017; Nguyen, 2021). The internet, mobile networks, local area networks, and optical backhaul networks are a few of the networks that make up the complex, autonomous, yet interconnected ecology of telecommunications (Liu et al, 2018). Roadside cabinets, access pits, cell towers, and underground

cables are some examples of the physical facilities that underpin the functionality of telecommunication infrastructure (Bertelli et al., 2018). Telecommunications has significantly impacted tourism. It enables highly rapid, simple, and affordable communication both within the country of destination and to and from other places. Additionally, it maximizes the availability of information on the destination while traveling, creating a journey that is more convenient, fearless, secure, and comfortable (Nim et al., 2022). Tourists from more developed nations favor traveling to places where communication and service technologies are similar to their nation (Seetanah, 2019).

Researchers believed that telecommunication can directly influence destination competitiveness (Mustafa et al., 2020; Zainuddin et al., 2016). When choosing a destination, tourists are increasingly evaluating the quality of telecommunications. Past studies have proven the positive relationship between telecommunication and destination competitiveness (Mutambo, 2018; Yozcu, 2019). Thus, a hypothesis developed as below:
H2: Telecommunication infrastructure positively related to perceived destination competitiveness.

2.3.3. Accommodation infrastructure

Another hard infrastructure that is commonly acknowledged by academics is the accommodation (Cristina, 2020; Jovanović, 2016). A physical site, usually a house or building where people live, that offers protection or shelter from nature is known as an accommodation (Gianpiero, 2009). Tourists depend on the destination's accommodation to provide them with a place to stay while traveling. An attractive destination benefited from having a good accommodation since it makes visitors feel comfortable during their stay. A wider selection of thoughtfully designed and strategically located accommodations will be essential for successful tourism planning and the quality of their stay is one of the most crucial factors for tourists' satisfaction and the image of the destination (Kimbu, 2011; Wardana et al., 2021). Hence, accommodation makes up a considerable share of all tourism-related spending (Palgan et al., 2017).

The destination competitiveness can be increased by having high-quality accommodations (Seetanah, 2019). More guests can be accommodated with increased capacity and higher quality accommodation, which increases the likelihood that they'll stay longer which drives up tourism spending. This implies greater employment opportunities, more investments, and higher tax revenues for the destination. Past research has confirmed the relationship between accommodation and destination competitiveness (Chin & Lo, 2017; Magombo et al., 2017). Therefore, a hypothesis has developed as below:
H3: Accommodation infrastructure positively related to perceived destination competitiveness.

2.3.4. Government tourism policy

Government or governance is widely acknowledged by researchers as a vital soft infrastructure (Al-Maamari, 2017). By definition, policy refers to the political strategy, tactic, and implementation (Tang, 2017). To build governance, government policy is typically made based on power sharing, compromising, collaboration, partnership, and negotiation between all sectors

(Bramwell, 2011). The government has used it as a tool for economic development and reconstruction (Andriotis et al., 2019). In general, the term "tourism policy" refers to the policies the government has made about tourism. To put it another way, the government decides what to do and what not to do in the tourism-related industry. It is one of the most important factors in determining the nature of a nation's tourism, enabling socio-cultural, environmental, and economic growth, as well as defending the domestic tourism industry's interests (Sheppard & Fennell, 2019).

One of the most important variables affecting a destination's competitiveness is tourism policy (Woyo & Slabbert, 2021). These government-created tourism policies often serve as guidance for all tourism development processes, operations, and management, focusing on sustainability following the best practices to enhance the destination competitiveness of the nation (Ismet & Abuhjeeleh, 2016; Tse & Tung, 2022). Many scholars have researched the effect of policies and destination competitiveness (Agiomirgianakis et al., 2017; Estol et al., 2018). Thus, a hypothesis is formed as below:
H4: Government tourism policy positively related to perceived destination competitiveness.

2.3.5. Health services

Numerous academics have identified health services as soft infrastructure (Al-Maamari, 2017; Tonny & Wulan, 2020). According to the World Health Organization (WHO), health services are all those that are specifically devoted to identifying and treating diseases as well as preserving and restoring the general public's health (Moreno-González et al., 2020). Good health services at the destination help tourists feel less anxious as they give travelers a sense of security about their health, hence, contributes in the rise of tourist arrivals. It is a crucial piece of infrastructure for visitors who travel with their families, elderly travelers, and travelers with disabilities. The visitors' health can be guaranteed by the availability of clinics, pharmacies, and all medically associated services. For those who travel for both recreational and medical reasons, many nations, notably Malaysia and India, have made significant investments in medical services. Additionally, the empirical finding demonstrates that supporting and fostering the tourism economy requires a strong health infrastructure (Gao et al., 2022; Seetanah et al., 2016).

One of the most crucial aspects which are rated as a pillar of destination competitiveness is health services (Kara & Kunt, 2020). Knežević Cvelbar et al. (2016) and Gajić et al. (2018) have confirmed the connection between health services and destination competitiveness. According to the literature studies above, a hypothesis is formed as below:
H5: Health services positively related to perceived destination competitiveness.

2.3.6. Safety and security

Many academics consider security and safety to be soft infrastructure (Cantú, 2017; Zimano & Ruffin, 2018). Given the crises and disasters that have affected the tourism sector over the years, including terrorist attacks, economic downturns, biosecurity threats, political unrest, and natural disasters, travelers tend to place a high priority on safety and security when making decisions (Fino

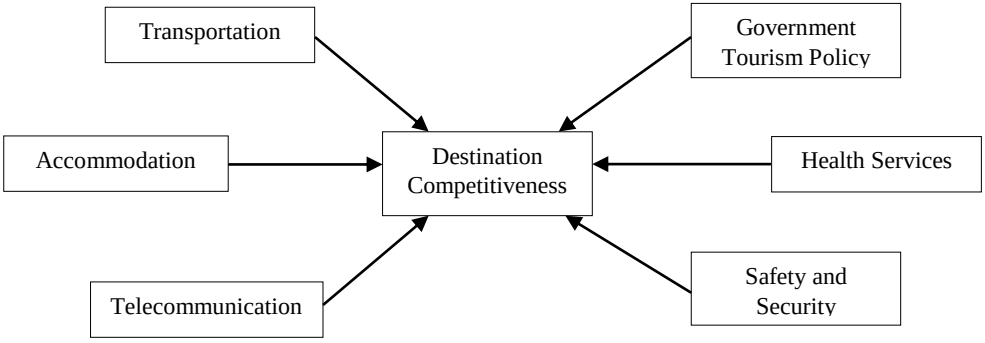
& Andrade, 2018; Fourie et al., 2020). According to Uchenna et al. (2016), the public and private sectors should jointly identify potential safety and security problems and create a strategy to address them for tourists. A lack of safety and security could be detrimental to the tourism sector as it will spread unfavourable word-of-mouth (Perić et al., 2018). Additionally, a cyberattack can damage a destination's reputation as well as visitors' trust and confidence, making cybersecurity one of the threats to a destination's overall safety and security (Paraskevas, 2020).

A dangerous area will ultimately make it more challenging to draw visitors and slow down the entire tourism industry (Wang & Lopez, 2020). Thus, it proves to be a crucial factor in destination competitiveness (Ramukumba, 2019). International travelers and investors are less likely to choose a destination if it is typically unsafe. Therefore, the nation will become less competitive and less appealing (Abukhalifeh & Chandran, 2020; Costea et al., 2017). Past studies have evidenced the relationship of safety and security with destination competitiveness (Hossain, 2019; Hsu et al., 2017). Hence, a hypothesis can be formed as below:
H6: Safety and security positively related to perceived destination competitiveness.

2.3.7. Research model design

The research model of the present study as illustrated in Figure 1.

Figure 1: Research Model



3. METHODOLOGY

Bako National Park, Semenggoh Nature Reserve, Matang Wildlife Centre, Gunung Mulu National Park, and Niah National Park were selected as research sites for the current study. The selected sites are Sarawak's top five ecotourism destinations with the most tourists in Sarawak (Sarawak Forestry Corporation, 2020). Furthermore, all of the selected sites are located in remote areas of Sarawak, demanding a substantial infrastructure to access.

A quantitative approach was used to obtain the data through survey questions. Visitors to the chosen sites, both domestic and international were the targeted respondents. Two sections made up the questionnaire: Section A contained the respondent's demographic data and Section B contained the constructs' measurement instruments. There are nine questions in Section A and 31 questions in Section B. The measuring items in Section B were all altered from earlier studies (Chen & Tsai, 2019; Díaz, 2017; Ismet & Abuhjeeleh, 2016; Lee & King, 2009; Seetanah et al., 2017; Zehrer et al., 2017). To tap into the response, a 5-point Likert scale has been inferred for the measurement items. Pre-testing was done before the survey. The results of the pre-test recommended reducing the number of items in the construct of perceived destination competitiveness since the respondents felt it had too many measurement items which creates confusion. The researcher then held a focus group with local professionals in the tourism sector to talk about the measurements for determining perceived destination competitiveness. The researcher has chosen to exclude the questionnaire items under each category and divide them into four major categories to serve as the measuring items of the construct based on the local context and the focus group discussion. As per the findings of the pre-test, the remaining assessment items in other constructs were slightly modified to reflect the local context. Before the survey is conducted, the researcher conducted another round of pilot tests to verify the validity of the construct.

The researcher arrived at the selected research sites, requested permission from the management, and carried out the research physically. Due to the Covid-19 epidemic, a digital survey form created by Google Form was distributed to respondents who agreed to take part in the study by displaying the rapid response (QR) code for them to scan. The usage of a Google form has another advantage - there won't be any problems with incomplete data because each measurement item must be completed before the form can be submitted. Then, after the respondents scanned the QR code with their mobile devices, a cover page explaining the purpose of the study was shown, followed by the questionnaire that needed to be filled out by the respondents. In the meantime, a face-to-face interview was conducted with visitors who had trouble understanding the measurement items. Fifty hard-copy questionnaires were printed in case the respondents didn't have access to a smart device or could not scan the QR code. The initial plan for the data collection is from November 2020 to January 2021. However, due to a lack of visitors and occasional restrictions on public movement during the COVID-19 epidemic, the data-gathering period was extended from November 2020 to March 2021.

To make sure the sample size for this study was sufficient, G*power analysis was used (Faul et al., 2007). To evaluate whether there is a relationship between the constructs, the power must be more than 0.80 (>0.80) (Cohen, 1988). Subsequently, priori analysis with 6 predictors, an effect size of 0.15, an 80% power, and a 5% level of significance was performed. The analysis indicates that 98 respondents are the minimum sample size needed for this study. Since every respondent can complete the survey using their mobile devices, 194 data for the current study were collected without the use of any physical questionnaires. 190 data sets (97.79%) were left for further study after preliminary data analysis, whereas 4 data sets were eliminated owing to straight-lining issues.

As a result, the data collected is sufficient to assess the significance of the hypothesized relationships.

The descriptive statistical analysis and demographic information were performed using SPSS version 26.0. The respondents' demographic information is displayed in Table 1 below.

Table 1: Demographic Information of the Respondents

			Respondents (N=190)	
No.	**Demographic Variable**	**Category**	**Frequency (n)**	**Percentage (%)**
1.	Nationality	Chinese	12	6.32
		Egyptian	1	0.53
		German	1	0.53
		Indonesian	7	3.68
		Japanese	1	0.53
		Korean	3	1.58
		Malaysian	164	86.3
		Singaporean	1	0.53
2.	Gender	Male	101	53.2
		Female	89	46.8
3.	Age Group	Below 18	2	1
		18 – 25	53	27.9
		26 – 35	68	35.8
		36 – 45	33	17.4
		46 – 55	12	6.3
		56 – 65	19	10
		66 and above	3	1.6
4.	Marital Status	Single	126	66.3
		Married	64	33.7
5.	Employment Status	Employed	100	52.6
		Unemployed	4	2.1
		Self-employed	26	13.7
		Students	46	24.2
		Retired	14	7.4
6.	Purpose of the visit	Holiday	98	51.6
		Conference & Exhibition	4	2.1
		Health treatment	1	0.5
		Sport	1	0.5
		Education / Seminar	34	17.9
		Business	27	14.2
		Visiting friends / Family	24	12.7
		Incentive trip	1	0.5
7.	Duration in Sarawak	Less than 5 days	28	14.7
		5 – 10 days	37	19.5
		11 - 15 days	6	3.2
		More than 15 days	8	4.2
		I stay in Sarawak	111	58.4
8.	First time in Sarawak	Yes	37	19.5
		No	153	80.5
9.	Trip planned by	Self	174	91.6

	Travel Agencies	10	5.3
	Company	6	3.2

The validity and reliability of the components were then assessed using WarpPLS 7.0, and the relationship between the constructs in the study model was examined (Hair et al., 2017). The results of the two-stage partial least squares structural equation modeling (PLS-SEM) analysis will be explained in the next section.

4. FINDINGS

4.1. Assessment of the measurement model

The reliability, convergent validity, and discriminant validity of the measuring scale were evaluated using confirmatory factor analysis (CFA). For the sake of internal consistency, the loadings of 0.5 and lower will be removed (Bagozzi et al., 1991). All of the loading values in this study are higher than 0.5, as shown in Table 2 below, hence none of them should be eliminated. The composite reliability (CR) values should be at least 0.7, according to Chin (2010), to ensure the data is valid for assessment. Additionally, as the average variance extracted (AVE) threshold is 0.5, any reading below 0.50 should be avoided (Fornell & Larcker, 1981). All of the CR and AVE values in the current study have complied with the minimal standards. Besides, Cronbach's alpha values were produced to evaluate the internal consistency and instrument reliability (Cronbach, 1951). According to Nunnally and Bernstein (1994), Cronbach's alpha values range from 0.60 to 0.80, with 0.60 denoting poor, 0.61 to 0.79 denoting acceptable, and 0.80 and above denoting significantly good. In the current study, the Cronbach's alpha of transportation and health services denoting acceptable and the rest of the variable denoting significantly good. The report of mean, standard deviation, skewness and kurtosis of each measurement items can be found in Appendix 2.

Table 2: Convergent validity of the measurement model

Construct	Items	Loadings	Cronbach's Alpha	AVE	CR
Transportation	Trans_1	0.664	0.725	0.550	0.829
	Trans_2	0.724			
	Trans_3	0.753			
	Trans_4	0.817			
Telecommunication	Tele_5	0.735	0.838	0.555	0.881
	Tele_6	0.685			
	Tele_7	0.806			
	Tele_8	0.790			
	Tele_9	0.773			
	Tele_10	0.668			
Accommodation	Accom_11	0.852	0.830	0.663	0.887
	Accom_12	0.833			

	Accom_13	0.785			
	Accom_14	0.784			
Government Tourism Policy	GTP_15	0.803	0.855	0.698	0.902
	GTP_16	0.882			
	GTP_17	0.864			
	GTP_18	0.789			
Health Services	HS_19	0.758	0.759	0.582	0.847
	HS_20	0.823			
	HS_21	0.754			
	HS_22	0.711			
Safety and Security	SS_23	0.741	0.834	0.602	0.883
	SS_24	0.840			
	SS_25	0.788			
	SS_26	0.720			
	SS_27	0.785			
Perceived Destination Competitiveness	DC_28	0.748	0.809	0.637	0.875
	DC_29	0.776			
	DC_30	0.847			
	DC_31	0.817			

Note: *Trans refers to transportation, Tele refers to telecommunication, Accomm refers to accommodation, GTP refers to government tourism policy, HS refers to health services, SS refers to safety and security and DC refers to perceived destination competitiveness. Please refer to the appendix for the measurement items.*

Table 3 displays the measurement scale's discriminant validity. According to the criteria given by Fornell and Larcker (1981), the average variance extracted (AVE) value is square-rooted and tested for the inter-correlation of the constructs in the research model. The correlation for each of the constructs should be noted as being higher than other values (Chin, 2010). According to Table 3, each construct's correlation value is higher than the values next to and below it, indicating that multicollinearity is not a problem in this study.

Table 3: Discriminant validity of the measurement model

No.	Construct	Trans	Tele	Accomm	GTP	HS	SS	DC
1.	**Trans**	**0.742**						
2.	**Tele**	0.426	**0.745**					
3.	**Accomm**	0.299	0.317	**0.814**				
4.	**GTP**	0.317	0.355	0.568	**0.836**			
5.	**HS**	0.255	0.183	0.452	0.435	**0.763**		
6.	**SS**	0.316	0.230	0.288	0.423	0.500	**0.776**	
7.	**DC**	0.341	0.266	0.349	0.317	0.444	0.336	**0.798**

4.2. Assessment of the structural model

The coefficient of determination (R2) for the endogenous latent variables in this study is 0.306, which accounts for 30.6 percent of the construct. R2 values of 0.67, 0.33, and 0.19 indicate strong, medium, and weak coefficients of determination, respectively (Chin, 1998). The R2 values in this study, however, are more than 0.19, which denotes that the R2 value is "weak." Therefore, the measurement model used in the current study is valid, reliable, and has passed the convergent and discriminant validity.

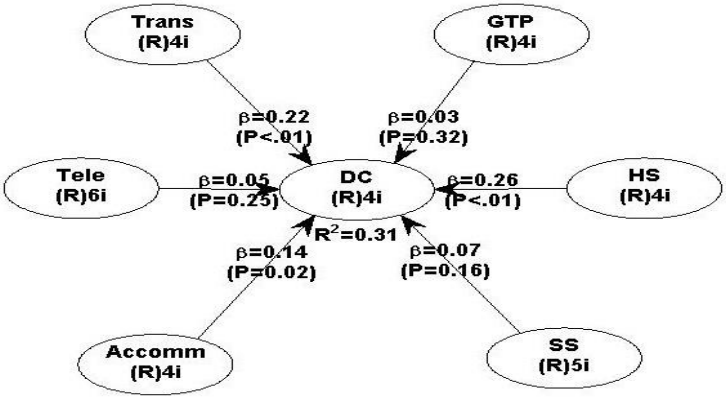
The results of the hypothesis testing are shown in Table 4 and Figure 2 below. When testing one-tailed hypotheses, the threshold p-value should be less than 0.01 or 0.05. The statistical findings show that H1, H3, and H5 were found to be supported. The perceived destination competitiveness was discovered to have a direct and significant relationship with the following factors: transportation ($\beta = 0.218$, $p < 0.001$), accommodation ($\beta = 0.141$, $p = 0.024$), and health services ($\beta = 0.263$, $p < 0.001$).

To further comprehend the connection between the constructions, the effect size value (f2) was analyzed. Large, medium, and small effect sizes are represented by the values of 0.35, 0.15, and 0.02 respectively (Cohen, 1988; Hair et al., 2017). Table 4 displays the effect size, and H1, H3, H5, and H6 correspond to small effect sizes (0.024 – 0.120). In addition, H2 and H4 have effect sizes lower than 0.02, indicating that no effect.

Table 4: Results of the structural model (hypothesis testing)

Hypothesis	Relationship	Std. Beta	Std. Error	P-value	Decision	f^2
H1	Trans -> DC	**0.218**	0.069	**<0.001****	**Supported**	0.084
H2	Tele -> DC	0.049	0.072	0.246	Not Supported	0.014
H3	Accomm -> DC	**0.141**	0.071	**0.024***	**Supported**	0.051
H4	GTP -> DC	0.034	0.072	0.318	Not Supported	0.012
H5	HS -> DC	**0.263**	0.069	**<0.001****	**Supported**	0.120
H6	SS -> DC	0.070	0.072	0.164	Not Supported	0.024

Figure 2: P-value and path coefficient



5. DISCUSSION AND CONCLUSION

5.1. Discussion

As predicted and in line with earlier research findings, transportation infrastructure is positively related to perceived destination competitiveness (Albayrak et al., 2018; Fernández et al., 2020); Therefore, H1 is supported. Additionally, it was found that accommodation has a positive and significant relationship with perceived destination competitiveness, validating H3, which is in line with previous research (Chin & Lo, 2017; Magombo et al., 2017). Besides, H5 (health services are positively related to perceived destination competitiveness) was found to be in line with the past studies (Gajić et al., 2018; Knežević Cvelbar et al., 2016).

Nevertheless, H2 was not supported because telecommunication infrastructure is insignificant to perceived destination competitiveness. This might because Sarawak's telecommunications network is still not capable of meeting the demands of the visitors. Numerous visitors from various research sites have complained about the unstable network connection and slow internet speed. Uncertainty, fear, and asymmetric information will result from poor telecommunication infrastructure because tourists rely upon telecommunication to communicate between the destination and their hometowns (Seetanah, 2019). All of these negative emotions will influence tourists' willingness to visit the destination, hence perceived destination competitiveness will be affected (Prajawati, 2020).

Unexpectedly, the findings indicate that there is no positive relationship between destination competitiveness and government tourism policy; thus, H4 is not supported. Based on the interviews with the respondents, the plausible reason H4 is not supported because visitors are negative and uninformed of Sarawak's tourism policy. The specifics of the tourism policies are not well known. They do not think the current tourism policy will benefit the general public and tourism practitioners. Lemos Baptista et al. (2019) argues that all the sectors related to tourism should be involved in the development of tourism policy to gather different viewpoints to boost destination competitiveness. Therefore, the local government should appropriately implement the tourism strategy and tailor it to the circumstances of the local tourism sectors.

Surprisingly, H3 is not supported because the findings suggest that there is no significant relationship between perceived destination competitiveness and safety and security. The response from the respondents indicates that Sarawak's safety and security system still lags behind of those more developed countries. For instance, closed-circuit television (CCTV) was not commonly available in public areas, no lampposts in remote areas, and the public safety and information technology (IT) security agencies are poorly informed. These factors could endanger tourists and causing insecurities. Understanding how individuals feel safe and secure is essential to provide them with a sense of security during and after the travel (Abukhalifeh & Chandran, 2020; Owiyo, 2018). To increase destination competitiveness, governments must take into account all safety and security concerns, offer a workable solution, and perhaps eradicate all dangers.

5.2. Conclusion, implication, limitation, and future recommendation

To conclude, this study has provided empirical evidence that transportation, and accommodation are significantly related to perceived destination competitiveness. Besides, health service is significantly related to perceived destination competitiveness. Therefore, the research's main finding is that improving transportation and accommodation infrastructure will lead to the success of the tourism industry development in terms of enhancing competitiveness, and adequate health services need to be ensured to boost destination competitiveness.

The present study is expected to contribute to the body of knowledge in the field of tourism, specifically in destination competitiveness. This study has added evidence to the literature on competitiveness theory by using CFA in examining the relationship between hard and soft infrastructure (transportation, accommodation, telecommunication, government tourism policy, health services, and safety and security) and the destination competitiveness. The scholars may refer to the current study and develop a more comprehend research relate to destination competitiveness. Besides, policymakers and tourism practitioners may refer to this study in decision-making. The study has examined the perception of tourists toward Sarawak's infrastructures and the competitiveness of Sarawak. Therefore, the policymakers and tourism practitioners may use this as a reference while improving the local infrastructures to gain competitive advantages in the global setting.

There are several limitations of this study need to be addressed. The study's main weakness is lacking of international travelers during the COVID-19 pandemic. Next, a cross-sectional approach was used to conduct the study rather than a longitudinal approach. Furthermore, several important infrastructures that could affect destination competitiveness were left out of our analysis.

As was mentioned in the preceding paragraph, the current study is lacking evidence from foreign visitors. After the COVID-19 pandemic, it is suggested that data can be collected from more foreign travelers. It is also advised that the framework be expanded to include different infrastructures, including utilities, financial institutions, travel services, and many other

infrastructures. Finally, it is recommended that a similar study be carried out in a different setting, such as in other Malaysian states, which may lead to various results.

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APPENDICES

Appendix 1

No	Measurement Items
Transportation	
Trans_1	Accessibility by car to the destination is easily obtainable
Trans_2	Accessibility by bus to the destination is easily obtainable
Trans_3	Accessibility by plane to the destination is easily obtainable
Trans_4	Accessibility to natural areas in the destination is easily obtainable
Telecommunication	
Tele_5	The quality of calls with respect of the presence of noises and echoes
Tele_6	The quality of calls with respect to the continuity (or the presence of interruptions)
Tele_7	The quality of indoor signal
Tele_8	The quality of outdoor signal
Tele_9	The speed of Internet
Tele_10	The availability of Internet in the cell phone
Accommodation	
Accom_11	Authentic accommodation experiences
Accom_12	Comfortable accommodation in a natural setting
Accom_13	High quality and international standard accommodation
Accom_14	Adequate capacity of accommodation establishments
Government Tourism Policy	
GTP_15	Clarity and ease of tourism policies
GTP_16	Ability of tourism policies to be implemented
GTP_17	The way tourism policies were formulated
GTP_18	Ability of policies in enhancing Sarawak economy
Health Services	
HS_19	Availability of first aid facilities
HS_20	Accessibility to health service (clinics, hospital, etc.)
HS_21	Value of money for private health services
HS_22	Accessibility and operating hours of pharmacy
Safety and Security	
SS_23	IT Security services
SS_24	Public security services
SS_25	Availability of Night patrols
SS_26	Street lightings
SS_27	CCTV in public spaces
Perceived Destination Competitiveness	
DC_28	Core resources and attractors (e.g., Food, cultural and historical heritages, beautiful scenes, attractive even and festival)
DC_29	Supporting factors and resources (e.g., Friendliness of local people, easy-to-reach destinations, quality of public transportation, business skills of local people, etc.)

DC_30	Destination management (e.g., tourism signing, knowledge of foreign language by staffs, existence of tourism programs and tours, tourism promotional material in foreign languages, etc.)
DC_31	Qualifying and amplifying determinants (e.g. Location, price, Cleanliness and tidiness, destination image, etc.)

Appendix 2

MEASUREMENT ITEMS	MEAN	Std. Deviation	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis
Trans_1	3.821	0.829	-0.724	0.176	0.785	0.351
Trans_2	2.911	1.063	0.207	0.176	-0.611	0.351
Trans_3	3.726	1.013	-0.448	0.176	-0.364	0.351
Trans_4	3.468	1.106	-0.346	0.176	-0.410	0.351
Tele_5	3.532	0.877	-0.597	0.176	0.070	0.351
Tele_6	3.484	0.936	-0.443	0.176	0.133	0.351
Tele_7	3.479	0.963	-0.370	0.176	-0.219	0.351
Tele_8	3.605	0.952	-0.361	0.176	0.007	0.351
Tele_9	3.468	1.037	-0.375	0.176	-0.184	0.351
Tele_10	3.479	0.936	-0.311	0.176	-0.036	0.351
Accom_11	3.621	0.978	-0.585	0.176	0.258	0.351
Accom_12	3.632	0.880	-0.573	0.176	0.474	0.351
Accom_13	3.558	0.940	-0.324	0.176	-0.300	0.351
Accom_14	3.700	0.835	-0.378	0.176	-0.056	0.351
GTP_15	3.537	0.871	-0.503	0.176	0.335	0.351
GTP_16	3.558	0.832	-0.631	0.176	0.449	0.351
GTP_17	3.489	0.808	-0.452	0.176	0.124	0.351
GTP_18	3.453	0.973	-0.422	0.176	0.101	0.351
HS_19	3.532	0.946	-0.640	0.176	0.332	0.351
HS_20	3.647	0.901	-0.252	0.176	-0.269	0.351
HS_21	3.568	0.899	-0.274	0.176	-0.077	0.351
HS_22	3.642	0.796	-0.221	0.176	-0.335	0.351
SS_23	3.342	0.857	-0.417	0.176	0.194	0.351
SS_24	3.384	1.000	-0.254	0.176	-0.171	0.351
SS_25	3.342	0.994	-0.306	0.176	-0.250	0.351
SS_26	3.295	1.073	-0.248	0.176	-0.596	0.351
SS_27	2.737	1.026	0.012	0.176	-0.388	0.351

DC_28	3.879	0.938	-0.962	0.176	1.009	0.351
DC_29	3.568	0.967	-0.498	0.176	-0.228	0.351
DC_30	3.553	0.973	-0.393	0.176	-0.312	0.351
DC_31	3.537	0.979	-0.600	0.176	0.236	0.351