Article

A New Paradigm of Sustainable Balance Scorecard Model for Sport Tourism

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Abstract: An integration between the principles in supply change management in sport tourism and sustainability balanced scorecard leads to development of guidance and assessment criteria for a city to be a sustainable sport tourist destination. This paper aims to present a sport tourism sustainability management model (STSM), consisting of 5 perspectives, namely financial perspective, customer perspective, internal process perspective, learning and growth perspective and sustainability perspective. By using Delphi technique to obtain a consensus from experts, university lecturers, independent organization/association and business entities in relation to sport tourism management, the researcher defines elements to assess complex perspective for sustainable development of sport tourism. The result shows that there are 5 perspectives and 18 elements in relation to sustainable development of sport tourism. All perspectives and elements have high consensus as measured by Kendall's Coefficient of Concordance (W) of .488. To validate the model, the researcher examines correlation among the five perspectives with structural equation model and finds that the absolute fit is satisfactory, with the value of CMIN/DF at 1.830, RMSEA at .046, GFI at .951, AGFI at .919 and RMR at .038. In addition, the incremental fit also demonstrates positive result with the value of NFI at .962, CFI at .982, TLI at .973 and IFI at .982. As the model aligns and explains empirical data, it can support decision making for management team, effective and efficient strategy drafting for sustainable development in sport tourism and improving livelihoods of residents.

Keywords: sustainability balanced scorecard, supply chain, sport tourism

1. Introduction

Adequate supply chain management adds value to services provided by stakeholders in sport, recreation and tourism and increases their capabilities in organizing an event and generating revenue from the activities. An interrupted supply chain management in sport tourism leads to irritating user experiences, hence effective management for uninterrupted services to maximize satisfaction, adding more economic value to sport tourism, is necessary. Particularly, supply chain management that supports an arrangement of activities should receive more attentions as it responds to demands of audiences [1] and creates sustainability development in an organization due to effective resource management. To measure the performance of the current supply chain, the researcher decides to use sustainability balanced scorecard (hereafter called "SBSC"), a concept especially designed to reflect issues in society and environment while considering sustainability in an organization. The tool is widely used in public and private sectors when formulating appropriate strategies and practical guidance for sustainable development. Originally, the balanced scorecard was developed by Kaplan & Norton in 1996, with a principle to balance management in all dimensions and convey high-level strategies into actionable items to all units in an organization. The balance scorecard enables an organization to share goals and common understandings, driving the entity to achieve its goal and moving forward. In doing so, open and clear

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communication with sincerity, effectiveness and flexibilities for practitioners over their responsibilities are required [2].

A combination of sustainable development strategies and SBSC is one of the tools for organizational resilience, especially when faced with challenges, and support its strategies to be sustainable. While existing research lacks clarity and comprehensive consideration of SBSC, this research proposes knowledges on deployment of SBSC to support strategies in sustainable organization while gaining participation of stakeholders [3] on five perspectives of sustainability, namely financial perspective, customer perspective, internal process perspective, learning and growth perspective and sustainability perspective [4]. The knowledge can be utilized in any organizations, regardless of their types whether they are businesses, industries, public entities or non-profit organizations as the balanced scorecard, widely used in the world to prepare a guideline of an organization for its visions and missions, supports a firm strategic development for performance assessment. Also, it is a tool to increase internal and external communication as well as sustainable development due to its contribution to strategy formulation and organization management [5]. As the literatures on combination between sustainable development and the SBSC are insufficient, this study aims to address the issues in supply chain management in sport tourism with reference to sustainability balanced scorecard, with an aim to contribute its result to development in sport tourism.

2. Research Design and Methods

This research is designed into three major steps. First, the researcher studies the elements and gathers preliminary data based on literature reviews to create questionnaire and assessment criteria for sustainable development in sport tourism. Then, the questionnaire is distributed to experts to assess accuracy, quality and content validity. Second, the researcher deploys Delphi technique to study trends and possible options by collecting opinions from the experts to get a consensus to make a judgment or select a choice [6-7]. Lastly, the researcher analyzes with inferential statistic to categorize elements by conducting an exploratory factor analysis (hereafter called "EFA"). Afterwards, the researcher conducts confirmatory factor analysis (hereafter called "CFA") and improves the model by modifying index to align with empirical data as recommended by Arbuckle [8] as illustrated in Figure 1.

2.1 Systematic Literature Reviews

During the first step, the researcher conducts systematic literature reviews to observe patterns and obtain reasonable data for the topic [9] by searching from Scopus and Web of Science (SSCI) and filtering only the content published from 2017 to 2021 with the keywords as shown in Table 1.

Table 1. Keywords and search string

Construct	Search String	Databases
sports tourism Supply Chain management	ABS("sport logistics") OR ABS("sport supply chain") OR ABS("tourism logistics") OR ABS("tourism supply chain") OR ABS("travel logistics") OR ABS("travel supply chain") OR ABS("sport tourism supply chain") OR ABS("sport tourism logistics") OR ABS("sport tourism") OR ABS("tourism sport") OR ABS("sport tourist") AND NOT ABS("logistic")	Scopus SSCI
Note: AB = Abstract		

Based on the results, 352 literatures are found with some duplication and issues in accessing the contents on 111 literatures as some papers are accessible only to its abstracts. After removing the literatures in issues, only 57 papers that are relevant to the

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topic remain for further investigation. The remaining papers can be summarized into 10 categories under the concept of basic supply chain management as shown in Table 2.

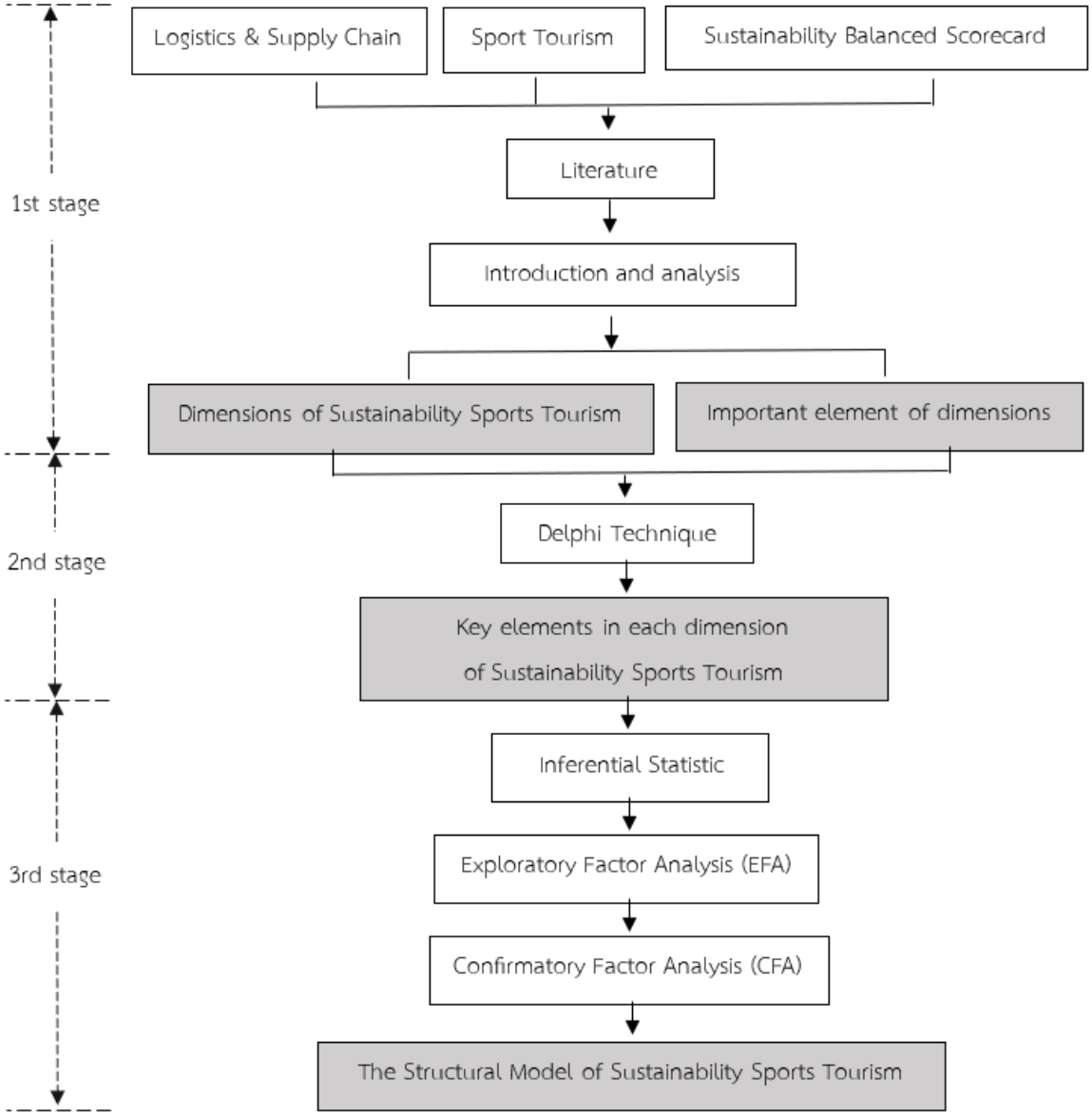

Figure 1. Research design flow

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Table 2. Category of Supply Chain Management in Sport Tourism

Categories	Objective
Tourist Service Infrastructure	Among improvements of infrastructure in tourism and facilities in Malaysia to be the world extreme sports tourism [10], majority of improvement is found in accommodation, tourist attraction, entertainment complex, shopping center, food and beverage [11-17]. Still, an improvement in tourists satisfaction with readiness in both sport facilities and services during the stay [18], especially the infrastructure linking transportation and public transportation is critical [19-20]. To increase the number of tourists, external transportation such as domestic and international air transport [21] as well as investment in infrastructure for artificial snow are also playing an important role[22].
Tourism Destination and Sustainability	Supportive weather conditions and safety improvement to reach destination are factors for tourist to select a destination [23]. In addition to the attraction, other factors such as recreation, creative arts, museum and cultural activities [24], good quality of food, affordable accommodation with varieties of selectable activities and easy access [25], fresh air and travelling expense are also a factor when selecting destination [26-27]. Hence, there should be policies and guidance for an attraction concerning a sustainable development from economic, socio-cultural and environmental aspects [28-30], including quality improvement in services/products provided for tourist to create revenue to local residents[30]. Also, promotional activities from tourism promotion policy to attract and increase travelers to create better economy is also necessary[31] where they should be launched with collaboration among neighboring countries, to develop sustainable sport tourism for economic development [32-33]. Furthermore, training facilities for alternative sports may also be one of the factors when selecting a destination [34-35], therefore, sustainable promotion of cycling in regional area [36] with a target to participants of outdoor sports who select a destination with consideration on environmental issues should be considered [37]
Sport Travel Agency and Sport Tour Operator	The tour package purchasing decision is made on qualities of the services, obtained from available data such as traveling and accommodation package [14], therefore, traveling program with diversification on tourist attractions [38] and the program for outdoor sports should be provided [39] by collaboration with tourism sector and local residents to plan and offer a package for tourists to stay longer and spend more on activities [40]. To support the sale of packages, there should be a training on licensing, advising and training on selling a ticket [41].
ICT Readiness	Distribution of information on works through the internet and social networks is widely used [42] through social media to increase access to customers [43]. Other channels are news broadcast through TV and social media, which are platforms for event's organizers and participants/teams to engage with fanbases [44]. By enabling online advanced purchase of parking ticket [45], promotion of sport tourism by digital tools, automatic vending channels and chatbots, together with other online sale channels such as video, sound, photo and VR/AR technology will increase audience's exposure[46]. Multi-channel promotion such as Facebook, local radio broadcasts and live broadcast on racing [31], with an area-based data collection to gather preliminary data and analyze can provide better products/services in sport tourism [47].
Venue Operation	Facilities in the venue for audiences such as adequate seat arrangement, plans for crowd management, especially, when entering or leaving the area and traffic management within the venue to reduce congestion and duration of the event are essential [38][45][48]. To completely prepare for the event, collaboration among organizations either public entities (to create a tourism masterplan or to invest in infrastructure and etc.) and private organizations or stakeholders in organizing an activity are inevitable [49-51]. Hence, to promote the

Table 2. *Cont.*

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Categories	Objective
	collaboration and standard on the provision, certification system for those who comply with standards in ecology and society should be in place [52].
Venue Sustainability	Organizations in relation to sport tourism should collaborate to raise awareness in environmental preservation, prevention on overexploitation of resources and capacity development to strengthen local operation for sustainable development of residents. The collaboration should also develop a space for activities to reduce impacts on environment and society from sport tourism [10][48-49][53-54]. In Japan, there is a collaboration among places regardless whether they are sport tourist attraction or not to increase travelling choices, leading to sustainable sport tourism [55], Policy design for sustainable development of sport tourism and well-being, promotion of green area and sustainable transportation while reducing pollution with air quality station established and monitored to decelerate climate change and control of waste and waste water should be implemented [55-57].
Safety and Health	The spread of COVID-19 introduces clear tracking and assessment system as a guidance to stave off the spread in sport events [58]. The environment for playing sports should be safe for both tourists and residents. There should be a measure to prevent the spread of the disease as well as preparation of an emergency rescue plan [30][59-61] while collaborating with stakeholders such as polices and fire fighters to prepare for incidents and healthcare personnels for a first-aid. [42] There should also be a safety management to reduce crimes as arranged in a tournament [62], the issues that affect business model include environmental management, practices on the safety measure and crowd control [63].
Infrastructure	Existing infrastructure of a city to organize a sport event and utilization of the existing facilities, travelling routes, parking spaces and recreational centers should be reevaluated [43][45][50] to appropriately accommodate travelers.
Planning	Planning helps accommodate the needs of participants as It substantially responds to the needs of athletes such as the planning of travelling product for golfers helps increase satisfaction in their purchase [65].
Transportation	Logistics of materials and merchandises as well as order receipt and delivery, route planning, custom clearance and others related activities in relation to sports have been limitedly attended [66] while logistics of equipment in the venue is crucial to business model [42]. Travelling plan to access an event may involve various modes of transportation such as car, either by driving or carpooling, or by plane to reach the destination [38][64].

2.2 Delphi Technique

To use Delphi technique and obtain a consensus from experts to summarize datasets for perspectives and elements, the researcher starts by conducting literature reviews from the sport tourism researches to categorize datasets and identify criteria. Then, the researcher defines and select experts, where the appropriate number of experts is supposedly to be around 5 to 20 to be considered as efficient [67]. Therefore, the researcher selects 18 experts, consisting of university lecturers, independent organization/association and business entities in relation to sport tourism management. Afterwards, the researcher inquires the experts under the Delphi technique to obtain their consensus with three criteria, 1) the median must be at least 3; 2) the interquartile range must not over 1 for the 5-scale measurement [68]; and 3) the Kendall's Coefficient of Concordance must not over 0.50 to verify correlation in the answers [69].

2.3 Inferential Statistics

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The analysis of structural equation model (hereafter called "SEM") consists of two steps by conducting EFA to verify construct validity and CFA to measure latent variables and verify appropriateness of the assumptions used in the model with statistical data by the fit indices. The fit indices can be divided into two categories, 1) Absolute Fit Indices consisting of CMIN/DF, RMSEA, GFI, AGFI and RMR and 2) Incremental Fit Indices, consisting of NFI, TLI, CFI, and IFI. In this research, the researcher uses both indices to verify assumptions synthesized from the results in the questionnaire where the data used in the analysis is gathered from the samples relevant to sport tourism, such as public organization, participants and businesses entities that relate to event organizing. The number of samples is at least 400 where the structural equation model is conducted with AMOS program.

After forming the model, the researcher then inspects its validity and reliability with composite reliability (hereafter called "C.R."), obtained from equation (1) where $\boldsymbol{L_i}$ is the weight of standardized factor loading and e is deviation. To interpret the result, The higher C.R. value, the better internal consistency within the element where the acceptable C.R. value must not be below 0.7. Also, the researcher considers convergent validity from the average variance extracted evaluation (hereafter called "AVE"), where the acceptable AVE value should not be less than 0.5. To ensure the model validity, the researcher also observes discriminant validity to verify clear discriminant of observable variables from latent variables through the value of AVE where AVE must be higher than the maximum shared squared variance. In addition, the Cronbach's Alpha, calculated by SPSS program and used to measure internal correlation, must be over 0.7 to shows high validity [70].

$$C.R. = \frac{(\sum_{i=1}^{n} \boldsymbol{L_i})^2}{(\sum_{i=1}^{n} \boldsymbol{L_i})^2 + (\sum_{i=1}^{n} \boldsymbol{e_i})} \quad (1)$$

3. Research Results and Analysis

After following the process mentioned above, the result can be analyzed as follows**.**

3.1 Result from elements and preliminary data

When combining literature reviews on supply chain management in sport tourism as shown in Table 2 with the principles of SBSC, developed for sustainable development, the researcher has found that there are 18 relevant elements that can possibly become index for sustainable sport tourism assessment as shown in Table 3.

Table 3. Analysis of elements based on experts' consensus by Delphi technique

Element	Category of Supply Chain Management in Sport Tourism
1. City development plan and operational monitor	Venue Operation
2. Product development and service management	Tourism Destination and Sustainability,Planning
3. Infrastructure on venue and transportation	Infrastructure, Transportation
4. IT system management	ICT Readiness
5. Quality management of accommodation	Tourist Service Infrastructure

Table 3. *Cont.*

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Element	Category of Supply Chain Management in Sport Tourism
6. Interaction with travelers and customer relationship management	Sports Travel Agency and Sports Tour Operator
7. Traveler data management	Venue Operations
8. collaboration and alliance among stakeholders	Venue Sustainability
9. Cost and quality management of products	Tourism Destination and Sustainability
10. Investment budgeting	Venue Sustainability
11. Financial risk management	Venue Sustainability
12. Inclusiveness from institutes and organization in knowledge development	Venue Operations
13. Commitment of management team	Tourism Destination and Sustainability
14. Tourism management team from community	Tourist Service Infrastructure
15. Safety operation	Safety and Health
16. Hygienic and environmental operation	Venue Sustainability
17. Economic Operation	Tourism Destination and Sustainability
18. Energy related operation	Venue Operations

3.2 *Delphi Technique Analysis*

There are three steps involved in obtaining a consensus from experts for each dataset in each element, 1) based on literature reviews, the researcher provides a questionnaire and build an assessment framework of sustainable sport city where the experts evaluate its accuracy and quality as well as content validity. From the inquiries, the researcher then refers to the index of the item–objective congruence (hereafter called "IOC") as a criterion for making a judgement. In this step, the acceptable IOC for the questions is not less than 0.50; 2) the researcher then develops a questionnaire to revisit the assessment framework of sustainable sport city and deliver to the experts, who are selected from their knowledges in the field and outstanding expertise in solving issues while the appropriate number of experts depends on the scopes of research, generally to be around 5 to 20 people to effectively conclude an opinion.[67]

This research relies on 18 experts, consisting of university lecturers, independent organizations/associations and businesses entities in relation to sport tourism management. The 5-scale questionnaire is delivered to the experts to obtain a the first-round consensus; 3) After obtaining the consensus, the researcher verifies possibility and appropriateness in developing a sustainable sport city management assessment model and develops another 5-scale questionnaire to obtain the second-round consensus from the experts. To be considered as a consensus, the researcher relies on 3 criteria, 1) the median must not less than 3; 2) the interquartile range must not over 1 for the or 5-scale assessment as shown in Table4 and; 3) the Kendall's Coefficient of Concordance or W must be less than 0.5. Since W is 0.488, the opinions of the experts are coherent and adequately appropriate to use Delphi technique.

Table 4. Analysis of expert consensus by Delphi technique

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Dimension	Element	Code	M.D. (≥ 3)	IQR (≤1)	S.D.
Internal process perspective	City development plan and operational monitor	I1	5	1	0.69
	Commitment of management team	I2	5	1	0.76
	Infrastructure on venue and transportation	I3	4	0.5	0.67
	IT system management	I4	5	1	0.68
Customer perspective	Quality management of accommodation	C1	5	1	0.76
	Interaction with travelers and customer relationship management	C2	5	1	0.68
	Traveler data management	C3	4.5	1	0.75
	collaboration and alliance among stakeholders	C4	5	1	0.45
Financial perspective	Cost and quality management of products	F1	4.5	1	0.68
	Investment budgeting	F2	4	1	0.60
	Financial risk management	F3	4.5	1	0.75
Learning and growth perspective	Inclusiveness from institutes and organization in knowledge development	L1	4.5	1	0.75
	Product development and service management	L2	5	1	0.60
	Tourism management team from community	L3	4	1	0.73
Sustainability perspective	Safety operation	S1	5	1	0.60
	Hygienic and environmental operation	S2	4	0.5	0.67
	Economic Operation	S3	5	1	0.58
	Energy related operation	S4	5	1	0.76

Notes: Interquartile Range (IQR); median (M.D.); average (AVR.); standard division (S.D.)

3.3 Analysis of Structural Equation Model

The researcher uses structural equation model as a tool to validate correlation between model and empirical data to confirm cohesiveness between theory and data collected from samples and find the causal relationship among variables. The results of the analysis are as follows.

3.3.1 Result of Exploratory Factor Analysis

The EFA on the sustainable development of sport tourism model has found that the Kaiser-Meyer-Olkin value is 0.850, implying appropriateness of data to analyze the element. Also, as the Bartlett's Test of Sphericity on significancy is 0.000, it can be interpreted that the correlation matrix is not an identity matrix, hence the variables are correlated and sufficient to be used in the analysis. The EFA, performed by principal component analysis with Promax rotation [70] over all 18 variables, concludes that the data are suitable with the set of variables as the communality value is more than 1, the acceptance criteria. Also, as the cumulative variance is explainable by the elements when the Eigen value is more than 1 and the analysis of factor loading is more than 0.5, the elements can be categorized into 5 perspectives and 18 elements as shown in Table 5.

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Table 5. CFA Factor Loading Statistics

The Standardized Factor Loading (L_i)						Hypothesis Testing			
Element	**LPG**	**CP**	**IPP**	**FP**	**SP**	**Estimate**	**S.E.**	**C.r.**	***p***
L1	0.86					1.24	0.08	15.73	***
L2	0.75					0.82	0.05	15.62	***
L3	0.76					0.80	0.05	15.73	***
C1		0.79				0.93	0.06	15.64	***
C2		0.78				1.08	0.07	15.64	***
C3		0.76				0.94	0.06	14.64	***
C4		0.70				0.85	0.06	13.68	***
I1			0.74			0.76	0.04	20.25	***
I2			0.96			1.32	0.07	20.25	***
I3			0.95			0.96	0.03	37.36	***
I4			0.59			0.58	0.04	14.11	***
F1				0.62		0.87	0.05	17.25	***
F2				0.72		1.16	0.07	17.25	***
F3				0.79		1.14	0.09	12.66	***
S1					0.96	1.12	0.07	15.78	***
S2					0.73	0.89	0.06	15.78	***
S3					0.63	0.79	0.06	14.31	***
S4					0.66	0.82	0.06	13.36	***

Notes: Standard Error (S.E.); Critical Ratio (C.r.); Unstandardized. $p < 0.001$ for all coefficients (***)
LPG : learning and growth perspective, CP : customer perspective, IPP : internal process perspective, FP : financial perspective, SP : sustainability perspective

3.3.2 Confirmatory Factor Analysis

The CFA assesses the sustainable management of sport tourism model with references to structural correlation index on the observatory variables in latent variables in relation to financial perspective (F1-F3), customer perspective (C1-C4), internal process perspective (I1-I4), learning and growth perspective (L1-L3) and sustainability perspective (S1-S4). The analysis has found consistency between the model and the empirical data as shown in Figure 2. By validating model appropriateness with two statistical indices, 1) the absolute fit indices consist of CMIN/DF at 1.830, where the acceptance criteria is not over 3, showing that the model is fit with all statistical data. Also, with the value of RMSEA at 0.046, where the acceptance criteria is not over 0.05 and the value of GFI at 0.951 where the acceptance criteria is not less than 0.95, the two indices also confirm its fitness. Moreover, with the value of AGFI at 0.919 where acceptance criteria is not less than 0.90 and the value of RMR at 0.038 where the closer the value with 0, the more acceptable it is, the statistical data for the absolute fit indices shows that the model is fit and appropriate. The second indices or incremental fit indices consist of the value of NFI at 0.962 where the acceptance criteria is not over 0.95 and the value of CFI at 0.982 where the acceptance criteria is not over 0.95, the two statistics also show positive result. With the value of TLI at 0.973 where

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the acceptance criteria is not over 0.95 and the value of IFI at 0.982 where the acceptance criteria is not over 0.90, all statistic data in the second indices meet the acceptance criteria. Hence. it can be concluded that the model is congruent with empirical data even the p of Chi-square is 0.000. In this case, the *p* of Chi-square does not contain any statistical significance as it may occur due to sample characteristics as the Chi-square becomes high when the sample size is large. As the number of the samples in this study is 400, which is considerably large, the chi-square may not be a good fit, therefore the researcher proposes another method for improvement as Bollen's [71] proposal by examining the CMIN/DF instead of the Chi-square. Since the value of CMIN/DF is deemed as good when the value is not over 3.0, the estimated value of 1.830 for the model shows alignment between the model and statistical data as shown in Table 6**.**

Table 6. Structural Model Index

Index	Acceptance Criteria	Good	Estimated Value
CMIN/DF	≤5.0	≤3.0	1.830
GFI	≥0.90	≥0.95	0.951
AGFI	-	≥0.90	0.919
RMSEA	≥0.05-0.08	≤0.05	0.046
RMR	Close to 0		0.038

To validate the tools developed and used with the data in this research, the researcher refers to the C.R. that illustrates whether the elements consist of questions or index with acceptable internal consistency. The acceptance criteria for C.R. is not less than 0.70 where the convergent validity, considered from the average variance extracted evaluation (hereafter called "AVE") should not be less than 0.50 and the Cronbach's Alpha (hereafter called "C.A.") should not be less than 0.7. As shown in both Table 7 and the structural model illustrated in Figure 2 that C.R., AVE and C.A. have fulfilled the acceptance standard, the model is considered valid.

Table 7. The STSM validity and reliability.

Dimension/Element			L_i	L_i^2	e_i	C.R.	AVE.	C.A.
STSM	→	LPG	0.72	0.52	0.48	0.86*	0.55*	0.91*
	→	CP	0.67	0.45	0.55			
	→	IPP	0.65	0.42	0.58			
	→	FP	0.94	0.88	0.12			
	→	SP	0.68	0.46	0.54			
LPG	→	L1	0.85	0.72	0.28	0.83*	0.62*	0.83*
	→	L2	0.75	0.56	0.44			
	→	L3	0.76	0.58	0.42			

Table 7. *Cont.*

Dimension/Element			L_i	L_i^2	e_i	C.R.	AVE.	C.A.
	→	C1	0.79	0.62	0.38			

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Dimension/Element			L_i	L_i^2	e_i	C.R.	AVE.	C.A.
CP	→	C2	0.78	0.61	0.39	0.84*	0.58*	0.85*
	→	C3	0.76	0.58	0.42			
	→	C4	0.70	0.49	0.51			
IPP	→	I1	0.74	0.55	0.45	0.89*	0.68*	0.91*
	→	I2	0.96	0.92	0.08			
	→	I3	0.95	0.90	0.10			
	→	I4	0.59	0.35	0.65			
FP	→	F1	0.62	0.38	0.62	0.75*	0.51*	0.84*
	→	F2	0.72	0.52	0.48			
	→	F3	0.79	0.62	0.38			
SP	→	S1	0.96	0.92	0.08	0.84*	0.57*	0.86*
	→	S2	0.73	0.53	0.47			
	→	S3	0.63	0.40	0.60			
	→	S4	o.66	0.44	0.56			

Note: the standardized factor loading (L_i); variance (L_i^2); the error variance 1 -L_i^2 (e_i); Composite Reliability (C.R.); Average Variance Extracted (AVE.); Cronbach's Alpha (C.A.); Acceptable (*).

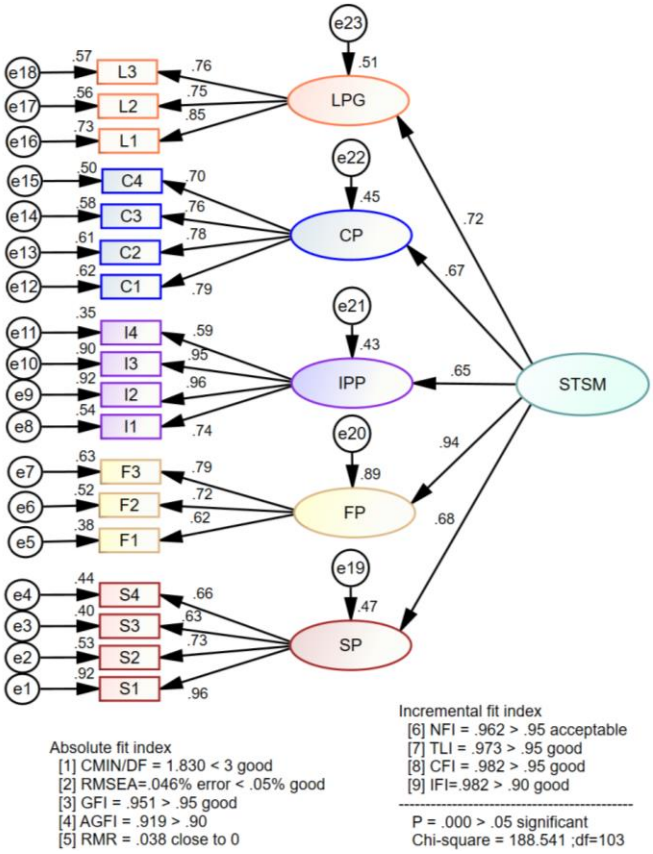

Figure 2. Structural Model of The STSM

To verify the sustainable sport tourism structural model (STSM), the researcher proposes an assumption as follows.

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- H1: the proposed sustainable sport tourism management model aligns with empirical data as shown in the fit indices due to the overall model fit. As all factors contain elements that are coherent with empirical data as shown in Table7, the hypothesis is accepted.

The discriminant validity is an assessment whether observatory variables can be clearly distinguished from latent variables by considering AVE, where AVE must exceed the Maximum Shared Variance. In addition, the *p*-value of the test has demonstrated that there are correlations in all perspectives, hence the assumption is accepted as shown in Table 8, with correlation among 5 perspectives are shown in Figure 3.

Table 8. The validity test of the interrelated dimensions

Relation between Dimensions			Cor.	MSV	Cov.	S.E.	C.R.	*p*
SP	⟷	FP	0.70	0.49	0.26	0.04	7.92	***
SP	⟷	IPP	0.43	0.18	0.25	0.04	7.02	***
SP	⟷	CP	0.36	0.13	0.15	0.03	5.65	***
SP	⟷	LPG	0.39	0.15	0.20	0.03	6.10	***
FP	⟷	IPP	0.56	0.31	0.28	0.04	7.99	***
FP	⟷	CP	0.60	0.36	0.21	0.03	7.75	***
FP	⟷	LPG	0.64	0.41	0.28	0.04	8.32	***
IPP	⟷	CP	0.48	0.23	0.27	0.04	7.53	***
IPP	⟷	LPG	0.52	0.27	0.36	0.05	8.02	***
CP	⟷	LPG	0.57	0.32	0.28	0.04	7.98	***

Notes: Correlations (Cor.); Covariances (Cov.); Maximum Shared Variance (MSV); Standard error (S.E); Critical ratio (C.R.); Unstandardized. $p < 0.001$ for all coefficients significant (***).

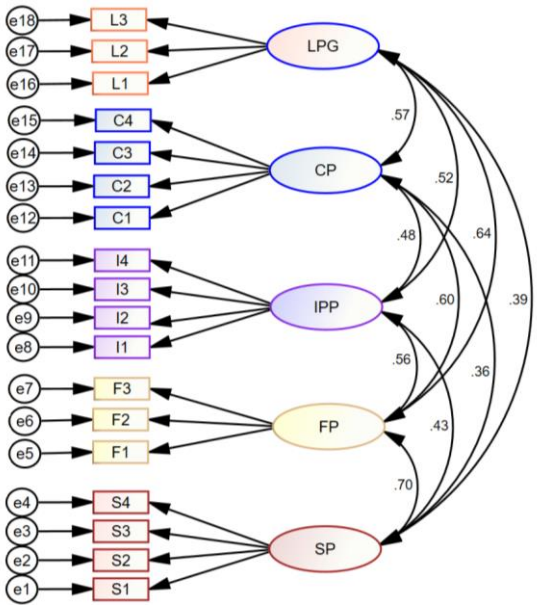

Figure 3. The interrelation among the five dimensions

Figure 3 shows correlations among the five perspectives after the test of hypothesis in each dimension. To verify the hypotheses, the researchers have set assumptions as follows.

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- H2: sustainability perspective interrelates with financial perspective (accepted)
- H3: sustainability perspective internal with internal process perspective (accepted)
- H4: sustainability perspective interrelates with customer perspective (accepted)
- H5: sustainability perspective interrelates with learning and growth perspective (accepted)
- H6: financial perspective interrelates with internal process perspective (accepted)
- H7: financial perspective interrelates with customer perspective (accepted)
- H8: financial perspective interrelates with learning and growth perspective (accepted)
- H9: internal process perspective interrelates with customer perspective (accepted)
- H10: internal process perspective interrelates with learning and growth perspective (accepted)
- H11: customer perspective interrelates with learning and growth perspective (accepted)

4. Discussion and Conclusions

By studying sustainable sport tourism, the researcher aims to propose a model for sustainable sport tourism on five perspectives with direct and indirect impact on the topic. The five perspectives are financial perspective, customer perspective, internal process perspective, learning and growth perspective and sustainability perspective. By using Delphi technique to obtain a consensus from the experts and identify indices to assess complex perspectives in sport tourism, the researcher expects the study to support strategy formulation in sustainable development of sport tourism.

After assessing correlations among the five perspectives with the concept of SBSC by SEM, the researcher has found that all five perspectives are intercorrelated with chain impacts both directly and indirectly. While the current sustainable development in many countries, including Thailand, is often conducted as a country-level assessment upon the Sustainable Development Goals or SDGs, the local-level assessment has yet been performed to identify a gap for development. Furthermore, budget allocation and planning of development usually occurs in a centralized form at the local leaders, who often make a decision from an opinion, lacks data and deep understanding on issues. The action leads to inefficient uses of budget and limited value creation for local residents. To solve the issue, the STSM model will be beneficial to city developers and people who are authorized to make a budget allocation in all levels, ranging from national level to local level. The model can also function as a principle for strategic planning with an indication to assess the current levels of sustainability, strengths and weaknesses as inputs in to promote and develop sustainability while targeting the right issue for effective and efficient budget allocation while improving the livelihood of residents.

5. Discussion and Conclusions Limitations and Future Work

The research still has some limitations to be improved in the future. First, as this study has yet covered issues such as political and regulatory impacts as well as local conditions and policies, further studies on the issues will provide clearer views on the impacts to sustainable sport tourism.

Second, as this research aims to propose a sustainable assessment model in five perspectives, still the research lacks verifiers while the correlations in perspectives and elements has been assessed by SEM. The future research can identify the verifier from the direct and indirect path analysis with multiple linear regression and descriptive statistics to elaborate each perspective and element in more details.

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