MULTI-DIMENSIONAL ATTRIBUTES OF ORGANIZING AN ECO-RUN EVENT FOR SUSTAINABLE TOURISM AND ITS POWERFUL IMPACT ON SATISFACTION AND LOYALTY OF TOURIST-RUNNERS

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Abstract: This paper aims to investigate the attributes of organizing an eco-run event for sustainable tourism and the causal effects of loyalty through the eco-run event attributes and satisfaction. Data were collected from 761 Thai runners experienced in a running event in tourist destinations. The questionnaires were tested using Cronbach's Alpha of attitude toward eco-run events, satisfaction, and loyalty, .941, .943, and .929, respectively. The data were analyzed by the structural equation model. The results illustrated 11 key attributes being a new concept managing running events responding to sustainable tourism. The paper found positive effects among the 11 attributes, satisfaction, and loyalty. Consequently, applying the key attributes can enhance tourist runners' satisfaction and loyalty. The results can make contributions to organizers, CBT, and academics in organizing an eco-run event sustaining tourism.

Key words: sport tourism, eco run, satisfaction, loyalty, tourist-runners

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INTRODUCTION

The running events had annually grown according to the increasing number of runners. The worldwide growth of marathon runners from 2008-2016 was 49.43%. The highest growth was in Africa (505.74%), followed by ASIA (262.89%), EU (42.86%), North America (20.97%), Oceania (65.66%), and South America (-14.40%) (Andersen, 2021). Nielson Sport (2021) revealed that 22% of all runners preferred running more often during the spreading of COVID-19. There are plenty of benefits both mental and healthy for runners. Additionally, the running event can also provide advantages in terms of environment, economy, and society. From academic research, it was found that the running event is a powerful tool to boost tourism. However, it confronted many challenges leading to transformation into several types of running events relying on the phenomenon of the times. For its benefits, it is a kind of sports tourism that can sufficiently enhance income and supplementary careers for locals (Gibson et al., 2012; Papanikos, 2015). Additionally, the running events can attract running tourists both domestic and international (Nowak and Chalimoniuk-Nowak, 2014). It is also found that runners from other provinces or countries spend more money than runners in the same areas, especially female and high-income runners (Wicker et al., 2012). Furthermore, it is a channel to promote destination awareness, and event quality impacts destination image (Moon et al., 2011), special events can impact destinations in the long term.

However, if management is not effective enough, it will seriously damage the area and the runners (Turco et al., 2003). Currently, running sports tourism event management has still confronted several difficulties apart from the positive impacts. Among the conservative concerns, running events have been changed in several measures such as reducing water bottles and plastics, organizing an event in urban areas to avoid traffic jams, etc. In addition, the lack of participation of locals leads to an unimpressed destination; it is due to applying outside organizers and aims for business benefits rather than sustainable tourism. Later on, there was applying the CSR concept in managing running events which can provide a positive impact on both social and environmental aspects (Walker and Heere, 2011). The small-scale running events have also been organized in order to reduce social impacts such as the disturbing way of local' life and enhance local incomes. Organizing a small running event with an emphasis on the use of local facilities, people, and local culture may be a viable form of sustainable tourism development (Gibson et al., 2012), therefore it can contribute economically, socially, and environmentally. Apart from the booming of small-scale running events, there is less attention to investigating attributes of eco-running events for sustainable tourism. Ko and Pastore (2004, 2005, 2007) proposed a measurement for sports recreation namely "SSQRS" or Scale of Service Quality for Recreation Sports consisting of 4 dimensions; program quality,

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quality of interaction, quality of the outcome, and quality of the physical environment, however, less concerned about involving from locals and aiming response to customer's satisfaction. Tzetzis et al. (2014) applied accessibility, venue, and contest quality. Theodorakis et al. (2014) focused on the physical environment, interaction, and outcome quality.

Du et al. (2015) proposed the PSEASD Scale consisting of event operations, event attributes, service extensions, expo amenities, and service deliveries. Huang et al. (2015) applied 8 components to study marathon events, namely event organization, event information, friendliness of locals, accommodations, tourism resources, infrastructure, shopping, and safety and security. However, it focused on large-scale running events, less on local involvement in sustainable tourism, and aiming for economic reasons. Consequently, it is still questioned what are the attributes of eco-run events that combine both event management and sustainable tourism dimensions. Additionally, the satisfaction and loyalty of tourist-runners are good outcomes that most running organizers desire and spend more funding to build. Both satisfaction and loyalty indicated successful running event management. Therefore, the relationship between satisfaction and loyalty is a central concern for many scholars, however, the finding of its relationship is still ambiguous.

Most previous research found a positive influence of satisfaction to repeat visitation in sports events (Alexandris et al., 2017; Wicker et al., 2012; Chen et al., 2021). However, event satisfaction did not affect the revisitation of riders in the week-long amateur bicycling event in Kaplanidou and Vogt (2007). The need to further establish whether satisfaction influences the loyalty of runners in the events for sustainable tourism is also needed in this field. The primary purpose of this study was to investigate the attributes of eco-run events for boosting sustainable tourism. After that, the causal effect of tourist-runner loyalty through attitudes toward eco-run events and satisfaction will be checked. The research contributions can benefit running organizers, community-based tourism, runners, government sectors, and academics. Additionally, the research results can broaden the general understanding of organizing an eco-running event to enhance sustainable tourism.

LITERATURE REVIEW
Components of Eco Run Events for Sustainable Tourism

From previous papers, it was found that the management of the eco-run events for sustainable tourism consists of both event management and sustainable tourism management. In particular, in terms of event management, the eco-running event should have a clear concept that focuses on promoting tourism (Du et al., 2015), strategies (Du et al., 2015), event management (Gibson et al., 2012; Du et al., 2015; Huang et al., 2018; Shonk and Chelladurai, 2009), staff or service providers (Du et al., 2015; Okayasu et al., 2016), marketing (Moon et al., 2011; Huang et al., 2018; Kruger and Saayman, 2012), safety (Huang et al., 2015; Kruger and Saayman, 2012; Moon et al., 2011). In addition, organizing the running event aiming to sustain tourism covers tourism components such as attractions (Boonsiritomachai and Phonthanukitithaworn, 2018; Moon et al., 2011), accommodations (Shonk and Chelladurai, 2009; Huang et al., 2015), participation (Huang et al., 2015 and 2018; Theodorakis et al., 2015), local cultures (Huang et al., 2018), foods (Huang et al., 2018) and souvenirs (Huang et al., 2015; Huang et al., 2018).

The concept of running events sustaining tourism is the objective of the running events which should focus on promoting tourism and a conservative environment and emphasize community-based tourism. Therefore, designing the events relies on how to create the impression and revisit the destination while simultaneously giving a local contribution. For instance, expanding the cut-off time allows runners to visit beautiful destinations between the running routes (Du et al., 2015).

Strategies of running events are important themes in designing a unique running event reflecting local resources both natural and cultural. An event venue with a beautiful destination and interesting activities or famous destinations can sufficiently succeed in promoting tourism through a running event (Du et al., 2015).

Event management affects runners' satisfaction (Chen et al., 2021; Du et al., 2015), therefore, it should give priority to good design. Shonk and Chelladurai (2009) focused on venue quality including interaction, environment, facilities, layout, worthiness, and competition quality. Similarly, Huang et al. (2018) studied event satisfaction via runners' facilities such as clean toilets, parking, aid stations, public relations points, transportation, and layout.

Staff or service providers in the running event are very crucial for the success. It includes interaction between staff and runners through the service process, friendliness, knowledge, adequacy, prompt response of running event staff (Chen et al., 2021; Huang et al., 2018; Theodorakis et al., 2015), and responsiveness (Theodorakis et al., 2015)

In the case of marketing, it has been less of a concern in the previous papers focusing on running events. Marketing is the process of designing a marketing mix covering product, price, distribution channel, and marketing promotion. Furthermore, the programs offered should be attractive (Huang et al., 2018). Applying online media, user-friendly websites, adequate information, adequate information regarding the race, and correct information given through marketing e.g. date, time, venue, etc. (Kruger and Saayman, 2012).

Safety and security are outlined to be crucial factors in organizing a running event (Huang et al., 2015; Moon et al., 2011). It plays an important role for tourist-runners to decide joining and repeating the running events, therefore, it was mentioned by several previous scholars. For example, safety is an intangible factor in the measurement of the running event quality (Moon et al., 2011). Safety and security in a single item were used to assess runners' satisfaction (Huang et al., 2015; Moon et al., 2011). Additionally, safety should include the visibility of emergency personnel, the visibility of security on the sports grounds, and adequate safety measures/precautions in place during the race (Kruger and Saayman, 2012). Kaplanidou and Vogt (2010) suggested sport tourism attributes covering safer routes which are under the control of the organizers. Lastly, during the spreading of COVID-19, all measures to protect should be considered in organizing the running events.

Local participation is an important factor involving the satisfaction of runners. Additionally, supporting sports events from the host community can affect the intention to revisit (Huang et al., 2018). Huang et al. (2015; 2018) applied items

to investigate participation including being friendly and passionate. Additionally, participation had a positive relationship with satisfaction in Theodorakis et al. (2015). It is important that all stakeholders such as local people, community-based tourism (CBT), local governments and organizations, private sectors, and national governments in the tourism destination venue participate and support the running events in different roles.

Tourism components have been less addressed in studying running events sustaining tourism. However, some issues were mentioned in the previous research such as accommodations, tourism resources, and shopping (Huang et al., 2015), as well as historical and local cultures including foods and souvenirs, etc. (Huang et al., 2018), tourist sites/activities, and local shows (Moon et al., 2011). Some tourism issues were mentioned in Shonk and Chelladurai (2009) consisting of access quality focusing on accessibility to destination, venue, and accommodation quality measuring in service provider interaction, environment, and worthiness. Perić et al. (2016) recommended the tourist experience dimension as a factor in a new conceptual business model framework for sports tourism. Boonsiritomachai and Phonthanukitithaworn (2018) revealed that destination attributes; activities, attractions, facilities, and supplementary services influence satisfaction.

Tourist-Runner's Satisfaction

The satisfaction of tourist runners can be defined as both emotional and rational delight. In terms of measurement, the overall satisfaction- a single item and its various attributes have been applied in the context of running events. Happiness is a main factor in determining the satisfaction of the runners; it is the outcome of experience and expectations (Du et al., 2015; Hyum and Jordan, 2018; Theodorakis et al., 2015), the right decision to join the running events (Du et al., 2015; Hyum and Jordan, 2018; Theodorakis et al., 2015), well organized (Gibson et al., 2012) and overall satisfaction (Gibson et al., 2012)

Tourist-Runner's Loyalty

The loyalty of runners toward the running event has been studied via several items, thus, it is the attitude of runners after joining the events leading to attention and future behaviors. It includes positive comments for organizing the events, word of mouth both traditional and electronic WOM, inviting others to join the future events (Du et al., 2015), and intention to revisit the future events (Wicker et al., 2012; Du et al., 2015; Hyum and Jordan, 2018). There are other behaviors to determine runner loyalty such as collecting medals, trophies, shirts, and numbers of running events (Shipway and Jones, 2008). Another issue relating to tourism is good impressions in tourism destinations and willingness to revisit the destination in other running events (Shonk and Chelladurai, 2009)

Research Proposition

Attitude is an important factor affecting the behaviors of people (Schiffman and Kanuk, 1994). The attitude of runners is shaped by perception from different resources such as online media, learning, word of mouth, etc. leading to an expectation before joining the running event. Comparison between expectation and experience occurs in finalizing attitude and behaviors; thus it is the customer's behavior according to the black box in marketing theory. Therefore, the attitude of runners toward running event management is positively related to the quality of organizing the running events. If the running event can be well managed according to the attitude which is the element of feelings or preferences of the runners, it will result in more satisfaction for the runners.

H1: Runners's attitudes toward the Eco Run for Sustainable Tourism Concept affect directly running event satisfaction

The previous studies found that attitude affects the behaviors of runners (Schiffman and Kanuk,1994), the behaviors include future intentions or revisiting the running events. Kaplanidou and Gibson (2010) found that the attitude of runners during the running events affected their intention to join the events in the future. Therefore, the events which are organized according to the needs/wants of runners toward sustainable tourism, will influence the revisit of runners.

H2: Runner's attitudes toward Eco Run for Sustainable Tourism Concept affect directly running event loyalty

In the literature reviews, there were ambitious results of the relationship between satisfaction and loyalty. Alexandris et al. (2017) found that the quality of the service environment and the outcome can predict running event loyalty. Furthermore, Wicker et al. (2012) studied the relationship between satisfaction and repeat visitation and found a positive relationship between them. Runners who have high satisfaction, tend to revisit the running event in the future. Similarly, Chen et al. (2021) found runner's satisfaction positively affected loyalty at 0.205. However, Kaplanidou and Vogt, (2007) found that event satisfaction did not affect the revisitation of bicycle riders. It can be seen that the results of the studies on the relationship in sports events areas are still ambiguous. There may be other factors causing the unanimous result. Each study applied different constructs to measure satisfaction and loyalty. For example, Wicker et al.(2012) applied a single item to study satisfaction and revisit. Therefore, this study will investigate the impact of satisfaction of running event management and loyalty, H3 was proposed as follows;

H3: Runner's satisfaction affects positively running event loyalty

The loyalty of runners through the running event relies on good attitudes toward the service quality of the running event leading to satisfaction. Chen et al. (2021:8-9) found that attitude toward the event's quality affected satisfaction (0.10), and the attitude had a direct effect the loyalty (0.307). In particular, the runner's attitude should affect loyalty through satisfaction. Therefore, in this research, the fourth hypothesis runner's attitudes toward eco run for sustainable tourism concept affect positively loyalty mediation via satisfaction was investigated.

H4: Runner's attitudes toward Eco Run for Sustainable Tourism Concept affect positively running event loyalty mediation via satisfaction.

RESEARCH METHODS
Participants

A non-probability, purposive sampling technic was applied. The running experience of participants was determined before collecting the data, participants were who experienced a running event in the southern corridor province of Thailand: Suratthani, Nakron Si Thammarat, Chumpol or Ranong, which are tourism destinations at least one time within the past 1-2 year. Data collection was applied both paper-based and online. Non-probability with convenient sampling was applied to collect data. The sample size was 761, while it has been widely noted for applying structural equation models. Sample size conditions strongly influenced GFI and AGFI, accounting for 10.27% and 11.37% of the total variance, respectively, for these two indexes (Fan et al., 1999), 100 samples.

Sample-size effects can also arise with descriptive indices of model fit (Raykov and Widaman, 1995), the large sample isn't the right answer. It depends on the types of models, the number of factors, the number of indicators, the strength of the indicator loadings and regressive paths, and the amount of missing data per indicator (Wolf et al., 2013). Kline (2011) explained that sample sizes depend on the complication of models and the numbers of observed and non-observed variables, the sample size should be higher than 200 and 5-10 samples per parameter. Furthermore, Nunnally (1967) recommended the rule of thumb, the ratio is 10 samples per 1 observed variable which is a suitable lower bound. Therefore, the samples of 761 respondents were adequate and fit to analyze SEM.

Measurement

The self-rated questionnaire was constructed from the literature reviews and the context of the running event in the Southern Corridor province of Thailand. Responses to all items were scored on a 5-point Likert scale, 1= the least agree and 5= the highest agree. The attitude toward Eco run for sustainable tourism is composed of 11 components with 67 observed variables: 1) eco-run concept (Con: C1-C12), 2) running event strategy (Stra: ST1-ST6), 3) event management (Man: M1-M8), 4) service provider (Peo:P1-P5), 5) marketing (Mar: MK1-MK7), 6) attractions (Att: TR1-TR4), 7) participation (Par: PR1-PR5), 8) accommodation (Accom:AC1-AC5), 9) local food and souvenirs (FO:FO1- FO4), 10) local culture (CUL: CU1-CU6) and 11) safety (SAF: S1-S5). Satisfaction (S) and loyalty (L) were measured via 4 and 7 observed variables, respectively. All attributes were a total of 79 items. The questionnaire was developed by 3 experts to check the index of item-objective congruence (IOC) and found that all items were 0.67 or higher, some sentences were improved to make a clear understanding. After that, the pilot test with 60 samples was conducted to confirm the reliability of the research instrument and the components in the study. The reliability of eco-run sustainable tourism attitudes, satisfaction, and loyalty was .941, .943, and .929, respectively.

Analysis

The data were checked for all conditions; missing value, coding error, normal distribution via kurtosis and skewness, multi-collinearity, and the Cronbach Alpha of each construct before applying the structural equation model. The data were normal distribution, the kurtosis and skewness values were in a range of -1.656 - -0.355 and -.988-4.228, the kurtosis and skewness values should be in a range of $\pm$ 3 and $\pm$7 (West et al, 1995). All data were non-multi-collinearity, since the correlations were a range of 0.142-0.853, being lower than 0.9. The confirmatory factor analysis; first and second order, was firstly conducted to verify the measurement model quality; convergent and discriminant validity, and all latent constructs in the study, after that the structural equation model was analyzed.

The convergent validity is indicated by high indicator loading, Composite reliability should be higher than 0.7, the AVE is $\geq$ 0.5, and T-test is > 1.96 (Hair et al., 2010). The discriminant validity referring to the extent to which variables are distinct and uncorrelated can be detected by comparing the Average Variance Extracted (AVE) and Maximum Shared Variance (MSV), MSV<AVE. The goodness of fit index was addressed via x^2/df >, GFI> 0.9, CFI>0.9 and RMSEA < 0.07 (Hair et al., 2010), SRMR < .08 (Hu and Bentler, 1999; Kline, 2005).

RESULTS
Respondent's Profile

Most of the samples were male (51.1%), aged 34-40 years (29.2%), currently living in Surat Thani Province (48.4%), Buddhism (96.7%), bachelor's degree (59.8%), personal business career (33.6%) and average monthly income 15,001-30,000 Thai baht/month (41.9%). Most of the respondents had a frequency of participating in running 9 or more times per year at 27.6%, followed by 3-4 times per year at 22.9%. Most of the samples participated in the latest event in the category of Fun Run (about 3 - 9 kilometers), 40.9%, followed by a mini-half marathon (10-13 kilometers), 30.0%, half marathon (21 - 22 kilometers), 12.2%, Trail (10 - 19 km), 4.7 %, Trail (20 - 29 km) and Marathon (42 - 43 km) (3.7%).

Measurement Model

The results of the confirmation component analysis are shown in the measurement model, consisting of 3 latent variables: attitude towards running management, satisfaction, and loyalty to the running event. The measurement model before adjusting found that the model is not well fit, X^2/df = 1.780, RMR = 0.025, GFI = 0.903, CFI = 0.971, and RMSEA = 0.032. There was a cutting of 23 items to improve the model fit.

The final measurement model showed satisfactory construct reliability, convergent validity, and discriminant validity. The fit indices of the improved model were satisfactory; X^2/df = 1.780, RMR: 0.025, GFI = 0.903, CFI = 0.971, and RMSEA = 0.032, showing that the measurement fits the data well.

Table 1. Reliability and validity of the measurement model

Latent Variable Items	Factor Loading	C.R.	CR	AVE
Components of Eco Run Events for sustainable tourism			0.571	0.936
Concept (Con)	.689	-		
C1: Developing community-based tourism	.776	-		
C2: Promoting a conservative environment	.815	23.911		
C3: Promoting community-based tourism	.868	23.257		
C5: No use of plastic and form	.656	17.018		
C8: Reducing disturbing locals	.674	18.457		
C11: Regulations to respect and conserve environments and culture	.731	18.979		
Strategy (Stra)	.702	14.966		
ST2: Interesting running types suitable for the area such as marathons, trails, triathlons, etc.	.703	21.585		
ST3: Suitable date and time for the area such as fruit seasons, fog, etc.	.874	28.687		
ST4: Beautiful attractions or interesting activities in the events	.863	-		
Manage (Man)	.649	13.192		
M1: Sufficient service of public relations points/registration /deposit /receiving bibs	.793	25.479		
M2: Sufficient facilities such as car parks, restrooms/toilets.	.879	29.811		
M3: Sufficient and appropriate food/drinks on the route and at the finish	.857	27.992		
M5: clear direction signs	.878	30.031		
M8: proper competition time and cut-off	.832	-		
People (Peo)	.708	15.326		
P2: Service providers are courteous and smiling	.899	32.679		
P3: Service providers well know service process and running events	.873	33.521		
P4: Providing quick service	.825	30.300		
P5: Adequacy of service providers	.902	-		
Participations (Par)	.676	15.339		
PR2: All locals participating in running management	.737	18.800		
PR3: Supporting from the national government	.857	30.320		
PR4: Supporting from local government	.867	-		
PR5: Supporting from inside and outside the private sector	.836	29.060		
Marketing (Mar)	.857	13.228		
MK2: Well design of shirts, medals, and trophies	.836	24.737		
MK3: Having several distances for applicants to choose	.756	22.387		
MK5: Convenience channels for application and payment	.816	-		
MK7: Suitable applicant fees	.795	32.777		
Attractions (Att)	.827	15.904		
TR1: Attractive tourism program before or after the events	.779	-		
TR2: Beautiful attractions and local uniqueness along the route	.874	31.885		
TR3: Feeling local uniqueness along the route	.881	-		
Accommodations (Accom)	.766	14.833		
AC1: Having accommodations of locals for participants promoting locals, jobs, and income	.894	-		
AC2: Having cultural activities at the local accommodations for guests	.851	31.323		
AC3: Having facilities for guests such as pick up the finish-start point	.840	30.698		
Foods and Souvenirs (FO)	.803	15.158		
FO1: Having local foods and beverages for participants and others	.806	32.549		
FO2: Participants and others knew local souvenirs in the running event	.883	27.839		
FO3: Participants and others can buy local souvenirs in the running event	.873	-		
Local Culture (CUL)	.794	14.500		
CU1: Designing and decorating the events reflected the local uniqueness of the community	.835	31.965		
CU2: Applying appliances reflected the local uniqueness of the community such as staff's uniform, local foods, photos, etc.	.826	-		
CU4: Participation of local youth to perform local culture	.812	24.935		
CU5: Night activities reflected the uniqueness of local culture	.732	21.709		
CU6: Local performs during the running routes	.763	23.755		
Safety (SAF)	.807	15.002		
S2: A sanitary security system in accordance with SHA standards	.848	-		
S3: Safety of running routes	.870	31.116		
S4: Safety of activities during the running routes	.900	32.932		
S5: Experts and safety equipment throughout the route	.836	29.034		
Satisfaction	-	-	0.935	0.784
S1: Participating in the running event provided me with happiness	.810	-		
S2: I feel that I made the right decision to participate in this running event.	.862	41.048		
S3: I feel that this event was well organized	.910	31.057		
S4: Overall, I was highly satisfied with the running event	.954	33.037		
Loyalty	-	-	0.908	0.666
L1: Always say positive things about the running event	0.897	-		
L2: Word of mouth	0.880	35.081		
L4: Invite others to join this running event in the future	0.881	35.168		
L6: Collecting medals, trophies, and number of events	0.670	21.956		
L7: Revisit this destination in other events	0.726	24.897		

From Table 1 and 2, the components of the measurement model verified convergent validity. The factor loadings were 0.649 - 0.954, higher than 0.5 (Hair et al., 2010). The discriminant validity was supported, the composite reliability (CR)of satisfaction, loyalty and attitude were 0.936, 0.935, and 0.908, respectively which were close to 1 and higher than 0.7 (Bagozzi and Yi, 1988; Hair et al., 2010). Furthermore, the Average variance extracted evaluation (AVE) of satisfaction, loyalty, and attitude was 0.571, 0.784, and 0.666, respectively, being higher than 0.5 (Kline, 2011; Hair et al., 2010). Lastly, the comparison between the AVE and MSV found that the AVE was lower than ASV (Hair et al., 2010).

Table 2. Discriminant Validity

	CR	AVE	MSV	Satisfaction	Loyalty	Attitude
Satisfaction	0.935	0.784	0.599	1.00		
Loyalty	0.908	0.666	0.599	.774(.599)	1.00	
Attitude	0.936	0.571	0.205	.395(.156)	.453(.205)	1.00
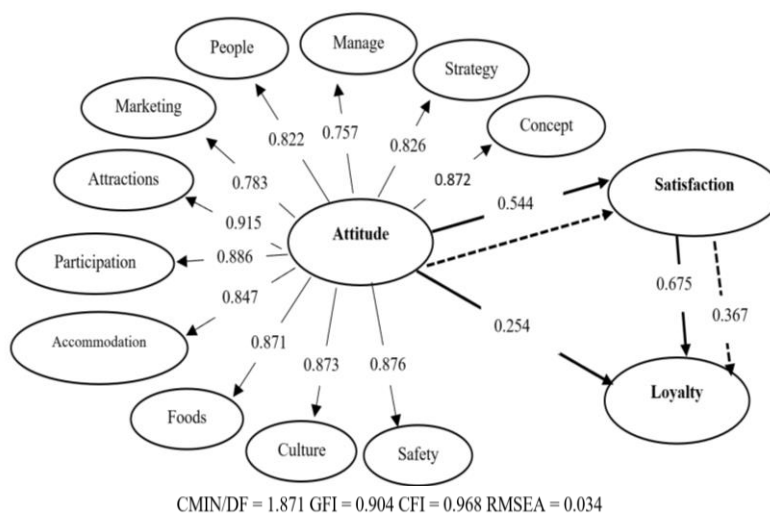
CMIN/DF = 1.871 GFI = 0.904 CFI = 0.968 RMSEA = 0.034
Figure 1. The Structural equation of eco-run and sustainable tourism attitude, satisfaction, and loyalty

Table 3. The hypothesized result

Research Hypothesis	Standard Estimated	Result
H1: Tourist-runner's attitudes toward an eco run for sustainable tourism directly affect running event satisfaction	0.544	Supported
H2: Tourist-runner's attitudes toward an eco-run for sustainable tourism directly affect running event loyalty	0.254	Supported
H3: Tourist-runner's satisfaction directly affects running event loyalty	0.675	Supported
H4: Tourist-runner's attitudes toward an eco-run for sustainable tourism affect running event loyalty mediation by satisfaction	0.367	Supported

Structural Equation Model (SEM)

The results of the attitude, satisfaction, and loyalty structural equation model found that the model was a good fit, according to $X^2/df = 1.849$, p=0.000, GFI= 0.867, CFI= 0.960, and RMSEA= 0.033, however, there were adjustments to increase the model fit. The fitness of the adjusted model revealed the model fit well with the data, the revised fit indices were $X^2/df = 1.871$, p=0.001, GFI= 0.904, CFI= 0.968, and RMSEA= 0.034. From Figure 1, the structural equation model indicated that attitude toward eco run for tourism concept impacts positively satisfaction, R^2=0.544 as well as loyalty, R^2=0.254, significant at .001. The impact of satisfaction toward loyalty is positive, R^2=0.675, significant at .001. While, it also has an indirect effect on loyalty through mediating by satisfaction, R^2=.367, significant at .001. The hypothesized results found that all hypothesizes were supported as mentioned in Table 3.

DISCUSSION AND IMPLICATIONS
Discussion

The objectives were to study components for eco-run events sustaining tourism and its relationship with satisfaction and loyalty. The finding extends a common understanding of running event management from previous studies. Firstly, the results proposed 11 components that combined both event management and tourism dimensions. As a consequence, it is the multi-dimensions to organize eco-run events for sustainable tourism consisting of sustainable tourism concept, strategy, management, people, marketing, attractions, participation, accommodations, food and souvenirs, local culture, and safety. All components can properly predict the attitude of tourist-runners who join the running event as a tourist and a runner. Based on the total effect coefficient, the top 3 elements of eco-run events; attractions, participation, and safety appeared to have the most importance in measuring eco-run events. Surprisingly, they are important components of tourism. Differently, past research has neglected the importance of tourism dimensions, focusing solely on investigating running event management. This phenomenon can be explained by the most runners desire to travel to beautiful destinations as a tourist by doing a favorite activity -running. Similarly, Saayman and Saayman (2012) found that reasons to join a sporting event were to visit tourist destinations and explore a new area. Huang et al. (2018) also

revealed that participation in communities was positively related to satisfaction and participants' intentions to return to Tianzhong Marathon. Safety and security are very important factors for visiting and repeating the events of the runners. Security was an item in the intangible factor that impacted destination image (Moon et al., 2011).

The finding confirmed that attitudes toward eco-run events for sustainable tourism of tourist-runners affected both satisfaction and loyalty. This result is consistent with prior research in that the quality of service in sports events influenced satisfaction (Moon et al., 2011) and revisit (Ho Kim et al., 2013; Chen et al., 2021). Additionally, tourist-runner satisfaction leads to repeat visitation (Alexandris et al., 2017; Chen et al., 2021; Wicker et al., 2012). Interaction quality and community attributes influenced the intent to return (Huang et al., 2018). However, it was inconsistent with Kaplanidou and Vogt (2007), satisfaction did not impact loyalty. Lastly, the finding highlighted the mediation effect of attitude toward eco-runs for sustainable tourism on loyalty through satisfaction. In particular, eco-run events for sustainable tourism had a greater impact on satisfaction than loyalty. This idea implies that the 11 components of eco-run events for sustainable tourism are worthy of creating the satisfaction of tourist-runners rather than building their loyalty.

Managerial implications

The findings have important implications for promoting sustainable tourism by organizing an eco-run event and can help community-based tourism (CBT) to design and implement an eco-run event that can make contributions, socially, economically, and environmentally. Organizing a running event to boost sustainable tourism should concern both tourism and event management elements. The results of this study suggest that an organization hosting a running event for sustainable tourism should consider attractions in the venue leading to designing attractive tourism programs before or after the events and along running routes having beautiful attractions and local uniqueness. In terms of participation, all stakeholders comprising local people, local and national government, and inside and outside businesses should be involved in running events for sustainable tourism. In addition, safety routes, safe activities, the adequacy of experts and safety equipment, and a sanitary security system in accordance with SHA standards should be emphasized in the event design.

In particular, a running event organizer should develop the events according to the concept focusing on community-based tourism, conservation environment, avoiding disturbing locals, and respecting culture. Strategies should be emphasized on setting the right types of running such as marathons, trail, triathlons, etc., suitable dates and times with seasons or attractions. Furthermore, local culture should be added to the running event and activities such as decorations, staff uniforms, local foods, and local shows. For marketing strategies, organizers should emphasize the good design of shirts, medals, and trophies. Products or distances should be several distances to serve different groups of tourist-runners. Suitable applicant fees and convenient channels for application and payment included both online and offline channels. Lastly, it is important to organize a running event for sustainable tourism that prepares local accommodations or homestays with cultural activities, local foods, and complimentary services such as pick-up at the finish-start point.

Although the paper provides theoretical and practical contributions, some limitations should be considered. Noticeably, research samples are limited to Thai tourist runners, while nationality may affect the attitude of the runners. Moreover, the distance may classify different groups of tourist-runners who may have different attitudes. Therefore, future studies on running events for sustainable tourism are warranted for a better understating of these important issues.

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