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BENEFITS AND IMPACT INFLUENCING SUPPORT OF PARTICIPANTS AND RESIDENTS FOR ROAD RACE EVENTS: A COMPARATIVE STUDY

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ABSTRACT

The aim was to compare the group model test and model path effects of benefits and impacts influencing the support for road race events between participants and residents in Taiwan. A total of 1,825 valid questionnaires were collected. The results revealed the following: (1) The group model of participants was significantly different from that of residents, though both were of well-adapted models, the extent of effect on various events support variables differed between participants and residents; (2) The participants and residents groups' benefits cognition and impact cognition had significant influence on events support, the path effect value were 42% for the participants which was higher than the 37% for residents. However, the impact cognition of road race event of participants and residents was less obvious than benefit cognition. These results showed that the benefits of road race events gained more attention from both participants and residents, events support was largely influenced by benefits, and the path effect value of participants was higher than that of residents. The support for road race events was mainly affected by the benefits cognition, while the impact cognition of road race events was less obvious.

Keywords: Road race; Event benefits; Event impacts; Event support.

INTRODUCTION

Sporting events provide an opportunity to profile and promote different countries to this lucrative niche market (Agrusa *et al*., 2006). Sport event tourism has become a huge and growing global industry with important economic implications, as well as the impact of tourism-related benefits on host destination (Solberg & Preuss, 2007; Candrea & Ispas, 2010). Marathon or road race events have gradually grown to be the niche sports events, attracting tourists from all over the world (Research and Markets, 2012). The impact of show marathon or road race events on tourism activities has gone beyond simply the major sporting events. In recent years, Taiwanese people have been enthusiastic to participate in road race activities (Runners' Plaza, 2016). Taiwan is 'the highest number density marathon country' in the world, if the area and population is the determining basis. In the past, the majority of studies pertaining to the impacts of locally-sponsored sporting events have focused on the economic impacts (Ohmann *et al*., 2006), only a few studies explored the social impact on the local residents

(Balduck *et al*., 2011; Shu *et al*., 2014).

PURPOSE OF RESEARCH

Marathon or road race events, though being one to two days of generally short-term and small-scale sports events, bring in a large number of runners and tourists in a short amount of time. It certainly has great social, environmental and economic impacts. However, the main problem remains: Are the benefits or impacts perceived by participants and those by the residents of the same cognition? Is the effect model of the benefit and impact of road race events for the participants the same as that for the residents? The findings may provide useful insight to help establish road race tourism policy, as well as for the operators and organisers of road race events to develop strategies on product planning, service delivery, marketing design and service quality improvement. The research objectives of this study are as follows:

1. To compare the *group model test* of the benefits and impacts influencing the support of participants with that of residents for road race events in Taiwan.
2. To compare the *model path effects* of the benefits and impacts influencing the support of participants with that of residents for road race events in Taiwan.

LITERATURE REVIEW

Positive benefit and related research of sporting events

Relevant studies on residents' attitudes towards event benefits suggest that there are three dimensions of event benefits, namely social, environmental and economic (Getz, 2005). The social benefits of events include national identity, cultural exchange, empowerment of local people, plans for expanding outreach, sport club promotion, volunteer groups, educational and historic preservation, social interaction, leisure entertainment and other benefits (Getz, 2009; Monterrubio *et al*., 2011). The environmental benefits of sport events are infrastructure investment (Brunt & Courtney, 1999), attention on environmental protection, upgraded leisure facilities and improved environmental quality (Monterrubio *et al*., 2011). The economic benefits of sport events (Turco *et al*., 2002) showed those of both direct and indirect impact (Agrusa *et al*., 2011). A direct benefit on sport events could mean economic benefits (Agrusa *et al*, 2011; USTA, 2012). While the indirect economic benefits include increased employment, gross regional production, institutional income, job opportunities, infrastructure investment (Brunt & Courtney, 1999) and economic development of town or region (Daniels *et al*., 2004; Kotze, 2006). It shows that sport events deliver positive social, environmental, and economic benefits, and these benefits have a positive effect on participants' and residents' cognition towards sport events (Chen, 2011; Lorde *et al*., 2011; Ünguren *et al*., 2015).

Negative impact and related research of sporting events

The negative social impact of events on destination indicated by previous studies includes: increased dependence on outsiders, undermined interpersonal relationships, changed pace of life, changed demographics, conflicts in profit distribution, disorderly behaviours, insufficient parking spaces and an undermined way of life (Brunt & Courtney, 1999; Getz, 2005; Monterrubio *et al*., 2011). Though not as serious as those of general sport events, road race events still give negative social and cultural impacts, such as crime, vandalism and traffic

problems (Ottevanger, 2007). As for the negative environmental impact, though generally considered as green activities (Stevenson, 2008), road race events still cause pollution of the air, of the water, of the soil and create noise and garbage (Monterrubio *et al*., 2011). Studies on the negative economic impact of events find that these events cause the unfair distribution of wealth and the employment effect for the locals is not significant as only temporary jobs are offered (Daniels *et al*., 2004). Road race events have negative social, environmental and economic impacts, and these impacts significantly affect the cognition of participants and residents toward road race events (Zhou, 2010; Chen, 2011; Lorde *et al*., 2011; Pranic *et al*., 2012; Ünguren *et al*., 2015).

Support theory and related research of sporting events

There have been more studies in the past decade examining not only the tourism impact perceived by residents, but also their potential or actual support for tourism or events development (Loots *et al*., 2011; Chien *et al*., 2012). Though most studies have followed a quantitative approach, some have tried to apply a theoretical paradigm to determine whether a relationship exists between the impact perceived by residents and their attitude toward tourism or events. Among the paradigms, Social Exchange Theory (SET) has gained the most popularity (Chen, 2011), and the use of SET in tourism has gained much support in the literature, though it has also been criticised for its shortcomings (Fredline & Faulkner, 2000). The support of residents toward sports events can generally be explained by social exchange theory (Ap, 1992; Chen, 2001; Harrill, 2004; McGehee & Andereck, 2004). SET examines the exchange of rewards and costs to quantify the value of outcomes from different situations for an individual or a group (Thibaut & Kelley, 1952). It suggests that people strive to minimise costs and maximise rewards. The application of SET is based on the assumption that the benefits of event development exceed the costs of visitors' shared environmental and social resources, therefore the residents will support the event development (Fredline & Faulkner, 2000; Harrill, 2004). The findings from the aforementioned literature form the basis for the following hypotheses:

Hypothesis 1: The *benefits cognition* has a positive effect on the support of participants and residents for road race events.

Hypothesis 2: The *impact cognition* has a negative effect on the support of participants and residents for road race events.

Comparison of support between participants and residents toward sporting events

The literature investigating non-mega sport events' benefits and impacts is limited. The benefits and impacts were examined mainly from the point of view of spectators or residents (Djaballah *et al*., 2015). Different roles and positions may have different attitudes towards event impacts (Chen, 2011; Ma *et al*., 2013; Djaballah *et al*., 2015; Liu *et al*., 2015). Residents from the same city were found to have different views towards event benefits and impacts (Chen, 2011) and their perceptions of event impacts showed significant differences in the educational level, adaptation to the event, level of support, level of interest in the event and attendance (Ma *et al*., 2013). Liu *et al*. (2015) found that the cognition of road race event participants regarding the social benefits, environmental benefits, economic benefits, event support, and sustainability was significantly higher than that of local residents. In addition, the participants' and residents' cognition of positive benefits was significantly higher than the negative impacts. The mentioned findings helped form the following hypothesis:

Hypothesis 3: There are significant differences between the *model path effects* of the benefits and impacts influencing the support of participants and that of residents for road race events.

METHODOLOGY

Research framework

The comprehensive above-mentioned theories and literature form the basis of this research framework (Figure 1):

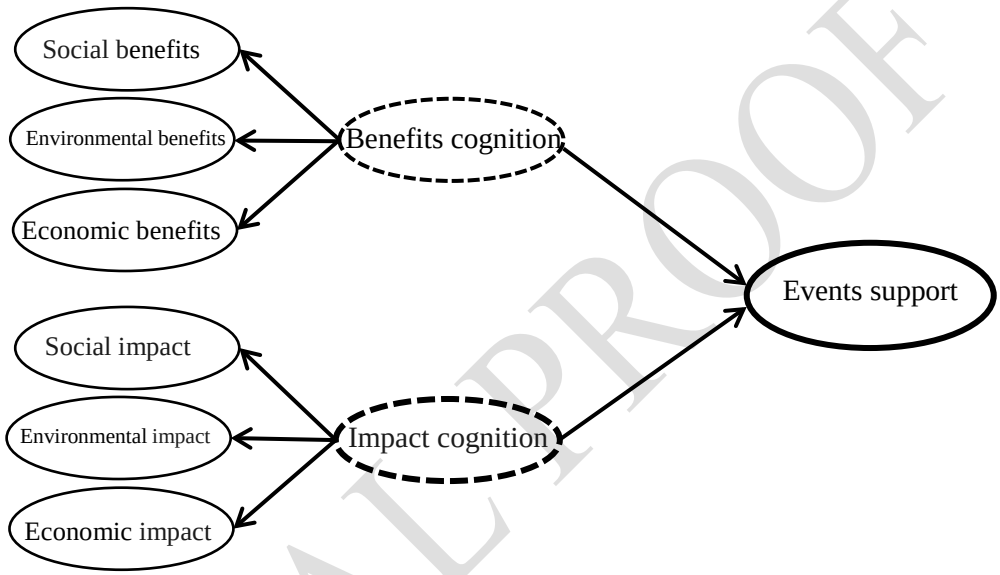

***Figure 1*. FRAMEWORK OF STUDY**

Data collection

***Table 1*. SURVEY TIME, PLACE AND NUMBER OF QUESTIONNAIRES**

Time and survey location and		Participants			Residents		
		Sent	Valid	%	Sent	Valid	%
2014/12/14	Bali Left Bank Marathon	170	123	72.35	170	135	79.41
2014/12/21	Taipei Marathon	230	188	81.74	170	138	81.18
2015/02/08	National New Agency Marathon	150	120	80.00	170	121	71.18
2014/12/07	31st Tsengwen Reservoir Marathon	220	174	79.09	175	144	82.29
2014/12/13	Taroko Gorge Marathon	230	202	87.83	175	129	73.71
2015/01/18	Kinmen Marathon	300	231	77.00	140	120	85.71
* =Mean %	TOTAL	1300	1038	*79.67	1000	787	*78.91

This study targeted road race event participants and local residents in Taiwan. The purposive convenience sampling was adopted to collect data from those aged 20 or above. A total of 2,300 questionnaires were distributed and 1,825 valid questionnaires were obtained, of which 1,038 were from participants and 787 from residents.

Instrumentation

The questionnaire for this quantitative research was developed based on relevant literature regarding the benefits and impacts of sporting events (Ohmann *et al*., 2006; Hritz & Ross, 2010; Monterrubio *et al*., 2011), as well as other relevant literature (Chen, 2001; Gursoy *et al*., 2002; Ko & Stewart, 2002; Harrill, 2004). The questionnaire consists of three sections: Scale of Road Race Events Participants and Residents' Benefits Cognition; Scale of Impacts Cognition; and Scale of Support. The Likert scale instrument adopted seven draft questionnaires prepared by three scholars and experts to form a consultation questionnaire before it was rectified to the formal questionnaire. The questionnaire of 562 samples was randomly drawn and recovered via EFA (Exploratory Factor Analysis) and CFA (Confirmatory Factor Analysis). The three scales analysis revealed that the scales demonstrated sound discrimination reliability, and confirmatory factor analysis was suited to measure opinions regarding the benefits, impacts and support of road race events in Taiwan (Chiou, 2010).

Data analysis

SPSS version 17.0 was used to provide a descriptive statistics analysis, EFA, CRD (Critical Ratio for Differences) and total correlation coefficients, validity and reliability. The SEM (Structural equation modeling) data analysis was divided into event participants and residents, mainly using version AMOS 17 multi-population analysis, structural test model and related assumptions. The statistical significant level for this research was α=0.05.

RESULTS

Analysis on the types of road race participants

There are more male than female participated in the event, but the female residents are more than male residents (Table 2, next page). Most participants are aged between 31 and 40 years, while majority of the residents are in the group of 21-30 years. Most of the participants and residents are university-educated or higher. The participants' monthly income is in the range of NTD 40,000–59,999, while the residents' is more in the category of NTD 19,999 and below. More participants reside in northern Taiwan, while the residents in southern Taiwan.

Group model test between participants and residents

The group models indicator analysis of participants and residents shows that the patterns are consistent with the adaptation of the evaluation index (GFI=0.90, NFI=0.94, CFI=0.95, CN=429, RMSEA=0.05, all are in compliance with standard), which indicates the sample data group model is the adaptation model. The analysis model of AMOS nested model was used to explore the possible differences under various models. Using the unconstrained model as the base, four nested schemes, which are measurement weights, structural weights, structural residuals, and measurement residuals, were explored (Chen, 2007).

***Table 2*. DEMOGRAPHICS OF PARTICIPANTS AND RESIDENTS**

Variable	Category	Participants		Residents	
		Frequency	Percentage	Frequency	Percentage
Gender	Male	622	59.9	359	45.6
	Female	416	40.1	428	54.4
Age group (years)	20 & under	146	14.1	132	16.8
	21-30	306	29.5	256	32.5
	31-40	348	33.5	175	22.2
	41-50	168	16.2	113	14.4
	51 & over	70	6.8	111	14.1
Educational level	Junior High School	61	5.9	108	13.7
	High school	144	13.9	208	26.4
	College	156	15.0	99	12.6
	University	473	45.6	318	40.4
	Graduate school	204	19.7	54	6.9
Income monthly (NTD)	19,999 & below	230	22.2	308	39.1
	20,000–39,999	296	28.5	306	38.9
	40,000–59,999	315	30.3	116	14.7
	60,000–79,999	121	11.7	23	2.9
	80,000 & above	76	7.3	34	4.3
Residential area	Northern Taiwan	496	47.8	169	21.5
	Central Taiwan	93	9.0	192	24.4
	Southern Taiwan	295	28.4	247	31.4
	Eastern Taiwan	85	8.2	113	14.4
	Outlying islands	69	6.6	66	8.4

***Table 3*. ANALYSIS OF MULTI-GROUP MODELS BETWEEN PARTICIPANTS AND RESIDENTS**

Model	**df**	**χ^2**	**p-Value**
Measurement weights	17	90.66	0.00*
Structural weights	8	67.35	0.00*
Structural residuals	7	191.08	0.00*
Measurement residuals	24	877.10	0.00*

*p<0.05

The results show that regardless of model restrictions, the group model of participants is significantly different from that of residents (measurement weights: df=17, χ^2=90.66, p=0.00*; structural weights: df=8, χ^2=67.35, p=0.00*; structural residuals: df=7, χ^2=191.08, p=0.00*;

measurement residuals: df=24, χ^2=877.10, p=0.00*) (Table 3). It can be seen that though both models are of well-adapted models, the extent of impact on various events support variables differ between participants and residents. Thus, the study supports H_3.

Comparison of model path effects between participants and residents

Based on the multi-group analysis between participants and residents, the value of Critical Ratios for Differences (CRD) is more than 1.96, indicating that the difference between the two parameters reaches a significant level of 0.05 (Wu, 2008). The CRD of benefits cognition's influence on events support is 5.61 ($p<0.05$), which shows that participants' perceived benefit is significantly higher than that of local residents. The CRD of impact cognition's influence on support is 3.99 ($p<0.05$), which shows that participants' impact cognition negatively influences events support, which is significantly different from the positive effect of residents' impact cognition on events support (Table 4).

When comparing the model path effects between participants and residents, the benefits cognition of both groups is found to have significant influence on events support. However the path effect value of participants (path value=0.64; t-value=16.84) is higher than that of residents (path value=0.60; t-value=15.31), indicating participants' benefits cognition has higher influence on the support for road race events. As for the negative influence of road race events, the impact cognition of both groups is also found to affect events support significantly, with the path effect value of participants showing negative influence on events support (path value=-0.08; t-value =-2.76), while the path effect value of residents showing positive influence on events support (path value=0.11; t-value=3.41). This can mean residents are more tolerant than participants about the events negative influence.

Table 4. **ANALYSIS OF PATH EFFECT VALUE OF PARTICIPANTS AND RESIDENTS**

Hypo-thesis	Path relationship	#Critical Ratios	Participants		Residents	
			path value	t-value	path value	t-value
1	Benefits Cognition → Event Support	5.61*	0.64	16.84*	0.60	15.31*
2	Impact Cognition → Event Support	3.99*	-0.08	-2.76*	0.11	3.14*

* $p<0.05$ # Critical Ratios for differences

From the model diagram of cognition of benefits, impacts, and event support (Figure 2 and Figure 3), one can comprehend that the model variance explaining power (R^2) of benefits cognition and impact cognition on events support is 42% for participants and 37% for residents. These study findings indicate that the support for events is mainly affected by the benefits cognition and it is more obvious for the participants than the residents. Thus H_1 and H_2 are supported.

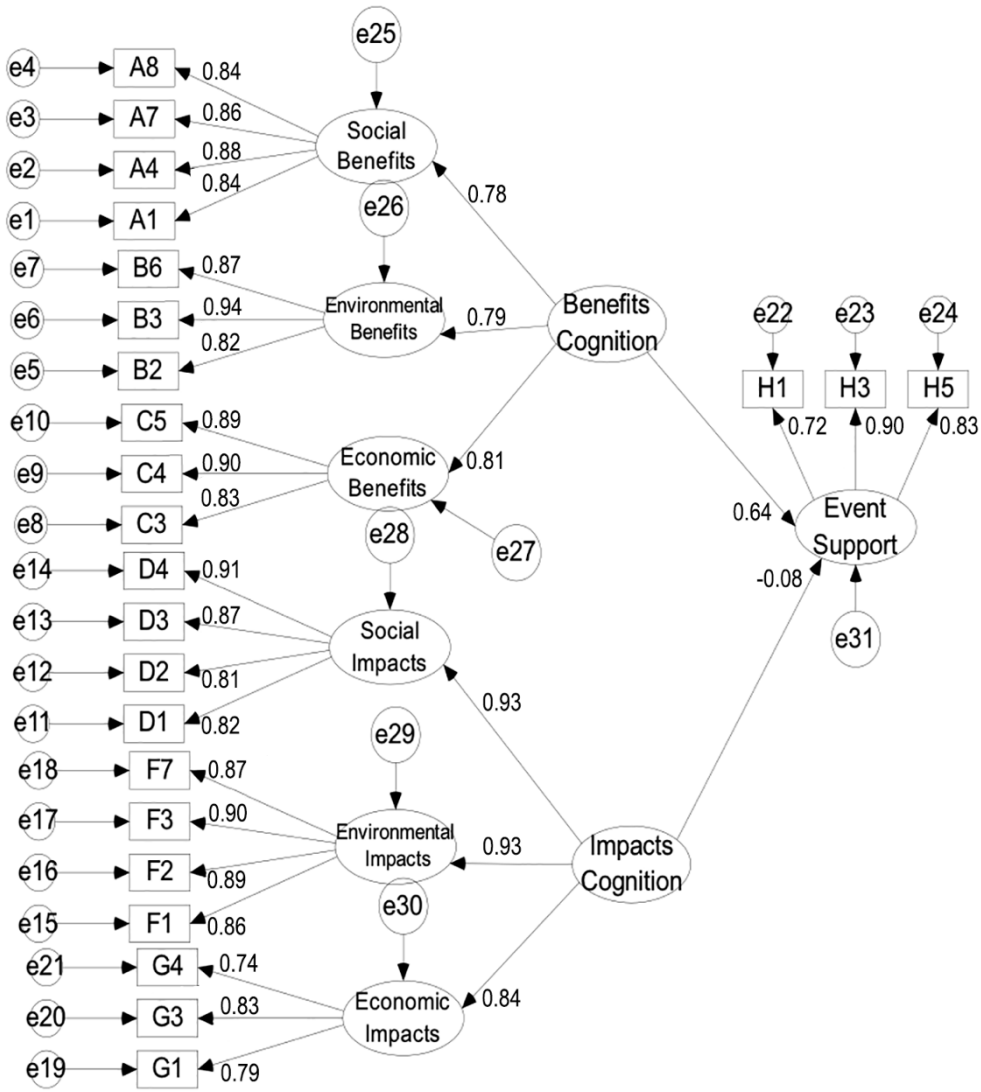

Figure 2. **MODEL OF PARTICIPANTS' COGNITION OF BENEFITS, IMPACT AND EVENT SUPPORT**

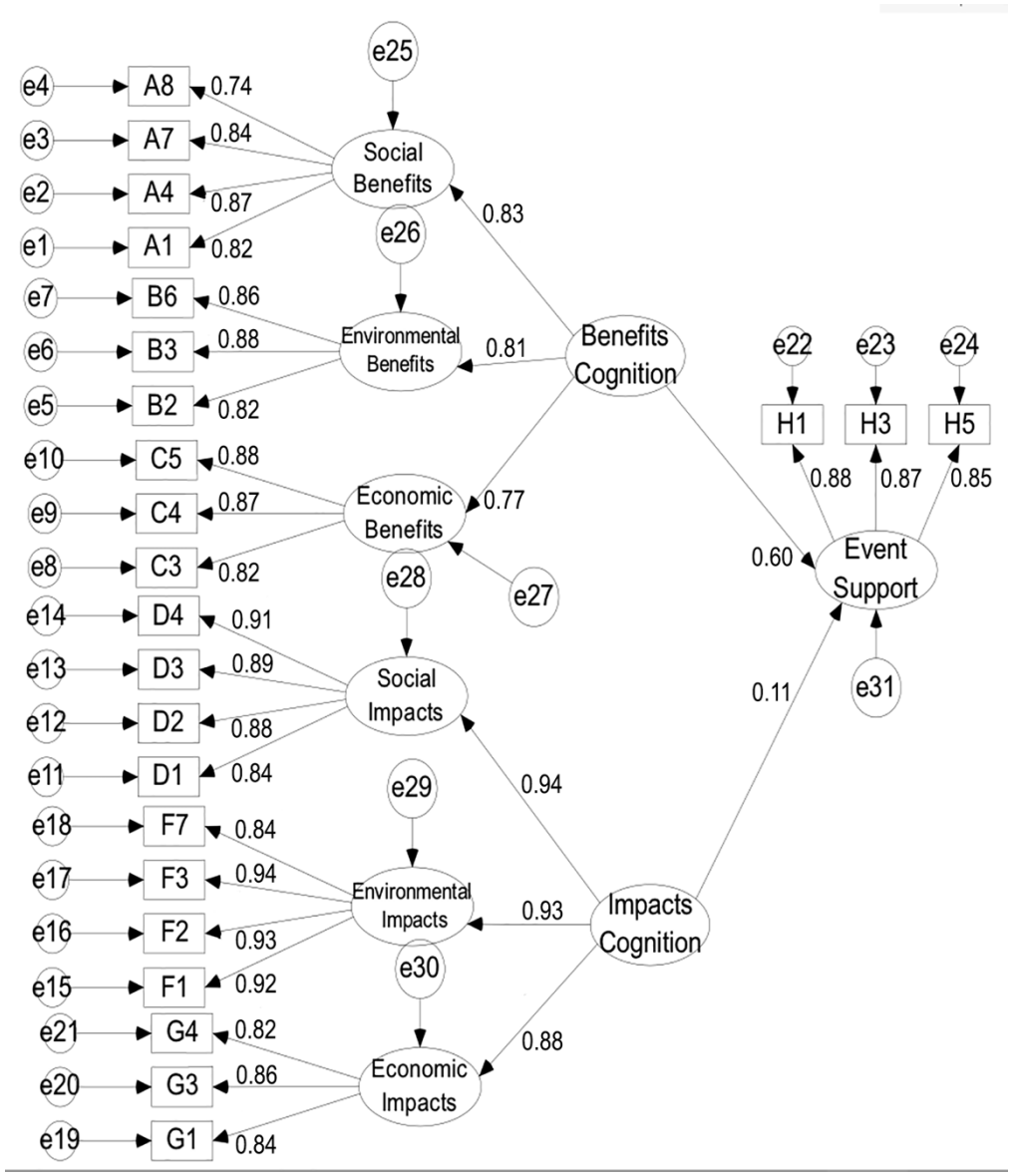

Figure 3. **MODEL OF RESIDENTS' COGNITION OF BENEFITS, IMPACT AND EVENT SUPPORT**

DISCUSSION AND CONCLUSION

This study extends the existing literature by proposing a conceptual model to compare the group model test and model path effects of benefits and impact influencing the events support for road race events between participants and residents in Taiwan. One important theoretical contribution of this study is to apply the Social Exchange Theory (SET) to sporting events (Ap, 1992; Chen, 2001; Harrill, 2004; McGehee & Andereck, 2004). Previous research on events and tourism considered the negative effect of impact cognition a more significant influence on events support (Aref *et al*., 2009; Chen, 2011; Lorde *et al*., 2011; Pranic *et al*., 2012; Ünguren *et al*., 2015). However, the findings of this study reinforce the importance of event benefits in understanding and predicting the support for road race events with the participants and residents believing that the impact of road race is not so serious (Ottevanger, 2007). Consequently, a well-modified measurement of the benefits and impacts of a road race event that includes a viable definition, is necessary for future research.

Another theoretical contribution of this study is to provide diverse empirical evidence, verify topics less explored in previous studies to better compare the perceptions between participants and residents of road race events. To the best available knowledge, this is the first study that attempts to compare a holistic model between the participants and residents of events where previous studies have mainly examined the issue from the point of view of spectators or residents (Balduck *et al*., 2011; Chen, 2011; Alhammad, 2012; Djaballah *et al*., 2015). From the study results, it can be seen that the extent of impact on various events support variables differ between participants and residents (CRD=5.61* and 3.99*). The R^2 of benefits cognition and impact cognition on events support for participants and residents are 42% and 37% respectively. The different roles of participants and residents can be confirmed (Chen, 2011; Ma *et al*., 2013; Djaballah *et al*., 2015).

Practically, the findings of the current investigation provide some important suggestions for the managing and marketing of road race events. One key factor in the process of forming events support is the benefits cognition. Event operators and organisers shall thrive to maximise the benefit cognition of both participants and residents so as to build positive support for the events. As the economic benefits are important to both participants and residents, local special exhibitions or tours can be arranged to expand the economic benefits of road race events. Though participants and residents are less concerned about the negative impact of events, the impact still affects events support negatively. The host communities should try to educate participants in cultivating good attitudes, reducing negative behaviours and to minimise the impact on traffic, environment and residents' lives, so as to enhance local residents' support for road race events. With proper cooperation, organisers, the participants and the communities can all obtain what they need.

Despite the significant contributions of this study, some limitations are worthy noting. Firstly, the sample of this study only covered the six road race events in Taiwan. To ensure the external validity of the measurement of road race events, a more comprehensive sample from various sporting events is recommended for future study. Secondly, future research should control the variable representing respondents' previous experiences with hosting communities or events as these experiences could affect respondents' perceptions of road race events and subsequently

their evaluations and support. Other potential arbitrators, such as running seniority, participation motivation and personality traits could also be explored in future studies.

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