

# The moderating role of residents' involvement on perception of mice impacts

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## Abstract

The purposes of this paper were to examine the effects of residents' perceptions of positive/negative economic impacts, positive/negative sociocultural impacts, and positive/negative environmental impacts on their perception of the overall MICE impact and to analyze whether these effects vary according to residents' involvement in MICE development. Data was collected via survey with a convenience sample of 412 Khon Kaen's city residents in Thailand. The results of a structural equation modeling revealed that perception of positive economic, positive sociocultural, and negative environmental impacts significantly affect the perceived overall MICE impact. Furthermore, the findings revealed the difference in magnitude of those effects on the overall impact across different levels of residents' involvement. This study extends previous studies by providing a more insightful explanation of how the perceived overall MICE impact is shaped and whether that can be enhanced by residents' involvement.

**Keywords:** Residents' involvement, Resident' perceptions, MICE impacts, Social exchange theory, Multiple group analysis



## Introduction

Business events, including meetings, incentives, conventions, and exhibitions (MICE) contribute enormous economic impacts to host cities. Accordingly, local governments are encouraged to promote their cities as destinations for business events. To become an established MICE destination requires huge investment in terms of a well-developed infrastructure system and other event facilities. As recognized by previous studies, the selection criteria for a MICE destination comprise ease of accessibility, venue space, variety of restaurants and entertainment, image and reputation of the host destination, local support, safety and security, and costs (DiPietro, Breiter, Rompf, & Godlewska, 2008).

In developing a MICE destination, and in a comparable manner to tourism, local residents are an integral element in the development process. This is because the MICE industry can bring both positive and negative impacts to the host community. It is generally perceived that MICE tourists generate economic benefits, such as income, job opportunities, and taxation revenue to local and central government, but they simultaneously increase sociocultural and environment problems, such as waste and pollution issues and environmental damage to the community (Almeida-García, Peláez-Fernández, Balbuena-Vázquez, & Cortés-Macias, 2016; Andereck & Nyaupane, 2011). Therefore, local government may face challenges gaining support from the community if the consequences of the development are perceived by local residents to be negative. Without active support from local residents, MICE

development cannot have success in the long term. Therefore, there is a need for local governments and policy makers to understand how local communities perceive the benefits and costs generated by the MICE industry, especially what aspects of those perceptions have the most weight on residents' overall evaluation of the MICE industry and under what conditions those perceptions can be altered.

Understanding local community perceptions and their support for tourism has been an ongoing research topic in the tourism literature (Almeida-García, et al., 2016; Styliadis, Biran, Sit, & Szivas, 2014). Many of the studies on this issue have long been focused on examining residents' perceptions of tourism impacts and their support for tourism development. These empirical studies have revealed that if residents perceive the overall tourism impacts to be positive, they are more likely to support tourism development (Almeida-García, et al., 2016; Gursoy, Chi, & Dyer, 2010; T. H. Lee, 2013; Nunkoo & Gursoy, 2012). The literature has revealed that residents' decisions on whether to support tourism developments depends on their overall judgment of the tourism impacts; although these findings can be applied in the MICE development context, several questions must be answered. These questions include what aspects of MICE impacts are perceived as positive or negative, how much each of those impacts influences residents' overall evaluation, and whether these effects vary depending on the level of residents' involvement. Yoon, Gursoy, and Chen (2001) recommended that community involvement should be considered when seeking to understand



what drives residents to support (or, conversely, oppose) MICE development.

To answer these questions within the context of MICE development, the objectives of this study were:

- (1) to test a conceptual model designed to explain how residents' perceptions of positive and negative MICE outcomes concerning economic, sociocultural, and environmental impacts influence residents' perceptions of the overall MICE impact; and
- (2) to test the moderating effect of residents' involvement on those effects.

The results of this study provide a better understanding of how local residents perceive and feel about the MICE industry. The model helps local governments to identify which factors have more impact on overall judgments regarding the MICE industry. In addition, by testing the moderating effect, the study reveals whether the levels of residents' involvement can alter the strength and direction of those factors on residents' perceptions of overall MICE impacts.

## **Theoretical framework and hypotheses**

### **Perception of MICE impacts**

In tourism research, social exchange theory (SET) has been extensively used to understand why local communities support or resist tourism. Following this approach, this study applied SET as a

background framework: it has been considered the most influential theoretical perspective in explaining social behavior in both sociology and social psychology since the 1920s (Cropanzano & Mitchell, 2005). As discussed by Cook, Cheshire, Rice and Nakagawa (2013), within SET, an interaction among individuals in the society or within social behavior is considered as an exchange between at least two parties: in essence, individual or group interaction is formed based on an exchange of resources, either in tangible or intangible forms. Social exchange theory posits that two persons will enter an exchange if they believe or expect to gain more than they lose: i.e., individuals will contribute to society if they expect their future returns to be higher than their future obligations.

In the tourism context, SET explains that residents are more likely to favor tourism if they assess that benefits it offers are higher than the costs incurred therefrom (Gursoy, et al., 2010; Nunkoo & Ramkissoon, 2011; Wang & Chen, 2015). Assessment of tourism differs between residents who perceive future benefits and those who perceive future obligations (Gursoy, Jurowski, & Uysal, 2002). In essence, residents are more likely to evaluate the tourism industry positively if they believe they would benefit from it, whereas those who perceive unpleasant outcomes are more likely to assess it negatively (Andereck, Valentine, Knopf, & Vogt, 2005).

Building on SET, empirical studies over recent years have reinforced the theory that residents' attitudes toward tourism are influenced by their perception of the outcomes generated by the industry. Several studies have categorized the



outcomes of tourism development into the two aspects of positive and negative impacts, as perceived by local residents (Boley, McGehee, Perdue, & Long, 2014; T. H. Lee, 2013; Nunkoo & Ramkissoon, 2011; Vargas-Sánchez, Oom do Valle, da Costa Mendes, & Silva, 2015; Wang & Chen, 2015). Findings from these studies have revealed that residents' attitudes toward tourism development are positively related to perceived positive impacts and, conversely, are negatively associated with perceived negative outcomes (Ko & Stewart, 2002).

Numerous studies have examined the consequences of tourism development in three major dimensions: economic, sociocultural, and environmental (Almeida-García, et al., 2016; Andreck & Nyaupane, 2011; Dyer, Gursoy, Sharma, & Carter, 2007; Kim, Uysal, & Sirgy, 2013; Stylidis, et al., 2014). Regarding the economic aspects, past studies have revealed that local residents perceive economic impacts in both positive and negative senses (Dyer, et al., 2007; Yoon, et al., 2001). Specifically, job opportunities, income generated from tourism activities, taxation revenue, and investment for small business are often perceived as positive economic outcomes, whereas increasing costs of living and housing are viewed as negative consequences of the tourism industry. Regarding the effects on residents' support for tourism development, several studies have revealed that residents' perceptions of economic impacts are positively related with attitudes toward tourism (Dyer, et al., 2007; Stylidis, et al., 2014). As regards the sociocultural impact, the majority of local communities have been found to view tourism development as

not only providing benefits to the community in terms of the quality of life, cultural exchange, residents' sense of community, and the preservation of local culture and history, but also resulting in more crime and vandalism in the community, traffic problems, and overcrowdedness in public areas (Almeida-García, et al., 2016; Kim, et al., 2013; Stylidis, et al., 2014). Concerning the relationship between the perceived sociocultural impacts and attitudes toward tourism development, mixed findings have been revealed in the previous studies. Several of them reported positive effects of sociocultural aspects on residents' support for tourism (Stylidis, et al., 2014); other studies found no significant effects of negative social impacts on residents' attitudes toward tourism (Dyer, et al., 2007; Yoon, et al., 2001). Regarding the environmental impacts of tourism, local people have been found to believe that their community would benefit from the industry in terms of improving public facilities, living utilities systems, and preserving the environment, but would, conversely, face the costs of environmental pollution and damage to the local ecosystem and natural environment (Almeida-García, et al., 2016; Ko & Stewart, 2002). Residents' perceptions of environmental consequences have been found to influence attitudes toward tourism, through direct and/or indirect effects (Almeida-García, et al., 2016; Stylidis, et al., 2014; Yoon, et al., 2001).

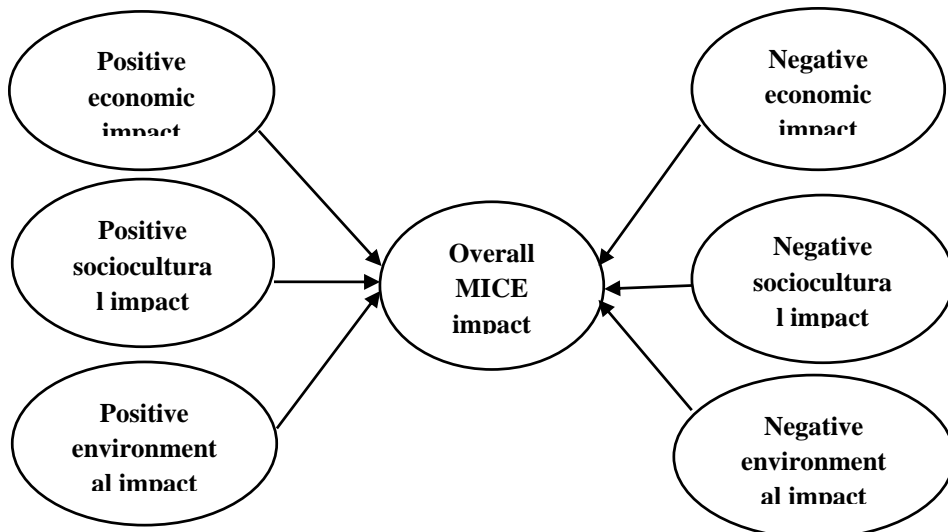
Furthermore, several studies (Carmichael, 2000; Chen, 2016; Vargas-Sánchez, et al., 2015; Yoon, et al., 2001) have observed that residents' perceptions of outcomes from the tourism industry may not directly influence attitudes

concerning or support for tourism. For instance, as discussed in Carmichael (2000), residents' attitudes towards tourism activities and development are directly influenced by their perception of the overall tourism impacts and the positive and negative outcomes of the industry on matters of personal importance to them. Similarly, undertaken through structural equation modeling, Yoon et al. (2001) observed that the effects of residents' perceived tourism outcomes – economic, social, cultural, and environmental impacts – on residents' support for tourism development are mediated by residents' perceptions of the overall tourism impact.

Drawing on above background, in the context of MICE development, this study focused on verifying which factors contribute to residents' perceptions of the overall MICE impact; the following hypotheses were proposed.

- H1. Perceived positive economic impacts influence the perceived overall MICE impact.
- H2. Perceived negative economic impacts influence the perceived overall MICE impact.
- H3. Perceived positive sociocultural impacts influence the perceived overall MICE impact.
- H4. Perceived negative sociocultural impacts influence the perceived overall MICE impact.
- H5. Perceived positive environmental impacts influence the perceived overall MICE impact.
- H6. Perceived negative environmental impacts influence the perceived overall MICE impact.

All six hypotheses above were combined in the conceptual model and is presented in Figure 1.



**Figure 1** Proposed conceptual model



## **Moderating role of residents' involvement**

It has been suggested that to succeed in tourism development, the government and policy makers should involve local community in the process (Sheldon & Abenoja, 2001; Styliadis, et al., 2014; Tosun, 2000). Involvement is a construct that has been used to explain human behavior in several disciplines. An explanation of the involvement concept varies according to the context in which it is explained. In tourism perspectives, residents' involvement refers to residents' voluntary participation in community activities or working cooperatively with other residents on community projects (Tosun, 2000).

Previous tourism development studies have revealed that the greater the level of residents' involvement in tourism, the more positive their attitudes toward it (T. H. Lee, 2013; Nicholas, Thapa, & Ko, 2009). Additionally, the literature has emphasized that attitudes toward tourism, particularly negative attitudes, can be improved if residents have greater involvement or engagement in tourism activities (Allen, Long, Perdue, & Kieselbach, 1988; Lundberg, 2016). Lee (2013) suggested that involvement has a direct effect on how residents perceive the benefits and costs generated by tourism, which in turn affects their support for tourism. However, Nyaupane, Morais and Dowler (2006) argued that residents' involvement does not directly influence perceptions of tourism's impacts, but rather influences them indirectly through interaction with other factors. This argument was supported by the recent empirical study of Lundberg (2016). With the underlying assumption that the relationship between

the importance of tourism impacts and resident group types is moderated by local involvement, Lundberg's study revealed that the effects of residence type on the perceived importance of economic impacts was moderated by the level of participation in the tourism development.

Based on the above discussion, this study postulated that the effects of residents' perceptions of the positive and negative MICE dimensions' impacts on perceptions of the overall MICE impact vary according to level of involvement. The underlying premise of this study is that the effect of residents' perceived positive impacts on the perceived overall MICE impact is stronger – and, concomitantly, the influence of perceived negative outcomes on perceived overall impact is weaker – in residents who have high involvement with MICE development than those who have low involvement.

## **Method**

### **Sample and data collection**

This study was conducted in Khon Kaen city in Thailand during May–June 2014. Khon Kaen is located in the northeast of Thailand and is the second-largest province in this region. According to the Tourism Authority of Thailand, Khon Kaen is not recognized as top destinations for tourism in Thailand. However, it was promoted by the Thailand Exhibition and Convention Bureau (TCEB) as Thailand's 5th official MICE destination in 2013. To create awareness of the residents and potential customers, a signing ceremony of the Memorandum of Understanding between TCEB and the city was held



with more than 350 participants from government agencies and local entrepreneurs. With the support of TCEB, the city created the 4-year roadmap to highlight Khon Kaen city as the hub of convention and exhibition in the Greater Mekong Sub-region (GMS). According to TCEB's statistics, 280,440 MICE visitors visited Khon Kaen and spent the equivalent of THB 730 million.

In order to satisfy the objectives of this study, a sample survey with self-report questionnaire was used to collect data. Following the suggestion of Hair, Black, Babin and Anderson (2010), this study required a minimum of 300 samples to ensure the collection of reasonably stable results for structural equation modeling. Based on convenience sampling, Khon Kaen city residents were approached and invited to participate in the survey. To ensure that all respondents qualified for the research, the field researchers asked the residents whether they had awareness of Khon Kaen as an official destination for convention and exhibition. After residents were informed of the purposes of the research, a self-administered questionnaire was distributed to those who qualified and agreed to participate. In total, 441 questionnaires were collected and checked for completeness. This process resulted in removing 29 questionnaires because they were incomplete and missing important information. After elimination, a sample of 412 responses was retained for analysis.

## Measurement

Data used to test the hypothesized conceptual model (Figure 1) were collected by a self-report questionnaire.

The study instrument comprised of scales measuring an endogenous construct, which was perception of the overall MICE impact (OMI) and six exogenous constructs including perceived positive economic impact (PE), perceived negative economic impact (NE), perceived positive sociocultural impact (PS), perceived negative sociocultural impact (NS), perceived positive environmental impact (PN), and perceived negative environmental impact (NN). The attributes of all constructs were identified from an extensive review of the related studies. Each exogenous construct was measured with multiple-item as presented in Table 1. These 18 statements (e.g., MICE industry increases employment opportunities for local residents; MICE industry increases the cost of living) were developed based on prior studies on residents' perceptions of tourism impact that employed well-established scales (Dyer, et al., 2007; Gursoy & Rutherford, 2004; Ko & Stewart, 2002; C. K. Lee, Kang, Long, & Reisinger, 2010).

To measure perception of the overall MICE impact (OMI), the participants were asked to express their level of agreement on a single statement "Overall, the MICE industry produces more positive impacts than negative ones". Operationalizing a single variable to measure the perceived overall impact was supported by prior studies (e.g. Assaker, et al., 2011; Chen & Tsai, 2007; Soon-Ho, et al., 2009). All of the measurement statements on perception of MICE impacts were scored on a five-point Likert scale in which 1 represented "strongly disagree", 2 represented "disagree", 3 represented "neutral", 4 represented "agree", and 5 represented "strongly agree". Further, residents'



involvement was captured by asking the participants to rate their level of involvement in development of the MICE industry in Khon Kaen on a five-point Likert scale, where 1 represented 'not at all involved' and 5 represented 'very highly involved'. The questionnaire also included the closed-ended questions regarding the respondents' demographic characteristics (e.g., gender, age, occupation and residence duration).

## Data analysis

The statistical analysis in this study was employed as follows. The frequency analysis was carried out to describe the respondents' demographic characteristics. A structural equation modeling (SEM) under the two-step modeling approach (Anderson & Gerbing, 1988) was employed to test the proposed conceptual model and its corresponding hypothesized relationships. As suggested by Anderson and Gerbing (1988), before testing the hypothesized conceptual model, the validity of the constructs and a good fit of measurement model was developed. This process was carried out by a confirmatory factor analysis (CFA). In addition, the reliability of the constructs were examined by Cronbach's alpha and composite reliability (CR). The validity of the constructs were tested by standardized loadings of the measurement items of each construct and average variance extracted (AVE). Once the study's theoretical model was tested by SEM, the moderating effects of involvement were analyzed by multiple group analysis.

## Results

### Demographic characteristics of respondents

Of the 412 samples, there were 233 female (56.6%) and 179 male (43.3%) respondents. The majority of the respondents (43.2%) were 31–40 years old. Approximately 26% of the respondents were 30 years old or less, while 23.5% were 41–50 years old. Concerning occupation, the largest category (34.7%) worked as public servants, while 28.6% of the respondents worked in the business sector. The third largest occupation category (27.7%) were self-employed. Regarding residence duration, most of the respondents (57.5%) had lived in Khon Kaen city for over 20 years. Approximately 13.6% of the respondents had been resident for 6–10 years, while 14.6% had lived in the city for 11–20 years. The remainder had lived in the community for 5 years or less.

### Measurement model

The reliability of the constructs was assessed by Cronbach's alpha and composite reliability (CR). As presented in Table 1, the analyses showed that all the constructs had a Cronbach's alpha value and CR higher than the suggested threshold of 0.70 (Hair, et al., 2010), signifying consistency among the multiple indicators of the construct. The constructs' validity was determined by standardized loadings of the measurement items of each construct and average variance extracted (AVE). The CFA results showed that all the standardized loadings had a value greater





than 0.6, statistically significant at 0.01 level. The AVE values of each construct ranged from 0.54–0.67. Both standard loadings and AVE exceeded the cutoff value of 0.5 (Kline, 2005), indicating convergent validity of the measurement model. In addition, the discriminant

validity was verified by comparing AVE with the squared correlation coefficients of the two constructs of interest. The results exhibited the discriminant validity as AVE values were greater than the squared correlation coefficients.

**Table 1** Results of reliability and validity of the measurement

Construct/ indicators	Standardized loading	CR	AVE
<b>Perceived positive economic impact</b> ( $\alpha = 0.790$ )		0.790	0.56
(PE1) MICE industry increases employment opportunities for local residents	0.775		
(PE2) MICE industry increase revenue for local residents	0.770		
(PE3) MICE industry provides economic benefits to small businesses in the community	0.691		
<b>Perceived negative economic impact</b> ( $\alpha = 0.812$ )		0.82	0.60
(NE1) MICE industry increases the cost of living	0.820		
(NE2) MICE industry increases the price of housing	0.770		
(NE3) MICE industry provides benefits to only some groups of people	0.737		
<b>Perceived positive sociocultural impact</b> ( $\alpha = 0.807$ )		0.81	0.59
(PS1) MICE industry improves the residents' quality of life	0.829		
(PS2) MICE industry enhances residents' sense of community	0.751		
(PS3) MICE industry increases demand for historical and cultural exhibits	0.718		
<b>Perceived negative sociocultural impact</b> ( $\alpha = 0.796$ )		0.81	0.58
(NS1) MICE industry increases the amount of crime in the community	0.796		
(NS2) MICE industry leads to more vandalism in the community	0.828		
(NS3) MICE industry increases traffic problems	0.654		
<b>Perceived positive environmental impact</b> ( $\alpha = 0.771$ )		0.78	0.54
(PN1) MICE industry improves public facilities	0.724		
(PN2) MICE industry provides incentives for the protection and conservation of natural resources	0.775		

(PN3) MICE industry improves water and electricity systems	0.694		
<b>Perceived negative environmental impact (<math>\alpha = 0.853</math>)</b>		0.86	0.67
(NN1) MICE industry results in more litter in the community	0.688		
(NN2) MICE industry causes more air pollution	0.864		
(NN3) MICE industry increases noise	0.897		

To test the overall measurement of the model, the CFA was analyzed using the maximum likelihood method estimation. The CFA results yielded the following goodness-of-fit statistics:  $\chi^2_{(120)} = 304.439$ ,  $p < .001$ ,  $\chi^2/df = 2.537$ , RMSEA = .061, CFI = .951, TLI = .938, SRMR = .045, indicating a fair fit of the overall measurement model to the data (Hair, et al., 2010; Hu & Bentler, 1999; Kline, 2005; MacCallum, Browne, & Sugawara, 1996).

## Structural model

Drawing on SET and the empirical results of prior research on tourism impact, this study hypothesized that residents' perceptions of the overall

MICE impact is influenced by their perceptions on each dimension, comprising positive/negative economic impacts, positive/negative sociocultural impacts, and positive/negative environmental impacts. These hypotheses were tested by SEM.

The results of the hypotheses tests are presented in Table 2. The SEM indicated that H1, H3, and H6 are supported at the 0.05 significance level, while H2, H4, and H5 are not supported. In essence, residents' OMI perceptions are influenced by PE, PS, and NN perceptions. The goodness-of-fit statistics of this model were  $\chi^2_{(132)} = 333.507$ ,  $p < .001$ ,  $\chi^2/df = 2.526$ , RMSEA = .061, CFI = .952, TLI = .937, SRMR = .044.

**Table 2** Hypotheses tests (N=412)

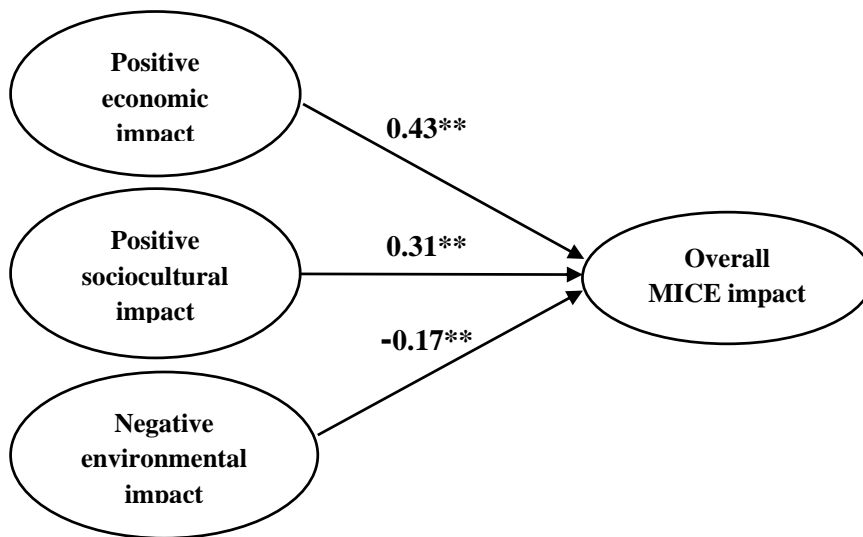
Research hypothesis	Standardized coefficients	t-Value	Results
H1: Positive economic impact → Overall MICE impact	0.382	3.458**	Supported
H2: Negative economic impact → Overall MICE impact	-0.056	-0.514	Not supported
H3: Positive sociocultural impact → Overall MICE impact	0.269	3.027**	Supported
H4: Negative sociocultural impact → Overall MICE impact	0.051	0.866	Not supported
H5: Positive environmental impact → Overall MICE impact	0.134	1.931	Not supported
H6: Negative environmental impact → Overall MICE impact	-0.127	-2.17*	Supported

\* $p < 0.05$ , \*\* $p < 0.01$

Based on a non-significant chi-square value at 0.001 and non-significant hypothesized paths, the original hypothetical model can be improved through revision (Yoon, et al., 2001). Thus, the non-significant paths were deleted for the revised model. Specifically, NE, NS, and PN were deleted from the original conceptual model. Deleting these three paths is consistent with prior studies (Dyer, et al., 2007; Yoon, et al., 2001).

The SEM results of the revised model yield the following goodness-of-fit statistics:  $\chi^2_{(30)} = 50.799$ ,  $p = 0.0102$ ,  $\chi^2/df = 1.639$ , RMSEA = .041, CFI = .990, TLI = .985, SRMR = .025, indicating a good fit of the revised model

to the data. In addition, all the paths in the model are statistically significant in the direction predicted at the 0.05 level. As shown in Figure 2, PE significantly influenced the OMI perception ( $\gamma = 0.43, \rho < 0.01$ ). Perception of positive sociocultural impact significantly influenced the OMI ( $\gamma = 0.31, \rho < 0.01$ ). Perception of negative environmental impact significantly influenced the OMI perception ( $\gamma = -0.17, \rho < 0.01$ ). These results indicated that as residents' PE and PS perceptions increase, their OMI perception increases. In contrast, as residents' NN perception increase, the OMI perception decreases.



**\*\* Significant at 0.01**

**Figure 2** The revised conceptual model

## The moderating effects of involvement

The basic premise of the moderating effects of involvement is that the effects of PE, PS, and NN on OMI differ according to the levels of residents' involvement. The multiple group analysis was performed to test the moderating effects. For this purpose, all 412 respondents were divided into two groups based on the mean of involvement.

As suggested by Kline (2005), the purpose of the first step of the multiple

group analysis was to develop the invariance measurement model across the groups. To test whether the full invariance model, which assumed the invariance of all the parameters across the groups, can be retained as the measurement model, a chi-square difference ( $\Delta\chi^2$ ) test between the configural invariance model and the full invariance model was performed. The results of testing measurement invariance are presented in Table 3. The insignificance  $\Delta\chi^2$  test ( $\Delta\chi^2_{(21)} = 35.933$ ,  $p = 0.02$ ) supported the full invariance model.

**Table 3** Testing measurement invariance

Goodness-of-Fit Statistics	Configural Invariance	Full Invariance
Chi-square ( $\chi^2$ )	64.781	100.714
Degree of freedom ( <i>df</i> )	48	69
P-Value	0.053	0.007
Normed Chi-square ( $\chi^2/df$ )	1.349	1.459
RMSEA	0.041	0.047
CFI	0.990	0.982
TLI	0.985	0.981
SRMR	0.033	0.064

The next step of the multiple group analysis was to develop the structural model with the full invariance model. To evaluate whether the level of involvement moderates the effects of PE, PS, and NN on OMI, the unrestricted model in which the unstandardized path coefficients of PE→OIM, PS→OMI, and NN→OMI were free to estimate across the low and high involvement groups was compared to the equality-constrained model, in which the paths of interest were

constrained to be equal across the groups. The equality-constrained model with full invariance model yielded  $\chi^2 = 325.268$  with 87 degrees of freedom.

Table 4 presents the findings of the multiple group analysis. Regarding the path PE→OIM, there was a significant difference between the unrestricted model and the equality-constrained model ( $\Delta\chi^2_{(1)} = 104.99$ ,  $p < 0.01$ ). This outcome reveals that residents' involvement moderates the influence of

PE on the OMI. The effects of the positive impacts on the OMI were significantly stronger in the low involvement group ( $\beta = 0.62, \rho < .01$ ) than in the high involvement group ( $\beta = 0.32, \rho > .05$ ). Concerning the path PS→OIM, the significance  $\Delta\chi^2$  test ( $\Delta\chi^2_{(1)}=117.648, p < 0.01$ ) suggested that the effect of the PS impact on the perceived OMI was significantly stronger in the high involvement group

( $\beta = 0.66, \rho < .01$ ) than in the low involvement group ( $\beta = 0.28, \rho < .01$ ). Regarding the path NN→OMI, the significance  $\Delta\chi^2$  test ( $\Delta\chi^2_{(1)}=144.301, p < 0.01$ ) suggested that the effect of the NN impacts on the perceived OMI was significantly stronger in the low involvement group ( $\beta = -0.27, \rho < .01$ ) than in the high involvement group ( $\beta = -0.05, \rho > .05$ ).

**Table 4** Results of multiple group analysis: Unconstrained model with full invariance measurement

Path	Unstandardized estimate		$\chi^2$	$\Delta\chi^2$
	Low involvement	High involvement		
PE→OIM	0.62	0.32	220.46	104.99**
PS→OIM	0.28	0.66	207.62	117.64**
NN→OIM	-0.27	-0.05	180.96	144.301**

## Discussion and conclusion

This study contributes to the literature on MICE destination development by examining how residents' perceptions of the overall MICE impact are formed and whether it can be improved. Specifically, this study sought to verify the effects of perceived positive and negative MICE outcomes on evaluations of the overall impact of MICE and to test whether those effects are moderated by residents' involvement.

Drawing conclusions from the two-step SEM approach, the findings revealed that residents' perceptions of positive economic, positive sociocultural, and negative environmental impacts were found to significantly predict their

perception of the overall impact, whereas perceived negative economic, negative sociocultural, and positive environmental outcomes were found to have no significant effects on the perceived overall impact. This should not be surprising since the findings were consistent with those of prior studies (Almeida-García, et al., 2016; Dyer, et al., 2007; Styliadis, et al., 2014; Yoon, et al., 2001), in which residents' evaluations of the consequences of the MICE industry varied. Some perceive only positive aspects, others foresee only negative outcomes, and the remainder predict both positive and negative impacts.

As the SEM yielded a non-significant chi-square value at 0.001, the original conceptual model was revised to improve



the model's fit. Following suggestions from previous studies on tourism development, the non-significant paths were deleted. The results from the CFA and SEM revealed a good fit of the final model, which explains 64.5% of variance in perception of the overall MICE impact. The results of this study support prior studies in that positive effects of positive economic and positive sociocultural impacts on overall impact were found (Dyer, et al., 2007; Stylidis, et al., 2014; Yoon, et al., 2001). This implies that local residents are more likely to evaluate the overall MICE impact positively if they perceive that the MICE industry generates employment opportunities, income, and other economic benefits for the local community, in addition to improving residents' quality of life, increasing demand for historical and cultural exhibits, and providing cultural exchange. Furthermore, this study found that perceived economic benefits have stronger effects than perceived socioeconomic benefit on the perceived overall impact. This supports the argument of Gursoy and Rutherford (2004) that local residents are more likely to focus all their attention on positive economic outcomes over other positive aspects generated by the tourism industry when they perceive that the local economy is enduring poor conditions.

Regarding perceived environmental impacts, several studies have found that residents only predict negative environmental outcomes from the tourism industry (Stylidis, et al., 2014). As discussed by Dyer et al. (2007), if local residents become conscious of negative outcomes, they are more likely to focus attention on them when evaluating the overall impacts of the

tourism industry. Consistent with the prior literature, this study found that in the context of MICE development, residents' perceptions of the overall MICE impact are more likely to be diluted when residents believe that the MICE industry results in more environmental pollution in the community.

Further, the findings from the multiple group analysis reported the difference in the effects of perceived economic, sociocultural, and environmental impacts on the overall impact across different levels of involvement. The residents' perceptions of positive socioeconomic impact had a larger effect on the perceived overall impact when residents' involvement was high. Conversely, perceived negative environmental had more influence on the perceived overall impact when residents' involvement was low. These findings resemble the observation of Almeida-García et al. (2016) that residents who have positive attitudes toward tourism are those who often participate in local community groups or activities. Furthermore, in Lundberg's (2016) study, local involvement was found to influence how residents perceive sociocultural impacts as important aspects when evaluating tourism. In essence, involvement provides local residents with some control over activities in which they participate, leading them to more favorable perceptions of the overall impact (Boley, et al., 2014).

## Implications

The conceptual model developed throughout this study may help local government assess the community



perception of MICE impacts, especially for cities with similar features as Khon Kaen city. It is important to note that residents who perceive the overall impact of MICE to be beneficial, they are tend to support the development of the MICE industry in their communities (Almeida-García, et al., 2016; Gursoy, et al., 2010; T. H. Lee, 2013; Nunkoo & Gursoy, 2012). Drawing from the empirical results of this study, it implies that if local residents have confidence that the MICE industry will provide more jobs and income to the community or other economic benefits, they are more likely to favor MICE development. Even if they believe that the MICE industry has generated negative impacts to the community such as air and noise pollution. Therefore, local government may highlight positive economic benefits of the MICE industry when seeking to gain supports from the community. Having said that does not mean that local government should hide the negative impacts of the MICE industry from local residents. Instead, all possible outcomes should be addressed. MICE city planners should not concern that if residents know about negative impacts, they will against the development. As suggested by the current study, residents who involve in the process of development are tend to favor the MICE industry even if they aware about negative outcomes. Therefore, it is recommended that local governments should provide residents with opportunities to participate in or voice their opinions about MICE development. As being involved in any MICE activities or development processes can direct residents' attention

to the positive consequences of being a MICE destination as well as provide them with some control over activities causing negative outcomes to the community.

## Limitations and future research

It is important to note that there are issues that limit the generalizability of the current study. First, as is the case with convenience sampling, the sample may not represent the larger population. In addition, the study area of this research is restricted to only one city on a particular time. To overcome this aspect, the results of this study should be tested in other MICE cities. Further, this study assumed that the respondents understand the concept of MICE development. However, it has been suggested that the level of tourism knowledge is associated with resident's attitude toward the tourism development. Therefore, future research on this aspect should be extended to examine the backgrounds of residents in terms of the level of MICE knowledge. Moreover, it would be fruitful to examine other factors that can influence residents' perceptions and attitudes toward MICE development.

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