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Understanding the wine tourism experience: The roles of facilitators, constraints and involvement

Abstract:

Understanding the wine tourism experience is indispensable to the development of a wine tourism destination. This study tested an integrated model to obtain a better understanding of the wine tourism experience. The proposed model included both perceived wine tourism facilitators and constraints to examine their effects on wine tourism experience and tested the moderating role of involvement in these effects. Using Chinese outbound wine tourists in Australia as the study sample, this study identified that *winery fame*, *interpersonal facilitators* and *local attractions* are three facilitating factors, while *personal language and transportation barriers* and *time and information barriers* were the perceived constraining factors. Both *interpersonal facilitator* and *local attractions* positively affected wine tourism experience; however, *winery fame* negatively influenced wine tourism experience. The study found that involvement moderated the effects of facilitators/constraints on wine tourism experience. For high-involvement wine tourists, the effect of *local attractions* is pronounced, while *interpersonal facilitator* negatively influences their wine tourism experience. Theoretical and practical implications are discussed.

Keywords:

Facilitators, Constraints, Involvement, Outbound Chinese tourists, Wine tourism, Tourism experience.

1. Introduction

Wine tourism is developing rapidly worldwide (Muntean & Nistor, 2017). Tourists can easily become involved in the cultural and/or physical grape-producing environment by tasting wine, acquiring wine knowledge and experiencing authentic landscape views during their visits (Sparks, 2007). Tourists are likely to extend their length of stay and increase expenditures during their stay to further immerse themselves in the experience shaped by wine tourism (Huang & Gao, 2018). Naturally, a highly involved wine tourism experience has considerable potential in generating economic benefits for a wine tourism destination.

Therefore, a better understanding of wine tourism experience has become critically important and identifying the facilitating and constraining factors of wine tourism experience is an indispensable step towards such an understanding. Currently, most academic studies consider wine tourism experience to be related to the visitor (e.g., group size and visit frequency) and destination (e.g., destination settings and culture) attributes (Charters, Fountain & Fish, 2009; Quadri-Felitti & Fiore, 2012). Nonetheless, scholars have recognized that wine tourism has multifaceted and complex features (Carmichael, 2005), and it is crucial to investigate both the facilitating and constraining conditions in the context of wine tourism, as well as to what extent tourists' psychological involvement level will prompt them to address constraining factors or make good use of facilitating elements.

Despite the importance of constraints in understanding various leisure and tourism behaviors, relatively few studies have systematically incorporated constraints into investigations of emerging wine tourism activities, especially among wine tourists from long-haul markets. Prior wine tourism studies have mainly focused on short-haul or local markets (e.g., Marzo-Navarro & Pedraja-Igesias, 2012), in which constraints may be greatly alleviated due to the geographic proximity between the source market and the destination. Thus, there is a need to address the role of constraints in deterring long-haul wine tourists' fulfilment of desirable wine tourism experiences and to evaluate the behavioral differences between high-involvement and low-involvement wine tourists in their wine tourism experiences.

Travel constraint research originated from leisure studies seeking to understand the effect of leisure constraints on leisure participation. Many studies have focused on constructing conceptual models to explore the relationships between constraints and motivations and travel intentions (e.g., Hung & Petrick, 2012). However, the integration of actual behaviors, which is believed to improve the predictive power for the tourism experience and disclose more in-depth knowledge about the tourism experience, remains unclear (Huang & Hsu, 2009). Moreover, while motivation has been generally accepted as a process that may motivate or enable engagement in the tourism experience, research has failed to draw together the facilitator and the condition itself within a meaningful constraint framework for understanding tourism experience (Raymore, 2002). Nonetheless, if the level of involvement is high, tourists are likely to exert greater effort to overcome barriers and use facilitating conditions to engage in wine tourism activities. By using a framework of intrapersonal, interpersonal and structural facilitators of leisure and tourism activities, this study will enrich the travel constraint framework. Furthermore, evaluating the behavioral differences between high-involvement and low-involvement wine tourists in wine tourism experiences will help enable a better understanding of the effects of constraints and facilitators in such experiences.

Chinese wine tourists travelling to Australian wineries were selected as subjects in the current study. The wine-purchasing power of Chinese customers is currently attracting attention worldwide. Since 2006, China has experienced a substantial increase in wine consumption, while the rest of the world has experienced a decline (Neirynck, 2017). Currently, China is also the number one export destination by value for Australian wine, accounting for 23% of the export value (Wine Australia, 2016). Due to increases in disposable income among the Chinese population and globalization, the number of Chinese wine consumers engaged in overseas wine tasting and wine-related activities is growing. A study conducted by Tourism Australia (2017) found that good food and wine were ranked among the top three considerations by Chinese tourists when selecting a tourism destination. Although attracting Chinese tourists through food and wine tourism can create tremendous benefits for local destinations, most wine producers and tourism administrators do not yet possess due knowledge on how to provide a satisfying wine tourism experience to Chinese tourists (Correia & Brito, 2016). In fact, satisfaction with food and wine among Chinese tourists is quite low (Tourism Research Australia, 2014a).

Therefore, this study seeks to evaluate the effects of facilitators and constraints on wine tourism experience and to assess the moderating effect of involvement in the relationship between facilitators and experience and that between constraints and experience. The study has two main objectives:

1) to test the effects of constraints and facilitators on wine tourism experience; and

2) to assess how wine tourists' involvement level can moderate the relationships between facilitators/constraints and wine tourism experience.

2. Literature review

2.1 Leisure constraints

Constraints are factors that "limit the formation of leisure preference and …inhibit or prohibit participation and enjoyment in leisure" (Jackson, 1993, p.273). Constraints act as barriers to both preference formation and participation behavior and may preclude or limit the frequency, intensity, duration or quality of an individual's leisure activity participation. Therefore, the early and widely accepted assumption is that a constraint leads to leisure nonparticipation (Jackson & Scott, 1999). This statement focusing on absolute nonparticipation was later challenged by Shaw, Bonen and McCabe (1991), as well as Kay and Jackson (1991), who asserted that while constraints have a negative impact on leisure participation, the activation of motivation may relieve the negative effect of constraints.

Efforts to measure constraints have classified constraints into two categories: Participant-related constraints (i.e., intrapersonal, interpersonal) and structural constraints (i.e., external to the participant) (Crawford, Jackson & Godbey, 1991). Intrapersonal constraints play an important role in one's choice or exclusion based on one's beliefs, values, skills, self-concept, and predispositions or other people's expectations. Interpersonal constraints refer to barriers to relationships with friends, family members, and others. Intrapersonal and interpersonal constraints are believed to have the greatest impact on the formation of leisure preferences, while structural constraints are factors that prevent active engagement. This hierarchical leisure constraint model has served as a theoretical framework in numerous leisure and tourism studies. Since this theoretical framework contains a clearly defined constraint hierarchy, it was proposed to sequentially influence an individual's leisure behavior (Crawford et al., 1991). This proposal was empirically tested by Raymore, Godbey, Crawford and von Eye (1993) and later by Hawkins, Peng, Hsieh and Eklund (1999). Both studies "verified that the constraint categories can be replicated and extended with subtle distinction" (Chen et al., 2001, p. 90).

In addition, more contemporary research has demonstrated the importance of other types of constraining factors and the existence of the interaction among constraint categories. Dong and Chick (2012) identified six leisure constraints: Personal value, lack of time and money, family issues, service quality, transportation, stress and lifestyle. Walker and Virden (2005) presented a constraint classification specific to the study of outdoor recreation with a four-part taxonomy of structural constraints as follows: Natural environment structural constraints, social environment structural constraints, territorial structural constraints and institutional structural constraints.

Empirical studies have also found that constraints do not function in isolation but appear to be interrelated (Gilbert & Hudson, 2000). Nadirova and Jackson (2000) discovered the dynamic interaction between these constraints in affecting participation in various activities. The approaches to negotiating those constraints are situated within a broader sociocultural context. Cost- and time-related constraints are regarded as the most common and intensive constraints in many leisure studies (Jackson, 2000).

2.2 Wine tourism constraints

Constraints are important considerations in tourist decision-making. In leisure science, the three categories of leisure constraints conceptually have a negative influence on leisure participation (Jackson, 1993). This three-dimensional model has also been widely applied in tourism research (e.g., Gilbert & Hudson, 2000). However, relatively few investigations have examined constraints specific to wine tourism. Most current research is qualitative, and the reported constraints may influence the wine tourism decision-making process. For instance, one intrapersonal constraint, i.e., personal barriers, is believed to be among the main impediments to wine tourists' trip intentions (Marzo-Navarro & Pedraja-Igesias, 2012; Cho, Bonn & Brymer, 2017). The opinions of friends and family are also one of the major barriers to wine tourists' decision-making, especially when wine regions compete with other possible destinations (Getz & Brown, 2006; Ye, Zhang & Yuan, 2017). Alonso, Fraser and Cohen (2007) found that age influenced the winery experience. Young people were constrained by wine knowledge, and they experienced less when compared with wine tourists over age 56, since senior tourists have life savings and more time as they are often retired (Alonso et al., 2007). Financial burden and geographical distance are also barriers to planning wine tourism trips (Duarte Alonso & Liu, 2010). Marzo-Navarro and Pedraja-Iglesias (2012) found that three layers of constraints influenced potential wine tourists' travel intentions. Axelsen and Swan (2010) found that winemakers' displays, one of the festival attributes in the context of wine and food festivals, distract festival visitors' attention and create a negative wine and food festival experience. Based on this literature, the following hypothesis is proposed:

H1: Perceived constraints to wine tourism have a negative effect on Chinese tourists' wine tourism experience.

2.3 Wine tourism facilitators

Facilitators are driving forces that form leisure preferences and generate/improve participation (Raymore, 2002). Raymore (2002) proposed the following definition: "Facilitators to leisure are factors that are assumed by researchers and perceived or experienced by individuals to enable or promote the formation of leisure preferences and to encourage or enhance participation" (p.39). Raymore also proposed three levels. First, intrapersonal facilitators are the individual characteristics that promote preference formation and participation. Second, interpersonal facilitators refer to individuals or groups that enable, encourage or promote the formation of preference and engagement. Finally, structural facilitators are factors external to the individual that positively influence the formation of preferences and engagement. These external factors include

but are not limited to social and physical institutions, organizations and belief systems in a particular society (Raymore, 2002, p.45-47).

According to leisure studies, facilitators are involved in promoting participation (Kim, Heo, Chun & Lee., 2011). In tourism studies, facilitators are also regarded as a mechanism for encouraging/enhancing tourism activities and for other behavioral intentions (Kim & Heo, 2015; Kim, 2015). Prebensen, Woo, Chen and Uysal (2013) suggested that motivation, including relaxation and socialization, tends to be one of the intrapersonal facilitators that has a positive influence on travel experience. Overcoming self-doubt and gaining the courage to reconnect with the outside world could make the travel experience an achievable goal for travelers with a disability (Yau, Mckercher & Packer, 2004). As for interpersonal facilitators, tourism scholars (Yau et al., 2004; Kim & Tussyadiah, 2013) have documented that social support, especially that from family, friends, and peers, represents an effective relationship facilitator for promoting activity engagement and enhancing tourism experiences. Structural facilitators are believed to exert a positive impact on the tourism experience. In the tourism field, distinctive products address specific consumer needs and result in longer-lasting experiences (Richards & Wilson, 2006).

In the wine tourism context, Alant and Buwer (2004) noted that relaxation and pleasure motives are useful for promoting engagement in wine tourism activities. Moreover, a personal preference for specific wines leads to an intention to experience wine tourism (Brown & Getz, 2005), and the need for relaxation, pleasure and individual preference are related to individual traits and beliefs/intrapersonal facilitators. Therefore, intrapersonal facilitators are assumed to have the power to enrich wine tourism experience. When the level of individual perception or demands is high, the demand to engage in wine tourism activities is expected to be high. Park, Reisinger and Kang (2008) found that the desire to meet new people and to spend time with family are critical interpersonal motivators for wine festival tourists (Park et al., 2008). Ye et al. (2017) also found an evident influence of family on the visitation intention of Chinese wine tourists. Relationship facilitators are therefore believed to have a substantial impact on the intention of wine tourism engagement. Scholars have also characterized wine tourism destinations that offer a wide range of cultural and outdoor attractions as appealing to both wine tourists and potential wine tourists (Getz & Brown, 2006; Marzo-Navarro & Pedraja-Iglesias, 2012). In addition, specific appellation-of-origin preferences positively influence wine tourism destination selection choices (Getz & Brown, 2006, Marzo-Navarro & Pedraja-Iglesias, 2009).

This literature has indicated that internal motives, relationship concerns and external attractions including the features and fame of the destination positively influence the intention of wine tourism trips. Based on the above discussions, we present the following hypothesis:

H2: Perceived facilitators have a positive effect on Chinese tourists' wine tourism experience.

2.4 The moderating role of wine tourism involvement

Involvement is a person's mental processing of information about product

categories (Zaichkowsky, 1985). Involvement is "a psychological state of motivation, arousal, or interest between an individual and recreational activities, tourist destinations or related equipment" (Havitz & Dimanche, 1997, p.246). Zaichkowsky (1985) defined involvement as the extent to which a person associates with an activity or product. Given its focus on the personal relevance of a product or an activity, this perspective is suitable for the current study.

The measurement of involvement has multiple dimensions (Dimanche, Havitz, & Howard, 1991; Gursoy & Gavcar, 2003; Laurent & Kapferer, 1985), and this study adopts five dimensions of Laurent and Kapferer's (1985) framework. These five dimensions have previously been examined in relation to 14 product categories with solid validity and reliability. The five dimensions of involvement include the perceived importance, pleasure value, risk importance, risk possibility and sign value of the product or situation.

Greater involvement is likely to enhance the possibility of purchasing behavior or engagement in activities. Personal motives can be triggered by high involvement, resulting in an active behavior, for example, increased usage of negotiation strategies and engagement in activities (White, 2008; Hubbard & Mannell, 2001). Involvement has also been examined in wine tourism studies (Gross & Brown, 2008; Sparks, 2007; Charters & Ali-Knight, 2002). When involvement levels are high, tourists express a greater desire to participate in wine tourism activities (Charters & Ali-Knight, 2002). High-involvement groups tend to show more positive emotional attitudes towards wine tourism, leading to greater willingness to participate in wine tourism activities (Sparks, 2007). Greater desire and willingness serve as intrapersonal facilitators. Gross and Brown (2008) found that if tourists are highly involved with local products, this structural facilitator, i.e., attachment to a local product, is likely to generate a high level of activity and/or service engagement with local food and wine. Involvement may impact of wine tourism facilitators, and these facilitators may, in turn, have a greater impact on behavioral engagement and on undertaking a wine tourism vacation. Therefore, it is logical to argue that those who are highly involved are more likely to seek wine-related experiences.

H3: The higher the level of involvement is, the stronger the positive effect of facilitators on wine tourism experience will be.

Tourists may be willing to be involved in an activity but may not proceed to participating because of constraints that they encounter (Jackson & Dunn, 1988). If the level of interest or involvement is comparatively high, tourists are empowered to overcome constraints and to exert greater effort towards engaging in activities. June and Kyle (2011) reported that individuals with high involvement in recreational golf make greater use of negotiation strategies to overcome constraints, allowing them to participate in golf activities even when constraints increase. Serious leisure participants or individuals who are highly involved in a specific activity, e.g., celebrity fandom, are more likely to encounter challenges that prevent or inhibit their ongoing engagement (Lee & Scott, 2009). Similarly, wine aficionados exhibit a greater desire to seek winery

experiences involving wine and sustain their participation in wine-related activities than other tourists when faced with constraints (Sparks, 2007). Thus, highly involved individuals tend to persevere and overcome difficulties rather than discontinue their participation. However, because limited research exists to date on the effects of involvement on wine tourist behavior, more evidence is needed to convincingly ascertain such connections.

H4: The higher the level of involvement is, the weaker the negative effect of constraints on wine tourism experience will be.

3. Methodology

3.1 Instrument development

Since the current constraint research shows the importance of other qualitative factors based on the research context and target population, this study moves beyond merely adopting existing constraint categories. Therefore, a comprehensive literature review was conducted to generate a list of items to measure these constructs (Facilitator: Kim et al., 2011; Marzo-Navarro & Pedraja-Iglesias. 2012; Constraint: Cho et al., 2017; Nyaupane & Andereck, 2008; Zhang, Yuan, Ye & Hung, 2013; Involvement: Laurent & Kapferer, 1985; Gursoy & Gavcar, 2003). To better adapt these items to the wine tourism context, in-depth interviews were also conducted. A number of Chinese wine tourists who had traveled to Australia for wine tourism in the past two years were recruited as interviewees. A total of 19 qualified informants were interviewed. Based on the interview findings, the wording of the measurement items was slightly modified and revised, and a few new items were also generated. The revised pool of items was then submitted to a panel of experts composed of experienced academic researchers for further review. Revisions were performed based on the expert panel feedback. Finally, a draft questionnaire was designed consisting of 86 items. All items were designed using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Since tourists engage in experiences accompanied by multiple service offerings and local attractions (Oh et al., 2007), this study used activity and service engagements to identify the experience construct in the context of wine tourism. Based on interviews and the literature, twelve wine tourism activities and services were considered.

A seven-point scale was adopted from the effectiveness measurement framework developed by Weese (1997) and then used to measure the intensity of participation level: 1 = “not at all”; 2 = “a little”; 3 = “somewhat”; 4 = “moderate”; 5 = “mostly”; 6 = “completely”; and 7 = “completely and actively”. The respondents were asked to report on this scale the intensity level with which they participated in the 12 activities during their current wine tourism experience.

3.2 Pilot study and questionnaire modification

The questionnaire was pretested in a pilot study distributed during the Hong Kong International Wine & Spirits Fair in November 2015 and the 5th China (Guangzhou) International Wine & Spirit Exhibition on 15th November in Guangzhou, China. Guests who had previously visited wineries or were interested in wine and planned to go were

eligible survey respondents. To ensure validity and reliability, an exploratory factor analysis (EFA) was conducted on the usable samples (n = 149) from the pilot test. After removing items with low factor loading and cross-loadings, 47 of 86 items were retained after the EFA (i.e., facilitators: n = 14; constraints: n = 7; involvement: n = 14; participation: n = 12). Following feedback from respondents, the wording of some items was revised. After further expert review, the items were finalized in the questionnaire for the main survey.

Data collection were conducted in two Australian states, Victoria and South Australia. Specifically, the Yarra Valley, Mornington Peninsula, and Geelong in Victoria and the Barossa Valley in South Australia were chosen as data collection sites. However, more questionnaires were distributed in Victoria (71.97%) than in South Australia (14.71%). Visitors were approached and asked to fill out the questionnaires after visiting a winery. The questionnaire was administered from December 2015 to February 2016. To encourage participation and to elicit the true feelings and reflections of the respondents, incentives were provided. A total of 539 questionnaires were distributed, and 503 usable questionnaires were returned, resulting in a 93% response rate.

4. Study findings

4.1 Demographic profiles of the respondents

As described in Table 1, more usable questionnaires were obtained from female (60.48%) than male respondents (39.52%). Over half of the respondents were married, and most (88.98%) were between 18 and 55 years of age, with the largest percentage between 26 and 35 (32.87%). In terms of geographical distribution, 61.43% of the respondents were from mainland China, 25.5% were from Hong Kong and Macao, and 13.52% were from Taiwan. This geographical distribution pattern aligned with the statistical percentages of outbound Chinese to Australia (Tourism Research Australia, 2014b). In terms of education level, over half of the respondents had completed a bachelor's degree or above. Personal annual income was evenly distributed in different categories.

The frequency of visits was almost equally distributed, and nearly half of tourists had previous winery travel experience. The majority of respondents were self-driving tourists, accounting for 68.42%. However, according to the observations during the survey, most of the long-haul tourists were not self-driving and depended heavily on local relatives and friends for transport to the wineries. Their local hosts recommended the winery trip and encouraged the respondents to participate. Therefore, local hosts acted as protection bubbles for long-haul tourists to prevent travel barriers. Their travel purposes were to taste excellent wine (61.41%) rather than to have a general travel experience that included wine (38.59%).

[Insert Table 1 here.]

4.2 Measurement of the constructs

The data were assessed for normality, which is an important prerequisite for structural equation modeling (SEM). The absolute values of skewness were between 0.020 and 1.197, and the kurtosis values were between 0.085 to 1.396, indicating that

the univariate normal distribution was not severely violated.

The original dataset was randomly split into two subsets for cross-validation of the measurement. Exploratory factor analysis (EFA) was performed on one subsample (n = 251), while confirmatory factor analysis (CFA) was performed on the other (n = 252). In the EFA, principal axis factoring was used for each of the constructs.

As indicated in Table 2, 11 of the 14 wine tourism facilitator items were retained with satisfactory total variance (66.011%) and eigenvalues. Three intrapersonal items were deleted due to low factor loading (< 0.4), and the structural facilitators were separated into the following two factors: *Local attractions* and *winery fame*. Thus, the wine tourism facilitator factors were accordingly labeled *winery fame*, *local attractions* and *interpersonal facilitators.* With respect to wine tourism constraints, two items were also deleted due to low factor loadings. The remaining 5 items revealed a two-factor solution, each with an eigenvalue greater than 1. The two constraint factors were accordingly labeled *personal language and transportation* and *time and information*. Together, these factors explained 63.546% of the total variance in the constraints measurement (Table 3). For the wine tourism experience, the 12 items constituted a two-factor solution, and the factors were labeled *in-depth wine tourism experience* and *routine wine tourism experience.* An in-depth wine tourism experience included very engaging activities, such as staying overnight at the winery, which required both the energy and time of the wine tourist. The routine wine tourism experience included ordinary activities that almost every winery offers, such as wine tasting. As presented in Table 4, the two-factor solution had an eigenvalue greater than 1 and explained a total of 62.606% of the variance. In terms of wine tourism involvement, the final 14 items generated three factors. Perceived importance was merged with pleasure value and formed factor 1: *Interests towards wine*. Risk possibility and risk importance were merged to form factor 2: *Risk perception of wine tourism/wine*. A sign value was retained after the EFA and was called *status value*. Accordingly, the scale of wine tourism involvement consisted of *interest in wine* (seven items), *risk perception of wine tourism/wine* (five items), and *status value* (two items). Table 5 describes the factors and items with respect to the EFA results for wine tourism involvement.

Insert Table 2 here

Insert Table 3 here

Insert Table 4 here

Insert Table 5 here

CFA was performed to further validate the measurement structure developed by the EFA. The maximum likelihood method was used for model estimation. As shown in Table 6, the standardized factor loadings ranged from .415 to .942. Table 6 also presents the composite reliability of the three factors, which ranged from .698 to .927, indicating the excellent construct reliability of the model (Bagozzi & Kimmel, 1995). The average variance extracted (AVE) was calculated for each construct to estimate the convergent validity, and the results were between .418 and .712 (see Table 7). As noted in Table 7, each of the squared correlations between any two constructs was smaller than the corresponding AVE, thereby confirming the discriminant validity of the measurement scale (Hair, Black, Babin & Anderson., 2010).

The overall model fit was also assessed using various indices. The chi-square test was used to assess the closeness of fit between the model and the data. The χ^2 value was 580.405, and the degree of freedom (df) was 329. The χ^2/df value was 1.764, indicating a satisfactory model fit. The root mean square error of approximation (RMSEA) value was .055, and the comparative fit index (CFI) and Tucker-Lewis index (TLI) were .929 and .919, respectively, further supporting the favorable fit of the model (Hair et al., 2010).

Insert Table 6 here.

Insert Table 7 here.

4.3 Model testing 1: Effects of facilitators and constraints on wine tourism experience

The proposed structural model based on the hypotheses was assessed via path analysis, and the obtained indices suggested a good model fit. Specifically, χ^2 was 1040.811, df was 330 and χ^2/df equaled 3.154. The RMSEA was .066. The CFI and TLI values were .900 and .885, respectively, suggesting a good model fit. The R-squared values of routine experience and in-depth experience were .291 and .202, respectively. This result indicates that both facilitators and constraints explained 29.1% of the total variance in routine experience and 20.2% of the variance in in-depth experience.

As shown in Figure 1, the results of the constraint parameter estimates indicate that language and transportation barriers had a negative influence on experience (β = -.229, $p < .001$ for routine experience; β =.-198, $p < .001$ for in-depth experience). However, time and information constraints did not have a significant effect on wine tourism experience. Thus, H1 regarding the effect of constraints on wine tourism experience was only partially supported for the language and transportation factors.

Figure 1 also presents the results of the parameter estimates indicating that local attractions and interpersonal facilitators had significant and positive effects on the wine tourism experience. Specifically, local attractions had a significant influence on routine (β = .241, $p < .001$) and in-depth experiences (β = .299, $p < .001$). Compared with local attractions, interpersonal facilitators had a slightly stronger effect on routine wine tourism experiences (β = .355, $p < .001$). Interpersonal facilitators also had a positive effect (β = .281, $p < .001$) on in-depth experience. However, winery fame had a significant and negative influence on in-depth experiences (β = -.192, p = .036) and no significant relationship with routine experiences. Therefore, H2 was mostly supported for local attractions and interpersonal relationship facilitators.

Insert Figure 1 here

4.4 Model testing 2: Moderating role of involvement

All the wine tourism involvement items were retained and divided into three subscales with satisfactory factor loadings and eigenvalues (see Table 7). Multigroup analysis was employed to test the moderating effect of involvement. Partial measurement invariance (metric invariance) was established for high and low dimensions of involvement. If the partial measurement invariance was acceptable (Byrne, 2004) for structural invariance testing, the analysis was continued.

The sample was then further divided into high- and low-involvement groups via the following steps. First, three factor scores were generated according to the factor

structure of involvement. Next, each factor's weight was calculated based on the percentage of the total variance it explained. Each factor score was multiplied by the corresponding weight, which generated a summary statistic. Finally, Z-scores were calculated for the newly generated statistics. To conduct a more thorough examination of the group differences, this study considered Z-scores greater than or equal to 0.5 to represent high-involvement wine tourists and Z-scores less than or equal to -0.5 to represent low-involvement wine tourists. The reason for using two extreme elements of the samples was to ensure that there were two subgroups that were bimodal and separated by the moderator (Hair et al., 2010, Chen & Tsai, 2008).

With a degree-of-freedom difference of 2, the fully constrained model exhibited a significant chi-square difference at the $p < 0.001$ ($\Delta\chi^2$ (2) = 131.656) significance level from the unconstrained model, thus indicating the presence of a moderation effect. As shown in Table 8, the effects of local attractions on both routine and in-depth experiences were significant and positive, and the path coefficient for the high-involvement group was greater than that for the low-involvement group. The effect of the interpersonal facilitators on both routine and in-depth experiences was significant. However, the path of the interpersonal facilitator towards both routine and in-depth experiences was negative for the high-involvement group and positive for the low-involvement group. The effects of winery fame on both routine and in-depth experiences were negative. However, the path coefficient was significantly lower among high-involvement tourists than low-involvement tourists. Thus, H3 was partially supported. With respect to the moderating effect between language and transportation constraints and experience, further analysis indicated that the low-involvement group had a negative coefficient, while the high-involvement group had a positive coefficient. Moreover, the effects of the time and information constraints on either the routine or in-depth experiences were insignificant. Therefore, involvement level acted only as a moderator between language and transportation constraints and experiences; thus, H4 is supported with limited evidence.

Insert Table 8 here.

5. Discussion and implications

5.1 Discussion

In this study, the language and transportation dimension had a significant influence on both routine and in-depth experiences. Previous studies on wine tourism constraints have failed to uncover this dimension, perhaps due to their focus on local or nearby markets (Marzo-Navarro & Pedraja-Igesias, 2012; Cho et al., 2017). However, the findings regarding this dimension are consistent with previous studies showing that outbound Chinese wine tourists encounter language barriers in Australia (Ma, Duan, Shu & Arcodia, 2017). Regarding transportation barriers, Cho et al. (2017) highlighted the inconvenient location of wineries, which represents a transportation barrier. However, the former emphasizes the location of wineries (and is therefore a structural constraint), while the latter focuses on tourists' self-driving abilities (and is therefore an intrapersonal constraint).

This study indicated that time and information constraints did not constitute barriers to participating in wine tourism activities. This finding is consistent with the

results of Marzo-Navarro and Pedraja-Iglesias (2009), who found that cost, time, and distance do not act as barriers to the development of wine tourism. However, Ma et al. (2017) found that participants are unable to justify the high cost involved in visiting wineries overseas. This difference occurs because in Marzo-Navarro and Pedraja-Iglesias's (2009) study, the survey respondents were nearby local residents, while Ma et al. (2017) investigated potential domestic wine tourists in China. The present study surveyed actual wine tourists, and the financial cost to visit wineries was not substantial for these individuals since they had already arrived in Australia for various purposes.

With regard to facilitators, each of the three dimensions identified by the study exerted different effects on experience. The study results offer evidence that the structural facilitator local attractions represented a statistically significant factor in predicting participation in wine tourism experiences. Thus, it would appear that local attractions are linked to wine tourists' participation. As Kim (2015) illustrated, tourism facilitators (intrapersonal and structural facilitators) positively influence tourist satisfaction in the context of local community festivals. Although the conceptualization of wine tourism facilitators in this study differs from the tourism facilitators in Kim's study, the facilitator-experience relationship disclosed here showed some similarities with Kim's findings. Since satisfaction is a rational assessment of experience, the findings of this study are consistent with those of Kim in that structural facilitators positively influenced satisfaction and experience. It could be argued that local attractions near a winery tourism destination greatly influence the tourism experience. If a visited winery or wine region appears to have many local attractions, wine tourists will have a pleasant and satisfactory engagement with the winery. This finding indicates that tourists seek opportunities to interact with local hosts or local attractions to enhance their wine tourism experience. This finding is also applicable if other tourism contexts need to design new facilities or to prolong their customers' stay.

By contrast, this study found that facilitators did not always have a positive influence on experience. According to the study results, winery fame negatively influenced in-depth experience and had no apparent relationship with routine experience. Famous or larger wineries were crowded with wine tourists, thereby impeding deeper communication with winery staff. Visitors may have the intention to go to famous wineries but might be unsatisfied with their wine tourism experience after arriving. This finding demonstrates that the positive influence of a facilitator on intention may not be equivalent to its positive influence on the actual experience.

As noted by Charters et al. (2009), smaller wineries offer tourists a hospitable atmosphere and sense of community and appear to have greater potential to build customer loyalty. However, most previous studies (e.g., Marzo-Navarro & Pedraja-Iglesias, 2009) have found only that specific appellation-of-origin preferences positively influence destination selections when participating in wine tourism. This study deepens this understanding by revealing that on-site wine tourism experiences at small- and mid-sized wineries generate positive outcomes. Our findings further indicate that Chinese tourists no longer pursue famous places; instead, they prefer quality communication and a more relaxing atmosphere when seeking an in-depth wine tourism experience. These findings could extend beyond wine tourism and be applied to other

tourism contexts to help provide a better understanding of the Chinese market.

Interpersonal facilitators were found to be the most important influencing factor in terms of a positive influence on the wine tourism experience. This finding indicates that outbound Chinese tourists rely on recommendations from friends or local people. This result is consistent with previous studies suggesting that interpersonal facilitators are associated with enhanced engagement in tourism activities (Shields, Synnot & Barr, 2012). However, this finding contrasts with Kim (2015), who found no apparent linkage between interpersonal facilitators and satisfaction in local festival settings. Such diverse results imply that the influence of perceived facilitators on experience may depend on the specific tourism context of the study. It therefore is necessary to explore the relationship between facilitators and experience in other settings. This difference may also be due to the present study's integration of actual behaviors into the model; the predictive power and the relationship might differ if the intended behavior was integrated into the model.

In terms of the moderating effect of involvement, the effect of local attractions on both routine and in-depth experiences was stronger for high-involvement wine tourists than their low-involvement counterparts. Moreover, the negative influence of language and transport on both routine and in-depth experiences was mostly observed for low-involvement wine tourists; high-involvement wine tourists will still pursue wine tourism experiences irrespective of language and transport difficulties. This result is consistent with previous studies on involvement that have concluded that high involvement in a product category as part of lifestyle and knowledge about the origin of a product or a country's name can have a significant impact on consumer behavior (Maheswaran, 1994).

However, the effect of interpersonal facilitators on both routine and in-depth experience was negative among high-involvement tourists but positive among low-involvement tourists. This finding indicates that interpersonal facilitators facilitate low-involvement tourists' experience with wineries. However, interpersonal facilitators may deter high-involvement tourists from gaining in-depth winery experience, probably because they sacrifice their interests to meet the needs of their friends. Although the results of this comparison conflict with the previous literature, the current findings are still reasonable and justifiable. It could be inferred that low-involvement wine tourists value opinions and suggestions and may be "followers" in wine tourism trips. However, high-involvement wine tourists are determined and have their own activity preferences and travel patterns. Involvement is a critical factor that differentiates consumer behaviors, although high involvement does not necessarily lead to a high level of engagement in consumer behavior. The current finding enriches the understanding of high- and low-involvement comparisons, and future studies are encouraged to explore differences between the high- and low-involvement groups in other dimensions of involvement.

5.2 Theoretical implications

This study indicates a satisfactory model fit for the proposed framework and highlighted the important role of facilitators. Jackson and Scott (1999) identified that motivation played an important role in the constraint model. However, this study found

a stronger influence of facilitators on participation compared with the effect of motivation on intention found in the past literature; thus, facilitators are a positive antecedent of participation. Therefore, this study is among the few studies to apply both facilitating and constraining aspects to investigate tourism experiences, especially in the context of wine tourism. The application of a constraint model indicates that tourism experiences could be influenced by facilitators, constraints and involvement. The Constraint-Effect-Mitigation model has been tested by Hubbard and Mannell (2001). Their model, however, examines motivation using two dimensions, i.e., enjoyment/pleasure motives and health motives. This previous study found that the path linking motivation to intention was not significant. In contrast, the present research recognizes facilitators as an important condition that can strongly stimulate participation. The revised facilitator-constraint-involvement-model provides a better and more efficient approach for explaining leisure and travel behavior.

This study provides a better understanding of the constraints and facilitators encountered by Chinese wine tourists. A good knowledge of this emerging market could aid the initiation of appropriate marketing strategies.

5.3 Managerial implications

Destination marketing organizations (DMOs) should conduct tourist-oriented regional design and planning in wine regions. When designing wine routes within a region, it is important to pay attention to the variety of wineries in terms of their functions and types. This study found that tourists are attracted by multiple wine tourism attractions in a wine region and that one winery cannot provide all the attractive features. Therefore, an effective wine route that combines different types of wineries could greatly improve customer satisfaction. Meanwhile, DMOs should pay attention to guiding wineries in differentiating their functions and marketing positions to prevent products from being assimilated and repetitive.

In addition to overall tourism planning and design, DMOs should pay attention to the detailed implementation. For instance, DMOs should design themed routes and implement the theme throughout the wine tourism itinerary to create an unforgettable experience that includes culture, authenticity and full involvement in the theme. Accordingly, DMOs could design interesting outdoor activities, activities with more opportunities for interaction, and themed festivals and events. This study shows that Chinese tourists focus on interpersonal relationships and reunions with family and friends. Specially designed activities could help wine tourists and their companions engage together and interact with one another. Winery marketing campaigns should stress the importance of wine-related travel in solidifying the ties between family and friends. When designing wine tourism activities, it is important to provide a warm atmosphere of reunion to enhance tourists' emotions through visual lighting and auditory scenes. Currently, wine regions' restaurants and hotel decorations are more Western in style and thus cannot arouse emotional and psychological echoes among Chinese tourists. In the future, attention to the elements of reunion, warmth and joy is urged to provide hints and external promises to potential Chinese tourists.

Congestion frequently occurs in densely populated, famous wineries, while other wineries are visited sporadically by few tourists. Therefore, visitor management is

critical. It is important to strengthen cooperation among different wineries. With famous or large-scale wineries as the center or subcenter, the wine region could be divided into several subcenters. DMOs could utilize the attraction and influence of famous wineries to achieve an orderly tourist flow.

Language and transportation barriers limit Chinese tourists' mobility. Wineries and local wine tourism marketing organizations should thoroughly investigate geographic route patterns in wine regions. Based on those patterns, wine region destination management organizations could design shuttle services to link different wineries within a wine region or enhance the provision of bicycle rental services to allow guests in the wine region to flow more freely. For example, bicycle lanes could be provided for rental bikes to provide opportunities for guests to enjoy their own activities in the wine region by interacting with their friends/companions. In addition, route signs in Chinese should be added along the wine route to better help Chinese customers.

Winery fame has a negative influence on in-depth experiences. Therefore, it is critical to advocate the establishment of small but warm wineries. Not all wineries have the financial ability to establish large-scale or famous wineries. This study shows that small wineries with local environmental characteristics, local cultural features and a sense of authenticity are attractive to Chinese tourists. Small wineries can attract customers through advertising and can collaborate with surrounding famous wineries to facilitate the distribution and routing of customers. This practice can prevent delays in handling tourists' requests in overcrowded wineries and increase tourists' opportunities to interact with locals in cozy, small wineries. Specifically, small wineries can organize in-depth activities, such as providing places for family gatherings, various celebrations, winemaking, and food and wine pairing activities. Such customer participation activities help customers achieve their own personal and unforgettable experiences.

Winery employees should try to learn Chinese culture and language. Alternatively, wineries should consider hiring Chinese-speaking staff to translate travel brochures and menus and to explain the refined elements of wine. The rapid recent and progressive growth in the number of Chinese wine tourists adds urgency to this call (Hogan, 2017). These changes could increase the satisfaction levels of Chinese tourists by, on the one hand, reducing the distance between employees and Chinese wine tourists and creating a warm and enjoyable travel experience for them; and, on the other hand, allowing local employees to have a better understanding of Chinese culture and contribute to their efforts to create an unforgettable travel experience.

6. Conclusion and future research

This study examined the influence of constraints and facilitators on wine tourism experiences and the moderating role of involvement in the wine tourism context. Among outbound Chinese wine tourists in Australia, wine tourism constraints had the following two underlying factors: language and transportation barriers and time and information barriers. Wine tourism facilitators were found to have the following three underlying factors: winery fame, local attractions and interpersonal facilitators. Experience was found to have the following two underlying factors: routine experience

and in-depth experience. The survey measurement items adapted from previous studies were reliable indicators of their respective constructs. Regarding the relationships among the research constructs, the study results showed several direct effects of winery fame on in-depth experiences, of local attraction and interpersonal facilitators on experience (both routine and in-depth) and of language and transportation barriers on experience.

However, a few limitations of the present study should be acknowledged. The convenience sampling method adopted in this study has been criticized for having several biases, although it is the most feasible approach for an onsite survey. Some small- and medium-sized wineries did not host many Chinese wine tourists, while other famous wineries could be visited only by appointment. These restrictions limited the locations where the survey could be conducted. Although the nature of this study made it unfeasible to use a quota sampling method, the different locations and sizes of the wineries were considered, and the survey was conducted on consecutive days of the week in Victoria during the Christmas season, New Year's Day and the pre-Chinese New Year season to reduce bias.

Although the survey was mostly conducted in wineries in Australia, the results of this study are still applicable to Chinese wine tourists visiting other wine regions overseas, such as Bordeaux and Burgundy, since the features of a satisfying in-depth wine tourism experience are universal. Future studies could further investigate and compare wine tourists of other nationalities or cultures. This study found differences between low-involvement tourists and high-involvement tourists. Future studies could consider further subdividing these groups to gain a better understanding of their travel demands and patterns. Finally, this study failed to find a moderator that influenced the relationship between constraints and travel experience. Further research could continue to explore possible moderating factors to provide a deeper understanding of this emerging wine tourism market.

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Table 1: Demographic profiles and travel behaviors (n=503)

Categories	n	%	Categories	n	%
Gender (n=436)			**Wine tourists** (n=497)		
Male	183	39.52	Yes, actual wine tourist	284	57.14
Female	280	60.48	No, but I plan to go (potential)	195	39.24
Marriage(n=428)			Not yet, and no plan in the future	18	3.62
Married	247	57.71	**Frequency** (n=469)		
Unmarried	181	42.29	First-time	234	49.89
Age (n=499)			Repeated	235	50.11
18-25	96	19.24	**Transportation** (n=475)		
26-35	164	32.87	Bus/Coach	150	31.58
36-45	86	17.23	Self-drive	325	68.42
46-55	98	19.64	**Travel purpose** (n=368)		
56+	48	11.02	Excellent wine	226	61.4
Education (n=502)			General travel experience	142	38.59
Primary or below	4	0.80	**Geographical distribution** (n=503)		
Secondary/Foundation	34	6.76	Mainland	309	61.43
Advanced diploma/Certificate /Vocational school/college	68	13.52	Hong Kong & Macao	126	25.05
Advanced diploma/Bachelor	272	54.18	Taiwan	68	13.52
Master	100	19.92			
Doctorate or above	24	4.77			

Table 2: Exploratory factor analysis for wine tourism facilitators (n=251)

Factor and items	Mean	SD	Loading	Eigenvalue	Variance Explained (%)	Cumulative Variance Explained (%)	Cronbach's α
Factor 1: Winery fame				6.780	48.427	48.427	.795
I want to choose winery with good reputation	5.61	1.099	.960				
I want to visit the winery which locates at famous wine region	5.69	1.050	.913				
I want to visit the winery with a certain scale.	5.59	1.144	.954				
Factor 3: Interpersonal facilitators				1.333	9.521	57.948	.720
Partner/family's support encourages me to participate in wine tour.	5.06	1.259	.762				
Local friends' recommendations encourage me to participate in wine tour	4.83	1.385	.946				
Opportunities to meet new friends encourages me to participate in wine tour	4.60	1.432	.838				
Factor 2: Local attractions				1.129	8.062	66.011	.876
I want to attend wine region's cultural activities (e.g. concert).	4.84	1.342	.432				
I want to taste the local specialties offered by Winery.	5.56	1.210	.775				
I want to participate in wine production.	5.36	1.230	.764				
I want to live in stylish accommodation (with local characteristics) near the winery.	4.94	1.502	.874				
I would like to attend the wine tasting courses.	5.21	1.261	.588				

Table 3: Exploratory factor analysis for wine tourism constraints (n=251)

Factor and items	Mean	SD	Loading	Eigenvalue	Variance Explained (%)	Cumulative Variance Explained (%)	Cronbach's α
Factor 1: Personal language and transportation barriers				1.744	34.883	34.883	.637
I have language related barriers	3.99	1.710	.521				
I can't drive to the wine regions.	4.02	1.943	.719				
I cannot taste wine while driving around.	4.12	1.784	.583				
Factor 2: Time and information constraints				1.433	28.663	63.546	.597
I have limited time to stay at wineries /in wine regions.	3.52	1.730	.708				
I have limited information on local wine tourism activities.	4.00	1.460	.599				

Table 4: Exploratory factor analysis for wine tourism experience (n=251)

Factor and items	Mean	SD	Loading	Eigenvalue	Variance Explained (%)	Cumulative Variance Explained (%)	Cronbach's α
Factor 1: in-depth wine tourism experience				7.071	58.924	58.924	.932
Participated in wine making process.	3.53	2.117	.602				
Stayed at winery overnights	3.18	2.156	.636				
Purchased local souvenirs/produce	3.72	2.046	.526				
Attended celebration party at vineyard	3.35	2.073	.908				
Attended themed wine festivals and events	3.43	2.125	.980				
Participated other special interests activities(farm, spa, hot-air balloon-ride etc.) in wine regions	3.14	2.160	.854				
Factor 2: Routine wine tourism experience				1.149	9.579	62.606	.865
Joined wine tasting	4.59	1.733	702				
Visited wine cellar	4.25	1.915	.689				
Dined at winery restaurant(indoor/outdoor)	3.96	2.093	.562				
Learnt about wines/food and wine pairing	4.01	1.903	.772				
Visited vineyard	4.53	1.933	.557				
Purchased wine	4.43	1.949	.517				

Table 5: Exploratory factor analysis for wine tourism involvement (n=503)

Factor and items	Mean	SD	Loading	Eigenvalue	Variance Explained (%)	Cumulative Variance Explained (%)	Cronbach's α
Factor 1: Interests towards wine				5.245	37.466	37.466	.883
I am interested in acquiring wine knowledge	5.272	1.202	.814				
I am interested in attending wine festivals(either food-or wine-related)	5.243	1.258	.730				
Possessing wine knowledge makes me feel confident in the context of social occasions.	5.179	1.300	.700				
Wine drinking makes communication less reserved.	5.318	1.268	.749				
I am willing to share with others my wine tourism experiences.	5.642	1.069	.805				
I will ask for professional advice to avoid buying unsuitable wine.	5.547	1.190	.661				
I will choose familiar/famous wine regions and grapes in order to avoid making a wrong decision.	5.429	1.260	.538				
Factor 2: Risk perception about wine tourism/wine				2.183	15.596	53.061	.770
I will choose familiar/famous wine brands in order to avoid making a wrong decision.	5.183	1.310	.424				
If my trip does not go well, I will be upset.	4.606	1.484	.625				
When choosing wine, I am not certain of my choice.	4.668	1.417	.740				
Deciding on wine tour is rather complicated.	4.109	1.525	.718				
If I choose wine, which does not live up to my expectations, I will feel disappointed.	4.789	1.468	.625				
Factor 3: Status value				1.432	10.230	63.292	.784
In the eyes of others, I have good taste.	4.390	1.339	.744				
I have good wine knowledge.	3.831	1.505	.780				

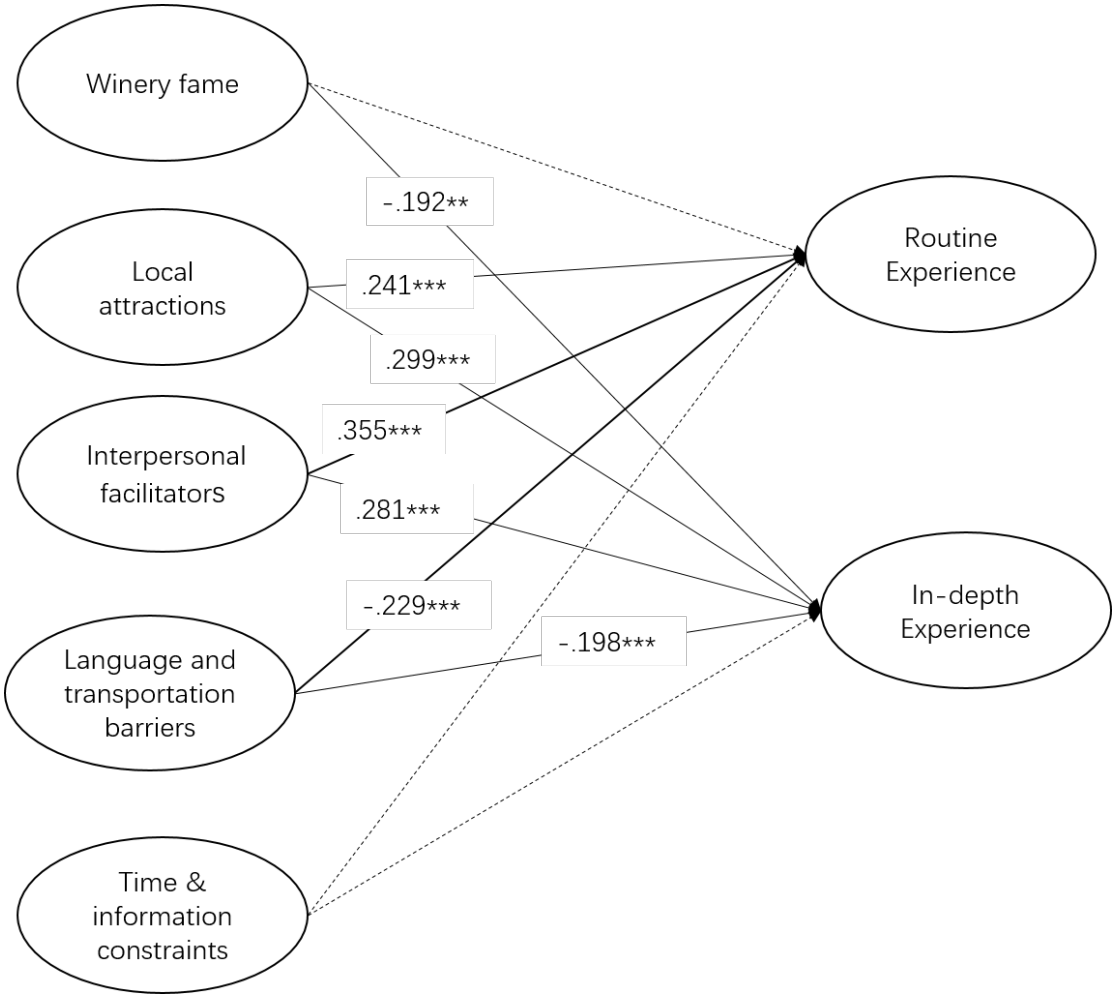
Table 6: Results of the overall measurement model (n=252)

Measurements	Composite Reliability	Standardized Factor Loading
Facilitators		
Factor 1: Winery fame	.880	
I want to choose winery with good reputation		.859
I want to visit the winery which locates at famous wine region		.931
I want to visit the winery with a certain scale.		.729
Factor 2: Local attractions	.803	
I want to attend wine region's cultural activities (e.g. concert).		.579
I want to taste the local specialties offered by Winery.		.704
I want to participate in wine production.		.789
I want to live in stylish accommodation (with local characteristics) near the winery.		.747
I would like to attend the wine tasting courses.		.815
Factor 3: Interpersonal facilitators	.808	
Partner/family's support encourages me to participate in wine tour.		.747
Local friends' recommendations encourage me to participate in wine tour		.768
Opportunities to meet new friends encourages me to participate in wine tour		.776
Constraints		
Factor 1: Personal language and transportation barriers	.698	
I have language related barriers		.519
I can't drive to the wine regions.		.812
I cannot taste wine while driving around.		.634
Factor 2: Time and information constraints	.748	
I have limited time to stay at wineries /in wine regions.		.645
I have limited information on local wine tourism activities.		.89
Experience		
Factor 1: in-depth wine tourism experience	.927	
Participated in wine making process.		.783
Stayed at winery overnights		.759
Purchased local souvenirs/produce		.691
Attended celebration party at vineyard		.942
Attended themed wine festivals and events		.924
Participated other special interests activities (farm, spa, hot-air balloon-ride etc.) in wine regions.		.827
Factor 2: Routine wine tourism experience	.805	
Joined wine tasting		.502
Visited wine cellar		.793
Dined at winery restaurant(indoor/outdoor)		.709
Learnt about wines/food and wine pairing		.771
Visited vineyard		.600
Purchased wine		.415

Table 7: Correlation (Squared Correlation) and Average Variance Extracted (AVE) for the Hypotheses Model

	Winery fame	Local attractions	Interpersonal facilitators	Language & transportation barriers	Time & information constraints	in-depth Experience	Routine experience
Winery fame	1						
Local attraction	.601(.361)	1					
Interpersonal facilitators	.591(.349)	.537(.288)	1				
Language and transportation barriers	.031(.001)	-.053(.003)	.061(.004)	1			
Time and information constraints	.014(.000)	-.056(.003)	.016(.000)	.288(.083)	1		
In-depth experience	.344(.118)	.318(.101)	.320(.102)	-.142(.020)	.022(.000)	1	
Routine experience	.158(.025)	.298(.089)	.207(.043)	-.126(.016)	-.043(.002)	.714(.510)	1
AVE	.712	.535	.583	.444	.604	.682	.418

Figure 1: Final structural model with standardized paths



*: significant at the 0.05 level; **: significant at the 0.01 level, ***: significant at the 0.001 level;

Table 8: Moderating effect of involvement on the conceptual framework

			Low involvement		High involvement		z-stat	Results
			Estimate	P	Estimate	P		
Routine	<---	Winery fame	-0.159	0.248	-1.165	0.013	-2.067**	Supported
Routine	<---	Local attractions	0.319	0.010	3.336	0.000	3.119***	Supported
Routine	<---	Interpersonal	0.550	0.000	-2.509	0.004	-3.452***	Supported
Routine	<---	Language & transportation	-0.244	0.073	0.243	0.240	1.967**	Supported
Routine	<---	Time & information	0.115	0.356	-0.011	0.925	-0.735	Not supported
In-depth	<---	Winery fame	-0.364	0.036	-3.520	0.013	-2.207**	Supported
In-depth	<---	Local attractions	0.505	0.001	9.363	0.002	2.918***	Supported
In-depth	<---	Interpersonal	0.506	0.005	-7.040	0.009	-2.785***	Supported
In-depth	<---	Language & transportation	-0.246	0.135	1.015	0.109	1.928*	Supported
In-depth	<---	Time & information	0.103	0.469	-0.221	0.500	-0.907	Not supported

Note: Note: Z-score >=0.5, n=:180, Z-score <=-0.5, n= 145;