Constraints Segmentation and Wine Tourism: Selecting Target Markets Based upon Consumers' Attitudes and Behavioral Similarities Related to their Intent to Visit Wine Destinations

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◦ *Purpose: This study was conducted to (1) determine if travel constraints specific to wine tourism could be identified and (2) categorized into cluster factors in order to (3) assess their potential as wine tourism market segments for development by wine destination marketing organizations.*

◦ *Design/methodology: Survey instrument for this study was initially developed based upon leisure and travel constraints literature. First, exploratory factor analysis was performed to identify the underlying dimensions of constraints associated with visiting wine regions. Second, based on the similarities of the identified constraints factors, cluster analysis was conducted. Finally, the ANOVA tests were used to examine any potential importance constraints clusters may have for influencing respondent's attitudes and intentions to visit wine regions.*

◦ *Findings: This study identified and categorized five specific constraints clusters representing obstacles facing today's consumers for visiting wine regions. Cluster segments represented categories of market potential based upon various constraints levels and were named "Highly constrained", "Insufficient money and time", "Family togetherness", "Minimally constrained", and "Lack of emotional motivation". Core constraints for visiting wine regions were found to be 'Lack of time, money and interest" and "Lack of emotional motivation." The "Insufficient money and time" and "Lack of emotional motivation" groups demonstrated similar attitudinal preferences and intention to visit wine regions. The "Minimally constrained" segment could possibly represent the most important segment for development into a more engage wine visitor. The "Family togetherness" group should be considered an attractive market segment and presents a motive for wine regions to develop family oriented outdoor products and services.*

Key words: Wine Tourism; Travel Constraints; Constraints Segmentation

1. INTRODUCTION

Wine 'tourism' has been an important motivating factor for the travel industry and especially for destinations located in rural areas. Wine tourism is commonly defined as 'visitation to vineyards, wineries, and wine festivals to experience wine-related products' (Hall et al., 2000). Wine-related trips have emerged as a growing sector of special-interest tourism and are now regarded as playing an essential role in regional tourism development, generation of employment, business growth, and corporate investment (King and Morris, 1997). Wine growing and producing regions can provide positive benefits that generate social, economic and political benefits for wineries, their communities and the overall regions as visits related to wine tourism result in direct visitor spending which creates economic value (O'Neil and Charters, 2000). Therefore, effective target market selection and management to attract visitors to wine regions requires a better understanding of why people visit wine regions and also why others do not.

Toward this direction, a market segmentation approach defined as the process of subdividing a heterogeneous market into distinct homogeneous subsets of travelers has been needed to establish comprehensive tourism marketing strategies (Bruwer et al., 2002). Given this, a very large number of studies in travel and tourism market segmentation widely suggest the use of psychographic factors (motivations to travel; activities, interest and knowledge about a destination) in conjunction with socio-demographic variables (i.e., gender, age, income, educational level, life stages, and family stages) to profile distinctive lifestyles or benefits sought by potential travelers in an effort to better understand the travelers' decision-making process (Hsu et al., 2002; Moscardo et al., 2001; Plog 2002).

By the same token, wine tourism research studies documented in the travel literature have used different and discriminating variables to segment customers based on socio-demographic variables (Dodd and Bigotte, 1997) as well as psychographic variables combined with benefits sought including relaxation, exploration, socializing, learning about wine, interest about wine regions, and involvement with wine (Alant and Bruwer, 2004; Dodd, 1995; Galloway et al., 2008). Wine tourism has focused heavily on the research addressing motivation-based segmentation of visitors to wine destinations. This research has provided much insight into why people desire to visit wine regions (Alebaki and Lakovidou, 2011; Getz and Brown 2006).

Research has also focused upon understanding those reasons why people do not travel. Fredman and Heberlein (2005) proposed that people do not visit an area because of various constraints. Some travel research previously examined constraints and documented that insufficient money, lack of time, lack of information, distance from home, lack of interest, lack of family support, and poor health status represented those primary perceived constraints (Hung and Petrick, 2010; Kim and Chalip, 2004; Pennington-Gray and Kerstetter, 2002). Additional empirical evidence presented in the travel literature documents that travel constraints cause an inability to maintain or increase frequency of travel, and also lead to negative effects on quality of travel (Gilbert and Hudson, 2000; Li et al., 2011; Nyaupane and Andereck, 2008). According to this preceding discussion, segmenting travelers on the basis of constraints should be performed to classify customers into distinct groups with similar perceived travel constraints in order to establish effective marketing strategies designed to overcome their constraints pertaining to visiting wine regions or destinations.

This is because most extant wine tourism studies have contributed extensively in the identification of those driving forces for visiting wineries (Getz and Brown, 2006; Hashimoto and Telfer, 2003), but have not paid much attention to investigate issues related to identifying barriers for visiting wine regions and how they may be addressed from a market segmentation

standpoint. To the best of our knowledge, no wine tourism research has ever been published that presents findings addressing consumer constraints and the utility for segmenting these based upon their attitudes and behavioral intentions towards visiting wine destinations, or engaging in wine tourism. Thus, with the consistent growth of and demand for wine as a product and travel for wine tourism specifically, there is a need for more advanced, in-depth multidimensional segmentation studies in order to identify core constraints factors applied specifically to the wine travel and tourism setting to better understand how these potential wine tourism segments may be developed into actual visitors to wine destinations. Because of this research void in scholarly journals that publish wine tourism research, a more complex research model is needed that explores constraints attributes among a much more complex participant group in order to compare findings to those behavioral patterns of potential wine destination visitors.

Within this context, the study objectives of this paper are fourfold: (a) identify the underlying dimensions representing constraints for visiting wine regions; (b) segment the wine tourism consumer into more detailed subgroups based upon the identified and delineated constraints factors; (c) explore for any differences among the classified constraints subgroups with respect to each constraints dimension; and (d) examine the potential importance those constraints dimensions represent as factors upon each constraints segment for influencing attitudes and intentions to visit wine regions.

2. LITERATURE REVIEW
2.1. Constraints and Wine Tourism

Backman and Crompton (1989) defined constraints as barriers that inhibit peoples' activities. Beginning in the 1980's, a number of research studies were based upon the assumption that a negative relationship existed between constraints and participation. These studies focused upon the effects constraints had upon leisure activity participation (Buchanan and Allen, 1985; Jackson and Searle, 1985; Hung and Petrick, 2010).

Crawford et al. (1991) developed the conceptual model explaining that an individual's desire to participate in leisure activities is inhibited by three constraints dimensions, named *intrapersonal, interpersonal,* and *structural* constraints. *Intrapersonal c*onstraints are defined as individual psychological conditions such as stress, depression, interest, anxiety, religiosity and perceived self-skill which interact with preferences toward a specific activity. *Interpersonal* constraints occur as a result of lack of having family, friends or acquaintances with whom to participate. Specially, interpersonal constraints are more likely to be affected by stage of family life cycle (age, marital status, and presence of children) as they interact with individual preferences for and participation in specific leisure activities. *Structural* constraints represent those factors intervening between preference for and participation in leisure activities and include financial barriers, unavailability of time (the work schedule), inconvenient accessibility and unavailability of opportunities.

A few articles applying the leisure constraints theory to a tourism context have reported findings similar to those found in traditional leisure constraints research (Loverseed 1997; Ross, 1999; Sung, 2004). Specifically, travel constraints studies have focused mostly upon the identification of roles various socio-demographic variables such as gender, age, ethnicity, and stage in family life cycle. Hudson's (2000) study of a ski tourism market found that women had higher intrapersonal constraints (i.e., fear and health concerns) that did men. Fleischer and Pizam (2002) researched travel constraints among Israeli seniors and indicated that leisure time, discretionary income and deteriorating health were the critical barriers for seniors. Hsu and Lam

(2003) identified the main constraints, or barriers that prevented Chinese residents from visiting Hong Kong. Specifically, their research identified five main constraints and included high costs (expense), lack of travel agencies, time (holiday too short), difficulty in obtaining travel documents, and concerns about personal safety.

In terms of the effects of changes in various family life cycle stages, Nickerson and Juroski (2000) emphasized the influences of children on travel patterns and provided a perspective on planning and development with a view to increase child satisfaction at the destination. Nicolau and Más (2005) found that income and household size were the two most important personal restrictions influencing the decision to travel. Nyaupane and Andereck (2008) also found that cost, time, and distance (the area being too far away) were the most important constraints for participation in nature-based tourism activities. These findings are not surprising. Many potential travelers required to pay high costs and invest significantly more time for their trip to and from a destination would likely be constrained by cost and time. Additionally, longer travel distances could require an increased length of stay at the destination resulting in constraints associated with additional spending (Bonn et al., 2005).

Jackson's research (1990) concluded that lack of interest could be the primary constraint distinguishing between those who would like to participate in a new or additional activity from those who would not. Crawford et al. (1991) demonstrated that psychological motivations which attract individuals to a specific activity may prevent them from perceiving high levels of constraints. These findings were in line with Iso-Ahola and Mannell's (1985) seminal proposition that an individual's internal psychological constraints are the most important factors for determining whether or not they decide to participate in leisure activities.

Originally, wine tourism was considered to be 'special interest tourism' defined as active and experiential travel to meet special interest tourists' primary motivations including social interaction, learning more, and improving themselves (Hall et al., 2000). An early study by Jackson (1990) investigated the main motivations for visiting wine regions, and identified a specific segment for this market subsequently named the 'special winery tourist.' Other studies identified motivations for visiting wine regions and included such dimensions as the overall exploration of wine, meeting the winemaker, and learning about wine (Alant and Bruwer, 2004; Carmichael, 2005; Dodd, 1995; Getz and Brown, 2006). Reversely applying the important roles of emotional motivations to the travel constraints framework for wine tourism, the following conclusions can be drawn. People who are most psychologically constrained by lack of interest and knowledge would be less likely to visit wine regions. On the other hands, non-visitors who are interested but are not able to travel to wine regions, fall into the latent demand segment because they could possibly represent future travelers once they have been able to overcome their constraints (Hung and Petrick 2010).

Further, Nadirova and Jackson (2000) proposed that an individual may have different types and levels of constraints and the dynamic interaction between constraints then affects participation. Studies have also supported the position that constraints do not work in isolation. Rather, they appear to be interrelated and thus can be perceived as having different levels of constraints dimensions (Gilbert and Hudson, 2000). Based on this preceding discussion, it is assumed that potential visitors to wine regions represent multidimensional constraints which may differently affect potential visitors' attitudes and intention to visit wine regions. Similarly, understanding the salient evaluative constraints used by potential consumers will provide important information that might be influential in better understanding the formation of an individual's overall attitude and their intention to participate in wine tourism activities.

3. METHODOLOGY

3.1. Data Collection and Measurements

Data for this study were obtained by using a random sampling of email addresses representing consumers over 21 years of age whom had purchased wine from a wine retailer during the prior two months. The survey process followed a method widely accepted in social science and marketing research. 20,000 randomly selected email addresses were initially sent an electronic invitation to complete a survey pertaining to visiting wine regions via a hotlink to a website address. 2,584 completed surveys out of the 20,000 were obtained for a response rate of 12.9%. Out of the 2,584 completed surveys, a total of 503 individuals were directly involved in the wine industry or did not drink wine. These respondents (n=503) were excluded in this study's data set. Thus, a total of 2,081 usable responses were analyzed for this study.

The survey instrument for our study was initially developed based upon a comprehensive review of the constraints literature found in the areas of leisure, recreation and travel (Mitchell et al., 2000; Getz and Brown, 2006). In the survey, constraints were measured by 21 items representing both general travel constraints and specific dimensions of an individual's interest and information pertaining to wine tourism. In terms of measuring an individual's behavioral intention to visit wine regions, four questions were developed to later apply to general tourism behavioral outcome variables (Sparks and Pan, 2009) and consisted of the following statements: (1) I would like to visit wine regions, (2) I often recommend wine regions and wine tours to others, (3) I am willing to pay extra for visiting wine regions, (4) I plan to take a wine-related trip during the next 12 months. In the constraints and behavioral intentions sections, 35 items were measured on a nine-point Likert scale (1 = strongly disagree and 9 = strongly agree). In addition, socio-demographics and wine consumption behavioral measures were collected.

3.2. Analysis

Data were analyzed in four steps. First, exploratory factor analysis was performed to identify the underlying dimensions of constraints associated with visiting wine regions. A reliability coefficient (Cronbach's α) was calculated to check the internal consistency of items with each factor. Second, cluster analysis was used to classify the respondents into homogeneous groups on the basis of the similarities of their identified constraints factors. Also, analyses of variance (ANOVA) procedures were then performed to determine whether statistically significant differences existed between the factor mean scores of each cluster. Third, the differences among clusters in socio-demographic (gender, marital status, education levels, annual income, and generation) and wine consumption patterns were assessed using chi-square tests and ANOVA to validate and develop segment profiles. Finally, the ANOVA tests were used to examine any potential importance constraints clusters may represent as factors for influencing respondent's attitudes and intentions to visit wine regions.

4. RESULTS

4.1. Exploratory Factor Analysis: Construct Validity and Internal Consistency

The exploratory factor analysis with Varimax rotation was used to address the relatively high correlations among the dimensions. Table 1 presents results produced by the factor analysis. Two items with factor loading lower than 0.5 and three items having high cross-loading on other factors were removed. The remaining 16 items were factor analyzed again. That process revealed five factors generated from 16 constraints statements all having eigenvalues greater than 1. This solution accounted for 72.83% of the total variance. The reliability test demonstrated that

coefficients of Cronbach's alpha for all five factors ranged between 0.67 and 0.88, which surpassed the criteria for reliability acceptability.

Factor 1 exhibited most of the variance (19.28%) with a reliability coefficient of 0.88. This factor incorporated four items of constraints related to lack of interest about visiting wine regions. The relatively large proportion of the total variance for this factor might be attributed to the fact that the central distinguishing constraints theme for participating in wine tourism activities was found to be related to 'a low level of interest'. This factor reflects a more emotional motivational deficiency and is labeled as the *'Interest Constraints'* segment. Factor 2 identified information components as constraints for taking a wine-related trip by them due to lack of information and knowledge about wine regions. Four items were loaded on Factor 2, which accounts for 17.14% of the total variance with a reliability coefficient of 0.81. This factor is described as the *'Information and Knowledge Constraints'* segment. Factor 3, explaining 14.79% of the total variance with a reliability coefficient of 0.86, includes three items regarding insufficient money and time. As a result, this factor is named the *'Money and Time Constraints'* segment. Factor 4, accounting for 12.13% of the variance identified physical travel difficulties as constraints for visiting wine regions. This factor includes three items which are mainly related to distance, airport, and roads conditions and is labeled as the *'Accessibility Constraints'* segment. Finally, Factor 5, which explains 9.49% of the total variance, consists of two items related friends or family members unavailable to travel with the respondent for the purpose of visiting wine regions. Based upon these statements Factor 5 is named the *'Social Constraints'* segment.

Table 1. Exploratory factor analysis of constraints for visiting wine regions

Dimensions	Mean	S.D.	Loading	Eigen value	Variance explained (%)	Cronbach's α
Interest Constraints						
I don't invest a great deal in my interest in visiting wine regions	5.499	2.237	.876	3.085	19.278	.882
I don't have a strong interest in wine regions	5.751	2.253	.845			
I am not interest in talking with wine makers	4.681	2.056	.825			
I don't wish to learn more about wine	4.087	2.106	.692			
Information and Knowledge Constraints						
Information about wine regions is difficult to obtain	3.712	1.786	.788	2.743	17.143	.816
Packaged tours are not offered to wine region	3.479	1.833	.737			
I am not knowledgeable about wine regions	4.365	1.857	.690			
The number of travel agencies offering wine tour is limited	4.427	1.879	.667			
Money and Time Constraints						
Moderately priced wine tours are limited	5.107	2.315	.867	2.366	14.789	.856
I can afford to take a wine trip	4.277	2.353	.847			
I have no time to take a wine trip	4.393	2.319	.837			
Accessibility Constraints						
An airport is not nearby wine regions	3.930	1.912	.795	1.940	12.126	.735
Wine region is far away from my home	4.788	2.132	.757			
Good roads are not present throughout wine regions	3.572	1.855	.705			
Social Constraints						
No wide range of activities for my children in wine regions	5.810	2.384	.874	1.519	9.492	.671
No wide range of opportunities for outdoor recreation for my family	4.377	2.054	.808			
Total variance explained					72.827	

4.2. A Cluster Analysis: Classification of Respondents by Constraints Factors

This study conducted two different types of cluster analyses to identify groups of respondents based on similarities in the five factors of constraints to visit wine regions. First, hierarchical cluster analysis with Euclidean distance was performed to determine the best number of clusters. This analysis led to a five-cluster solution for constraints. Second, the K-Means non-hierarchical cluster analyses were employed with the cluster centers from the hierarchical cluster analysis as the initial seed points (Hair et al, 1998).

One way ANOVA tests were conducted to identify significant differences across each of the five constraints factors for the five clusters ($p < 0.000$). The results of the Scheffe post hoc tests showed that statistically significant differences were found between clusters, thus supporting the fact that distinct clusters had indeed been identified (see Table 2).

Cluster 1: *'Highly Constrained'* segment (7.4% of the sample). This group accounted for the smallest sample and was distinguished by the highest mean scores across all the constraints dimensions except for the 'money and time' (6.73b) constraints factor. Thus, this cluster was named as the 'Highly Constrained' group based upon the mean score characteristics pertaining to the identified constraints factors.

Cluster 2: *'Insufficient Money and Time'* segment (21.4%). This group had the highest score on the 'time and money' constraints dimension (7.12a). This cluster was labeled as the 'Insufficient Money and Time' group.

Cluster 3: *'Family Togetherness'* segment (25.9%). This group, representing the largest sample of the respondents, was found to have the second highest mean score on 'social' constraints, but had relatively low mean scores on the rest of the constraints dimensions. Therefore, this cluster was named the 'Family Togetherness' constraints group.

Cluster 4: *'Minimally Constrained'* segment (25.3%). This group had the lowest reported mean scores across all four constraints dimensions. Thus, this cluster was described as the 'Minimally Constrained' segment. This finding indicates that this cluster has the most potential among all other segments for development as a viable 'wine tourism' segment.

Cluster 5: *'Lack of Emotional Motivation'* segment (20%). This group had the second highest mean scores on 'interest', 'information and knowledge' and 'accessibility' constraints dimensions. However this group exhibited a much higher mean score (6.21b) on 'interest' constraints than on 'information and knowledge' (4.46b) and 'accessibility' (4.48b). Therefore, this cluster was named as the 'Lack of Emotional Motivation' group.

Table 2. Constraints factors mean among clusters

Constraints Factor	Cluster 1 'Highly Constrained' ($n = 155$)	Cluster 2 'Insufficient Money and Time' ($n = 445$)	Cluster 3 'Family Togetherness' ($n = 539$)	Cluster 4 'Minimally Constrained' ($n = 526$)	Cluster 5 'Lack of Emotional Motivation' ($n = 416$)	*F*-value
Interest	**7.40a**	5.88c	4.29d	**3.33e**	**6.21b**	511.03***
Information & Knowledge	**6.87a**	4.14c	3.72d	**2.95e**	4.46b	408.54***
Money & time	**6.73b**	**7.12a**	3.18e	**3.50d**	4.31c	785.51***
Accessibility	**6.84a**	3.88c	4.27b	**2.99d**	4.48b	291.25***
Social	**7.23a**	4.96c	**6.79b**	**3.44e**	4.33d	544.02***

4.3. Characteristics of Five Constraints Clusters

The results of the chi-square and ANOVA tests indicated that all clusters were found to be statistically significantly different with respect to respondents' socio-demographic characteristics and wine consumption behavioral variables.

Cluster 1, the 'Highly Constrained' segment was represented by members of this segment that were generally single (66.2%), and educated (58.5%) having earned at least a 4-year college degree. 'Highly Constrained' segment members had the same levels of 'insufficient money and time' and 'lack of emotional motivations'. They reported relatively low annual household income levels (40% earning less than US$50,000) and were young (40% 22-26 years old). Cluster 2, the 'Insufficient Money and Time' constraints segment, represented members that were more likely to be female (65.9%) and single (63.1%). This segment represented the largest percentage of respondents (42.2%) having the lowest annual income level (less than US$50,000). Also, 66% of members in the 'Insufficient Money and Time' cluster segment were between 22-46 years of age. Since the majority of respondents in this low income-producing segment were younger, it makes sense they would be more inhibited by cost and time necessary for visiting wine regions.

Cluster 3, the 'Family Togetherness' constraints segment, were married (74.1%), highly educated (about 70% with at least a 4-year college degree), and wealthy (51.5% earning more than US$100,000). The 'Family Togetherness' segment represented a broad range of age groups with 35.8% being between 47-67 years old followed by the age groups of over 67 (24.1%) and between 27-46 (22.1%). Cluster 4, the 'Minimally Constrained' segment appeared to be similar to the 'Family Togetherness' segment regarding gender, education and annual income levels. However, contrary to the 'Family Togetherness' segment, half of the 'Minimally Constrained' segment members were single (49.8%). Also, the proportion of young people (22-26 years old) was higher (23.2%) while the percentage of old people (67 years and older) was lower. Cluster 5, the 'Lack of Emotional Motivation' segment included more female respondents (60.6%) than male (39.4%) with half of this segment being married (50.7%). They were educated (59% with at least a 4-year college degree) and wealthy (41.2% earning more than US$100,000).

It was found that three cluster segments reported having visited a wine region at least one time. In fact, Cluster 2, 'Family Togetherness' (91.8%), Cluster 4, 'Minimally Constrained' (85.4%), and Cluster 5, 'Lack of Emotional Motivation' (74.5%) all reported high levels of prior experience visiting wine regions. Comparatively, 53.6% of the 'Highly Constrained' segment and 66.5% of the 'Insufficient Money and Time' segment had previous experience visiting wine regions.

In terms of wine consumption behavioral characteristics, significant differences were found among all five constraints cluster segments. Frequency of drinking wine in the 'Highly Constrained' segment (38.1% drinking wine less than once a month) was significantly lower than all other cluster segments. The 'Lack of Emotional Motivation' segment reported drinking wine between once and three times a month (42.7%). More than half of the segments representing 'Family Togetherness' (59.6%) and 'Minimally Constrained' (54.5%) reported drinking wine more than 3 times a week. With respect to wine drinking duration, the 'Family Togetherness' segment reported the greatest numbers of years for drinking wine (16.19a years).

4.4. Comparison of Segmented Clusters' Attitudes and Behavioral Intentions to Visit Wine Regions

The five segments reported in this study were generated based upon each cluster segment having different types of constraints. One-way ANOVA analyses were conducted to

examine the differences among the identified constraints groups using a series of dependent variables contained in the survey that represented attitudes and behavioral intention. The ANOVA tests indicated that there were significant differences for all four dependent variables across all five constraints group (Table 3). As expected, the 'Minimally Constrained' cluster segment showed the lowest mean scores on all four dependent variables while the 'Highly Constrained' cluster segment had the highest mean scores on all dependent variables. 'Family Togetherness' reported the highest preference for visiting wine regions (7.04a) and had the second highest scores on willing to recommend (5.97b), willingness to pay extra (6.31b) and intent to visit wine regions (6.06b). These findings indicate that this cluster has the greatest potential to become the most important market segment if they can overcome their constraints.

Comparatively, the constraints cluster segment 'Lack of Emotional Motivation', showed the same level of preference (5.66b) for visiting a wine region as did the 'Insufficient Money and Time' (5.71b) cluster segment. However, the mean scores for willing to recommend (4.35c), willingness to pay extra (5.05c), and intention to visit wine regions (4.60c) were higher than those reported by (3.98c, 4.43d and 3.59d, respectively) the 'Insufficient Money and Time.' segment. This result supports previous findings that expensive costs and lack of time were the primary constraints to travel (Nyaupane and Andereck, 2008). In addition, this finding implies that despite having no interest in wine tours, this segment could become loyal customers if wine regions and/or wine destinations offer various services to arouse the interest of the "Insufficient Money and Time' cluster segment.

Table 3. Comparison of clusters' attitudes and behavioral intention to visit wine regions

	Highly Constrained	Insufficient Money and Time	Family Togetherness	Minimally Constrained	Lack of Emotional Motivation	F-value
Preference	3.33c	5.71b	7.04a	7.31a	5.66b	235.31***
Recommendation	2.81d	3.98c	5.97b	6.60a	4.35c	216.79***
Willingness to pay extra for winery tours	2.89e	4.43d	6.31b	6.84a	5.05c	219.33***
Intent to visit wine regions during the next 12 months	2.84e	3.59d	6.06b	6.71a	4.60c	256.45***

5. CONCLUSIONS

This study was conducted to enhance the existing body of knowledge addressing constraints related to travel, and specifically applied to wine tourism. A recent study addressing constraints research applied to participation and non-participation involving cruises by Hung and Petrick (2010) provided much direction for this research through the development of their constraints measurement scales. Although those scales were specific to the activity of cruising, the researchers believed their scales could be customized for application to other travel-related activities. Thus, a customized scale was modified using the cruise constraints scale as a point of reference, to successfully measure constraints related to visiting wine regions. Furthermore, consumer data obtained using the wine constraints scale, was shown to successfully segment consumers into five mutually exclusive cluster factors according to their various levels of constraints. This success enabled our study to build upon prior constraints research needs to be able to classify customers into distinct groups with similar perceived travel constraints in order to

establish effective marketing strategies designed to overcome their constraints pertaining to visiting wine regions or destinations.

Providing a better understanding of why people visit wine regions assists those wine region businesses in their marketing efforts to select, develop and manage effective target markets designed to attract the best visitor segments to wine regions. Historical wine tourism research has provided much useful information pertaining to the issue about why consumers travel to wine regions. Conversely, this research explores the opposite position. This study successfully identified a number of specific constraints that prevent today's consumer from visiting wine regions, and then segmented consumer groups according to levels of their various constraints into sub-groups representing different levels of market potential. Findings clearly identify existing opportunities for creating strategies designed as inducements to engage these potential wine tourists.

Five distinct consumer groups were successfully identified and examined in great detail to determine their potential and appropriateness for development into viable visitor markets related to wine region travel. The cluster analysis results confirmed the logic from a marketing perspective to eliminate consumers classified within the 'Highly Constrained' segment as possibilities for immediate market development efforts. On one positive note, it was interesting to learn that the 'Highly Constrained' segment actually accounted for the smallest constraints group (percent of overall sample) representing just 7.4% of all study participants. This segment's lowest rankings for their attitudes and intention to visit wine destinations confirmed it would be much more effective to concentrate on the four remaining clusters because of these challenges.

Turning attention to study findings where cluster segments exhibited more actionable results for developing into visitor markets, it was noted that Cluster 2 and Cluster 5 were very similar overall in segment size, accounting for slightly over 40% of the entire sample. Results also identified that because of shared similarities with attitudinal, behavioral and demographic characteristics, these two clusters were deemed noteworthy as having some development potential and further attention should be given to these clusters.

Cluster 2 'Insufficient Money and Time' and Cluster 5 'Lack of Emotional Motivation' both demonstrated similar attitudinal preferences with respect to 'visiting wine regions' and 'often recommending wine regions and wine tours to others'. They resembled each other very closely with respect to numbers of years drinking wine and also what they paid on average when purchasing a bottle of wine. Other evidence suggests that although somewhat similar in gender (male), age (27-46 years old), and education (university), the "Insufficient Money and Time" cluster represented the segment with the lowest overall household income. And although this segment reported having visited wine regions, they did so in much lower percentages compared with the 'Lack of Emotional Motivation' cluster. Marketing executives should take note of these similarities shared by Clusters 2 and 5 and develop opportunities for these clusters for visiting during non-peak tourist seasons, perhaps with a group of other similar wine enthusiasts. Single, younger males having earned university degrees could be targeted by offering packages through university alumni associations, perhaps combined with other activities they may enjoy together such as attending festivals, events, musical performances, and sporting events.

Cluster 4, the 'Minimally Constrained' segment, could possibly represent the most important segment for development into a more engaged wine visitor. This relatively young, largely single group of individuals outspent all other cluster segments on the average price paid when purchasing a bottle of wine. They drank wine regularly (over 3 times each week), and could well-afford doing so, as they accounted for the greatest percentage of individuals earning

over $300,000 annually, by category. Finally, two of the most desirable qualities for marketing organizations to capitalize upon are that (1) 'Minimally Constrained' segment members reported the second highest percentage of having previously visited wine regions and (2) represented the cluster segment documenting the least amount of constraints. This segment's stage in life, combined with their income, buying behavior and propensity to have already traveled to wine regions presents an enthusiastic group of wine visitors most destinations should creatively pursue.

Cluster 3, represented by the name, 'Family Togetherness', also should be considered a very attractive market segment. This was the largest segment according to overall percent of respondents, and reported the second highest scores on social constraints related to a wine region's lack of activities for other members of their family. This supports findings from prior research (Nickerson and Jurowski, 2000), pertaining to the effect family life cycle has upon family vacation destination selection. The implications for wine region marketing organizations is that the 'Family Togetherness' cluster presents a motive for wine regions to develop family oriented outdoor products and services to compliment the adult's motives for selecting wine regions. This is obviously accomplished in some wine destinations much easier than in others due to the abundance of natural resources. For instance, New Zealand's North Island, where vineyards produce outstanding Chardonnay, Sauvignon Blanc, and Pinot Noir grapes, 'Black Water Rafting' is a highly sought-after activity for families during a vacation to this wine region. Underground limestone caverns provide rafts for visitors to float through a series of underground rivers in total darkness except for lights attached to required protective head gear reminiscent of the apparatus worn by coal miners.

Other demographics for the 'Family Togetherness' cluster report high annual household income levels, highly educated consumers representing a broad range of age groups. Behaviorally, this cluster also is attractive as a prospective travel group because they are the leading segment for wine-drinking frequency and also for numbers of years' experience with drinking wine. Wine marketing organizations should give the most thought to attracting 'Family Togetherness' group members because larger party sizes of travelers typically result in the highest levels of economic impact through direct spending patterns.

In conclusion, results from this study addressed constraints for visiting wine regions because although most extant wine tourism studies have contributed extensively in the identification of those driving forces for visiting wineries (Getz and Brown, 2006; Hashimoto and Telfer, 2003), most others have not paid much attention to investigating issues related to identifying barriers for visiting wine regions and how they may be addressed from a market segmentation standpoint. To the best of our knowledge, no wine tourism research has ever been published that presents findings addressing consumer constraints and the utility for segmenting these based upon their attitudes and behavioral intentions towards visiting wine destinations, or engaging in wine tourism.

This research presents a first time identification and examination of constraints associated with travel to wine regions. More research in this area is needed to expand the dimensions representing constraints faced by today's wine region travelers. Although this study's results were generated from a population of respondents obtained from a large list of consumers having purchased wine through retail operations, a more representative sampling of all consumers should prove to generate quite different constraints clusters. It is the intent of this research to encourage other scholars interested in this field of wine research to continue the journey towards a better understanding of constraints for travelling to wine regions.

REFERENCES

Alant, K., and Bruwer, J. (2004), "Wine tourism behavior in the context of motivational framework for wine regions and cellar doors," *Journal of Wine Research,* 15 (1), 27-37.

Alebaki, M., and Lakovidou, L. (2011), "Market segmentation in wine tourism: A comparison of approaches," *Tourismos,* 6 (1), 123-140.

Backman, S.J., and Crompton, J.L. (1989), "Discriminating between continuers and discontinuers of two public leisure services," *Journal of Park and Recreation Administration*, 7 (4), 56-71.

Bonn, M. A., Furr, H. L., and Dai Mo (2005), "Economic growth and recession time periods: their effect upon pleasure travelers visiting Florida theme parks," *FIU Hospitality and Tourism Review,* 23 (2), 19-32.

Brown, G., and Getz, D. (2005), "Linking wine preferences to the choice of wine tourism destinations," *Journal of Travel Research,* 43 (3), 266-276.

Bruwer, J., Li, E., and Reid, M. (2002), "Segmentation of the Australian wine market using a wine-related lifestly approach," *Journal of Wine Research,* 13 (3), 217-242.

Buchanan, T., and Allen, L.R. (1985), "Barriers to recreation participation in later life cycle stages," *Therapeutic Recreation Journal,* 19 (3), 39-50.

Carmichael, B. (2005), "Understanding the wine tourism experience for winery visitors in the Niagara regions, Ontario, Canada," *Tourism Geographies,* 7 (2). 185-204.

Crawford, D.W., Jackson, E.L., and Godbey, G. (1991), "A hierarchical model of leisure constraints," *Leisure Sciences,* 13 (4), 309-320.

Dodd, T.H. (1995). "Opportunities and pitfalls of tourism in a developing wine industry," *International Journal of Wine Marketing,* 7 (1), 5-16.

Dodd, T.H., and Bigotte, V. (1997). "Perceptual differences among visitor groups to wineries," *Journal of Travel Research,* 35 (3), 302-308.

Fleishcer, A., and Pizam, A. (2002), "Tourism constraints among Israeli seniors," *Annals of Tourism Research,* 29 (1), 106-123.

Fredman, P., and Heberlein, T.A. (2005), "Visits to the Swedish mountains: constraints and motivations," *Scandinavian Journal of Hospitality and Tourism,* 5 (3), 177-192.

Galloway, G., Mitchell, R., Getz, D., Grouch, G., and Ong, B. (2008), "Sensation seeking and the prediction of attitudes and behaviors of wine tourists," *Tourism Management,* 29 (5). 950-966.

Gets, D., and Brown, G. (2006), "Critical success factors for wine tourism regions: A demand analysis," *Tourism Management,* 27 (1), 146-158.

Gilbert, D., and Hudson, S. (2000), "Tourism demand constraints- A skiing participation," *Annals of Tourism Research,* 27 (4), 906-925.

Hall, C.M., Sharples, L., Cambourne, B., and Macionis, N. (2000), *"Wine tourism around the world: Development and markets,"* Oxford: Butterworth-Heinemann.

Hashimoto, A., and Telfer, D.J. (2003), "Positioning an emerging wine route in the Niagara regions: Understanding the wine tourism market and its implications for marketing," *Journal of Travel & Tourism Marketing,* 14 (3/4), 61-76.

Hair, J., Anderson, R., Tatham, R., and Black, W. (1998), *"Multivariate data analysis,"* 5th ed., Prentice-Hall Inc, Upper Saddle River, NJ.

Hsu, C.H.C., Kang, S.K., and Wolfe, K. (2002), "Psychographic and demographic profiles and Niche market leisure travelers," *Journal of Hospitality and Tourism Research,* 26 (1), 3-22.

Hsu, C.H.C., and Lam, T. (2003), "Mainland Chinese travelers' motivations and barriers of visiting Hong Kong," *Journal of Academy of Business and Economics,* 11 (1), 60-67.

Huang, S., and Hsu, C.H.C. (2009), "Effects of travel motivations, past experience, perceived constraint, and attitude on revisit intention," *Journal of Travel Research,* 48 (1), 29-44.

Hudson S. (2000), "The segmentation of potential tourists: Constraint differences between men and women," *Journal of Travel Research,* 38 (4), 363-368.

Hung K., and Petrick J.F. (2010), "Developing a measurement scale for constraints to cruising," *Annals of Tourism Research,* 37 (1), 206-228.

Iso-Ahola, S.E., and Mannell, R.C. (1985), "Social and psychological constraints on leisure," In M.G. Wade (eds.), *Constraints on Leisure.* Springfield, IL: Charles C. Thomas.

Jackson, E.L. (1988), "Leisure constraints: A survey of past research," *Leisure Sciences,* 10 (3), 203-215.

Jackson, E.L. (1990). "Variations in the desire to begin a leisure activity: Evidence of antecedent constraints?" *Journal of Leisure Research,* 22 (1), 55-70.

Jackson, E.L., and Searle, M.S. (1985), "Recreation non-participation and barriers to participation: Concepts, and models," *Society and Leisure,* 8 (2), 693-707.

King, C., and Morris, R. (1997), "Wine tourism: A western Australian case study," *Australian & New Zealand Wine Industry Journal,* 12 (3), 246-249.

Kim, N., and Chalip, L. (2004), "Why travel to the FIFA World Cup? Effects of motives, background, interest, and constraints," *Tourism Management,* 25 (6), 695-707.

Lee, T.H., and Chang, Y.S. (2012). "The influence of experiential marketing and activity involvement on the loyalty intentions of wine tourist in Taiwan," *Leisure Studies,* 31 (1), 103-121.

Li, M., Zahng, H., Mao, I., and Deng, C. (2011), "Segmenting Chinese outbound tourists by perceived constraints," *Journal of Travel & Tourism Marketing.* 28 (6), 629-643.

Loverseed, H. (1997), "The adventure travel industry in North America," *Travel and Tourism Analyst,* 6, 87-104.

Moscardo, G. Pearce, P., and Morrison, A.M. (2001), "Evaluating different bases for market segmentations: A comparison of geographic origin versus activity participation for generating tourist market segments," *Journal of Travel and Tourism Marketing,* 10 (1), 29-50.

Mitchell, R., Hall, C.M., and McIntosh, A. (2000). "Wine tourism and consumer behavior," In: C.M. Hall, L. Sharples, B. Cambourne and N. Macionis (eds), *Wine Tourism Around the World*: *Development, management and markets,* Oxford: Elsevier Science, pp. 115-135.

Nadirova, A., and Jackson, E.L. (2000), "Alternative criterion variables against which to assess the impact of constraints to leisure," *Journal of Leisure Research,* 32 (4), 396-405.

Nickerson, N.P., and Jurowski, C. (2000), "The influence of children on vacation travel patterns," *Journal of Vacation Marketing,* 7 (1), 19-30.

Nicolau, J.L., and Más, F.J. (2005), "Heckit modeling of tourist expenditure: Evidence from Spain," *International Journal of Service Industry Management,* 16 (3), 271-293.

Nyaupane, G.P., and Andereck, K.L. (2008), "Understanding travel constraints: Application and extension of a leisure constraints model," *Journal of Travel Research,* 46 (4), 433-439.

Nyaupane, G.P., Morais, D.B., and Graefe, A.R. (2004), "Nature tourism constraints: A cross-activity comparison," *Annals of Tourism Research,* 31 (3), 540-555.

O'Neil, M.A., and Charters, S. (2000), "Service quality at the cellar door: Implications for Western Australia's developing wine tourism industry," *Managing Service Quality,* 10 (2), 112-122.

Pennington-Gray, L.A., and Kerstetter, D.L. (2002), "Testing a constraints model within the context of nature-based tourism," *Journal of Travel Research,* 40 (4), 415-423.

Plog, S.C. (2002), "The power of psychographics and the concept of venturesomeness," *Journal of Travel Research,* 40 (3), 244-251.

Ross, K. (1999), "Exploring the world of adventure travel," *HSMAI Marketing Review,* 16 (2), 10-13.

Sparks, B., and Pan, G.W. (2009), "Chinese outbound tourists: Understanding their attitudes, constraints and use of information sources," *Tourism Management,* 30 (4), 483-494.

Sung, H.H. (2004), "Classification of adventure travelers: Behavior, decision making, and target markets," *Journal of Travel Research,* 42 (4), 343-356.

Woodside, A.G., Krauss, E., Caldwell, M., and Chebat, J. (2007), "Advancing theory for understanding travelers' own explanations of discretionary travel behavior," *Journal of Travel & Tourism Marketing,* 22 (1), 15-35.