

出國報告（出國類別：國際會議發表論文）

# 探討台灣閩南人、客家人及美國安格魯薩 克遜人遊憩型態之不同

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## 中文摘要

我在 2012 年遊憩與保護區遊客監控與管理國際研討會 (MMV 2012) 發表兩篇論文。論文研究目的在於檢視不同文化族群之森林遊客，包括台灣族群中的閩南族群、客家族群和美國的安格魯薩克遜族群，其社會人口統計資料、戶外遊憩活動、價值觀以及滿意度之差異性。本研究於 2011 年，對前往台灣八仙山國家森林遊樂區和台灣奧萬大森林遊樂區，與美國奧勒岡州 Mt. Hood 國家森林遊樂區之遊客現地問卷調查，並將此三地點調查所得資料合併分析討論。由於三個國家森林遊樂區皆幅員廣闊，如果對所有遊客採取隨機抽樣將無法獲得足夠的問卷數量來做比較。所以本研究採便利抽樣之方法，使研究能夠順利進行。本研究一共蒐集到 1251 份有效問卷，其中閩南人為 525 份、客家人 102 份而美國安格魯薩克遜人為 624 份。其中在美國奧勒岡州 Mt. Hood 國家森林遊樂區之遊客調查，我們與 West Virginia University 之學者合作，並於在瑞典舉行之 MMV 2012 國際研討會，共同發表口頭報告論文及海報報告論文。

研究結果顯示社會人口統計變項如年齡、性別、教育程度以及薪資在閩南人、客家人與安格魯薩克遜人等森林遊憩遊客有顯著不同。另外，在 12 項戶外遊憩活動參與中，三個族群有 10 個問項達顯著差異。在價值觀方面，9 個問項中有 8 個問項在三個族群中達顯著不同。在遊客滿意度方面，全部 16 個滿意度問項在三個族群中皆達顯著差異，且有 6 項滿意度問項之  $\eta$  值大於 0.30，表現很高的解釋力。此外，本研究同時發現安格魯薩克遜族群跟其他兩個族群的差異性較大。本研究意涵在了解東西方跨文化之戶外遊憩遊客之間的差異，並探討解釋差異之原因。對此，我們未來研究將持續針對東西方跨文化相關研究作更深入的探究與討論，以期提出具體建議，供森林遊樂之經營管理參考。

## 英文摘要

I presented two papers in the 2012 International Conference on Monitoring and Management Visitor Flows in Recreational and Protected Areas (MMV 2012 conference). The purpose of the presentation was to examine the socio-demographics, activities, values, and satisfaction differences among three cultural/ethnic groups: Taiwanese Hoklo, Taiwanese Hakka, and Anglo-American forest recreation visitors. In 2011, we surveyed visitors to Basianshan National Forest Recreation Area and Aowanda National Forest Recreation Area in central Taiwan as well as the Timberline Lodge Recreation Complex in the Mt. Hood National Forest Recreation Area in Oregon, U.S.A. Because the national forest areas were vast, a simple random sample of all visitors within the setting would not yield an adequate number of respondents for comparisons. Accordingly, we used a purposive on-site convenience sampling approach at sites known to be heavily used by visitors. Overall, we obtained 1251 usable questionnaires, with 525 Taiwanese Hoklos, 102 Taiwanese Hakkas and 624 Anglo-Americans. We collaborated with the scholars from West Virginia

University, U.S.A. for data collection at the Mt. Hood National Forest Recreation Area in Oregon, U.S.A. and coauthored for both oral and poster paper presentation at the MMV 2012 conference in Sweden

The results showed that socio-demographic variables such as age, gender, education and income were significantly different between Taiwanese Hoklo and Hakka and Anglo-American forest recreation visitors. Ten out of the 12 recreation “activities participated in” differed among the groups. For visitor values, 8 out of 9 measures differed among groups. And for visitor satisfaction, the 16 satisfaction measures all differed among groups, with 6 out of the 16 measures showing strong associations, as indicated by the Eta values. We also found the main differences for the measures examined were between the Anglo-Americans and the others. The findings indicate cross-cultural differences between eastern and western forest recreation visitors. Therefore, we further explored the factors influencing these cross-cultural differences. Management implications and future research in this line were also discussed in the presentation.

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## 目的

在瑞典斯德哥爾摩舉行的 2012 年遊憩及保護區遊客監測與管理研討會(MMV 2012) 是關於遊客在遊憩區的監測與管理相關議題，並提供相關研究者就遊憩與保護區管理想法交流的論壇。此研討會主要討論重點放在政策、解決問題、如何實踐與創新的解決方案，所有與會者皆歡迎參與討論。MMV 研討會為目前戶外遊憩與公園管理領域中最重要的研討會之一，除了公開口頭與海報發表之外，還有提供論文集來記錄完整會議過程。此新興國際會議吸引了來自世界各地共 38 個國家的與會者。我參與口頭與海報發表 (完整論文如附錄)，此外我亦擔任研討會中圓桌會議小組中的小組成員。在這幾天的會議參與中，我與在此領域的重要學者如 Dr. Robert Manning、Alan Graefe 和 Thomas Heberlein 有愉快且良好的交流與討論。Dr. Alan Graefe 同時也是我在美國賓州州立大學博士班口試答辯委員會的成員之一，我們一直有很好的合作。我延續我在美國賓州州立大學博士班之後的研究並以共同作者的形式論文發表，詳細發表文題目及作者如下：

### 口頭發表論文題目及作者

題目:

Exploring recreation pattern differences among Taiwanese Hoklos and Hakkas and Anglo-Americans  
探討台灣閩南人、客家人及美國安格魯薩克遜人遊憩型態之不同

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The Pennsylvania State

### 海報發表論文題目及作者

題目:

Cross-cultural Models of Customer Services: The Case of Taiwan and U.S. Forest Recreation Visitors  
遊客服務之跨文化模式: 以台灣與美國之森林遊客為例

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## 過程

除了口頭發表之外，我和我的博班研究生王青怡(目前就讀於國立中興大學)也一起參與了海報發表。我在最後一天的圓桌小組會議” **Addressing challenges in managing recreation in protected areas: A cross-cultural approach**” 中擔任小組成員。此外亦參加了會中舉辦的實地考察，與會人員實地參觀瑞典的 Tyresta National Park 和 Nämndö Island (如圖 4、5、6、7、8 和 9)，學習到瑞典如何管理國家公園和海岸帶環境的方法與策略。整體而言，每位會議參與者之間都有很高的互動與想法交流，包含經驗與社會網絡的分享。本次會議非常令人印象深刻與難忘。由於這是一個保護區遊憩和遊客休閒為主的會議，我將搭配圖片與文字解釋說明如下：

在 8 月 21 至 24 日，第六屆「**Monitoring and Management of Visitors in Recreational and Protected Areas**」國際研討會舉辦得非常成功，此次研討會從世界各地邀請六位主要演說者，其中一位是來自美國威斯康辛大學與瑞典農業科學大學的教授 Thomas A. Heberlein (圖 1)。Heberlein 教授在演說中提倡態度、規範與遊客管理技巧的重要性，這個想法受到很多在座參與者的認同，同時他介紹他的新著作「**Navigating Environmental Attitudes**」，是牛津大學出版社在 2012 年 8 月 27 日發行的書籍，我已經購買一本，並且加入我在國立中興大學的研究參考資料與課程教材，其幫助甚多。Heberlein 教授會後也請我在 Amazon 網頁為他的書做評論。我在這次的研討會中口頭發表一篇報告，並且與我的研究生，國立中興大學博士生王青怡發表一篇海報報告。在研討會的最後一天，我也受邀參與「**Addressing challenges in managing recreation in protected areas: A cross-cultural approach**」國際學術會議分組討論，同時我參加由研討會舉辦之 Tyresta 國家公園與 Nämndö 島的田野調查，學習瑞典管理國家公園與海島環境之觀點。整體來說，這次研討會令人印象深刻，尤其是實地參訪部分，使與會者們都分享彼此的經驗以及提供良好互動，更促使與會者社會脈絡的交流。以下我將以圖文方式說明研討會的流程：



圖 1. 主要演講者之一，Thomas A. Heberlein 為世界知名的學者，專門研究擁擠度、遊憩承載量與環境態度。他是於美國威斯康辛大學與瑞典農業科學大之教授。

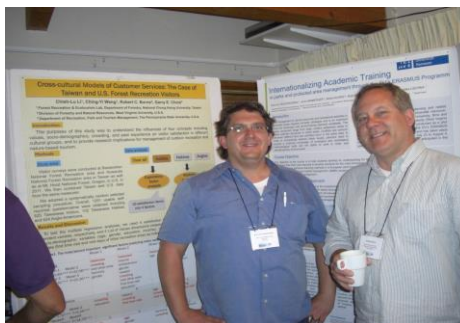


圖 2. 來自德國漢諾威萊布尼茲大學的 Eick von Ruschkowski 博士(左)與來自美國西維吉尼亞大學的 Robert Burns 博士(右)。背景左邊為我的海報，而 Eick von Ruschkowski 教授的海報則是右邊那幅。



圖 3. 研討會共同主席，Peter Fredman 博士，是歐洲旅遊研究協會(ETOUR)，以及中瑞典大學 Östersund 校區的自然旅遊領域之教授，他是在此領域的主要領袖學者之一。



圖 4. 實際體驗是本研討會最大的特色。與會者參加位於瑞典的 Tyresta 國家公園之遠足健行，並體驗瑞典國家公園的經營管理方式。



圖 5. 瑞典國家公園的工作伙伴正在講解瑞典國家公園的自然資源給與會者分享。



圖 6. Tyresta 國家公園的解說牌，包含國家公園的位置與資源等信息。



圖 4. 5. 和 6. 顯示研討會的與會者(圖 6.為本人)參與大會所舉辦的參觀瑞典斯德哥爾摩 Tyresta 國家公園的行程以了解瑞典地區國家公園的管理方式。這個行程由瑞典工業園區管理局所主辦。大部分的與會者都認為此行程對於國家公園的自然和文化資源的解釋是十分生動、有趣且兼具知識性的，我認為這個國家公園充滿濃濃的瑞典風格。



圖 7. 離島之旅，大會帶領研討會與會者到 Nämndö 島，並解說了解瑞典沿海自然環境管理。  
圖 8. 位於右前方的長捲髮男子為 Mart Reimann 博士，將是 MMV 研討會 2014 年的主辦人。



圖 9. 畫面中間雙手插口袋的男子為 Thomas Heberlein 教授，是本次 MMV 研討會特別邀請的主講教授之一，為國際知名環境與自然資源管理大師。演講題目是態度、規範及遊客源管的藝術。

圖 7. 8. 和 9. 顯示與會者參加由斯德哥爾摩群島基金會舉辦的郵輪行程遊覽 Nämndö 島嶼，學習瑞典在沿海環境休閒區的管理方式。它展示了現地解說與當地知識的結合並透過開放式會議來互動的重要性。這一向是 MMV 研討會的舉辦特點，這也促使與會者之間能夠有更密切的互動。

## 心得及建議

我和來自美國的 Drs. Thomas Heberlien、Alan Graefe 和 Robert Manning 以及來自紐西蘭的 Dr. Brent Lovelock 等教授們有著良好的互動，他們在此 MMV 會議中有舉足輕重的地位。我們交換意見與討論未來合作的機會，尤其是在戶外遊憩、對人類健康效益、跨文化遊客管理、國家公園與自然遊憩區經營管理領域方面。我發現在國際林業研究組織聯盟 (IUFRO) 會議中，戶外遊憩與自然資源觀光研究，佔有一定程度的主導的地位。這也許意味著以自然為本的戶外遊憩與觀光研究、生態旅遊，或是人文與社會面向之自然資源經營管理，將在林業社會科學研究中扮演重要的角色。

我建議未來在亞洲地區能夠聯合舉辦 MMV 會議。2014 年的 MMV 會議將在愛沙尼亞的首都塔林舉辦，並由塔林大學的休閒學系系主任 Dr. Mart Reimann 負責該次會議。筆者 Dr. Mart Reimann 有良好的交流與互動。另一方面，大多數與我交談的與會者，都願意繼續參加 2014 年的 MMV 會議。同時，我們將繼續研討未來聯合舉辦 MMV 會議之可能性。我認為在某種程度上，公園與遊憩或戶外遊憩領域中大多以北美的觀點出發，北美的觀點在這個領域佔有重要的影響力。因此發展與歐洲學者及經營業者之間的互動，將有助於瞭解在此領域中的不同觀點。尤其是從亞洲的觀點來首公園與遊憩或戶外遊憩，更能提供不同的經驗交流，共同推進這個領域的發展。

會議組織精心安排了在會議之間的實地體驗考察行程，將與會代表們帶到 Tyresta 國家公園，這是在斯德哥爾摩附近一個被大量使用的都會型公園，以及乘船遊覽到 Nämndö 島，這是斯德哥爾摩群島的島嶼之一。請見照片如圖 4,5,6,7,8,9。從務實的角度來看，實地考察的導覽特別有助於使與會代表們與瑞典國家公園之人員和斯德哥爾摩群島基金會的工作人員們有所互動。實地考察也促進了與會代表們的實用知識、務實方法以及沿海管理，此外也在會議中安排了並行部分的演講。

2012 至 2014 年國際森林研究組織聯盟(IUFRO)中一部分新的策略，第 2 屆 Forests for People 會議，將在美國密西根州舉行，從 2013 年 5 月 19-23 日。Forests for People 會議結合了 2013 年國際戶外遊憩會議，由戶外遊憩協會所贊助。我也被邀請協助 Forests for People 會議。國際科學委員會的成員還包含了德國的 Eick von Ruschkowski、奧地利的 Arne Arnberger、加拿大的 Wolfgang Haider、美國的 Alan Graefe, Chuck Nelson, Grace Chang, Taylor Stein。我們保持聯繫並且結合相關的主題如森林與人、戶外遊憩、自然旅遊、人類福祉以及健康、生物多樣性與生態系勞務、森林與氣候變遷以及文化和教育等作為 2013 年會議的展望。我們期待著與來自世界各地在這個特定領域的學生、學者以及經營業者們之間的另一個良好互動。我發現，某種程度上，在 IUFRO 之中的 Forests for People 會議，大多以戶外遊憩與自然旅遊的學者與經營者為主。這意味著戶外遊憩與自然旅遊在林業的社會科學領域中扮演了重要的角色。台灣目前正大力推展自然觀光與戶外遊憩，這個國際會議的未來發展，值得國內重視。

# Exploring recreation pattern differences among Taiwanese Hoklos and Hakkas and Anglo-Americans

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## Outline

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- Introduction
- Literature review
- Methods
- Results & discussion

## Introduction

1

- Comparative studies across different cultures are one of the **emerging research trends** in forest recreation
- Understand both **intra-cultural** and **inter-cultural** differences among cultural groups or nations

## Introduction (Cont.)

5

- **Values** applied on a number of cross-cultural research to understand difference among cultural groups (Hofstede, 1980; McCleary & Choi, 1999; Rokeach, 1973)
- **Values** influence **behavior** and **perception**. The is also true in the context of forest recreation (Li, Aksher, Graefe, & Hsu, 2008 ; Li, Chick, Zinn, Aksher, & Graefe, 2007)

## Introduction (Cont.)

6

- Kahle et al.(1986) established the **List of Values** (LOV) which can be used as measures of values across different contexts
- LOV is *parsimonious* in its approach and easy to administer. LOV has been applied to the cross-cultural and international tourism consumer research (e.g. marketing segmentation)

## Study purpose:

7

- Exploring the recreation pattern differences among forest recreation visitors including:  
*Taiwanese Hoklos, Taiwanese Hakkas and Anglo-Americans*
- Mainly focus on  
*Social-demographics*  
*Values*  
*Activities participated*  
*Satisfaction*

## Why choose these 3 cultural groups?

8

- *70% Hoklos, 14% Hakkas in Taiwan*
- *72% Anglo-Americans in the USA*

9

Why study social-demographics, values, activities participated and satisfaction?

- **This study focuses on identifying differences**
- **We have part II study**

# Background

10

- Li, Absher, Zinn, Graefe and Chick (2009) examined **perceptions of service quality (SQ)** on an **ethnically diverse** sample including 444 Anglos, 312 Hispanics and 319 Asians in Angeles National Forest, California, USA
- The study found that Asians were likely to perceived lower SQ than the other groups

# Background (Cont.)

11

- Li, et al. & Chick (2011) examined **perceptions of service quality (SQ)** on 3 Taiwanese ethnic groups including 1,686 Hoklos 473, Hakkas and 211 Mianlanders from Taroko National Park and Huisun National Forest Recreation Area in Taiwan
- The study found that Hakkas were likely to perceive lower SQ than the other 2 groups
- The SQ differences may be explained from differences in values

# Methods

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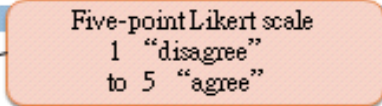
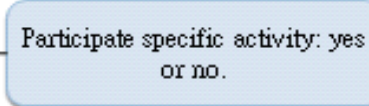
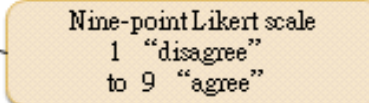
## Setting:

1. Basianshan National Forest Recreation Area, Taiwan
  2. Aowanda National Forest Recreation Area, Taiwan
  3. Timberline Lodge Recreation Complex, Oregon, U.S.A.
- convenience sampling survey
  - 749 usable sample from Taiwan, and 972 from U.S., with 1721 responses in total.

# Methods (Cont.)

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## Measure:

1. Satisfaction(16 items) 
2. Activity(12 items) 
3. List of Values(9 items)
4. Social-demographic(4 items) 

## Data analysis:

1. Analysis of Variance & Chi-square
2. Report practical significance: Eta & Cramer's V
3. Post-hoc test for ANOVA
4. Factor analysis



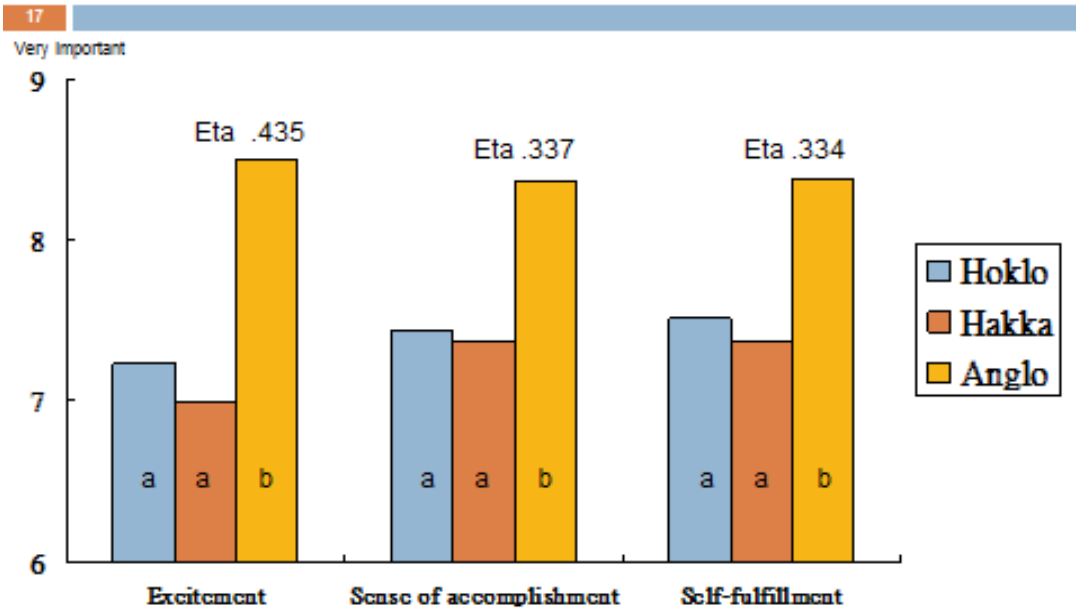
## Results

Social-demographic		Hoklos	Hakka	Anglo	$\chi^2$ Cramer' s V
		Percentage	Percentage	Percentage	
Gender	Male	49.2	52	69	51.370*** 0.197
	Female	50.8	48	31	
Age	16-20	6.1	7.1	14.5	35.174*** 0.115
	21-30	26.9	29.3	30.4	
	31-40	28.5	23.2	25.4	
	41-50	20.6	25.3	15.2	
	51-60	14.3	12.1	11.3	
	61-70	2.6	2.0	2.8	
	Over70	1	1	0.4	

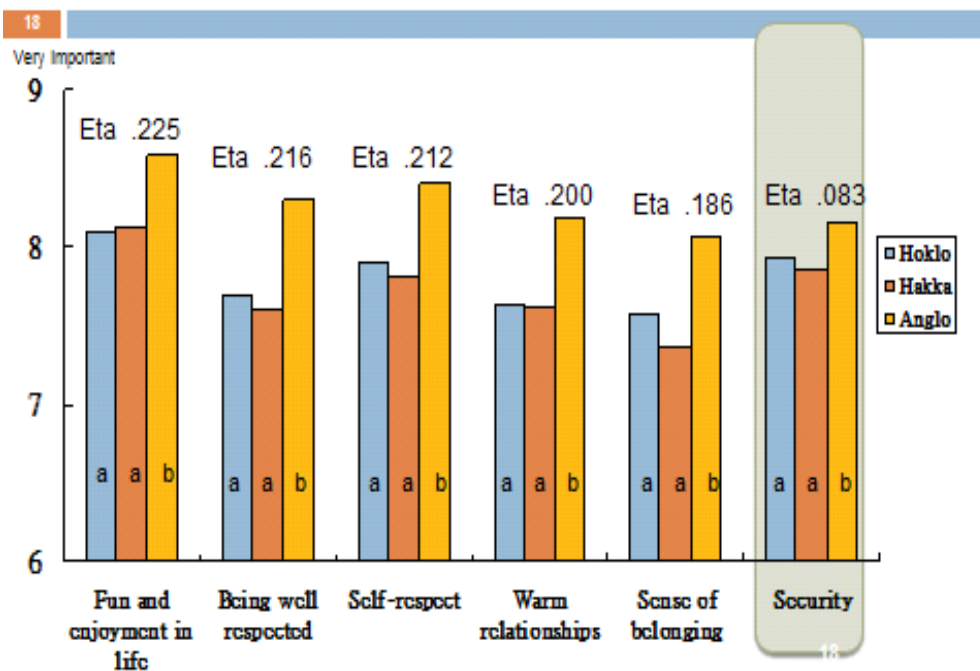
## Results (Cont.)

Social-demographic		Hoklo	Hakka	Anglo	$\chi^2$ Cramer' s V
		Percentage	Percentage	Percentage	
Education	High School	14.6	13.4	31.2	77.089*** 0.174
	Technical	23.6	30.9	13.4	
	College	39.2	36.1	38.9	
	Masters	19.7	16.5	11.8	
	Ph.D	2.8	3.1	4.7	
Income	25k or less	26.7	26.4	15.1	42.111*** 0.137
	25k-49k	17.8	24.2	18.8	
	50k-99k	19.6	16.5	25.7	
	100k-149k	14.3	15.4	21.3	
	150k-199k	10.2	2.2	10.3	
	200k or over	11.3	15.4	8.9	

# Values Results



# Results (Cont.)



## Discussion: socio-demographics

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### **Gender:**

The Anglo visitors were likely to be males; whereas, this pattern did not hold for Hoklos and Hakkas

### **Age:**

Anglo visitors tended to younger than Hoklos and Hakkas

### **Education:**

The Anglo visitors tended to be high school graduates; whereas, Hoklos and Hakkas visitors to be technical school graduates.

### **Income:**

The Anglos have higher income than Hoklos and Hakkas. (About 25% Hoklo and Hakka visitors were less than 25K, 25 % Anglo visitors were 50K-100K)

## Discussion: values

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### Results from List of Values (LOV) differences :

- All the 9 items values tested were significantly different among 3 cultural groups.
- The Eta and Cramer' s V values showed the association of independent variable and dependent variable.



## Discussion: values

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List of Values	External oriented	Internal oriented	Cronbach' s $\alpha$
Being well respected	.848	.215	.908
Self-respect	.772	.343	
Security	.854	.210	
Sense of belonging	.793	.360	
Warm relationships	.733	.412	
Self-fulfillment	.417	.771	.877
Sense of accomplishment	.359	.818	
Fun and enjoyment	.231	.828	
Excitement	.227	.854	

## Discussion: values

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Dimension	Values	Association of group
External Oriented	Security	Weak
	Self-respect	Moderate
	Being well respected	
	Sense of belonging	
	Warm relationships	
Internal Oriented	Fun and enjoyment in life	Strong
	Sense of accomplishment	
	Self-fulfillment	
	Excitement	

# Results

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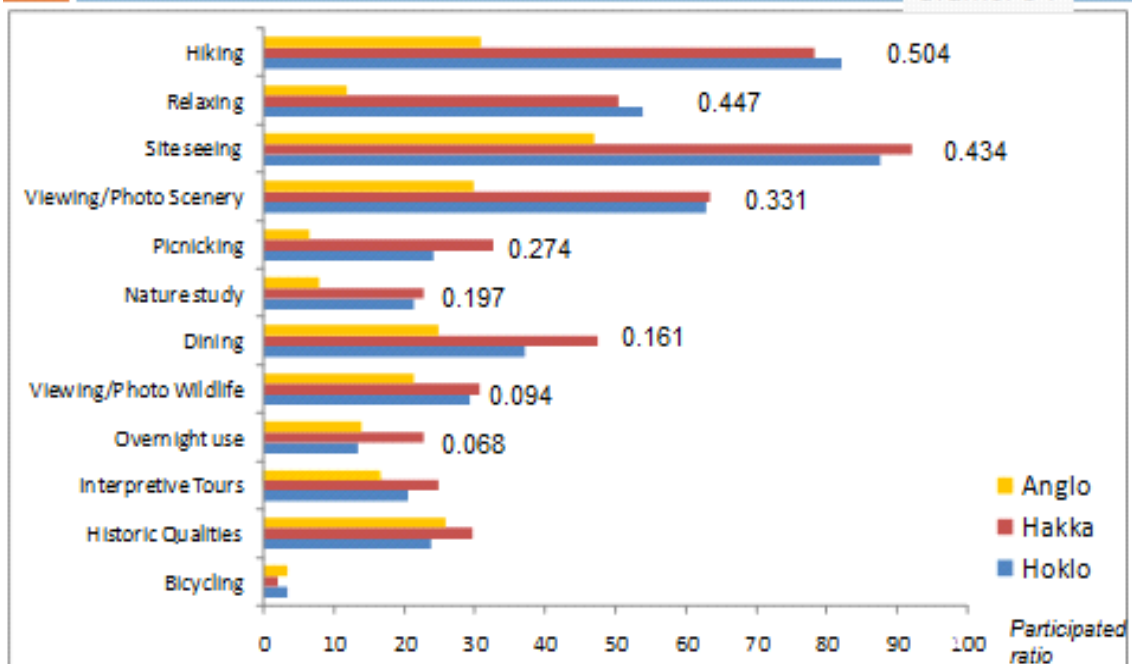
## Activity participated:

- The setting specific activity such as snow activities in TLRC and tea activities in Basianshan were dropped from comparisons.
- 9 out of the 12 activities were significantly different among groups.

# Results

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Cramer's V

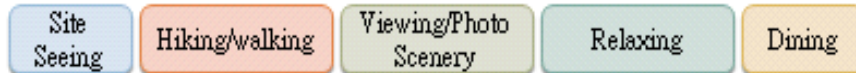


## Results

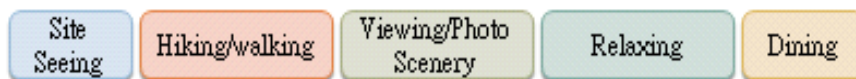
25

### The primary activity participated ranking:

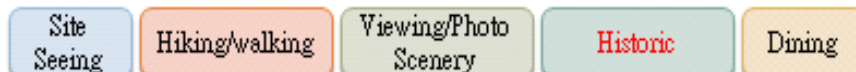
- Hoklos



- Hakkas



- Anglos



## Results

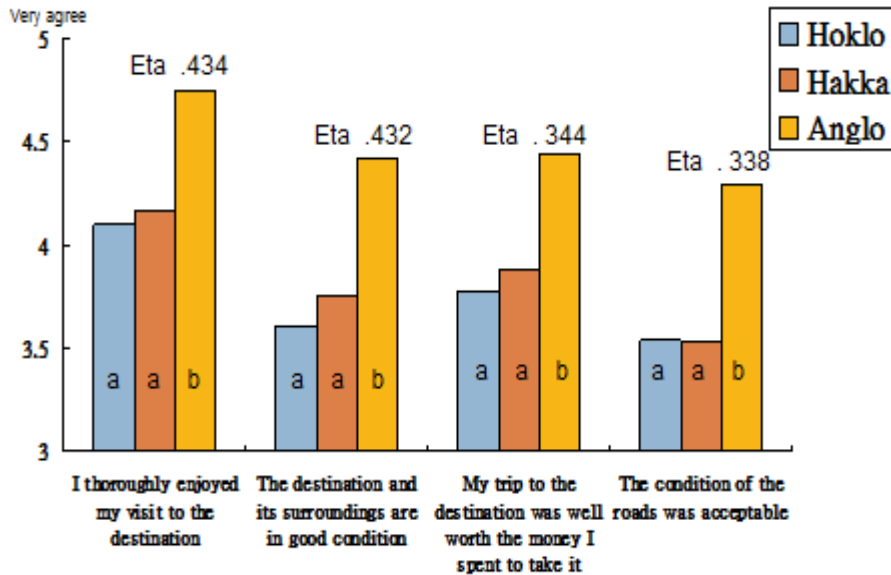
26

### Satisfaction:

- All 16 satisfaction measures were significantly different among three cultural groups
- 5 items in different direction.
- 6 out of the 16 measures showed strong association as indicated by the Eta values (>3.00).

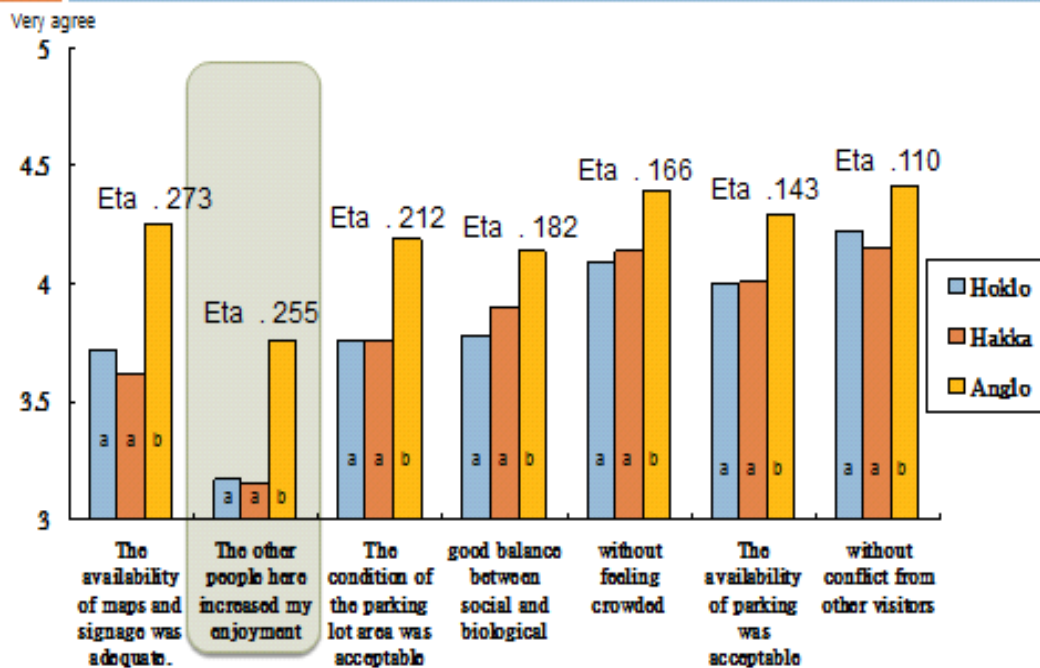
## Results and Discussion

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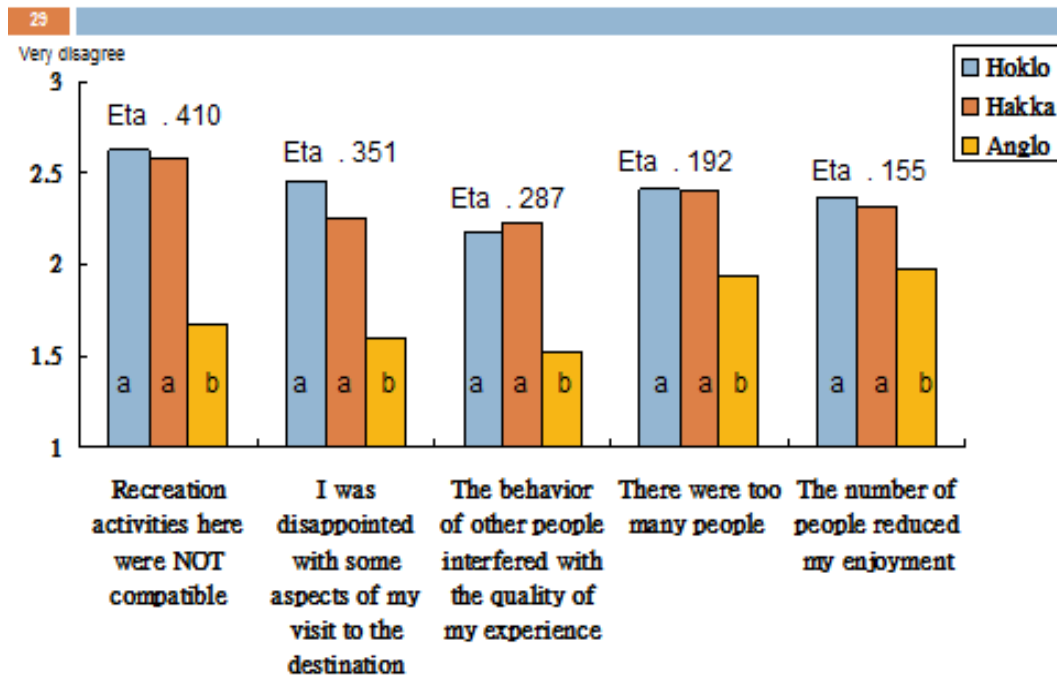


## Results and Discussion

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## Results and Discussion



## Results and Discussion

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### The satisfaction ranking:

#### □ Hoklos

without **conflict** from other visitors

**enjoyed** my visit to the destination

without feeling **crowded**

#### □ Hakkas

**enjoyed** my visit to the destination

without **conflict** from other visitors

without feeling **crowded**

#### □ Anglos

**enjoyed** my visit to the destination

My trip to the destination was **well worth**

without **conflict** from other visitors



## Results and Discussion

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### □ The satisfaction ranking (5 different direction items):

#### □ Hoklos

Recreation **activities**  
here were NOT  
compatible

I was **disappointed** with  
some aspects of my visit to  
the destination

I avoided some places  
because there were **too  
many people** there

#### □ Hakkas

Recreation **activities**  
here were NOT  
compatible

I avoided some places  
because there were **too many  
people there**

**The number of people**  
here reduced my  
enjoyment

#### □ Anglos

**The number of people**  
here reduced my  
enjoyment

I avoided some places  
because there were **too many  
people there**

Recreation **activities**  
here were NOT  
compatible

## Results and Discussion

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The results of satisfaction showed that:

The **response style pattern** of Hoklos and Hakkas were close to neutral score; whereas, Anglos tended to be on both ends.

The **main differences** were between the **Anglo-Americans** and the other 2 groups. To some extent, the two Taiwanese cultural groups showed **homogeneous** in satisfaction.

The findings consistent with those found between Taiwan and the U.S. visitors (Huang, Li, & Burns, 2012)

# Conclusion

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- This study demonstrated differences among Taiwanese Hoklo, Taiwanese Hakka and Anglo-American forest recreation visitors in terms of their socio-demographics, values, activities participated and satisfaction.

## Summary of results:

- All the socio-demographic, values, and satisfaction measures were significantly different among 3 groups.
- 9 out of the 12 activities participated were significantly different.

# Study Limitation & Future Research

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1. Using convenience sample to survey visitors and therefore our data was not a random sample
2. Further compare trip characteristics, e.g., first time vs. repeat visitors, day vs. overnight visitors, etc. between cultures to hold better details about the differences
3. Why differences in visitor satisfaction?
  - ▶ Next poster session

## 附錄: 會議海報發表論文與口頭發表論文場次

### Cross-cultural Models of Customer Services: The Case of Taiwan and U.S. Forest Recreation Visitors

Chien-Lu Li<sup>1</sup>, Ching-Yi Wang<sup>2</sup>, Robert C. Burns<sup>3</sup>, Garry E. Chick<sup>4</sup>

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<sup>3</sup>Division of Forestry and Natural Resources, West Virginia University, U.S.A.

<sup>4</sup>Department of Recreation, Park and Tourism Management, The Pennsylvania State University, U.S.A.

#### Introduction

The purposes of this study were to understand the influences of four concepts including values, socio-demographic, crowding, and past experience on visitor satisfaction in different cultural groups, and to provide research implications for management of nature based tourism and outdoor recreation.

#### Materials and Methods

##### Study area

We combined the Taiwan and US data which were surveyed from same measures but different recreation areas in 2011. Data collections were conducted at Basianshan National Forest Recreation area and Aowanda National Forest Recreation area in Taiwan as well as Mt. Hood National Forest, Oregon, U.S.

From convenience sampling procedures, 1251 usable self-reported questionnaires were obtained including 525 Hoklos, 102 Hakkas, and 624 Anglos.

#### Methods

We tested data from four segments including the overall data, Hoklo group, Hakka group and Anglo group. We then used exploratory factor analysis and multiple regression analysis to analyze our data. Multiple regression analysis was used to test the predictive power of value dimensions, visitors' socio-demographics, crowding, and recreation behavior on visitor satisfaction factors. We used exploratory factor analysis testing 16 satisfaction items in overall and different cultural groups (e.g., overall, Hoklo group, Hakka group and Anglo group) and the result showed four factors in our analyses.

#### Results and Discussion

##### Results

We used four satisfaction factors in each cultural group as dependent variable, respectively, and four LOV dimensions (respect, harmony, achievement, hedonism), four socio-demographic items (age, gender, education, income), crowding and two behavior items (first day visit and visit days of other recreation area) as independent variables to run the multiple regression analyses, as shown in Table 1.

	Model1 First Satisfaction factor	Model2 Second Satisfaction factor	Model3 Third Satisfaction factor	Model4 Fourth Satisfaction factor	Most important/ second factor
Overall					
Model1	crowding	crowding	age	crowding	crowding
Model2	harmony	education	hedonism	education income	hedonism
F= 13.83***	hedonism	income		harmony	R <sup>2</sup> ranged from
F=22.08***	gender	respect			.12 to .20
Model3	visit other area	achievement			
Model4		hedonism			
F=12.31***		gender			
F=21.26***		visit other area			
		first time visit			
Total sig factors	5	9	2	4	
Hoklos					
Model1	crowding	crowding	crowding	crowding	crowding
Model2	education	respect	age	first time visit	first time visit
F= 5.70***		first time visit	first time visit		R <sup>2</sup> ranged from
F=5.34***					.06 to .32
Model3					
Model4					
F=2.91***					
F=14.79***					
Total sig factors	2	3	3	2	
Hakkas					
Model1	crowding	age	crowding	None significant	crowding
Model2	age	gender	harmony		age
F= 2.20***	income				R <sup>2</sup> ranged from
F=2.53*					.17 to .21
Model3					
F=2.65**					
Total sig factors	3	2	2		
Anglo-Americans					
Model1	crowding	crowding			crowding
Model2	education	harmony			harmony
F=7.42***	income	hedonism			R <sup>2</sup> ranged from
F=6.79***	harmony	first time visit			.02 to .15
Model3	first time visit				
Model4					
F=1.87*					
F=2.44**					
Total sig factors	5	4			

Note: N=1251, including Hoklo=525, Hakkas=102, Anglo-Americans=624  
\*p<.05 : \*\*p<.01 : \*\*\*p<.001

#### Conclusion and Implication

- ❖ We found crowding concepts were the most powerful predictor in all multiple regression models, but with weak significance, as indicated from the t-values from the 16 models.
- ❖ We found a few significant variables from the concept of crowding, socio-demographics, values and recreation visitor behavior from different cultural group in predicting satisfaction in this study.
- ❖ To improve the measurement of concepts. For instance, developing specific value measures from previous studies in individual cultural group might increase the model significance.
- ❖ To develop more advanced statistical method, e.g., using structural equation modeling or non-linear model testing to examine the proposed model.



## PARALLEL SESSIONS I – Wednesday August 22, 13.00–15.00

### IA On-site visitor monitoring

*Chair: Robert Burns*  
Main Hall

Visitor monitoring from a management perspective – Experiences from Sweden  
*Rosemarie Ankre, Peter Fredman, Anders Lindhagen*

Tourist distribution in time and space: A case from the Icelandic Highlands  
*Rögvaldur Ólafsson*

Counting visitors in alpine areas: how sensor range, clothing, air temperature and visitor volume affects passive infrared counter accuracy  
*Oddgeir Andersen, Vegard Gundersen, Line Camilla Wold, Erik Stange*

MTB monitoring in Arrábida Natural Park, Portugal  
*Ricardo M. Nogueira Mendes, Alexandra Silva, Clara Grilo, Luís M. Rosalino, Carlos P. Silva*

Monitoring coastal uses of the Marine Reserve of La Reunion using aerial surveys, Reunion Island, France, West Indian Ocean  
*Anne Lemahieu, Gwenaëlle Pennober, Gilbert David, Franck Lavigne, Karine Pothin*

Recreational use and visitor motivations at Torfhaus visitor area in Harz National Park, Germany  
*Eick von Ruschkowski, Arne Aramberger, Robert Burns*

### IB Managing visitor impacts

*Chair: Don English*  
Room 7a

Welsh seasonal habitat vulnerability mapping  
*Joe Roberts, Durwyn Liley*

Monitoring and management of bush camp grounds in an Australian national park  
*Kelly Hunt de Bie, Peter Vesk*

A conceptual model for assessing wildlife vulnerability to human activity at visitor sites in Svalbard  
*Kirstin Fangel, Nina E. Eide, Dagmar Hagen, Anne Cathrine Flyen, Odd Inge Vistad*

How effective are planned buffer zones in reducing recreation impacts on an urban national park? – A combined visual discrete choice and agent-based modeling approach  
*Arne Aramberger, R. Eder, K. Taczanowska, R. Deussner, G. Stanzer, T. Hein, S. Preiner, I. Kempter, U. Nopp-Mayr, K. Reiter, I. Wagner, R. Jochem*

Horse riding in protected areas: And the dung?  
*Teresa Cristina Magro, Fabiola Saporiti Angerami de Andrade*

A research agenda for adventure racing events that take place in natural settings and protected areas  
*David Newsome, Carol Lacroix*

### IC Outdoor recreation and ethnicity

*Chair: Andreas Muhar*  
Room 5a

Colourful recreation in green: Review of research on immigrants, greenspace and society  
*Marjolein E. Kloek, Arjen E. Buijs, Jan J. Boersema, Matthijs G.C. Schouten*

Exploring recreation pattern differences among Taiwanese Hoklos and Hakkas and Anglo-Americans  
*Chieh-Lu Li, Robert C. Burns, Garry E. Chick.*

Race, ethnicity, and outdoor recreation in the United States: Tests of the marginality, ethnicity, and discrimination hypotheses with national-level survey data  
*Daniel H. Krymkowski, Robert E. Manning, William Valliere*

Fear and loathing in the forest: Immigrant perceptions and experiences of natural area recreation in New Zealand  
*Brent Lovelock, Kirsten Lovelock, Carla Jellum, Anna Thompson*

### ID Managing nature-based tourism

*Chair: Linda Lundmark*  
Room 3a

Governance and sustainable tourism in World Heritage sites – Can sustainable tourism serve as a tool for improved protection of UNESCO World Heritage sites?  
*Lea Ketterer Bonnelame, Dominik Siegrist*

A supply-side perspective on tourism enterprises in biosphere reserves – case study of Biosphere Reserve Rhön  
*Felix Kraus, Cornelius Merlin*

Hoge Kempen National Park (Belgium) – The economic impact of visitors as a crowbar for nature conservation  
*Johan Van Den Bosch*

Tourism destination brand image of Beypazari as perceived by hikers in Ankara  
*Eray Çağlayan*

Tourism trade-offs: An analytical framework for visitor management in fresh water systems  
*May Carter, Pierre Horwitz*

Certification as a tool for sustainable development in winter sport destinations – challenges for “old” and “new” European skiing areas  
*Ulrike Pröbstl*