

PUSH-PULL FACTORS IN MOUNTAIN RESORTS

—A Case Study of Huangshan Mountain as World Heritage

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ABSTRACT: The push-pull framework provides a useful approach for examining the tourist motivation. This paper takes the world heritage—Huangshan Mountain as a sample. From the two different aspects of pull and push factors, the underlying features of visitors' motives to Huangshan Mountain are analyzed with the help of factor analysis. As a result, five push factors and four pull factors are identified. Further analyses investigate differences in the push and pull factors among different socio-demographic subgroups with one-way ANOVA analysis. The result of the study affords us useful references for development, protection and marketing expansion of mountain resorts.

KEY WORDS: push factors; pull factors; socio-demographic characteristics; Huangshan Mountain

CLC number: F590

Document code: A

Article ID: 1002-0063(2004)04-0368-09

1 INTRODUCTION

The push-pull framework provides an effective approach for examining the tourist motives (DANN, 1977; KLENOSKY, 2002). Using the push-pull framework, ZHANG and LAM (1999) examined Chinese mainland visitors' motives to visit Hong Kong. KIM *et al.* (2003) examined the influence of push and pull factors on visitors to Korean national parks. In this framework, push factors refer to tourist's motivations factors or needs that influence his decision to take a vacation, while pull factors refer to the features of a destination itself that attract the tourist's decision to select a specific destination.

Push factors have been classified among motivational factors, and conceptualized as the motives and needs that arise due to a disequilibrium or tension. That is, push factors can be defined as factors that motivate or create a desire to travel (CROMPTON, 1979; DANN, 1981; PEARCE and CALTABIANO, 1983; PYO *et al.*, 1989; UYSAL and HAGAN, 1993; YUAN and McDONALD, 1990). ISO-AHOLA (1982, 1989) suggested that it is a central basis in tourist behaviour study to identify motivational factors that are the reasons for and direction of behaviour. He put forward two basic motivational factors of leisure travel, escaping and seeking, which simultaneously influence people's leisure or tourism behaviour. For example, a tourist may want to

make a trip to escape from his/her personal or interpersonal environment ("escaping from everyday routine life") and to seek out psychologic rewards ("taking adventure or building up new friendship"). Thus, these motivational factors explain why tourists make a trip and what type of experience, destination or activity they may want. Most tourism motivation studies have been conducted in the context of a broad tourism destination (BOTHA *et al.*, 1999; CHA *et al.*, 1995; OH *et al.*, 1995; UYSAL and JUROWSKI, 1994). The common push factors drawn from these studies were "escaping from everyday environment", "novelty", "social interaction", and "prestige".

Pull factors, in contrast to push factors, are the condensation of the features, attractions, or attributes of the destination itself, such as "beaches", "water/marinebased resources", "mountains and beautiful scenery", or "historic and cultural resources". Investigations of pull factors have been reported in travel and tourism literature overseas. FAKEYE and CROMPTON (1991) identified six pull factors from 32 attribute items of destinations using a sample of visitors to a well-known winter resort in Texas. The pull factors identified included "social opportunities and attractions", "natural and cultural amenities", "accommodations and transportation", "infrastructure, foods, and friendly people", "physical amenities and recreation activities" and "bars and evening entertainment". In their

Received date: 2004-03-18

Foundation item: Under the auspices of the National Social Science Foundation of China (No.03BJY084)

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study, perception on the destination attributes differs among nonvisitors, first-timers and repeaters. HU and RITCHIE (1993) explored the relative importance of 16 destination attributes contributing to the general attractiveness of the destination. The relative importance of many of these attributes was found to vary among different groups owing to their different travel purposes and destination familiarity. TURNBULL and UYAL (1995) found six pull factors including "heritage/culture", "city enclave", "comfort-relaxation", "beach resort", "outdoor resources" and "rural and inexpensive". They identified differences in perceived importance of the pull factors examined among visitors from different nations. KIM *et al.* (2000) reported four domains of destination attributes of Sun/Lost City, such as "entertainment", "infrastructure", "physical environment" and "good entertainment opportunities". Subsequent analyses revealed that respondent subgroups differed in terms of the importance attached to each of these pull factors.

Overseas experts have made great progress in the research of push-pull framework. However, similar researches are few in China, especially concrete evidence researches. Therefore, this research examines the influence of push and pull factors on visitors to the world heritage Huangshan Mountain. Because Huangshan Mountain occupies very important position among the mountain resorts, the research of push-pull framework of Huangshan Mountain has reference function to other mountain resorts.

2 DATA AND METHOD

2.1 Data Collection

The data used in this study were collected from visitors to Huangshan Mountain with a sample survey. On the base of a review of the recreation literature and combination with the overseas research experience and the actual attributes of Huangshan Mountain, seventeen motivational items (push factors) and seventeen attractive items (pull factors) were specified for this study. The primary data were collected from on-site self-administered questionnaire at North Sea Area, Bright Peak and Jade Screen Mansion Scenic Area of Huangshan Mountain where visitors are more concentrative. The questionnaires were distributed to visitors at random and collected on the spot in October 2003. The questionnaires sent out were totally 1000, and 856 valid ones were collected. The rate of collecting back was 85.6%.

2.2 Measurements of Push and Pull Factors

The push factor items were measured by asking respon-

dents to indicate their agreement-disagreement with statements describing their potential reasons for visiting Huangshan Mountain. Respondents were told: "Here we are interested in your reasons for visiting Huangshan Mountain. For each statement below, circle the number that best describes your reasons for visiting here". For example, one push factor item was "Escaping from daily routine". Then, respondents were presented with a 5-point Likert-type scale [not at all important (1), somewhat important (2), important (3), very important (4), and extremely important (5)]. The pull factor items were measured using a similar procedure. In this section respondents were told: "Here we are interested in your view about what makes Huangshan Mountain attractive. For each statement below, circle the number that best describes how you feel about Huangshan Mountain on the following 17 attributes". An example of pull factor item was "The renowned Four Wonders of Huangshan Mountain—unique pines, grotesque rocks, fantastic clouds, and hot springs". The same 5-point Likert scale was used to assess these pull factor items.

2.3 Analysis Method

In this study, push and pull factors were analyzed with application of Factor analysis and one-way ANOVA.

Factor analysis was a multivariate statistical analysis, in which the linear function of comparatively few and mutually independent factors and the sum of set factors was used to delineate the observed variables, and variables of complicated correlations were grouped into a few comprehensive factors based on the inter-reliable relationship among related determinants. The mathematical model was as follows.

$$\begin{pmatrix} X_1 \\ X_2 \\ \vdots \\ X_p \end{pmatrix} = \begin{pmatrix} a_{11} & a_{12} & \cdots & a_{1m} \\ a_{21} & a_{22} & \cdots & a_{2m} \\ \vdots & \vdots & \vdots & \vdots \\ a_{p1} & a_{p2} & \cdots & a_{pm} \end{pmatrix} \begin{pmatrix} F_1 \\ F_2 \\ \vdots \\ F_m \end{pmatrix} + \begin{pmatrix} \varepsilon_1 \\ \varepsilon_2 \\ \vdots \\ \varepsilon_p \end{pmatrix} \tag{1}$$

Briefly noted as: $X=AF+ \varepsilon$ (2)

In this mathematical model, *F* was factor variable or factor, which was a factor found in all variables. Principal Component Analysis was employed to construct the factor variable. $A=\{a_{ij}\}_{p \times m}$ was factor loading determinant on $p \times m$ dimension, and a_{ij} was factor variable which was the load of original variable *i* on factor *j*, reflecting the relative significance of original variable *i* to factor *j*. The bigger the absolute value was, the more the influence the variable had on the factor. ε was the special factor representing the part that could not be delineated by the factor. In addition, *m* was smaller than *p*.

According to the criterion of extracting a factor in factor analysis, only factors with eigenvalues greater than 1 were retained and only variables with factor loading and communalities greater than 0.4 were included in the final factor structure. Communality showed the percentage of information that extracted from each variable when the factors were extracted. Its value was in 0–1, and the greater the value was, the higher the degree the factor explained the variable. Reliability alphas were computed to confirm the internal consistence in each dimension and the whole questionnaire. Moreover, to search for the relations between the push and pull factors and the socio-demographic subgroups, one-way ANOVA analysis was used to examine whether there were statistical differences among subgroups of different ages, occupations or incomes on push and pull factors.

3 RESULTS

3.1 Demographic Profile of Respondents

Table 1 summarizes the demographic profile of the study respondents. The percentage of the male (51.64%) was larger than that of the female (48.36%). About 74.52% of the respondents fell within the age group between 25 and 64, especially, those between 25 and 44 occupied the largest percentage (49.68%). The educational level of the respondents was comparatively high. About 75.48% of the tourists had received junior college education or above, and became the principal part of the visitors. About 40.65% of the tourists had a household income over 2000 yuan(RMB). About 64.83% of the respondents were enterprise managers, professionals or technicians, businessmen and government employees. Most of the respondents (67.1%) were traveling

with their families or on organized tours by their working units.

3.2 Importance of Push and Pull Factors

Table 2 reveals the ranking of importance of mean of push and pull factors, which listed below are the top 10 items. "Physically resting and relaxing" ($m=3.329$) was the most important among all push factors, followed by "escaping from daily routine" and "getting some exercise and enhancing health". Among the pull factors, the most important one was "Four Wonders in the Heaven—unique pines, grotesque rocks, fantastic clouds, and hot springs" ($m=3.687$), followed by "enchantment of the world natural and cultural heritage", "the amenities of air environment" and "beautiful scenery and concentration of scenic spots".

3.3 Factor Analysis of Push and Pull Factor Scales

In this study, the Varimax Rotation of factor analysis was used to analyze push and pull factors with the aim to group the original items into a few factors, which could report the information fully by linear shift. The premise of factor analysis was that all items must be interrelated, if not, there would be no factors to extract. KMO (Kaiser-Meyer-Olkin) was the index to examine the relationship among the items, and when it was greater than 0.7, the result of factor analysis could be reliable. KMO indexes of the push and pull factor items in the study was 0.78 and 0.86 respectively, indicating that the premise was met.

3.3.1 Factor analysis of push factor scales

The seventeen push factor items yielded five factors with eigenvalues greater than 1.0 (Table 3), and these factors explained 62.7% of the variance. The first factor

Table 1 Description of survey respondents

Socio-demographic variable	Percent (%)	Socio-demographic variable	Percent (%)	Socio-demographic variable	Percent (%)
Gender		Tourism pattern		Occupation	
Male	51.64	With families	23.87	Government employee	12.58
Female	48.36	With relatives or friends	10.97	Enterprise manager	22.25
Age		Organized by working units	43.23	Professional or technician	15.16
Under 15	0.97	Organized by travel agencies	13.54	Businessman	14.84
15–24	19.35	Alone	8.39	Server	5.16
25–44	49.68	Monthly income level		Private business owner	6.21
45–64	24.84	Less than 500 yuan	10.00	Worker	6.13
65 and above	5.16	500–999 yuan	9.03	Peasant	0.65
Educational level		1000–1999 yuan	40.32	Retiree	7.10
Under Junior high school	1.94	2000–2999 yuan	23.55	Student	9.92
Junior high school	3.87	3000 yuan or more	17.10		
Senior high school	18.71				
Junior college	33.55				
University and above	41.93				

Table 2 Top 10 important push factors and pull factors

Rank	Travel motivation (push factor)	Mean	Destination attribute (pull factor)	Mean
1	Physically resting and relaxing	3.329	Four Wonders in the Heaven	3.687
2	Escaping from daily routine	3.287	Enchantment of the world natural and cultural heritage	3.523
3	Getting some exercise and enhancing health	3.268	Amenities of air environment	3.497
4	Releasing work pressures	3.258	Beautiful scenery and concentration of scenic spots	3.423
5	Increasing knowledge about destination	3.200	Abundance of vegetation	3.365
6	Fulfilling dream of visiting a place	3.084	Broad in scale and vast space for visiting	3.355
7	Enjoying the natural scenery	2.965	Waste water and garbage well disposed and water not polluted	3.348
8	Sharing travel experiences after returning home	2.900	Harmony between architecture and nature	3.313
9	Experiencing a different lifestyle	2.894	Strict management of tourist market	3.258
10	Facilitating family and kinship ties	2.839	High quality service of tourist enterprises	3.226

Table 3 Principal component analysis on push factors with Varimax Rotation

Push factor and item	Factor load	Communality	Eigenvalue	Percentage of variance	A Coefficient
Factor 1: Relaxation and health			4.19	24.63	0.820
Escaping from daily routine	0.723	0.679			
Getting some exercise and enhancing health	0.661	0.541			
Physically resting and relaxing	0.776	0.755			
Releasing work pressures	0.699	0.557			
Factor 2: Appreciating natural beauty and acquiring knowledge			2.56	13.25	0.724
Enjoying the natural scenery	0.760	0.623			
Increasing knowledge about the destination	0.792	0.679			
Experiencing a different lifestyle	0.650	0.579			
Factor 3: Enhancement of human relationship			1.65	10.71	0.719
Facilitating family and kinship ties	0.772	0.651			
Building new friendship	0.542	0.491			
Sharing travel experiences after returning home	0.647	0.452			
Being with families	0.693	0.555			
Factor 4: Prestige			1.31	7.65	0.705
Visiting places friends have not been to	0.624	0.534			
Fulfilling dream of visiting a place	0.659	0.590			
Going to places friends want to go	0.786	0.664			
Visiting a destination that would impress friends or families	0.628	0.611			
Factor 5: Adventure and novelty			1.17	6.46	0.785
Finding excitement	0.829	0.752			
Enjoying adventure	0.847	0.760			
Total variance explained				62.70	
Total scale reliability					0.805
KMO				0.78	

was labeled "relaxation and health". "Relaxation and health" was the most important push factor for visiting Huangshan Mountain and this explained 24.63% of the variance, which had comparatively bigger factor load among items such as "escaping from daily routine", "getting some exercise and enhancing health", "physically resting and relaxing" and "releasing work pressures". The second factor was named "appreciating natural beauty and acquiring knowledge", which had comparatively bigger factor load among "enjoying nature re-

sources", "increasing knowledge about the destination" and "experiencing a different lifestyle". The third factor was named "enhancement of human relationship", which had comparatively bigger factor load among "facilitating family and kinship ties", "building new friendship", "being able to share travel experiences after returning home" and "being with family". The fourth factor was labeled "prestige", and this was concerned with "visiting places friends have not been to", "fulfilling dream of visiting a place", "going to places friends want

to go" and "visiting a destination that would impress friends or family". The fifth factor was named "adventure and novelty", which was concerned with "finding excitement" and "enjoying adventure". Communality for all the seventeen push factor items ranged from 0.45 to 0.76, which indicated information contained in the variables largely extracted and the degree the factors explained the variables was high. The reliability A , which was designed to check the internal consistency of items within each dimension, and the general reliability A of the questionnaire were both greater than 0.70. These coefficients conformed to the standard of 0.70 recommended by NUNNALLY (1978).

3.3.2 Factor analysis of pull factor scales

Applying the factor analysis to the seventeen pull items, four pull factors whose eigenvalue were bigger than 1.0 were obtained (Table 4). These four factors accounted for 64.17% of the whole variances and were named "high quality tourist resources", "comfortable tourist environment", "availability of information and convenient facilities" and "management and service". The first factor "high quality tourist resources" had an eigenvalue of 5.98 and explained 33.05% of the variance. This indicated that "high quality tourist resources of Huangshan

Mountain" was the most important factor attracting tourists. The following factor was "comfortable tourist environment" with a variance of 14.47%, which argued for another essential factor. Factor loads for the seventeen pull factor items ranged from 0.50 to 0.86. Communality for the 17 items ranged from 0.46 to 0.79, which indicated information contained in the items was largely extracted and the degree the factors explained the variables was high. The reliability alphas for the four dimensions were bigger than 0.70, indicating that NUNNALLY's (1978) criterion was met.

3.4 Comparison of Push and Pull Factors for Demographic Groups

The other purpose of this study was to find out if there were any significant differences between push and pull factors and demographic subgroups. Tables 5–7 report the results of analysis of variance (ANOVA) accordingly. There would be significant differences if the significant coefficient was smaller than 0.05 ($p < 0.05$). The results indicated that some significant differences existed for both push and pull motivation factors by the view of certain demographic variables, such as age, occupation and income.

Table 4 Principal component analysis on pull factors with Varimax Rotation

Pull factor and item	Factor load	Communality	Eigenvalue	Percentage of variance	A Coefficient
Factor 1: High quality tourist resources			5.98	33.05	0.865
Enchantment of the world natural and cultural heritage	0.856	0.789			
Four Wonders in the Heaven	0.789	0.723			
Beautiful scenery and concentration of the spots	0.628	0.666			
Broad in scale and vast space for visiting	0.734	0.676			
Factor 2: Comfortable tourist environment			2.62	14.47	0.702
Abundance of vegetation	0.762	0.601			
Amenities of air environment	0.729	0.557			
Waste water and garbage well disposed and water not polluted	0.780	0.690			
Harmony between architecture and nature	0.593	0.496			
Factor 3: Availability of information and convenient facilities			1.86	10.28	0.828
Well-organized tourist information system	0.771	0.659			
Convenience of transport	0.623	0.545			
Convenience of parking lots	0.553	0.463			
Clean and comfortable accommodations	0.787	0.673			
Clean and convenient dining environment	0.767	0.646			
Factor 4: Management and service			1.15	6.37	0.696
Perfect managing system	0.577	0.595			
Strict management of tourist market	0.519	0.637			
High quality and positive attitude of local residents to tourists	0.632	0.625			
High quality service by tourist enterprises	0.783	0.642			
Total variance explained				64.17	
Total scale reliability					0.873
KMO				0.86	

3.4.1 Comparison of push and pull factors for different age groups

The results in Table 5 indicate that different age groups show significantly different results in such push-pull factors as "relaxation and health", "appreciating natural beauty and acquiring knowledge", "enhancement of human relationship", "adventure and novelty" and "high quality tourist resources". Two of the age groups (25–44 and 45–64) showed the higher mean scores on the relaxation and health push factor. Members of these groups appeared to release high stress and escape from daily routine work and everyday family life. Groups 1 and 5 rated "enhancement of human relationship" as a more important push factor than other age groups did. Group 1 traveled with their parents because they were too young to travel by themselves. Group 5 hoped to increase family ties through traveling, because their children might be busy working in other cities and had no time going home. Groups 1 and 2 regarded "appreciating natural beauty and acquiring knowledge" and "adventure and novelty" as a more important push factor in visiting Huangshan Mountain than older groups did. This is understandable as young people are likely to broaden their scope of knowledge and prefer adventure through traveling. The pull factor of "high quality tourist resources" was less important for Group 5 than other groups. Members of these groups laid much more emphasis on promoting family harmony, and high quality tourist resources were not important to them.

3.4.2 Comparison of push and pull factors for different occupation groups

The significant difference of influence that the occupation casts on the push and pull factors showed itself in four push factors and two pull factors. Those factors were "relaxation and health", "appreciating natural beauty and acquiring knowledge", "enhancement of human relationship", "adventure and novelty", "high quality tourist resources" and "availability of information and convenient facilities". These results are reported in Table 6.

The "relaxation and health" factor appeared to be a strong motive for all except peasants, retirees and students. This indicated that all the others regarded the visit to Huangshan Mountain as a means of releasing work pressure or physically resting and relaxing. Students had the highest mean score on the factor "appreciating natural scenery and acquiring knowledge", indicating they had a strong desire to enjoy natural scenery and acquire knowledge by traveling. On the contrary, peasants had the lowest mean score on this factor. On the push factor of "enhancement of human relationship", retirees showed the highest mean score, while the scores of all the other occupations were low. This indicated that retirees perceived increasing family relationship through traveling to be an important motive of visiting Huangshan Mountain. Students showed strong motive to experience "adventure and novelty" for a journey, but all the other occupations had low scores on this factor.

Table 5 ANOVA for comparison of push and pull factors for different age groups

Push-pull factor	Mean score					F-value	P-value
	Group 1	Group 2	Group 3	Group 4	Group 5		
Push factor							
1. Relaxation and health	2.273	2.447	3.549	3.632	2.351	3.814	0.037*
2. Appreciating natural scenery and acquiring knowledge	3.122	3.294	2.574	2.475	2.600	3.143	0.049*
3. Enhancement of human relationship	3.430	2.162	2.324	2.589	3.253	5.133	0.000*
4. Prestige	2.635	2.475	2.595	2.760	2.433	0.739	0.566
5. Adventure and novelty	3.048	3.912	1.451	1.117	0.746	6.478	0.000*
Pull factor							
1. High quality tourist resources	3.056	2.879	3.196	3.013	2.391	3.420	0.047*
2. Comfortable tourist environment	3.516	3.462	3.351	3.320	3.545	0.400	0.808
3. Availability of information and convenient facilities	3.318	2.601	2.671	2.775	2.337	0.938	0.442
4. Management and service	2.318	2.743	2.983	3.039	2.991	0.996	0.410

Notes: Group 1: Under 15 years old, Group 2: 15–24 years old, Group 3: 25–44 years old, Group 4: 45–64 years old, Group 5: 65 years old and above; * means P-value<0.05

Except the retiree group, "high quality tourist resources" was a very attractive factor to all groups as the mean scores were comparatively high. The businessmen and the government employees attached great im-

portance to the factor "availability of information and convenient facilities", because they had higher income and require a high quality of life, and the government employees had more opportunities to travel with state

Table 6 ANOVA for comparison of push and pull factors for different occupation groups

Push and pull factor dominated	Mean score										F-value	P-value
	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10		
Push factor												
1. Relaxation and health	3.483	3.667	3.776	3.363	3.740	3.419	3.962	2.104	2.183	2.365	1.954	0.037*
2. Appreciating natural scenery and acquiring knowledge	2.686	2.475	2.741	2.528	2.607	2.484	2.449	1.213	2.544	3.039	1.729	0.049*
3. Enhancement of human relationship	2.330	2.291	2.611	2.447	2.486	2.213	1.986	1.736	3.294	2.356	3.114	0.001*
4. Prestige	2.732	2.585	2.411	2.818	2.755	2.410	2.567	4.332	2.647	2.391	1.297	0.238
5. Adventure and novelty	1.611	1.258	1.336	1.712	1.692	1.473	0.909	0.109	0.758	2.251	3.469	0.000*
Pull factor												
1. High quality tourist resources	2.943	3.372	2.858	3.015	3.417	3.208	3.139	3.100	2.409	2.937	1.791	0.041*
2. Comfortable tourist environment	3.341	3.474	3.364	3.178	3.781	2.932	3.394	2.732	3.058	3.569	1.446	0.168
3. Availability of information and convenient facilities	3.247	2.714	2.746	3.464	2.929	2.913	2.442	2.009	2.299	2.198	1.756	0.046*
4. Management and service	3.186	2.780	3.211	2.825	3.131	3.088	2.600	2.699	3.240	2.653	1.598	0.115

Notes: Group1: Government employee, Group 2: Enterprise manager, Group 3: Professional or technician, Group 4: Businessman, Group 5: Server, Group 6: Private business owner, Group 7: Worker, Group 8: Peasant, Group 9: Retiree, Group10: Student; * means P -value<0.05

expense. However, the workers, the peasants, the retirees and the students showed the lowest mean scores on this factor owing to economic state and saving concept.

3.4.3 Comparison of push and pull factors for different income groups

Table 7 reports that significant differences for different income groups exist on three push factors and two pull factors, which are "relaxation and health", "prestige", "adventure and novelty", "availability of information and convenient facilities" and "management and service".

Generally speaking, the higher the income is, the stronger the work pressure will be, and so the people of high-income hope to release high-pressure and physically rest and relax. Thus respondents with an income of 3000 yuan or more had highest mean score on "relaxation and health". Meanwhile, the group with an income of 1000 yuan and less, mainly composing of students and retirees, showed comparatively low mean score. People with high-income attached great importance to "prestige" for visiting Huangshan Mountain, and their mean scores on "prestige" were high. The factor "adventure and novelty" gave a strong push to those

Table 7 ANOVA for comparison of push and pull factors for different income groups

Push and pull factor dominated	Mean score					F-value	P-value
	Group 1	Group 2	Group 3	Group 4	Group 5		
Push factor							
1. Relaxation and health	2.482	2.812	3.313	3.476	3.635	2.141	0.049*
2. Appreciating natural scenery and acquiring knowledge	2.966	2.574	2.597	2.464	2.675	1.532	0.193
3. Enhancement of human relationship	2.406	2.349	2.309	2.430	2.699	1.310	0.266
4. Prestige	2.352	2.683	2.762	3.018	3.461	2.330	0.042*
5. Adventure and novelty	2.378	1.572	1.342	1.269	1.444	2.514	0.042*
Pull factor							
1. High quality tourist resources	2.839	3.100	2.968	3.239	3.368	2.035	0.076
2. Comfortable tourist environment	3.507	3.145	3.441	3.371	3.157	1.281	0.278
3. Availability of information and convenient facilities	2.135	2.395	2.650	2.993	3.243	2.227	0.043*
4. Management and service	2.156	2.438	2.907	3.055	3.295	2.722	0.039*

Notes: Group 1: Less than 500 yuan, Group 2: 500–999 yuan, Group 3: 1000–1999 yuan, Group 4: 2000–2999 yuan, Group 5: 3000 yuan or more; * means P -value<0.05

with an income less than 500 yuan, most of which were students. All the other occupations showed a low mean score on this factor. The Groups 4 and 5 had higher in-

come and tended to require a high-quality life, so these two groups gave the highest mean score on the factors "availability of information and convenient facilities"

and "management and service", while groups with a lower income showed the lowest mean score.

4 CONCLUSIONS

The purposes of this study were: 1) to identify the push factors and pull factors that influence visitors' decision to visit Huangshan Mountain; 2) to investigate differences on these push and pull factors for different socio-demographic groups. Knowing the importance of both push factors and pull factors as perceived by travelers to Huangshan Mountain can help the sustainable development of the tourism of Huangshan Mountain.

A factor analysis of the seventeen push factors resulted in five underlying dominances. The most important three ones were "relaxation and health", "appreciating natural scenery and acquiring knowledge" and "enhancement of human relationship". This suggests that visitors to Huangshan Mountain are likely to consider Huangshan to be valuable recreational resources that can provide important opportunities for people to physically rest and relax, to appreciate natural scenery and increase knowledge and to improve human relationship. Thus, in conformity to these visitors' motives, a strategic development plan for the whole area should be in store while the superior natural resources of Huangshan Mountain are being exploited. Taiping Lake, in the close vicinity of Huangshan Mountain, with its abundant water resources, can be considered a nice place for leisure and holiday and conference. At the same time, ties should be strengthened with neighboring ancient villages Xidi-Hongcun, Jiuhua Mountain and Qiyun Mountain, with respect to developing tourist products on specific themes, namely, Huizhou Culture, Buddhism Culture, Taoism Culture, and promoting eco-tourism in nearby villages, in hope that various needs of visitors can be met.

A factor analysis of the seventeen pull factors produced four underlying dominances. Visitors to Huangshan Mountain had relatively high opinion of "Four Wonders in the Heaven—unique pines, grotesque rocks, fantastic clouds, and hot springs", "the amenities of air environment", "beautiful scenery and concentration of scenic spots". This finding reflects the fact that Huangshan Mountain occupies important position in people's minds because of beautiful scenery and rich culture, and is strongly attractive. Being granted as the "Civilization Mountain", the "Safe Mountain" and the "Sanitary Mountain", the attraction of Huangshan Mountain has been enhanced for the comfortable environment. To retain this strong attraction, a sustainable

development of the resources, the ecosystem and the tourism industry should be maintained under the guideline of overall planning and ever lasting utilization to combine short-term profits with long-term interests.

Further more, the push and pull factors appeared a number of obvious differences among the different socio-demographic sub-group. Managers in tourist industry need understand these differences and value them highly in order to enhance visitors' sense of satisfaction and encourage revisit. For example, the results of this research showed that for aged 25–64 groups, businessman and government employee groups and high-income groups, "relaxation and health" was the most important motivation to Huangshan Mountain. The "appreciating natural scenery and acquiring knowledge" and "adventure and novelty" were the most important push factors to young group being under 24 and student group. "Enhancement of human relationship" was the most important push factor for retiree group. The study results indicated that respondents perceived Huangshan Mountain to possess attractive resources except old age group (65 and above) and retiree group. Respondents who were businessman and government employee groups with the income of more than 2000 yuan attached high importance to "information and convenience of facilities" and "management and service". Therefore, Huangshan Mountain need enhance construction of infrastructure, upgrade road quality, improve transportation capability, launch international scheduled flight, increase transport service of the highway, build high-grade inns, and perfect facilities of recreation and shopping.

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