

CORRESPONDENCE ANALYSIS ON IMAGES OF JIANGXI PROVINCE AS A TOURIST DESTINATION

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ABSTRACT: This paper delineates the images of Jiangxi Province as tourist destination perceived by about 2000 sample visitors at Lushan Mountain and other 3 famous resorts (Jinggangshan Mountains, Longhushan Mountain, and Sangingshan Mountain), with a result that the most common image is the famous scenic mountain image with partial attribute of image of religious culture destination. In order to reveal the similarities and dissimilarities of images among the four destinations, a correspondence analysis on 16 image attributes was employed. The results indicate that the tourists' images on Longhushan Mountain, Sangingshan Mountain and Lushan Mountain are very similar: having a lot of good tourist sites, famous mountain scenery, being close to nature and having good guide service, and others, but religious culture and good shopping facilities having not made deep impression on tourists, while Jinggangshan Mountains is famous for its red culture. The correspondence analysis visualizes the strengths and weaknesses of the destinations, which is useful for market positioning among the competitive places. Finally, some marketing suggestions for the four destinations were provided.

KEY WORDS: tourist destination; image; cognitive attribute; evaluative attribute; correspondence analysis

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1 INTRODUCTION

An image is a set of beliefs, ideas and impressions that a person holds about an object (KOTLER, 1991). Similarly, definition is the image of a destination as the sum of beliefs, ideas and impressions that people have of a place or destination (CROMPTON, 1979; KOTLER, 1993). According to systematic analysis by World Tourism Organization (WTO, 1979), image is defined as "an aura, an angel, a subjective perception of the same message transmitter". Image is also defined as perceptual phenomenon formed through a consumer's reasoned and emotional interpretation,, which has both cognitive (beliefs) and affective (feelings) components (DOBNI and ZINKHAN, 1990). From these basic definitions, we can conclude that a destination's image is a complex concept that may be analyzed from different perspective and composed of a variety of individual perception that related to various product/service attributes. In almost three decades since the first study emerged, the topic has become one of the most popular in the tourism research lit-

erature (PIKE, 2002). GUNN (1972) referred to two levels of images as organic image and induced image. Organic image deals with tourists' impression of a destination without physically having visited the place, and induced image is forged through promotional materials or actual visitation. GARTNER (1993) further subdivided tourists' image into 8 domains including Overt Induced I, Overt Induced II, Covert Induced I, Covert Induced II, Autonomous, Unsolicited Organic, Solicited Organic, and Organic. The measurement of a destination image has been of great interest not only to tourism researcher, but also to industry practitioner and destination marketer (BALOGLU and MANGALOGU, 2001). Indeed, a good understanding of tourists' perceived importance of destination presumably enables destination marketers to entice potential customers. In addition, the resulting data acquired from tourists' image studies often help destination marketers identify a location's strengths and weaknesses, providing critical insights on service delivery and product development. ECHTNER and RITCHIE (1993) in completing the image measuring technique suggested

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the framework of image consists of 3 continua: attribute-holistic, functional-psychological and common-unique. The majority of destination image studies have used either structured (scale format) or unstructured (open-ended, repertory grid, etc.) measurement techniques. ECHTNER and RITCHIE (1993) suggested that a combination of both structured and unstructured methodologies should be utilized to capture the complex assessment of destinations. In order to assess the magnitude of tourists' image of destinations, two sets of attributes in regard to designative and evaluative image have been used frequently by researchers (BALOGLU and BRINBERG, 1997; WALMSLEY and YOUNG, 1998). Designative attribute relates to the perceptual and cognitive component of image, while evaluative attribute deals with the affective component of image. Beyond image theory, tourism scholars have further explored the complexity of destination image. For example, GARTNER (1989) used a Multi-dimensional Scaling Analysis to help marketer target specific market segments. CHAUDHARY (2000), BALOGLU and MANGALOGU (2001) used the analysis of variance (ANOVA) to analyze destination image.

In recent years, some Chinese research articles have been conducted of tourists' destination images (LI, 1999; BAO, 2000), although they have made notable contributions to the body of literature in the area of Chinese tourism management, little work has compared images among travelers to different destinations by using designative attribute or multivariate data analysis method. The advantage of using designative attribute vs. evaluative attribute is that the designative attribute provides more concrete, interpretive meaning regarding uniqueness of a destination, which helps marketers to develop actionable positioning strategies. Based on the project of "Tourism Master Plan of Jiangxi Province from 2001 to 2020", this study is designed to help marketers visualize tourists' images on Lushan Mountain, Jinggangshan Mountains, Longhushan Mountain, and Sanqingshan Mountain among tourist groups by using a correspondence analysis.

2 DATA COLLECTION AND METHOD

An overall image of a place is formed as a result of both perceptual/cognitive and affective evaluations of that place (BALOGLU and MANGALOGU, 2001). The questionnaire included questions about affective, perceptual/cognitive, and open-ended evaluations of the four destinations (Lushan Mountain, Jinggangshan Mountains, Longhushan Mountain, and Sanqingshan

Mountain), as well as several questions to describe the nature of respondents in this study. Sixteen image attributes measured by close-ended questions were included to assess tourists' image of their travel. With the cooperation of the Tourist Bureau of Jiangxi Province, a series of on-site surveys were conducted at Lushan Mountain, Jinggangshan Mountains, Longhushan Mountain, and Sanqingshan Mountain from July 21 to 24, 2000. Questionnaires were delivered to and collected from domestic volunteer participants. Respondents were asked to rate each destination on each sixteen attributes on a 5-point scale with strongly disagree, somewhat disagree, neither disagree nor agree, agree, strongly agree, referring scaling values as 1, 2, 3, 4, 5 respectively. Among the questionnaires received, 98.1% were effective for this study, 765 questionnaires from Lushan Mountain, 602 from Longhushan Mountain, 608 from Sanqingshan Mountain, and 708 from Jinggangshan Mountains.

In order to study tourists' images, specifically, further to visualize what were similarities/differences of tourists' images between these four mountains, the correspondence analysis of 16 destination image attributes was undertaken in this study. To further visualize the relationship between row and column variable, canonical normalization was used to derive maps portraying the relative position of each respondent group in the context of destination images. As a result, all row and column categories were plotted in the derived maps. All categories in both row and column variables constitute plotted points. The total number of points is equal to the sum of the number of the categories of row and column variables. The proximity between a pair of points is used to interpret the underlying relationship between the points. The closely aligned points reveal a strong relationship (GUO, 1999).

Because correspondence analysis requires categorical data, sixteen attitude-related items were transformed into a contingency table. To facilitate the transformation, a new variable pertaining to tourists' destination images was first created by re-coding the 16 image attributes. In this procedure, the scale of 4=agree and 5=strongly agree were treated as "yes", and 1=strongly disagree, 2=somewhat disagree, 3=neither disagree nor agree as "no". All of the calculations in this study were carried out by program ANACOR Ver0.4 with SPSS software.

3 RESULTS AND DISCUSSION

3.1 General Analysis of Destination Image

Table 1 lists respondents' agreements and disagreements with the images on Lushan Mountain, Jinggangshan

Mountains, Longhushan Mountain, and Sangingshan Mountain. It was found that the cognitive images "agreed most" by respondents at Lushan Mountain, Longhushan Mountain, and Sangingshan Mountain were the same: famous mountain scenery, close to nature, and rich cultural heritage, while the cognitive images "agreed most" by respondents at Jinggangshan Mountains were red (revolution) culture, famous mountain scenery, and close to nature. The cognitive images "disagreed most" by respondents were religious culture at Lushan Mountain, Sangingshan Mountain and Jinggangshan Mountains, others at Longhushan Mountain respectively. STABLER (1988) divided the factors influencing the formation of a consumer's destination image into de-

mand and supply factors. The above results reveal the main character of Jiangxi tourist resources, but do not match them completely. For example, Longhushan Mountain is one of the birthplaces of Taoism, with a long history of more than 1900 years when ZHANG Dao-ling, a founder of Taoism came to live, and the title of ZHANG Tian-shi (Heavenly Master ZHANG) has been passed the 63 generations now, but among the ten cognitive images, religious culture is only in the seventh. Sangingshan Mountain as well as Longhushan Mountain, is also a famous Taoism mountain in China. The above results seem to suggest that it is necessary to reinforce further the sales promotion and exploitation of the tourist production of religious culture in Jiangxi Province.

Table 1 Count of Jiangxi's images as the tourist destination (%)

Image attribute	No.	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	D ₇	D ₈
Designative attribute									
Rich cultural heritage	1	50.27	49.73	44.90	55.10	34.90	65.10	46.06	53.94
Man-made landscape	2	8.22	91.78	5.50	94.50	5.60	94.40	10.57	89.43
Folk-custom	3	17.55	82.46	25.20	74.80	21.00	79.00	24.29	75.71
Close to nature	4	50.56	49.44	50.40	49.60	47.40	52.60	50.63	49.37
Famous mountain scenery	5	69.22	30.78	63.20	36.80	68.10	31.90	50.99	49.01
Special tour	6	8.08	91.92	12.60	87.40	8.90	91.10	9.31	90.69
Red culture	7	31.75	68.25	22.40	77.60	17.20	82.80	57.24	42.74
Village scenery	8	13.79	86.21	13.90	86.10	11.10	88.90	17.98	82.02
Religious culture	9	0.01	99.99	17.60	82.40	0.01	99.99	0.01	99.99
Others	10	0.97	99.03	0.30	99.70	1.90	98.10	1.60	98.40
Evaluative attribute									
Good accommodation facilities	11	48.07	51.93	37.80	62.20	34.60	65.40	42.60	57.40
Good transportation facilities	12	61.55	38.45	38.70	61.30	30.90	69.10	37.50	62.50
Good cuisine/food/drink	13	31.22	68.68	35.30	64.70	26.50	73.50	36.20	63.80
Good shopping facilities	14	26.13	73.87	29.60	70.40	13.10	86.90	28.10	71.90
Good tourist sites	15	79.60	20.40	65.40	34.60	74.90	25.10	62.40	37.60
Good guide service	16	60.25	39.75	62.30	37.70	43.90	56.10	51.70	48.30

Notes: 1. D₁—A green entered expressed by tourists at Lushan Mountain; D₂—Disagreed entered expressed by tourists at Lushan Mountain; D₃—A green entered expressed by tourists at Longhushan Mountain; D₄—Disagreed entered expressed by tourists at Longhushan Mountain; D₅—A green entered expressed by tourists at Sangingshan Mountain; D₆—Disagreed entered expressed by tourists at Sangingshan Mountain; D₇—A green entered expressed by tourists at Jinggangshan Mountains; D₈—Disagreed entered expressed by tourists at Jinggangshan Mountains.
2. Do the same as this in the below tables and Fig. 1.

As to the evaluative images, more than 60% of respondents agreed good tourist sites, but less than 50% of respondents agreed good cuisine/food/drink, good shopping facilities and good accommodation facilities at these four mountains. Only at Lushan Mountain more than 50% of respondents agreed good transportation facilities. Therefore, the tourist infrastructure requirements needed to be improved further in Jiangxi Province.

3.2 Correspondence Analysis of Destination Image

The correspondence analysis on Jiangxi's images as the

tourist destination was shown in Table 2. The result reveals a one-dimensional solution containing 93.1% explained variance, with a singular value 0.44793, inertia 0.20064 (Table 2). The second dimension contains 0.041% of explained variance, and these two dimensions contain 97.1% of explained variance. Table 3 shows the contribution of dimensions to the inertia of each image: 14 out of the 16 destinations attributes are loaded in the first dimension; one in the second dimension, and the other in the fourth dimension. The above results suggest the 14 image attributes (rich cultural heritage, man-made landscape, folk-custom, close to nature, famous mountain

Table 2 Correspondence analysis on destination in ages

D in ension	Singularvalue	Inertia	Proportion explained	Cumulation explained
1	0.44793	0.20064	0.931	0.931
2	0.09346	0.00874	0.041	0.971
3	0.05667	0.00321	0.015	0.986
4	0.05468	0.00299	0.014	1.000
5	0.00001	0.00000	0.000	1.000

Table 3 Contribution of dimensions to inertia of each im age

Im age attribute	No.	D in ension 1	D in ension 2	D in ension 3	D in ension 4
Designative attribute					
Rich cultural heritage	1	0.944	0.031	0.023	0.003
Man-made landscape	2	0.986	0.000	0.002	0.012
Folk-custom	3	0.900	0.012	0.057	0.032
Close to nature	4	0.973	0.000	0.016	0.011
Famous mountain scenery	5	0.957	0.038	0.005	0.000
Special tour	6	0.983	0.015	0.002	0.000
Red culture	7	0.004	0.965	0.032	0.000
Village scenery	8	0.993	0.000	0.004	0.003
Religious culture	9	0.942	0.033	0.006	0.018
Others	10	0.981	0.007	0.002	0.010
Evaluative attribute					
Good accommodation facilities	11	0.925	0.036	0.004	0.035
Good transportation facilities	12	0.612	0.002	0.231	0.154
Good cuisine/food/drink	13	0.000	0.197	0.060	0.743
Good shopping facilities	14	0.802	0.043	0.098	0.056
Good tourist sites	15	0.984	0.007	0.006	0.003
Good guide service	16	0.944	0.000	0.025	0.031

tain scenery, special tour, village scenery, religious culture, others, good accommodation facilities, good transportation facilities, good shopping facilities, good tourist sites, good guide service) shared a commonality in the first dimension; the second dimension was portrayed by one image attribute—red culture; the fourth dimension was portrayed by good cuisine/food/drink. The above results suggested that the respondents' images can be better represented by the dimensions 1 and 2.

The joint plot (Fig. 1) derived from the correspondence analysis revealed the tourists' agreeable and disagreeable images of the four destinations. The principal axis of Dimension 1 separates religious culture (9) on the right from good tourist sites (15) on the left. As to the relationship between the column variable (respondents' agreements and disagreements) and row variable (image items), the agreement falls into the left-hand side of the axis while the disagreement lands in the right-hand side. It revealed that the tourists tended to agree that the four mountains had a lot of good tourist sites (15), famous mountain scenery (5), close to nature (4) and good guide service (16), but being disagreed with a destination image about religious culture (9), others (10) and good shopping facilities (14).

In the joint plot (Fig. 1), the relationship between tourists' agreeable and disagreeable images of the four destinations was revealed. For example, the tourists tended to agree that the Sangqingshan Mountain (D₅) had a lot of good tourist sites (15), famous mountain scenery (5), while they disagreed that Jinggangshan Mountains (D₈) with a destination image being religious culture (9). The relationship in Dimension 2 among the destination points (D₁, D₃, D₅, D₇ or D₂, D₄, D₆, D₈) shows the dissimilarities of the destination images. That the distances among D₁, D₃ and D₅ are very near implies that the tourists' images of them are very similar. The furthest distance among D₁, D₃, D₅ and D₇ is the distance between D₅ and D₇, because red culture had left a deep impression on tourists at Jinggangshan Mountains while it had left little impressions on tourists at Sangqingshan Mountain. These dissimilarities can be considered as unique image attribute pertaining to each destination.

The correspondence analysis also reveals the interrelationship among 16 image attributes. For example, in Fig. 1, three image attributes (rich cultural heritage (1), good accommodation facilities (11) and good transportation facilities (12)) constitute a distinct cluster while red culture (7) does not share a common trait with any other

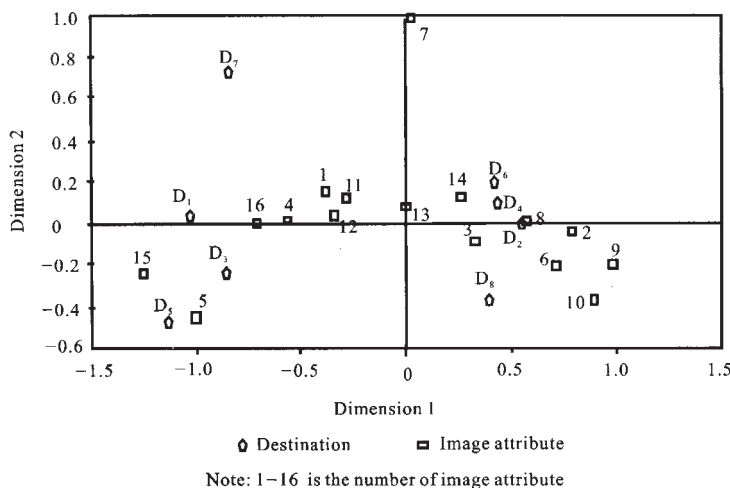


Fig. 1 Joint plot of Jiangxi's images as the tourist destination

attributes among these destinations.

4 CONCLUSIONS

The tourists' images on Longhushan Mountain, Sangging-shan Mountain and Lushan Mountain are very similar: having a lot of good tourist sites, famous mountain scenery, being close to nature and having good guide service, and others, but religious culture and good shopping facilities having not made deep impression on tourists. The tourists' image results reveal the main characters of Jiangxi tourist resources, but do not match completely them. The similarities and dissimilarities of destination image among the four destinations were revealed by correspondence analysis. The analysis indicates that the correspondence analysis visualizes the strengths and weaknesses of the destinations, furnishes practitioners with a more holistic view of their market positions compared to those of their competitive places. Therefore, the practical implications are of great importance to destination marketers of the destinations. It is necessary to take action to improve their weak or negative images and promote their strengths targeting markets.

At present, it should be taken seriously to improve the tourist infrastructure requirements, to enhance the sales promotion and exploitation of the tourist production of religious culture. From marketing perspective, practitioners may consider positioning their products by utilizing the unique image surrounding the destinations. The similarity of tourist images results in market competitions among these mountains increasingly. The resources-based theory (PENROSE, 1951; WERNER-FELT, 1984) might help to determine the competitive potential of an industry in a given geographic area. The

term "geographic area" is meant as a destination possesses certain resources and/or capabilities that enable to carry out a particular economic activity (MELIA' N-GONZALEZ, 2003).

In future, as a world cultural landscape, Lushan Mountain should be made a famous center of international/national convention and exhibition and an expo center of world cultural landscape; as the birthplace of Taoism, Longhushan Mountain should enhance the sales promotion and exploitation of the tourist production of religious culture; Jinggangshan Mountains, which is not only the cradle of the Chinese revolution (red culture), but also a national nature (subtropical forest) reservation area, should be a tourist area of studying the modern history of China and Chinese key ecological tourism demonstration area. Like many researches note, further study is required. An interesting future research may compare the images of the destination between different tourists (age, cultural background, etc.).

REFERENCES

- BALOGLU S, BRINBERG D, 1997. Affective images of tourism destination [J]. *Journal of Travel Research*, 35(4): 11-15.
- BALOGLU S, MANGALOGUM, 2001. Tourism destination images of Turkey, Egypt, Greece and Italy as perceived by US-based tour operators and travel agent [J]. *Tourism Management*, 22(1): 1-9.
- BAO Ji-gang, 2000. *The Study on Tourist Exploitation: Theory, Method and Practice* [M]. Beijing: Science Press. (in Chinese)
- CHAUDHARY M, 2000. India's image as a tourist destination—a perspective of foreign tourists [J]. *Tourism Management*, 21(3): 293-297.
- CROMPTON JL, 1979. An assessment of the image of Mexico as a vacation destination and the influence of geographical location upon that image [J]. *Journal of Travel Research*, 17(4): 18-

- 23.
- DOBNID, ZINKHAN G M, 1990. In search of brand image: a foundation analysis [J]. *Advances in Consumer Research*, 17(2): 110-119.
- ECHTNER C, RITCHIE M B, 1993. The measurement of destination image: an empirical assessment [J]. *Journal of Travel Research*, 31(4): 3-13.
- GARTNER W C, 1989. Tourism image: attribute measurement of state tourism products using multidimensional scaling techniques [J]. *Journal of Travel Research*, 27(2): 16-20.
- GARTNER W C, 1993. Image formation process [J]. *Journal of Travel and Tourism Marketing*, 2(3): 199-212.
- GUNN C, 1972. *Vacationscape—Designing Tourist Regions* [M]. Washington DC: Taylor and Francis, University of Texas.
- GUO Zhi-gang, 1999. *Application of SPSS Software* [M]. Beijing: Chinese Renmin University Press. (in Chinese)
- KOTLER, 1991. *Marketing Management: Analysis, Planning, Implementation and Control* [M]. Englewood Cliffs, NJ: Prentice Hall.
- KOTLER, 1993. *Market Places: Attracting Investment Industry and Tourism to Cities, States and Nations* [M]. New York: The Free Press.
- LILei-lei, 1999. *The Plan of Destination Image: Theory and Practice* [M]. Guangzhou: Tourist Press. (in Chinese)
- MELIA' N-GONZA' LEZ A, 2003. Competitive potential of tourism in destination [J]. *Annals of Tourism Research*, 30(3): 720-740.
- PENROSE E, 1951. The theory of the growth of the firm [A]. In: FOSSN (eds.). *Resources Firms and Strategies* [C]. New York: Oxford University Press, 27-39.
- PIKE S, 2002. Destination image analysis—a review of 142 papers from 1973 to 2000 [J]. *Tourism Management*, 23(16): 541-549.
- STABLER M. J, 1988. The image of destination regions: theoretical and empirical aspects [A]. In: GOODALL B, ASHWORTH G (eds.). *Marketing in the Tourism Industry: The Promotion of Destination Regions* [C]. London: Croom Helm, 133-161.
- WALMSLEY D J, YOUNG M, 1998. Evaluative image and tourism: the use of personal constructs to describe the structure of destination images [J]. *Journal of Travel Research*, 36(3): 65-69.
- WERNERFELT B, 1984. A resource-based view of the firm [J]. *Strategic Management Journal*, 5(2): 171-180.
- WTO (World Tourism Organization), 1979. *Tourist Images* [M]. Madrid: WTO