Abstract

Digital media as an information resource and communication platform for tourists has significantly grown. Other than facilitating mobility and interactivity, digital media has likewise been instrumental in making convergence a reality. Convergence in media can be readily observed in tourism websites. The design of tourism websites are able to provide a virtual experience for tourists about a destination, and are able to influence the formation of a tourism destination image in their minds. Image management and image perceptions lie at the core of media-induced tourism. The aim of this study is to determine the role of digital images on consumer choices within nature-based tourism (NBT) in East Java, Indonesia. It analyzed the mix of digital communication sources that are relevant and important in destination image formation, determined the motives of traveling to an NBT destination, and examined, among others, the changes in expected NBT destination attributes prior to and after exposure to a set of digital induced-images.

Keywords: nature-based tourism, digital media, image of tourism destinations

1. Introduction

The use of digital media as an information resource and communication platform for tourists has significantly grown. These include the provision of online information that can readily be accessed from websites, electronic mail, web advertising, blogs, and social networking sites, among others. Smart phones and electronic gadget manufacturers have teamed up with telecommunications providers to enable tourists worldwide to acquire, store, disseminate and exchange information in multimedia-friendly format about their travel plans and itineraries; make, adjust, confirm or cancel reservations interactively on demand and at their convenience 24 hours each day; and communicate their travel experiences and outcomes to their colleagues and family members through mobile Internet features.
Other than facilitating mobility and interactivity, digital media has likewise been instrumental in making convergence a reality. According to Jenkins (2006) [1], various information and media sources (e.g. print media such as newspapers and books, broadcast media such as radio and television, and entertainment such as films and computer games) are collaborating, vertically integrating, and converging towards the digital sphere. Tourism destination management organizations (DMOs) and other key players in the tourism industry are capitalizing on digital media’s convergence phenomenon to disseminate tourism information content concurrently, and accelerate consumption propensities for tourism goods and services across destinations.

Convergence in media can be readily observed in tourism websites. Doolin, Burgess, and Cooper (2002) [2] acknowledged that the design of tourism websites are able to provide a virtual experience for tourists about a destination, and are able to influence the formation of a tourism destination image in their minds. Image management and image perceptions lie at the core of media-induced tourism. In an earlier study, Gartner (1993) [3] connected image formation and destination selection along a continuum. Two types of images are formed based on the nature of information sources. These are organic images and induced images. Organic images are a result of unbiased sources of information whereas induced images originate from paid sources (e.g. promotional elements of the marketing management mix).

The aim of this study is to determine the role of digital images on consumer choices within nature-based tourism (NBT) in East Java, Indonesia. Prior researches, such as those undertaken by Henkel, Henkel, Agrusa, Agrusa, and Tanner (2006) [4] state that images are developed by one’s personal impression or deliberately created from external communication sources. These external sources could be in digital or printed forms; and would include a mix of paid or unsolicited advertising, tourism promotional materials, factbooks, news, movies, travelers’ reviews and opinions, and word-of-mouth, among others.

Specifically, the study sought to achieve the following objectives:

- analyze the mix of digital communication sources that are relevant and important in destination image formation from the respondents’ perspective;
- determine the motives of traveling to an NBT destination among prospective, first-time and repeat travelers; and
- examine the NBT destination attributes expected by the respondents prior to and immediately after they were exposed to a set of digital induced-images.

2. Research Method

A multi-phase approach was used in undertaking the research. Phase 1 consisted of a focus-group discussion that was conducted to identify the nature-based tourism destination attributes expected by respondents. Phase 2 covered the preparation of digital induced-images about a nature-based tourism destination in East Java. These images were later used in a controlled interview environment that was conducted in a central location. Phase 3 was about preparing and undertaking the controlled interview. Respondents selected for this study were a group of students who were enrolled in the Management Study Program. They were in their junior year in the university. The research instrument used in the interview was prepared in both English and Indonesian languages. The instrument was subjected to reliability tests and subsequently improved. It was administered to the students in a central location at the Faculty of Business. Field editing was done to ensure that there were no missing responses.

The study adopted the Communication Effectiveness Grid (CEG) that was developed by McCartney, Butler and Bennett (2008) [5] to analyze the mix of digital communication sources that are relevant and important in destination image formation from the respondents’ perspective. [14]

Descriptive statistics and factor analysis were employed in analyzing the results.
3. Review of Literature

Researchers agree that a combination of information sources on tourism destinations and the variety of information they provide influence the destination image. However, there are also other factors that interact with information and affect the formation of tourism destination images in the minds of travelers. Falco-Mammone (2005) [6], for instance, cited the destination image research review conducted by Gallarza, Saura and Garcia (2002) [7] that identified time, ‘movement’ and distance as the other factors that tend to influence image formation. Tourists who had prior visits to a destination and continued to acquire information after the visits had clearer and better images relative to those who may have only heard about it.

Digital-induced tourism, on the other hand, tends to facilitate virtual tourism by providing recorded or real-time multi-dimensional images of the destination prior to the visit. Some of these are in multimedia format. It is thus possible that virtual tourism, by way of digitally-induced images, can likewise enhance image formation for potential and first-time visitors. Heung (2003) [8] acknowledged that travelers are increasingly utilizing digital sources such as tourism websites in their information search and communication exchange. A website’s usefulness is enhanced if this contains information that can ease the traveler’s preparation of trip planning. In their study, Kapalindo and Vogt (2006) [9] found out that a traveler’s intention to visit a destination is strengthened by the trip-planning features of a tourism destination website. Falco-Mammone also reported that environmental images, mental maps, and tourist destination images are 3 key approaches to the study of image. Although environmental images and mental maps are considered to be highly subjective, tourist destination images would have cognitive, affective and conative elements. Integrating these 3 approaches is possible and the result would be a multi-disciplinary approach in studying destination image formation. It must be pointed out that conative elements are inherently behavior in nature and can be a product of the image formation process that was induced by a prior visit to the destination or a virtual experience from the Internet and other digital media sources. A study conducted by White (2004) [10] reported that changes in destination images will continue to occur even after a visit has been made. These changes are a result of the continuous inflow of information that tourists are exposed to on a daily basis.

NBT capitalizes on the natural and cultural attractions in the destination. It may be in the form of wildlife tourism (e.g. wildlife safari adventures), cultural visits that engage the travelers to learn other cultures from communities living in the natural attractions (e.g. indigenous peoples or hill tribes), and travels that support the goals and aspirations of sustainable ecosystems. Sustainable development and biodiversity conservation, as viewed in the context of NBT, enjoins stakeholders and tourists alike to participate in the destination’s conservation efforts. In a study, Luo and Deng (2008) [11] said that the main difference of NBT from tourism (in general) is its emphasis on both sustainability and viewing visits to natural sceneries. Hence, without the preservation of rich natural environments, nature-based tourism will cease to exist. Natural environments can enhance tourists’ on-site experience. The attitudinal desire or interest of tourists to help preserve natural and cultural attractions; promotional messages of DMOs, and tourism and hospitality businesses on sustainable ecosystems; and the conservation efforts of communities are thus expected to provide valuable inputs in building a broader-based public support to NBT activities. Reality shows that tourists, who were raised from cramped and high population-dense urban clusters and are deprived of natural sceneries, would be an attractive market segment for the NBT market. These individuals may also be the most disconnected in terms of their knowledge to biodiversity conservation campaigns as their urban-oriented lifestyles would suggest. Hence, NBT information sources should highlight cause-related and environmental management taglines in their destination marketing brochures and websites to increase awareness on or improve their attitudes to sustainability and conservation efforts and programs. It is possible that a greater majority of urban dwellers may have no pre-existing motivation to support conservation initiatives.

In their study, Balmford, Beresford, Green, Naidoo, Walpole and Manica (2009) [12] reported that visits to NBT sites (and other protected areas) in some developed countries (e.g. United States and Japan), and a few developing countries (e.g. Indonesia) have declined over the last two decades. On the other hand, nature-based tourists are increasing in other countries that were surveyed. This was based on information on visitor numbers gathered from 1992 to 2006 in 280 protected areas across 20 countries. In fact, the total number of visitors grew in 15 out of the 20 countries that were studied.
What factors could be driving down the NBT interest in some countries? Do these factors include attitude-related constructs? In like manner, what could be pushing it up? Is this also a manifestation that alternative wildlife and natural attractions in developed countries are having image problems (e.g. getting pricier or difficult to access) whereas those from developing countries are becoming more tourist-friendly and accessible? Line and Costen (2011) [13] explored the relationships between environmental attitudes and place attachment within the context of NBT. Results showed that supportive environmental attitudes contribute an important role in the formation of travel motivation. These findings imply that the primary target market segments for NBT destinations are individuals and groups for whom environmental considerations are relatively more important.

4. Survey Results and Discussion

A total of 111 undergraduate students from the university’s Management Study Program participated in this research with a response rate of 96%. Results were supported by a Cronbach-alpha reliability value of 0.892. The five most important digital communication sources of information about nature-based tourism were search engines (e.g. Google); advertisements on the internet; and tourism-specific websites such as travel and vacation websites, airline websites, and government tourism websites. The least important ones on NBT destination image formation included mass media sources such as newspaper/magazine websites (e.g. Jakarta Globe), online video sites (e.g. You Tube), personal email, and e-groups (e.g. Yahoo eGroups). Furthermore, search engines were both rated important and relevant in providing information about NBT destinations (Table 1).

Table 1. Mean Importance Rating and Mean Information Relevance Rating of Digital Communication Sources in Destination Image Formation

| Digital Communication Source                | Importance Rating | Information Relevance Rating |
|--------------------------------------------|-------------------|------------------------------|
| Search Engines (Google)                    | 2.41 (1.01)       | 1.66 (0.78)                 |
| Travel & Vacation Websites                 | 1.97 (1.34)       | 1.15 (1.13)                 |
| Airline Websites                           | 1.74 (1.44)       | 0.85 (1.27)                 |
| Government Tourism Websites                | 1.60 (1.51)       | 0.59 (1.41)                 |
| Internet Advertising                       | 1.59 (1.46)       | 0.83 (1.22)                 |
| Social Networking (Facebook)               | 1.30 (1.69)       | 0.91 (1.28)                 |
| Hotel Websites (ACCOR)                     | 1.28 (1.64)       | 0.63 (1.33)                 |
| Chat Rooms (Blackberry chat, YM)           | 1.14 (1.67)       | 0.67 (1.42)                 |
| Blogs                                      | 1.00 (1.76)       | 0.54 (1.35)                 |
| Newspaper Websites (Jakarta Globe)         | 0.99 (1.69)       | 0.42 (1.40)                 |
| Magazine Websites                          | 0.95 (1.61)       | 0.43 (1.37)                 |
| Online Video Sites (You Tube)              | 0.81 (1.84)       | 0.44 (1.49)                 |
| Personal Email                             | 0.59 (1.91)       | 0.18 (1.50)                 |
| E-Groups (Yahoo eGroups)                   | 0.56 (1.71)       | -0.24 (1.41)                |

Factor analysis further revealed that search engines and tourism-specific websites contributed at least 31% or about a third of the explained variance. This means that any changes in the students’ specific use of a digital communication source in acquiring information about NBT destinations can be significantly attributed to changes in search-driven engines and tourism-specific websites (Table 2). The other third can be attributed to mass media digital communication sources and to personal email/E-groups. The CEG in Figure 1 showed that search engines and tourism-specific websites were both rated as relevant and important digital communication sources in NBT image formation.
Table 2. Varimax-Rotated Factor Matrix of Digital Communication Sources in Destination Image Formation

| Digital Communication Sources                  | VARIMAX-Rotated Loadings* |
|-----------------------------------------------|---------------------------|
|                                               | Factor                    |
|                                               | 1            | 2            | 3            | 4            |
| Personal Email                                | 0.86            |              |              |              |
| E-Groups (Yahoo eGroups)                      | 0.78            |              |              |              |
| Chat Rooms (Blackberry chat, YM)              | 0.60            |              |              |              |
| Government Tourism Websites                   | 0.78            |              |              |              |
| Airline Websites                              | 0.78            |              |              |              |
| Hotel Websites (ACCOR)                        | 0.85            |              |              |              |
| Travel & Vacation Websites                    | 0.80            |              |              |              |
| Search Engines (Google)                       |                | 0.79            |              |              |
| Internet Advertising                          |                | 0.72            |              |              |
| Social Networking (Facebook)                  | 0.70            |              |              |              |
| Blogs                                         | 0.71            |              |              |              |
| Newspaper Websites (Jakarta Globe)            | 0.85            |              |              |              |
| Magazine Websites                             | 0.82            |              |              |              |
| Online Video Sites (You Tube)                 | 0.70            |              |              |              |
| % of Variance Explained                       | 21.85           | 20.29        | 13.99        | 11.59        |

* Factor Loadings less than 0.60 have not been printed

Figure 1. Communication Effectiveness Grid (CEG) in Nature-based Tourism Destination Image Formation

The 5 most important motives for traveling to an NBT destination for all respondents are “physical and mental relaxation,” “vacation time,” “an experience of the unfamiliar/unknown aspects of nature,” “get away from daily demands of life”, and “learn new things” (Table 3). Respondents who have not traveled to an NBT destination (i.e. identified as prospective travelers) rated “physical and mental relaxation”, “vacation time”, and “get away from daily demands of life” as important motives for traveling to an NBT destination. First-time travelers rated “physical and mental relaxation”, “an experience of the unfamiliar/unknown aspects of nature”, and “learn new things” as important motives for traveling. Moreover, repeat travelers (i.e. those who have visited an NBT destination at least twice) rated the motives “physical and mental relaxation”, “an experience of the unfamiliar/unknown aspects of nature”, and “get away from daily demands of life” as important. Interestingly, the motive “support conservation of nature” was more important only to repeat travelers.
Table 3. Mean Importance Rating of Motives for Traveling to a Nature-Based Tourism (NBT) Destination

| Motives for Traveling                                      | All Travelers | Prospective Traveler | First-Time Traveler | Repeat Traveler |
|-----------------------------------------------------------|---------------|----------------------|---------------------|-----------------|
| Relax physically and mentally                             | 2.67          | 2.75                 | 2.50                | 2.61            |
| Time available to take a vacation                         | 2.37          | 2.45                 | 2.15                | 2.39            |
| Experience the unfamiliar/ unknown aspects of nature      | 2.36          | 2.34                 | 2.31                | 2.50            |
| Get away from the demands of daily life                   | 2.32          | 2.46                 | 1.81                | 2.56            |
| Learn new things                                          | 2.28          | 2.30                 | 2.19                | 2.33            |
| Variety of natural tourism attractions and views          | 2.27          | 2.36                 | 2.15                | 2.11            |
| Experience a new culture                                  | 2.18          | 2.18                 | 2.00                | 2.44            |
| Going to places that my family or friends have not seen   | 2.13          | 2.19                 | 1.96                | 2.11            |
| Cost of the vacation package                              | 1.78          | 1.78                 | 1.81                | 1.78            |
| Time to reach the destination                             | 1.64          | 1.60                 | 1.81                | 1.56            |
| Support conservation of nature                            | 1.58          | 1.49                 | 1.50                | 2.00            |

Factor analysis further revealed that 5 out of the 11 identified motives for traveling to an NBT destination contributed to about 28% of the explained variance (Table 4). This implied that any variation in the ratings on motives for traveling to an NBT destination can be attributed to these motives. Moreover, three factor names were identified. These factors are “need-driven” motives, “on-site experience” motives, and “within-reach” motives. The 5 “need-driven” motives for traveling to an NBT destination include “physical and mental relaxation”, “vacation time”, “get away from daily demands of life”, and “going to places that family/ friends have not seen”. The motive “support conservation of nature” can be considered a part of the “on-site experience” factor.

Table 4. Varimax-Rotated Factor Matrix of Motives for Traveling to a Nature-Based Tourism (NBT) Destination

| Motives for Traveling                                      | VARIMAX-Rotated Loadings \( a \) |
|-----------------------------------------------------------|----------------------------------|
|                                                           | Factor 1 | Factor 2 | Factor 3 |
| Relax physically and mentally                             | 0.61     |          |          |
| Time available to take a vacation                         | 0.78     |          |          |
| Get away from the demands of daily life                   | 0.64     |          |          |
| Learn new things                                          | 0.68     |          |          |
| Going to places that my family or friends have not seen   | 0.72     |          |          |
| Experience the unfamiliar/ unknown aspects of nature      |          | 0.85     |          |
| Variety of natural tourism attractions and views          |          | 0.84     |          |
| Experience a new culture                                  |          | 0.73     |          |
| Support conservation of nature                            |          | 0.75     |          |
| Cost of the vacation package                              |          | 0.67     |          |
| Time to reach the destination                             |          | 0.65     |          |
| % of Variance Explained                                   | 28.04    | 17.35    | 12.15    |

\( a \) Factor Loadings less than 0.60 have not been printed.
All respondents viewed a set of digital-induced images to determine the important attributes that a traveler to an NBT destination would look for. The three highly-rated important attributes prior to and immediately after viewing the digital-induced images were “cleanliness”, “uniqueness”, and “accessibility/ availability of transportation facilities”. Results of paired-samples t-test revealed that there were significant differences in the importance rating prior to and immediately after viewing the digital-induced images. Differences were observed on the attributes “cultural/historical value”, availability of tour guide”, and “distance of the NBT destination from place of residence” (Table 5). This meant that the set of digital-induced images were capable of enhancing the importance of certain attributes of an NBT destination. However, images may not also likely enhance the importance ratings of other destination attributes. These included “cleanliness”, “uniqueness”, and “accessibility/ availability of transportation facilities”.

### Table 5. Mean Importance Rating of Attributes of a Nature-Based Tourism (NBT) Destination

| Attributes of a Nature-Based Tourism Destination | Before Images were Shown | After Images were Shown | Paired-Samples t-value | p-value |
|-------------------------------------------------|--------------------------|-------------------------|------------------------|---------|
| Cleanliness                                      | 2.82                     | 2.79                    | 0.65                   | 0.52    |
| Interesting Events                               | 2.40                     | 2.34                    | 0.85                   | 0.40    |
| Uniqueness                                       | 2.68                     | 2.95                    | -0.98                  | 0.33    |
| Cultural/Historical Value                        | 1.98                     | 2.19                    | -2.86                  | 0.01    |
| Popularity                                       | 2.07                     | 2.06                    | 0.09                   | 0.92    |
| Availability of Information                      | 2.29                     | 2.35                    | -0.90                  | 0.37    |
| Availability of Tour Guide                       | 1.91                     | 2.13                    | -2.23                  | 0.03    |
| Availability of Souvenirs                        | 1.32                     | 1.21                    | 0.93                   | 0.35    |
| Accessibility/Availability of Transportation Facilities| 2.45                     | 2.40                    | 0.61                   | 0.54    |
| Distance of NBT Destination from Place of Residence| 1.68                     | 1.95                    | -2.62                  | 0.01    |
| Availability of Accommodation Facilities         | 2.29                     | 2.32                    | -0.37                  | 0.71    |
| Affordability                                    | 2.41                     | 2.35                    | 0.90                   | 0.37    |

* Significant at the 5% level of significance

Factor analysis further revealed that the attributes “uniqueness” and “cultural/historical value” of an NBT destination were important both prior to and after viewing the set of digitally-induced images of an NBT destination. Taken together with the attribute “affordability”, these attributes were associated to a factor that can be called, “value of the destination”. It contributed to at least 22% of the explained variance prior to viewing the NBT destination images (Table 6). After the images were viewed, there were observed changes on the factor, “value of the destination”. The attribute “affordability” was replaced by the attribute “distance of NBT destination from place of residence”. The attributes “cleanliness” and “availability of accommodation facilities” were also important after the images were viewed. This meant that the images created a spatial orientation on the minds of the respondents. These findings would tend to support prior studies that images were capable of creating multi-dimensional features of the destination prior to the visit. This also means that any changes in the importance rating on the attributes of an NBT destination after the images were viewed would account for about 49% by these attributes.
Table 6. Varimax-Rotated Factor Matrix of Attributes of a Nature-Based Tourism (NBT) Destination Before and After Images were Shown

| Attributes of a Nature-Based Tourism Destination | Before Images were Shown | After Images were Shown |
|-------------------------------------------------|--------------------------|-------------------------|
|                                                 | VARIMAX-Rotated Loadings* | VARIMAX-Rotated Loadings* |
|                                                 | Factor                   | Factor                  |
|                                                 | 1                        | 2                        | 3                        | 1                        | 2                        | 3                        |
| Cleanliness                                     |                           | 0.81                     |                           |                           |                           |
| Availability of Accommodation Facilities        |                           | 0.61                     |                           |                           |                           |
| Interesting Events                              | 0.72                     |                           |                           |                           |                           |
| Popularity                                      | 0.75                     |                           |                           |                           |                           |
| Uniqueness                                      | 0.77                     | 0.89                     |                           |                           |                           |
| Cultural/Historical Value                       | 0.79                     | 0.85                     |                           |                           |                           |
| Affordability                                   | 0.82                     |                           |                           |                           |                           |
| Availability of Information                     |                           | 0.68                     |                           |                           |                           |
| Availability of Tour Guide                      | 0.72                     | 0.69                     |                           |                           |                           |
| Availability of Souvenirs                       |                           |                           |                           |                           |                           |
| Accessibility/ Availability of Transportation Facilities | 0.76                     |                           |                           |                           |                           |
| Distance of NBT Destination from Place of Residence | 0.82                     | 0.85                     |                           |                           |                           |
| % of Variance Explained                         | 22.04                    | 21.00                    | 18.13                    | 29.97                    | 19.52                    | 10.83                    |

* Factor Loadings less than 0.60 have not been printed

As discussed earlier, the attributes “cleanliness” and “availability of accommodation facilities” were significantly rated important after the respondents have viewed the set of digital-induced images of an NBT destination. These attributes emphasized the destination’s “surrounding environment.” Likewise, the importance of the attributes “availability of information”, “availability of tour guide”, and “availability of souvenirs” were highlighted (Table 7). These attributes can be jointly called “destination features”.

Table 7. Identified Factor Names for Attributes of a Nature-Based Tourism (NBT) Destination Before and After the Images were Shown

| Factor Number | Before Images were Shown | After Images were Shown |
|---------------|--------------------------|-------------------------|
|               | Attributes of a Nature-Based Tourism Destination | Factor Name | Attributes of a Nature-Based Tourism Destination | Factor Name |
| 1             | Uniqueness, Cultural/ Historical Value, Affordability | Destination Value | Uniqueness, Cultural/ Historical Value, Distance of NBT Destination from Place of Residence | Destination Value |
| 2             | Availability of Tour Guide, & Transportation Facilities; Distance of NBT Destination from Place of Residence | Destination Features | Cleanliness, Availability of Accommodation Facilities | Destination Environment |
| 3             | Interesting Events, Popularity | Destination Offerings | Availability of Information, Tour Guide, & Souvenirs | Destination Features |
5. Conclusion

5.1 Lessons Learned

Travelers considered a mix of digital communication sources that are relevant and important in destination image formation. The most important and relevant were search engines and tourism-specific websites. Currently, these sources are undergoing convergence. Physical and mental relaxation was the most important motive to travel to nature-based tourism destinations. Relaxation is part of need-driven motives. Uniqueness and cleanliness were the most important NBT destination attributes. NBT destination images were found to be capable of creating a spatial orientation on the minds of the respondents. Images amplified the attributes that were associated with destination value and on-site features.

5.2 Limitations of the Paper

The results of this paper were based on the responses of university students who may not all had the experience of traveling to NBT destinations. Hence, their opinion could be based on the experiences of their friends or family members.

5.3 Implications to Media-Induced Tourism

Digital communication providers must recognize the mix of digital communication sources that travelers use, and provide content that address travelers’ motives. Digital media can be used to highlight important attributes that will motivate travelers to go to NBT destinations. NBT destination managers must ensure that travelers’ needs are realized by on-site experience that are within their reach, and help encourage them to support the conservation of nature.

Areas for further study may include an analysis of the mix of digital communication sources, NBT travel motives, and NBT travelers by travel market segments; comparison of important NBT destination attributes between similar and differently perceived destinations; and an analysis on the effect of other media on NBT destination attributes.

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References

[1] H. Jenkins, Convergence Culture- Where Old and New Media Collide. New York: New York University Press, 2002.
[2] B. Doolin, L. Burgess, and J. Cooper, “Evaluating the Use of the Web for Tourism Marketing: A Case Study from New Zealand,” Tourism Management, vol. 23, pp. 557-61, 2002.
[3] W.C. Gartner, “Image Formation Process,” Journal of Travel and Tourism Marketing, vol. 2, no. 3, pp.191-212, 1993.
[4] R. Henkel, P. Henkel, W. Agrusa, J. Agrusa, and J. Tanner. “Thailand as a Tourist Destination: Perceptions of International Visitors and Thai Residents,” Asia Pacific Journal of Tourism Research, vol. 11, pp. 269–287, 2006.
[5] G. McCartney, R. Butler and M. Bennett, “A Strategic Use of the Communication Mix in the Destination Image-Formation Process,” Journal of Travel Research, vol. 47, no.2, pp. 183-196, 2008.
[6] F. Falco-Mammone, Beach Images: Meaning, Measurement and Management. An unpublished PhD thesis, James Cook University, 2005. Accessed from http://eprints.jcu.edu.au/11834 on 01 December 2011.
[7] M.G. Gallarza, I.G. Saura, and H.C. Garcia, “Destination Image: Towards A Conceptual Framework,” Annals of Tourism Research, vol. 29, pp. 56–78, 2002.
[8] V.C.S. Heung, “Internet Usage by International Travelers: Reasons and Barriers,” International Journal of Contemporary Hospitality Management, vol. 15, no. 7, pp. 370-378, 2003.
[9] K. Kaplanidou, and C. Vogt, “A Structural Analysis of Destination Travel Intentions as a Function of Web Site Features,” Journal of Travel Research, vol. 45, pp. 204-216, 2006.

[10] C.I. White, “Destination Image: To See or Not to See?,” International Journal of Contemporary Hospitality Management, vol. 16, no. 5, pp. 309-314, 2004.

[11] Y. Luo and J. Deng, “The New Environmental Paradigm and Nature-Based Tourism Motivation,” Journal of Travel Research, vol. 46, pp. 392-402, 2008.

[12] A. Balmford, J. Beresford, J. Green, R. Naidoo, M. Walpole, and A. Manica, “A Global Perspective on Trends in Nature-Based Tourism,” PLoS Biology, vol. 7, no. 6, pp. 1-6, 2009.

[13] N. Line and W. Costen, "Environmental Attitudes, Motivation, and Attachment: Toward A Model of Nature-based Tourism," International CHRIE Conference-Refereed Track, Paper 5, July 27, 2011. Accessed from http://scholarworks.umass.edu/refereed/ICHRIE_2011/Wednesday/5

[14] Tseng, M.L. "An assessment of cause and effect decision making model for firm environmental knowledge management capacities in uncertainty". Environmental Monitoring and Assessment 161, 549-564. 2010.

Appendix A. List of Digital Communication Sources Used in Destination Image Research

- Personal Email
- E-Groups (Yahoo eGroups)
- Chat Rooms (Blackberry chat, YM)
- Government Tourism Websites
- Airline Websites
- Search Engines (Google)
- Internet Advertising
- Social Networking (Facebook)
- Blogs
- Newspaper Websites (Jakarta Globe)
- Magazine Websites
- Online Video Sites (YouTube)
- Hotel Websites (ACCOR)
- Travel & Vacation Websites

Appendix B. Attributes of an NBT Destination

- Cleanliness
- Interesting Events
- Uniqueness
- Cultural/ Historical Value
- Popularity
- Availability of Information
- Availability of Tour Guide
- Availability of Souvenirs
- Accessibility/ Availability of Transportation Facilities
- Distance of NBT Destination from Place of Residence
- Availability of Accommodation Facilities
- Condition of Infrastructure such as Roads
- Affordability