

# An Adapted Q-Methodology and its Application in a Tourism Study on Online Destination Image

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## ABSTRACT

Destination image influences tourist motivation and destination choice which is experiencing challenges in the age of the Internet. User Generated Content on the internet provides alternatives to the projected official image of a destination. This paper presents the research design of an adapted Q-Methodology study to understand the online destination image of Sabah, Malaysian Borneo from the perspective of different generations of potential tourists from China. Q-Methodology is a systematic method to extract participants' subjective perceptions and is referred to as a bridge between qualitative and quantitative research traditions. Current literature is replete with destination attributes rooted in Western perspectives, but the Asian perspective remains understudied. The Q-Methodology process is explained including the generation of a concourse from two image sources to denote both perceived images and projected images of Sabah to understand the attributes of its online destination image. The concourse consisted of 266 photographs generated from the most popular travelogue website in China [www.mafengwo.cn](http://www.mafengwo.cn) where images are posted and shared by tourists themselves, and also from 'Signature Attractions' listed on the Sabah Tourism Board website. Next, the Q-set is derived from the concourse, a P-set is recruited to conduct the Q-sort, a ranking order of the Q-set of 33 images. A purposive sample of 24 participants or P-set will be selected (potential outbound tourists in China) consisting of six persons from four different generations: post-1950s/post-1960s, post-1970s, post-1980s, and post-1990s. Each P-set will conduct a Q-sort of the Q-set (images) to produce the key attributes for Sabah's online destination image rooted in the perceptions of four different generational groups. As a final step to enhance the credibility of findings, the P-set will participate in a focus group discussion. This paper only delineates the research design for data collection in this study.

**Keywords:** Visual data; Q-methodology; Q-sort; Online Destination Image

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## INTRODUCTION

Destination image is considered the paramount element influencing tourist motivation and ultimate destination choice (Pike, 2006; Chen & Tsai, 2007). For potential tourists, there are two types of influential images: projected image and perceived image (Chen & Tsai, 2007). Projected images are found in promotional material distributed by the Destination Management Organization (DMO) or tour operators, and the perceived image is shared by tourists during or post-visit (Li *et al.*, 2015). The difference between these two images creates a gap and provides an opportunity for destination marketers to improve existing destination images as it strongly influences destination choice. In this digital age, User Generated Content (UGC) is regarded as an electronic form of word-of-mouth defined as the extent to which an individual is willing to recommend a certain event with high-level

satisfaction through verbal comments and visual resources to other users who are looking for desired information from Internet (Lee & Tussyadiah, 2011; Hidalgo *et al.*, 2014; Lu & Stepchenkova, 2015). Due to the Internet, UGC is seen by consumers as an authentic and influential content acting as an informal information resource, and notably, for the tourism industry, its influence is growing rapidly (Ye & Tussyadiah, 2011). Tourist have changed dramatically, especially the way they search for and share information about tourism suppliers and destinations (Kim *et al.*, 2019). For Hidalgo *et al.*, (2014), UGC plays an important role in the process of information distribution which influences the perceptions of potential tourists towards destinations. UGC is supposed to be an important secondary information stimulus for the formation of destination image (Ye *et al.*, 2009; Hidalgo *et al.*, 2014; Li *et al.*, 2015), but it has become the primary source instead (Lu & Stepchenkova, 2015).

UGC concerning the destination image and reputation has two main orientations in the literature. One is to explore the perceived image of various destinations by specific marketing segments. Another is a comparative analysis of online destination image (ODI) as projected by UGC creators, various travel intermediaries, DMO, and general media. In-depth analysis of UGC of a destination provides insights into the underlying perceptual dimensions of destination and the behaviours of tourists (Tussyadiah & Fesenmaier, 2008). In contrast, the literal and visual images provided by DMOs not only play a vital role in attracting potential tourists, but also stimulate the imagination of tourists about a destination (Ye & Tussyadiah, 2011). However, with the growth of the Internet specifically social media, UGC has emerged as a primary data source for analysing destination image (Marine-Roig, 2019). Notwithstanding, DMO continue their promotional efforts, projecting iconic, well-known attractions online in keeping with the times (Huang *et al.*, 2022). This digitalization-oriented revolution opens up significant opportunities for academics to acquire a large amount of primary data from the Internet (Farhangi & Alipour, 2021).

Mafengwo.cn is the most popular travelogue website in China where images are posted and shared by tourists themselves (Long, & Ooi, 2022). China is an important tourist generating region (TGR) for Sabah, Malaysian Borneo, a world renown nature, and adventure destination. Leiper's tourism system (1979) has not been explored for how generational differences of the originating TGR influence perception of the Tourist Destination Region (TDR). The purpose of this study was to explore the ODI of Sabah, Malaysian Borneo as a TDR from a generational perspective of tourists from China, the TGR. The main research question asks how do Chinese tourists of different generations perceive Sabah's image as a tourist destination? Guided by the aim to understand this phenomenon, the study adopted an interpretative inquiry paradigm. This study drew on both projected images by the state DMO as well as perceived images shared by tourists on Mafengwo.cn to analyse Sabah's ODI. Both image sources supplied valuable ODI data which was incorporated into an adapted Q-Methodology (QM) (Wong & Kler, 2022) chosen to address the research question.

## BACKGROUND OF STUDY

QM was first developed in 1935 by William Stephenson and applied by researchers in the fields of psychology, health, political science and rural studies (McKeown & Thomas, 1988; Phelan, 2015). QM evolved from factor analysis theory, and is regarded as a scientific method for examining human subjectivity, such as people's attitudes, views or opinions (Brown, 1996; Goldman, 1999). According to Dennis and Goldberg (1996:104) QM, "combines the strengths of both qualitative and quantitative research traditions". QM is a systematic method to extract participants' subjective perceptions as well as the systematic and rigorous study of participants' viewpoints (Stergiou & Airey, 2011; Mokry & Dufek, 2014). Its essence is to administer a set of 'concourses' (usually statements about an issue) to a small group of participants, then segment them into groups with comparable attitudes toward the issue, in order to identify the similarities and disparities in their thoughts about a specific social issue (Barry & Proops, 1999; Mokry & Dufek, 2014). The concourse can be pictures, recordings, and other stimuli open to appraisal (Brown, 1996).

The most important feature of QM is that it requires participants to express their attitudes or impressions to discover the subjective meanings of a specific social issue, which reflects the integration of qualitative and quantitative research (Lin & Lin, 2019). Although subjectivity is ubiquitous and has a great influence on people's behaviour, it is sometimes thought to be impossible to investigate systematically and accurately. But the purpose of QM is to enable people to describe subjectivity in a stable manner, so that subjectivity can be investigated systematically and strictly quantifiably (Webler *et al.*, 2009). Therefore, objective analysis and understanding of subjective communication can be carried out as long as the means of objective analysis of communication do not destroy or change its own characteristics in the process of analysis (Zhou & Wang, 2006).

According to Brown (1996), QM analyses the subjective life as lived from the perspective of the people living it, whereas quantitative techniques frequently overlook it. QM is interested in what is relevant to participants and, as a result, how participants construct sense and meaning of their own realities and situations. It rejects the notion of a single objective reality and seeks to uncover the underlying meaning by researching multiple truths or realities, and then analysing each fact of reality (Stergiou & Airey, 2011). QM provides a structured and interpretable framework for studying all forms of subjectivity (Barry & Proops, 1999), while it also potentially expands avenues for contemporary tourism research by highlighting participants' subjective experiences (Stergiou & Airey, 2011). QM is a technique that is essentially exploratory in nature. It is incapable to test hypotheses, but provides a deeper understanding of research questions with multiple answers (Watts & Stenner, 2005).

### **Q-Methodology in Tourism Studies**

Despite the fact that QM is a relatively new research approach in tourism studies, it is gaining a small but growing presence in it, particularly in the context of visual Q-sorting techniques (Phelan, 2015). For example, Fairweather and Swaffield (2001) used photographs to sort the different groups of overseas tourists' experiences in Kaikoura's DI of New Zealand. Four characteristics are identified that illustrate how the QM may be utilized to advance the understanding of destination image. Tan *et al.*, (2014) employed the QM to characterize creative tourists and their subjectivity of creative experiences in relation to personal meaning constructions. The results showed the disparate perceptions of five distinct groups. Lee and Kim (2016) examined Seoul's destination image from the perceptions of sampled backpackers using QM. According to the findings, four distinct groups of sampled backpackers present four different perceived images: Seoulizer, Patternaizer, Utilizer, and Socializer. Elsewhere, Hardy and Pearson (2016) used QM to examine stakeholders' attitudes about sustainable tourism in Tasmania, Australia. Finally, Nikraftar and Jafarpour (2021) used QM to conclude three distinct conceptions to assess the perceptions of different stakeholders' perspectives on sustainable tourism. From these studies, it is apparent that the QM used in the tourism field is mostly concerned with exploratory studies on people's subjectivity. Hence, as Stergiou and Airey (2011) stated, more tourism researchers are embarking on exploring the subjectivity of research objects rather than just objectifying their subjects, a trend that has gained momentum recently. The following section will introduce the process of QM or the research design for this study.

## **METHOD**

### **The Process of QM**

The process of QM typically comprises five steps: concourse definition, development of the Q-set, selection of the P-set, Q-sorting, and analysis and interpretation (Brown, 1996). The first step is to build the concourse, which is a technical notion that refers to the collection of viewpoints, opinions, propositions and so forth that is intended to provide participants with statements about a certain studied topic (Stephenson 1993 as cited in Brown, 1996). Along with languages, the collection includes paintings, artworks, photography and even musical works (Zhou & Wang, 2006; Stergiou & Airey, 2011). The second step requires forming the Q-set. The Q-set is a set of statements drawn or derived from the concourse for Q-sorting. The researcher may choose the statements as Q-set through concourse or on the basis of pre-existing theories (van Exel & Graaf, 2005). A Q-set typically has between 20 and 40 heterogeneous statements but may contain more or less.

Finally, after editing and sorting the selected statements, each statement is assigned a random number and printed on the cards, resulting in a stack of Q cards. The third step is participant selection (also called P-set). A smaller sample size is required for the QM. However, participants are not chosen at random; rather, the P-set is composed of all eligible participants who have a theoretical connection to the research subject. The fourth step entails conducting a Q-sort, the process in which participants rank-order the Q-set according to predetermined criteria to stereotype their perspectives from most agree to least agree, from most like to least like (Brown, 1996). Analysis and interpretation are the fifth and final step. QM is viewed as a synthesis of qualitative and quantitative method (Phelan, 2015).

QM is considered to be a qualitative research method with quantitative features due to the original process of QM which contains quantitative factor analysis (Brown, 1993; van Exel & de Graaf, 2005). Three consecutive steps form the data analysis. Normally, the first step is to calculate the correlation coefficients for each Q-set. The second step is to conduct a correlation matrix factor analysis. The third step is to calculate the factor statement's score and different values. Q-methodological factor analysis, on the other hand, differs from R-methodological incarnation in that it applies a by-person factor analysis in order to identify groups of participants who make sense of a set of statements in a similar manner, rather than comprising a quantitative statistical method for data reduction (Watts & Stenner, 2005). Therefore, QM actually can be seen as a '*qualiquantological*' method and in essence is a qualitative and critical method (Stenner & Rogers, 2004).

As methods are dynamic and fluid, adaptations can be applied to remain within the tenets of an interpretive inquiry paradigm. This study applied an adapted QM in accordance with the research objective and the nature of this study which utilised only qualitative analysis to produce findings. Thus, a quantitative factor analysis will not be used for analysis and interpretation for several reasons. First, it is not necessary to calculate the correlation matrix for each Q-sort in this study. The original purpose of factor analysis is to identify participants who hold similar opinions or attitudes on a particular subject, with the potential to shed light on a large population (Tan *et al.*, 2014). Since the participants in this study will be classified into distinct groups with similar attitudes and experiences in accordance with generational theory, hence participants who have similar perspectives on a subject will likely share the same opinions. As a result, there is no necessity to assess the degree of similarities amongst participants' point of view. Secondly, the Q-set derived from the concourse has been classified into categories of nature, adventure and culture (NAC), demonstrated as the distinctive categories of attributes of Sabah's ODI (Wong *et al.*, 2017). Moreover, Beerli and Martín (2004) indicate that when researchers select attributes for a scale to measure destination image, their selection is heavily influenced by the destination's own attractions.

Therefore, it is not necessary to use factor analysis to identify the number of natural groupings of a Q-set in accordance with their similarity or dissimilarity to one another. Thirdly, this is an exploratory study. Through the first-four steps, the study can clearly analyse and identify the similarities and disparities in perceptions of different generations of Chinese tourists on Sabah's ODI, and then explore the internal relationship between the attributes of destination image and generations according to the result of the Q-sort. Hence, the adapted QM does not require the factor analysis, which is theoretically viable and consistent with the ontological and epistemological assumptions of this study. Simultaneously, to further improve the dependability of this study, a focus group discussion will be conducted following the results of the Q-sort which also enhances trustworthiness (Wong & Kler, 2022).

## DATA COLLECTION

### Generation of The Concourse

QM aims to present the widest range of possibilities or situations to subjects (Fairweather & Swaffield, 2001). The concourse of QM is considered as the population of all possible stimulus items, including all the forms of statements, pictures, smells, sounds and so forth (Hutson & Montgomery, 2010). Although there exist plentiful options for concourse generation, photographs have become commonly used materials due to the advantages of cost-effective production and ease of administration (Phelan, 2015). Several studies have demonstrated the general viability and validity of using photographs in destination image research (Lee & Kim, 2016; Cai & Luo, 2019; Cheng *et al.*, 2019). This study used photographs to form the concourse because participants can accurately perceive or evaluate and rank photographs presented to them as indicators of destination image (Fairweather & Swaffield, 2001).

The generation of concourse photographs were based on the NAC categories derived from the pilot study (Zhang & Kler, 2020). Three main categories of Sabah's destination attributes, NAC emerged consistently from the pilot study which only used photographs from UGC (perceived image). To ensure we would gain the universal attributes of Sabah's ODI as far as possible, two types of destination image-related photographs were considered: photographs shared by tourists (perceived images), and photographs shared by the official DMO (projected images). Some writers advocate that when researchers synthesize attributes to evaluate destination image, they should consider local destination attributes rather than depending simply on prior study findings (Chen & Tsai, 2007). We chose to include photographs from the DMO (projected images) in the concourse. In sum, the images shared by tourists on a travelogue website and the images projected by the Sabah Tourism Board (STB) were merged to generate the concourse to answer the research question.

The concourse was selected by the researchers. Qualitative researchers assume the role of the instrument, making judgments regarding data coding, theming, decontextualizing, and recontextualizing (Starks & Trinidad, 2007). The researchers conducted a preliminary screening of photos on the Mafengwo.cn and STB websites. To begin with, Mafengwo.cn was chosen to extract the perceived image of Sabah (via purposive keyword search: "Sabah (in Chinese: 沙巴)" since it is the most popular travelogue website in China, ensuring that all extracted photographs were posted and shared by tourists themselves. On Mafengwo.cn, each column of Sabah's tourist attractions was meticulously browsed and identified (see Figure 1 for a screenshot of the webpage) and the top five most popular photographs of each attraction in Sabah on the Mafengwo.cn website with distinct features in each column were chosen based on the NAC categories. Universiti Malaysia Sabah (UMS) campus is a popular tourist attraction for the China market so from the UMS column, photographs included the white beach and pink mosque. We focused on the top five and not the top ten most popular photographs based on the sheer number of

images on this travelogue. For example, the Floating Mosque has over 15,000 photographs. At the time of this study, the mafengwo.cn website had over 300 Sabah visitor attractions columns (some of the visitor attractions columns do not have any photos). We chose to select only the top five most popular photographs from each column that had images in it. There were 217 photographs chosen from this travelogue.

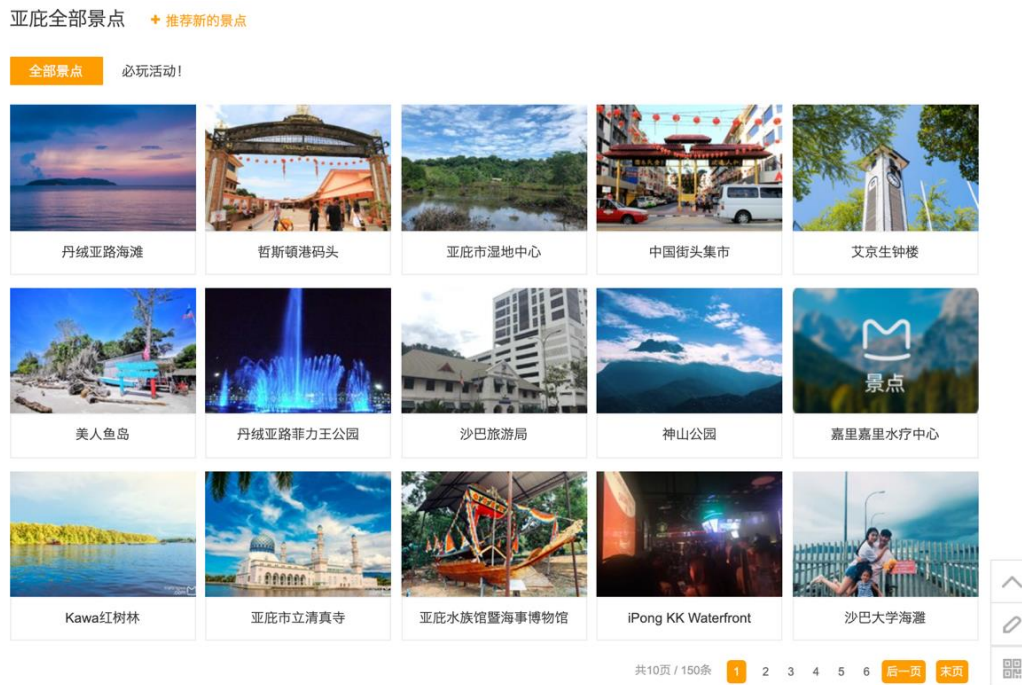


Figure 1: Images of Sabah on Mafengwo.cn

Second, photographs related to Sabah's destination image attributes were extracted from 'Sabah's Signature Attractions' page of the STB website and were considered as the projected image by the DMO. This exercise contributed 49 photographs.

**Sabah's Signature Attractions**

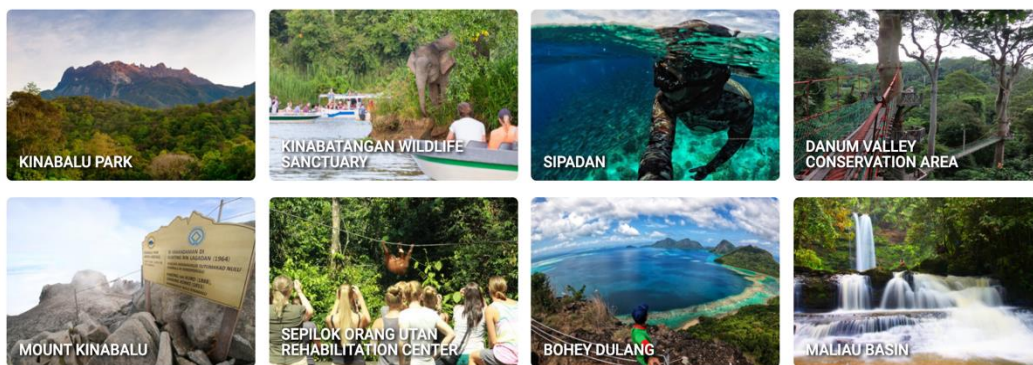
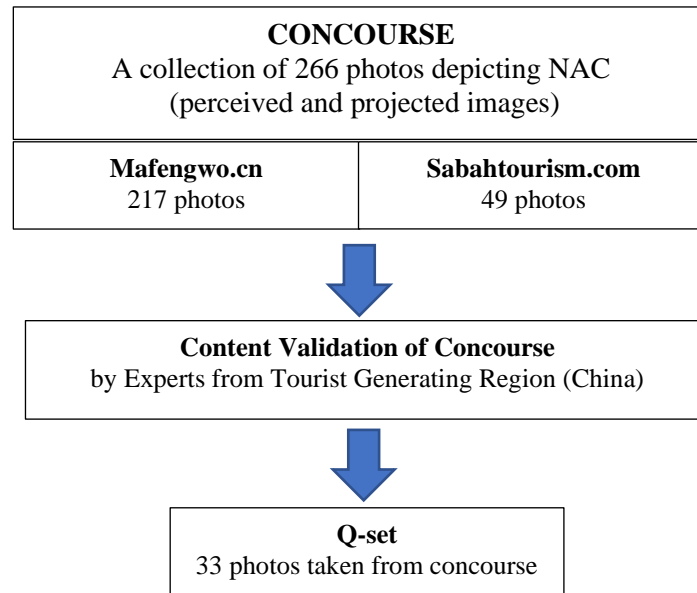


Figure 2: Images of Signature Attractions on Sabah Tourism Board website

The disproportionate number of images between UGC and DMO in the concourse is not a concern as the role of the concourse is to act as a collection of all possible material concerning the research topic (Stergiou and Airey, 2011). As a travelogue website, many tourists share photographs taken during their journey to Sabah on Mafengwo.cn, however STB's website is an official promotional website with fewer pictures. Researchers found major differences between both data sources (notably the categories of NAC) and chose to include more images from the travelogue. Moreover, the projected images on the STB website under 'Signature Attractions' depict established tourist attractions which target Western tourists. The exploratory nature of this study guided the revelation of the disparity between perceived versus projected images to finally generate 266 photographs in accordance with NAC categories as the concourse.

**Development of the Q-Set**

The Q-set is a collection of materials drawn from the concourse for participants to sort or rank. The Q-set might be chosen by the researcher through the concourse or on the basis of pre-existing theories (van Exel & de Graaf, 2005). Typically, the Q-set comprises of 30 to 60 representative items (Brown, 2008). In order to scientifically establish the Q-set, two steps were introduced: first, the generation of the concourse by the researchers and second, a content validation exercise using experts from China (tourist generating region) (Figure 3).



**Figure 3: Development of Q-set**

Step one as described earlier is the generation of the concourse by the researchers. All selected photographs were identified and checked against the NAC categories. Photographs with the same destination attribute were deleted except for the most popular photos (with the greatest number of ‘likes’). Photographs with similar attributes were bunched into a single attribute, for example, all images related to different islands were deleted to only keep the most popular one. The NAC categories are not mutually exclusive, and can overlap for example, an image of Mount Kinabalu is categorised as ‘nature’, whereas an image of people hiking in nature is categorised as ‘adventure’. Researchers made the decision to focus on the primary category depicted in the photograph.

In Step two, the content validity index (CVI) approach was used to establish the validity index as the basis for deriving the Q-set (Yusof, 2019). The procedure included preparing a validation form, selecting a review panel of experts, conducting the validation, reviewing images, scoring each item, and calculating the CVI (Yusof, 2019). Three postgraduate students at UMS who are citizens of China and have lived in Sabah for over one year were invited as ‘experts’ to evaluate the 266 photographs for their relevance to the objective of the study and the clarity of the content expression. Since this study explores Chinese tourists’ perceptions of Sabah’s ODI, the selection of photographs should be based on their perceptions rather than Western tourists’ perceptions. This activity was conducted using VooV online meeting tool by the first author. A two-point scale was used to evaluate the contents of the photographs in terms of appropriateness and for deletion. The scoring method was 1 point for suitability with all experts in agreement, and 0 points for deletion following the universal agreement calculation (Yusof, 2019). The CVI values and the opinions of the three experts were used to remove similar content and low values, as well as add some attributes which the researchers had overlooked.

The steps were as follows: First, they evaluated the photographs selected for each section by rating them, and finally selected one photographs to represent each Sabah attraction. Second, those photographs with similar attributes were bunched into a single attribute and only one was retained (for example, the original concourse contained many island-related photographs, and after scoring and discussion, only one photograph jointly approved by three experts was retained for the Q-set). Again, those photos with low rating values (all three experts gave 0 points) were deleted (because some Sabah attractions were too niche and there were not many photos, so these were rated low). In addition, the three experts also selected certain STB photographs, such as snorkelling,

scuba diving and handicrafts, which did not appear on the Mafengwo.cn website. Throughout the process of this study, a gap became apparent between projected and perceived images being shared online by tourists from China versus what was on the official STB website.

Finally, a total of 33 photographs emerged as the Q-set (see Appendix), with variable destination attributes of Sabah in terms of nature (7), adventure (8), and culture (18). Table 1 provides an indication of the data source origins of each attribute (projected versus perceived image) and should be read with the Appendix (Q-set of Sabah’s ODI) to view the photographs. One limitation of this study is that we did not aim to ensure the NAC attributes in each category were equal in number. Instead, the derived Q-set provided informative insights. Patterns emerged from the exploratory nature of this study in that the Q-set images were concentrated on ‘Culture’ indicative of an Asian perspective of Sabah’s ODI. Also, the credibility and dependability of this Q-set can be evaluated through the two-step process used to derive it.

**Table 1: Derived Q-Set based on NAC Attributes**

Categories	Nature (8)	Adventure (6)	Culture (19)
<b>Q-set</b> Photo Number:	11,15,16,17,27,28,30,32	1,8,14,21,22,33	2,3,4,5,6,7,9,10,12,13,18,19,20,23,24,25,26,29,31
<b>Mafengwo.cn</b> Photo Number:	11,15,16,17,27,30,32	22	2,3,4,5,6,7,9,10,12,13,18,19,20,23,25,26,29,31
<b>Sabahtourism.com</b> Photo Number:	28,32	1,8,14,21,33	24

According to Creswell (2014), the sample size is determined based on the qualitative design that is used, which refers to the idea of saturation. Data saturation can strengthen the trustworthiness of the findings (Fusch and Ness, 2015). However, saturation cannot be determined with precision since there is no clear criterion for doing so (Francis *et al.*, 2010). Researchers can stop collecting data if new data no longer yields new insights or discloses new attributes, indicating data has reached a saturation point offering sufficient information to address the research question under consideration. In qualitative research, the sample size is determined by the depth of data collected rather than the quantity of data collected. After evaluating all the photographs in the concourse and conducting the CVI exercise, a total of 33 photographs were derived for the Q-set of Sabah’s ODI. From this perspective, it is possible to say that the data saturation point was achieved for this study.

**Selection of the P-set: Defining the Selection Criteria**

The P-set is composed of all eligible participants who have a theoretical connection to the research subject, indicating that the participants should be selected purposively (Brown, 2008). The initial step is to define who are the ‘qualified’ subjects. Thus, purposive sampling was used in line with the aim to explore Sabah’s ODI from the perspective of Chinese tourists of different generations. Tourist behaviour has changed dramatically since the emergence of the internet, mobile devices, and online booking engines. UGC has become the critical information stimulant in the decision-making process of potential tourists (Caldito *et al.*, 2015). From a marketing standpoint, because potential visitors represent a marketing opportunity, the ODI portrayed on social media will have a crucial influence on potential tourists’ motivation and eventual destination decision (Martins, 2015). As a result, studying and identifying the perspectives of Sabah’s ODI held by different generations of Chinese tourists may provide a clear picture of how to disseminate the targeted ODI to each segment market in order to attract more potential Chinese tourists visiting Sabah. Therefore, participants must be restricted to potential Chinese tourists only, rather than tourists who have already visited Sabah.

Furthermore, participants are chosen based on their theoretical saturation (generation theory) in the P-set. There is significant homogeneity within generations because people in each generation have a set of similar ideas, traits, and values that are shaped by external events (Schewe & Noble, 2000; Chiang *et al.*, 2014 ). Significant heterogeneity across generations, on the other hand, demonstrates that there are significant inter-generational differences in values, attitudes, preferences, and actions (Schewe & Noble, 2000). Therefore, participants should purposively comprise people of various ages to ensure a broad age range. Hence, participants in this study will be

recruited from a variety of generations in China. The differences in perceptions of destination image between the post-1950s and post-1960s generation in China are not statistically significant (Zhang *et al.*, 2017). Because people in these two generations grew up in an extremely similar social environment and processes, they share similar cultural identities and values, and intergenerational differences are negligible (Zhang *et al.*, 2017). As a result, participants in the 1950s and 1960s were combined into a single group in this study. Finally, four generations were selected: the post-1950s/post 1960s, the post-70s, the post-80s, and the post-90s. In order to assure dependability of this study, each generation should have an equal number of male and female participants (Fairweather & Swaffield, 2001; Brown, 2008). Following the sampling rationale, the following criteria were used to select participants:

- i. potential China tourists (tourists who have not visited Sabah)
- ii. have overseas travel experience
- iii. born between the 1950s and the 1990s
- iv. equal composition of both males and females

### Participants Recruitment

In terms of the ideal number of participants, the sampling theory of the QM approach uses a small number of representative samples to explore diverse viewpoints inside the population rather than the distribution of opinions within the population (Hutson *et al.*, 2010). P-set works well with small number of subjects, as a larger sample size would obscure the subject's nature and could result in statistical problems (Watts & Stenner, 2005). Rajé (2007) proposed that the number of participants is not limited, however it is frequently less than the number of Q-set. According to Brown (2008), the objective of P-set is to ensure the wide representativeness of responses to Q-set, so an adequate number of participants is normally less than forty, and should represent a variety of socioeconomic classes and educational backgrounds.

For the recruitment procedure, the first author who was based in China initially invited five colleagues who had never visited Sabah to participate in this study. This initial group was asked to recommend their friends, colleagues or family members who were eligible and fit the selection criteria. This snowball strategy allowed the inclusion of distant acquaintances. Participants were contacted by WeChat to request their participation. As long as they fit the criteria, and were willing to participate, they were recruited for this study. Finally, twenty-four Chinese tourists participated in this study, evenly divided into four generation groups, with three males and three females in each group. Businessmen, college teachers, government employees, corporate employees, college students, and retirees are among those invited and have agreed to participate. On the chosen date, each generation group of participants, known as the P-set will gather at a suitable, chosen venue to conduct the Q-sort which is described next.

### Q-Sorting

The Q-sort allows for the study of shared viewpoints, adopts a multi-participant design; and is a highly unusual form of qualitative analysis (Rost, 2020). We include the Q-sort explanation here as part of the research design for data collection. Q-sort is both data being collected and 'analysed' for each generation group. In fact, findings of the Q-sort are used to guide the focus group discussion. It is not logical to present a paper on QM without discussing the terms *concourse*, Q-set, P-set, and Q-sort. After the *concourse* is established, a suitable ranking system and sorting distribution is also chosen, either forced-choice or free distribution of items to be given a ranking value (Rost, 2020). The Q-set consists of 33 photographs, resulting in an approximate normal distribution with five levels. The P-set will sort these photographs according to their subjective perceptions of Sabah's ODI. The scale was divided into five levels based on its degree of representativeness, with a certain number of items in each level. The scale was designed to follow the shape of a forced normal distribution in terms of its shape and size.

As the degree of representativeness falls from right to left, each level is assigned a score starting with the most representative score (+2) and decreasing to the least representative score (-2). A positive score will be given to the photographs on the right-hand side of the normal distribution table if these are well-liked by the P-set, and a negative score to the photographs on the left-hand side of the normal distribution table if they were unpopular. Photographs in the middle piles will be the ones that were neither strongly liked nor disliked. The score table is shown in Figure 4.



Least like (-2)	Dislike (-1)	Neutral (0)	Like (1)	Most Like (2)
5 photos	7 photos	9 photos	7 photos	5 photos

Figure 4: Score Table of Q-sort

For the process of Q-sorting, the P-set will be requested to browse through the 33 photographs. They may seek explanations for any photographs that they do not understand with the rest of the group. The P-set will generate an initial ranking of the photographs in their minds by comparing the 33 photographs. The P-set will then be instructed to “sort the photographs into the ones you best liked and most disliked”. Photographs will be divided into three piles: the most liked, no opinion, and the least liked. The most liked pile will be sorted again (into most liked, no opinion, least liked) until the score sheet is completely filled, after which the P-set will be given the option of adjusting to make it more agreeable. Following this, the P-set will join their respective focus group discussion focusing on the categories of most liked (+2) and least liked (-2) mainly to explain why they selected the five top-ranked photographs and the five lowest-ranked photographs. The discussion will be recorded for subsequent thematic analysis and compiled as part of credibility.

**CONCLUSION AND RECOMMENDATIONS**

The adapted QM used in this study provides a novel way to understand the ODI of Sabah, Malaysian Borneo as a destination for potential tourists from China. QM is a systematic method to extract participants’ subjective perceptions, and some say is a bridge between qualitative and quantitative research traditions. This study was designed to fill the gap in destination image studies which mainly focus on Western perspectives. The choice of a purposive sample should provide interesting insights into the generational perspectives of Asian tourists in terms of how they perceive Sabah, Malaysian Borneo, a renowned nature, adventure destination which has attracted over 500,000 tourists from China in 2018 (Sabah Tourism Board, 2018). This paper has introduced the adapted QM, presented the process including choosing a concourse, selecting the Q-set, recruiting a P-set, and conducting a Q-sort. Following in the footsteps of other tourism studies, this paper utilised UGC or images provided by tourists online as well as the tourist board to produce a concourse. UGC is easily available online and provides an avenue for researchers to access images or visual data with ease. This paper delineates the research design for data collection in this study including designing the Q-sort. Limitations have been expressed and future work should present the findings of this study to share the nuances of generational perspective of tourists from China towards Sabah’s ODI. This paper provides insight into the use of an adapted QM as a novel qualitative method.

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**Transparency Statement**

The lead author affirms that this manuscript is an honest, accurate and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

## CONFLICT OF INTEREST

The authors declare that they have no conflict of interest in this study

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**Appendix: Q-Set for Online Destination Image of Sabah**

			
1 White Water Rafting	2 Atkinson Clock Tower	3 Shopping	4 Night Life
			
5 Indigenous People	6 Handicraft Market	7 Pink Mosque	8 Snorkeling
			
9 Sea Gypsies	10 Seafood	11 Mangrove Forest	12 Gaya Street

			
13 Durian	14 Mountain Hiking	15 Island	16 Desa Dairy Farm
			
17 Sunset	18 Swordfish Mounument	19 KK Cityscape	20 Skybus
			
21 Scuba Diving	22 Parasailing	23 Floating Mosque	24 Handicrafts

			
<p>25 Semporna Water Resort</p>	<p>26 Bird's Nest</p>	<p>27 Fireflies</p>	<p>28 Proboscis Monkey</p>
			
<p>29 Steam Train</p>	<p>30 Beach</p>	<p>31 Jesselton Port</p>	<p>32 Mount Kinabalu</p>
	<p>Images source: <a href="http://www.mafengwo.com/">http://www.mafengwo.com/</a> and <a href="http://www.sabahtourism.com/">http://www.sabahtourism.com/</a></p>		
<p>33 Jungle Trekking</p>			

