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Different tourists – different perceptions of different places: accounting for tourists' perceptual heterogeneity in destination image measurement

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Different tourists – different perceptions of different places

Accounting for tourists' perceptual heterogeneity
in destination image measurement

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Abstract

We suggest that differences between tourists be evaluated as part of any destination image study. In doing so, one can avoid the potential pitfall of deriving one single destination image by averaging over individuals with possibly very different perceptions. A typology of destination image measurement approaches is presented that provides a framework for the evaluation of past destination image studies and shows directions for future developments of destination image measurement. The perceptions based market segmentation (PBMS) framework and indices derived from this approach are proposed as one possible way to explore differences in destination images between tourist groups. An empirical data set is used to illustrate the proposed approach. The data consists of perception statements of 575 respondents who evaluated six Australian tourism destinations along four dimensions.

1 Introduction

A destination marketing organization is charged with the task of convincingly appealing to potential visitors and so attracting them to their destination. Destination image plays a central role in this process and the effect of destination image on destination choice decisions has been well established in the tourism literature (see, for instance, Moutinho 1987; Fakeye & Crompton, 1991; and Tapachai & Waryzcak, 2000). It is also known that visitors generally do not constitute one homogenous group. Another key challenge of a destination marketing organization, consequently, is to identify sub-markets of visitors. The uncovering of separate target markets, captured by the concept of market segmentation, is well recognized by practitioners and researchers in the fields of marketing, and in applications related to tourist destination choices (Dolnicar, 2004).

Hence, the notion of heterogeneity within markets extends to destination image measurement: different tourists may not only seek different benefits from a destination, they might have different perceptions of the same destination which will affect their evaluation and the probability of them visiting the destination. Yet, while benefit segmentation has become a standard approach in tourism research, the possibility that destination image heterogeneity, or perceptual heterogeneity, may exist, is not always explored as an integral part of a destination study. If tourists have different views on particular aspects of a destination, it is equally important that destination marketing organizations appreciate the differences in destination image between customer market segments as it is to segment tourist based on behavioral or psychographic characteristics. The challenge then is to derive a destination image profile for each identifiable sub-group. In this paper, a typology of destination image

measurement approaches with respect to the exploration of heterogeneity is proposed as a framework to investigate past image measurement methodology and to identify directions for future development thereof. The emphasis lies on the first dimension, the subject dimension, as defined by Mazanec (1994). The object dimension is not the central focus, but it does enter the typology for the case of multiple destination measurement, whereas the attribute dimension is not discussed at all as it can be assumed as constant for the purpose of the discussion of heterogeneity. The perceptions based market segmentation (PBMS) approach is put forward as a technique that implicitly accounts for unobserved heterogeneity in destination image measurement.

2 Destination image measurement

There is a vast literature on the broad topic of tourist destination image. The contributions to that literature can be divided into theoretical/conceptual analyses of the notion of destination image and empirical studies of the measurement of (comparative) destination image. While this paper focuses on the latter, it is worthwhile noting that the image notion has been conceptualized in different ways. For instance, Echtner and Ritchie (1991) divide the concept of destination image into a range of individual attributes and holistic destination impressions. Similarly, Baloglu and Brinberg (1997) distinguish between cognitive and affective dimensions of destination image. In addition to these two destination image dimensions of beliefs and emotions, respectively, White (2004) identifies a behavioral component. While it is important to acknowledge the various elements within the complex destination image construct, the current study deals with the cognitive aspect of destination image only; that is, it is concerned with tourists' perceptions of destination attributes.

Image heterogeneity in the context of such destination-attribute associations as the basis for brand image measurement research can be handled in different ways. One approach is to adopt the implicit assumption of image homogeneity; that is, all tourists are expected to have the same perception of a tourism destination. This approach is reflected in a destination image measurement study by the use of sample means. The image homogeneity assumption is appropriate when tourists do indeed associate the same attributes with a destination. However, this may not necessarily be true and requires investigation before conclusions about destination image are drawn. A destination image presented as a profile consisting of sample means of various image dimensions can distort the picture of differing images held by sub-markets. Hypothetically speaking, if half of respondents in a destination image study rate a particular destination as extremely family–friendly and the other half rate it as extremely family-unfriendly, the overall image profile based on sample means would yield an image of that destination being seen as neutral in terms of family-friendliness while none of the respondents would actually hold that image.

Although descriptive statistics in a study based on sample means can reveal the distribution of the responses, and the measures of dispersion can be used to test differences in means and to provide an indication of tourist heterogeneity, the crucial issue is how to deal with the heterogeneity in an analytical sense and which recommendations to make to a destination marketing organization.

Overall, we identify four different approaches with a view to dealing with image heterogeneity: (A) the average profile is presented as it is, with dispersion levels not being discussed or taken into consideration for interpretation purposes; (B) the average profile is presented taking dispersion levels into consideration (for instance by interpreting only attributes with low levels of dispersion); (C) destination image is

analyzed at segment level for known *a priori* segments (Mazanec, 2000) or commonsense segments (Dolnicar, 2004); and (D) destination image is analyzed at segment level even if no clear *a priori* segments are known to exist.

Pike (2002) and Gallarza et al (2002) comprise reviews of the literature on tourist destination image in terms of both conceptual and empirical aspects. Pike (2002) categorizes 142 papers along various dimensions including the data analysis technique used and the focus of the study. In the context of image heterogeneity, an analysis of the study interest reveals that 12 studies investigate issues of segmentation while 8 studies deal with image differences between different groups. The image heterogeneity issue is reflected in Gallarza et al (2002) by way of the "relativistic nature" of the destination image concept; that is, the notion that destination image varies across segments.

The picture that emerges from the above two comprehensive reviews of the destination image literature is that studies of type A and C are most common. Image segmentation across subjects along the lines of approach C is investigated in, for instance, MacKay and Fesenmaier (1997), Chen and Kerstetter (1999) and Baloglu and Macleary (1999). Examples of type A studies focusing on "analysis of means" (Pike 2002, 542) or "average scoring" (Gallarza et al 2002, 67) include Chon (1991), Oppermann (1996) and Dimanche and Moody (1998).

A review of some more recent findings in the field of tourism research (articles published in the Journal of Travel Research, Annals of Tourism Research and Tourism Management between 2000 and 2005) appears to confirm the continuing prevalent use of approaches of types A and C in destination image measurement studies. Type A studies include Joppe et al (2001), Baloglu and Magaloglu (2001), Pike and Ryan (2004) and O'Leary and Deegan (2005). A type C investigation of

segment heterogeneity is reported in, for instance, Baloglu (2001), Beerli and Martin (2004) and Bonn et al (2005).

With respect to the above type A studies that employ sample means for the purpose of image measurement, the statistical information on the dispersion of sample data is generally reported. Indeed, the variance is also used to test for statistical differences in the means of destination image, for instance between pre-visit image and post-visit image. However, the scope for enrichment of the study findings by accounting for heterogeneity is not explored (It should also be noted, that the assumption of image homogeneity might well be true for the above studies and that this fact might just not have been explicitly stated in the articles.) and a type B study design is not considered for items which are perceived very differently among the respondents.

While the type C studies above account for image heterogeneity, they distinguish between sub-groups in the sample on the basis of *a priori* segmentation criteria; that is, the heterogeneity analysis is based on segmentation variables that are pre-determined (known in advance). This approach is the best choice if the *a priori* segmentation criteria are the optimal ones to account for the destination image heterogeneity in the data. However, this is not always the case. For instance, in the area of market segmentation, *a posteriori* (Mazanec, 2000) or data-driven (Dolnicar, 2004) psychographic approaches appear to generally outperform a priori socio-demographic approaches. This is where the value of type D approaches becomes clear. Type D studies are suitable when differences in perceptions between tourists are expected even without knowing clearly in advance which groups of tourists may perceive destinations in a different way. They could also be applied to check whether the *a priori* criterion chosen in a type C study was indeed the optimal one.

Gallarza et al (2002) report that a limited number of type D studies have been undertaken in the past, typically using cluster analysis to investigate the destination image heterogeneity (for a recent example see Leisen, 2001). We propose the perceptions based market segmentation (PBMS) method as an alternative type D approach to investigate image heterogeneity when both heterogeneity of respondents and destination is investigated. In addition to accounting for perceptual differences between people (the 'subject' dimension of Mazanec's (1994) classification), the PBMS method also allows for the identification of the differences in how multiple destinations are evaluated (the 'object' dimension). These two sources of image heterogeneity are potentially confounded and their separate elements need to be identified. This is important since more than half of the destination image studies in tourism include more than one destination (Pike, 2002), thus complicating type D studies by additionally adding object heterogeneity. The PBMS approach proposed here allows researchers to undertake studies of type D while accounting for differences between destinations as well.

3 PBMS-based destination image measurement

The original idea of PBMS was introduced by Dolnicar, Grabler and Mazanec (1999) and described in more detail in Mazanec and Strasser (2000), Buchta, Dolnicar and Reutterer (2000) and Dolnicar, Grabler and Mazanec (2000). PBMS was introduced as a non-parametric technique for integrated market structure analysis. PBMS is exploratory in nature and investigates market structure in an integrated manner, accounting for heterogeneity among tourists (market segmentation) and heterogeneity of destination image perceptions (positioning) simultaneously to derive perceptual

competition between products. The usefulness of PBMS for strategic marketing decision support has been demonstrated in prior studies (Dolnicar, Grabler and Mazanec, 1999; Dolnicar, Grabler, and Mazanec, 2000; Buchta, Dolnicar and Reutterer, 2000; Dolnicar, 2001; Mazanec, 2005).

PBMS requires three-way data: each respondent has to evaluate each tourist destination with respect to all attributes included in the study. This structure reflects precisely the dimensions discussed by Mazanec (1994): the subject, the object and the attribute dimensions. At first, this appears to represents a major restriction. On closer inspection, however, three-way data turns out to be the typical format for destinations studies including more than one destination. If only one destination is included, the researcher deals with two-way data including the subject and attribute dimensions only. In this case, PBMS is not needed, as a type D study can easily be undertaken using classical cluster analytic techniques.

PBMS follows four stages. Firstly, data is ordered such that the attribute evaluations represent variables and the destination information is ignored. If, for instance, 4 attributes were used in the questionnaire to describe the destination image, and 5 brands were listed for evaluation, the number of variables would not be 20, but only 4. Table 1 illustrates the structure of the required data for a binary data set. Every row thus represents the evaluation of one destination by one person along the four attributes. Only the last four columns of Table 1 are used in stages one and two of the PBMS analysis. The information which destination was evaluated and by whom is thus ignored during the clustering part of the PBMS analysis.

>> Table 1 here <<

In the second stage, the data is grouped, with one case representing one row in Table 1. Any algorithm of the researcher's choice can be used for this purpose including hierarchical clustering procedures (such as Ward's method), partitioning clustering procedures (such as k-means), ensemble techniques (such as bagged clustering, Dolnicar and Leisch, 2003) and model-based segmentation algorithms (such as finite mixture models, Wedel and Kamakura, 2000). Stage two results in a grouping in which each case is assigned to one group. Each group of destination image patterns represents one image position. These image positions can be interpreted by management: they represent "generic" destination images which exist in the tourists' minds. At this stage, however, it not clear yet which of these image positions is occupied by which destination. This information becomes available after stage three has been completed.

In stage three, destination information is revealed which shows how strongly each one of the destinations is associated with each one of the generic image positions. The higher the concentration of a destination at one position, the stronger and less heterogeneous the brand image. The more the destination is spread across all generic destination image positions, the more different destination images are associated with this destination by different people. Stage three yields information about the extent of heterogeneity in the destination image.

Finally, in the fourth stage, it is investigated how frequently single tourists place more than one destination at the same brand image position. The more unique a destination's image, the less frequently will the same respondent locate more than one destination at the same position. Stage four reveals information about the extent to which respondents view a destination as unique.

We propose to use the PBMS approach to explore destination image. PBMS implies, as opposed to type A and B destination image studies, that different tourists have different destination images and, as opposed to type C studies, that it is not known in advance what characterizes groups of people who share a more similar destination image. Consequently, high average agreement of respondents on attributes is not necessarily the aim. A possible aim could be to create a highly unique, distinct image for a destination in the minds of a smaller segment of tourists.

This criterion can easily be operationalized on the basis of PBMS results for any given destination, for instance Canberra. After the generic positions associated with Canberra are determined, a "uniqueness value" is computed for those identified positions: the number of respondents who assign only Canberra to the selected generic positions divided by all respondents who assign Canberra and at least one more destination to each generic position. The uniqueness values for all positions are added up (total uniqueness value) and divided by the number of generic positions if a total uniqueness value is required. The resulting uniqueness index thus lies between 0 and 1, with 1 indicating the maximum level of destination image uniqueness and 0 indicating the minimum. Furthermore, a correction can be computed taking into consideration the "segment size" where the segment is defined as all respondents placing Canberra in the generic position under study. Clearly, this same computation could be undertaken for one single generic position as well. For instance, Canberra might not want to be perceived as unique at the generic position associated with "the power capital of the world"; it might only be concerned about the uniqueness at the generic position associated with being a "relaxed, laid-back capital offering a wide range of entertainment options".

If the destination marketing organization were to adopt such a differentiated segmentation strategy (and assuming that the position is favorable and in line with destination management's image aims), its objective would consequently be to enhance the uniqueness value by increasing the proportion of tourists who perceive Canberra uniquely as a "relaxed, laid-back capital offering a wide range of entertainment options". In particular, segment members who already perceive Canberra to be unique in this way would have to be reinforced in their perceptions while members of segments who either have non-unique perceptions or unique perceptions of the wrong nature have to be targeted with a message customized for the desired generic position. That message may even have to be customized to differentiate from competitors who are seen to be similar.

4 Empirical illustration

4.1 Data

The data was collected by way of a survey of prospective short-break tourists from Sydney, Australia in August 2001. The survey was part of a broader study on the effect of destination attributes on holiday destination choice (details are provided in Huybers, 2003). In the exploratory research stage, focus groups were employed comprising a broad cross-section of the target population of potential short-break holidaymakers from Sydney. The focus group discussions produced a set of relevant short-break destinations and a number of destination attributes.

The destination regions comprise Canberra, the Central Coast, the Central West, the Hunter, the Mid North Coast, and the South Coast. All six destinations are within the New South Wales/Canberra region which attracts approximately 65 percent of all Sydney short-break tourists (Bureau of Tourism Research, 1999). Table 2 shows the

relative importance of each of the six destinations as shares within the New South Wales/Canberra region. The six destinations make up 58 percent of overnight visitors from Sydney within that region.

>> Table 2 here <<

Five key attributes, as identified in the focus groups, are shown in Table 3 in alphabetical order. One other attribute – 'Season' – was also singled out in focus groups and included in the broader destination choice study. However, it is not included in the current investigation since the timing of the holiday is not an attribute for which respondents could give destination perceptions. The labels attached to each attribute as well as the determination and wording of each of the attribute levels had been investigated carefully during focus group discussions. The attribute 'Price per day' is continuous and the other four attributes are of a categorical nature (each defined at three levels). Four of the five attributes are related to the situation at the destination itself while the attribute 'Travel time' refers to the travel time between place of origin and the destination.

>> Table 3 here <<

The brand image measurement literature has produced a vast amount of studies aiming at optimizing measurement aspects. For instance, selecting attributes to be included in a brand image study has been known to be a very essential and crucial task in the process of brand image measurement. Joyce (1963) recommends the use of a wide variety of exploratory data collection techniques to extract a list of attributes for the actual brand image study, which is then reduced by removing duplicates or using factors emerging from factor analysis instead of single items. This market-driven and product category specific way of determining relevant attributes is still

being postulated many decades after Joyce's publication (Boivin, 1986; Low & Lamb, 2000). Specific recommendations for elicitation of best-suited attributes based on empirical studies have been made by Myers and Alpert (1968) and Alpert (1971). Although direct questioning, indirect questioning, observation and experimentation all represent feasible techniques, Alpert's research indicates that direct questioning leads to significantly better results for collecting choice-relevant brand image attributes. The focus group method adopted for this study is consistent with this approach.

A further issue that has been discussed in the literature is the number of attributes used in brand image studies. That number varies significantly among the studies published in academic journals. For instance, Low and Lamb (2000) use only five attributes to measure the image of one single product while Castleberry et al (1994) exposed respondents to 10 brands, 10 attributes and 5 product categories, which requires 500 answers to complete the questionnaire. Wilkie and Weinreich (1972) conclude that "attitudes can be efficiently described with fewer attributes than are typically gathered in marketing research". We recognize that the number of attributes included in the current study is limited. However, this is not deemed problematic since the aim of this paper is to illustrate a way of measuring destination image and of operationalizing the uniqueness of a destination image.

Potential respondents were surveyed at four geographically dispersed shopping malls across Sydney (on weekdays and weekends). To ensure that all respondents would be drawn from the correct sampling frame of prospective short-break tourists, people were screened (following Um and Crompton, 1992) on the basis of two criteria: their intention to take a short-break holiday within the next three months, and their position as a major decision maker within their travel party. Those that passed the screening test, were given a questionnaire, a show card with the information about the

destination attributes as shown above, and a map depicting Sydney and the six destinations. Interviewers were available for help while respondents completed their questionnaires. Respondents were asked to provide their perception of the five attributes for each destination as best as they could. For the four categorical attributes, they were given the choice between the three designated levels while for the 'Price' attribute, they were given a free choice. In each case, they were given the option to indicate a question mark if they did not have a perception of a particular attribute for a particular destination.

Within the brand image measurement literature, the issue of the optimal question format has been subject of investigation. The first study of this kind – to our knowledge – was conducted by Joyce (1963), who compared various sorting and scaling techniques and found that free-choice attribute-by-attribute questioning produced the best results. Mohn (1989) reports on an empirical study conducted by Coca-Cola, which investigated whether free-choice or rating scale questioning was superior, finding that free-choice format had a number of advantages when sample sizes exceed threshold values. However, Barnard and Ehrenberg (1990) re-investigate the matter comparing free-choice, scaling and ranking techniques and conclude that the attitudes derived were robust and not strongly influenced by the data collection technique, with free-choice, however, being quicker and easier to use. Further, Romaniuk and Driesener (2002) and Driesener and Romaniuk (2002) compare ranking, rating and pick-any procedures supporting the prior findings by Barnard and Ehrenberg (1990) of a high level of similarity between procedures.

The total number of questionnaires completed by respondents was 575. A selection of respondent characteristics is included in Table 4. The average age of respondents, of whom just of over half were female, was 35. Most respondents indicated that they

used hotel/motel facilities as their preferred type of accommodation, while their own vehicle was the main mode of transport used for short-breaks. The latter result is consistent with the majority of Sydney residents' short-break destinations being within a relatively short driving distance from Sydney. Most income categories were reasonably well represented in the sample.

>> Table 4 here <<

For the purpose of this illustration, four out of the five variables described above were chosen and transformed into binary format. The type of attraction was excluded due to its nominal – as opposed to ordinal – nature (Alternatively, that variable could be recoded into three binary variables if the attraction type were essential to destination marketing.). The data set for this illustration was partitioned using topology-representing networks (Martinetz & Schulten, 1994), a form of unsupervised neural network. As opposed to the classic *k*-means algorithm in its online version, self-organizing neural networks not only aim to find a good grouping to represent the density structure of data, they also try to align the groups into a grid that allows topological insight into the data structure. Martinetz and Schulten further developed the traditional self-organizing maps (Kohonen, 1997) by introducing an adaptive neighborhood-updating algorithm. The usefulness of neural networks for market segmentation research in tourism was first demonstrated by Mazanec (1992) and while all clustering algorithms have their limitations, topology-representing networks were chosen in this study as they outperformed other partitioning algorithms in an extensive Monte Carlo simulation based on a series of artificial data sets modeled after typical tourism data sets (Buchta et al, 1997). Solutions with three to ten clusters were computed 50 times each to determine which number of groups results in the most stable grouping. This was the case for six image positions.

4.2 Results

Before discussing the findings of the PBMS analysis, the image measurements that would most likely follow from the traditional approach to destination image are presented. Type A study results assuming image homogeneity among tourists are depicted in Figure 1 for each of the six destinations. As can be seen, there is hardly any difference between the perceived image profiles for the studied destinations. The only attribute that seems to discriminate a little bit is the price level. In sum, however, the conclusion drawn from such an investigation would be that the destinations under study are not profiled and, hence, that potential tourists do not perceive any major differences between them. However, as will be shown shortly, this conclusion is inaccurate as it is based on the assumption of a homogeneous group of potential tourists.

>> Figure 1 here <<

Figure 2 shows the profiles of the six generic destination image positions derived from the PBMS analysis. The grey lines indicate the total sample average of all respondents' perceptions across all destinations, while the black lines represent the perception at each particular destination image position.

Position 1 represents tourist destinations that are perceived as being located rather far away from home as well as being expensive. A total of 364 image patterns (11 percent of the patterns) were assigned to this position. Position 2 (559 patterns, 16 percent) evokes the association of very active nightlife destinations. Regarding the evaluation of expensiveness no clear picture can be deducted. Long travel time is the single distinct brand image characteristic of destinations located at position 3 (452 patterns, 13 percent), while position 4 (186 patterns, 5 percent) is dominated by the perception

of being very crowded. Regarding the distance from home and the nightlife activity, no homogeneous view is displayed. The brand image at position 5 (547 patterns, 16 percent) is associated with expensive destinations, and, finally, position 6 acts as a collection point for zero values. The latter is not a position that should be interpreted in a managerial sense. It represents a methodological artifact that is especially strong when three-way data structure is required where many respondents are unable to evaluate all brands, thus leaving the attributes for some brand unevaluated.

>> Figure 2 here <<

Revealing the destination information leads to the insight shown in Figure 3. It basically represents the values of the cross-tabulation of generic brand image positions and destinations (the Chi-square test is significant with a *p*-value of lower than 0.000). It can be seen that Canberra is strongly perceived as being located in positions 1 and 5, which both convey expensiveness. The Central Coast image is strongly dominated by position 5 (expensive) as well. The Hunter Valley is very frequently located in the active nightlife position 2. From this chart, it seems that Canberra, the Central Coast and the Hunter Valley have distinct destination brand images, with very high proportions of assignments to one or two brand image positions.

>> Figure 3 here <<

This graph, however, represents an aggregated view of the position-destination associations. It could well be that the respondents who see these destinations in their particular positions of strength also see competing destinations in the same way. That would, of course, weaken their competitive position.

To eliminate this potential cause of misinterpretation, uniqueness values are presented with a special focus on Canberra and the Hunter Valley. These two destinations are chosen as examples because they – based on the aggregated analysis – seem to be associated with different things: Canberra as being expensive and the Hunter Valley as offering excellent night life.

Table 5 contains all uniqueness values for generic position 1 (characterized by perceptions of long travel time and a pricy destination). The first row contains the absolute number of *sole* assignments to this generic position for each destination, while the second row contains the number of respondents who assigned this and at least one other destination the label of generic position 1. The third row is the total of the first two. The uniqueness value in row four is the ratio of the values in rows one and three. As can be seen, the position uniqueness of Canberra at generic position 1 is very high: more than half of the respondents who perceive Canberra in this way (53 percent), do not assign any other of the remaining five destinations to this generic position. The last two rows correct the uniqueness value by the total segment size. Row five is the proportion of respondents assigning the destination to generic position 1 as a proportion of the entire sample, and the last row multiplies this value with the uniqueness value. On the basis of this measure, Canberra, indeed, demonstrates a high uniqueness value at generic position 1 in comparison with other destinations. Only the Mid North Coast reaches an even higher value.

>> Table 5 here <<

Table 6 shows how multiple generic positions can be evaluated. Two positions are included for Canberra: generic position 1 and generic position 5. The values in the first column correspond to those in Table 4. While Canberra's uniqueness value at generic position 1 is high, the uniqueness value at position 5, which signifies an

expensive destination in the segment members views, is relatively low; 70 percent of the respondents who see Canberra that way also see at least one other destination like that.

>> Table 6 here <<

For the Hunter Valley generic position 2 was studied, which mainly represents the perception of respondents that a destination offers opportunities for active nightlife. Figure 3 above indicates that nightlife might represent an important image dimension for the Hunter Valley marketing activities, as many respondents have assigned the destination to this particular image position.

>> Table 7 here <<

However, the uniqueness values provided in Table 7 initially paint a different picture. Although the highest proportion of all respondents have indeed associated this destination with the nightlife image (see segment share in row 5), the uniqueness value is not very high and only slightly above the Canberra value (see row 4). This indicates that – taking heterogeneity of tourists into account and using distinctiveness as a criterion for destination image – nightlife does not distinctly discriminate the Hunter Valley from other Australian destinations. If the perceptual segment size, however, is considered, the Hunter Valley does have the highest value. This demonstrates the potential of this particular image dimension for further focused marketing activities.

5 Conclusions, limitations and future work

The aim of this study has been to draw attention to the importance of tourists' perceptual heterogeneity when destination images are studied. A typology of destination image studies with respect to the subject dimension is proposed to investigate the typical approaches presently used. Destination image studies of type A draw conclusions about destination images on the basis of average evaluations of respondents, thus essentially assuming destination image homogeneity for each of the included destinations. Type B studies use averages as well, but use the heterogeneity information derived from dispersion measures when reporting results. Type C studies investigate destination images separately for segments which are known to exist in advance, thus assuming image heterogeneity with regard to predefined market segments. Finally, type D studies investigate heterogeneity of destination images for groups of tourists whose distinguishing characteristics are not known in advance.

A review of prior studies indicates that studies of types A and C occur most frequently. Most of the type A studies report measures of dispersion, such as standard deviations, but do not screen attributes based on the extent of dispersion. Instead, they use the average values to determine destination image, which can lead to wrong conclusions if the tourist population studied is not homogeneous with respect to their destination image perceptions. Studies of type B do not appear to exist. Among the studies that incorporate heterogeneity, type C studies dominate the area, with socio-demographic characteristics being typically used for *a priori* grouping of individuals.

We believe that type D studies should be undertaken more frequently in destination image measurement; either for the purpose of exploring whether unobserved heterogeneity impacts on the results or to check whether the *a priori* criterion chosen

for a type C study is indeed the optimal segmentation criterion with respect to the destination image investigated.

Because the majority of destination image studies include more than one destination, which leads to additional object heterogeneity in the data, the PBMS approach is put forward as an analytic tool for the simultaneous exploration of subject and object heterogeneity in destination image studies. The usefulness of PBMS in this context has been illustrated using real destination image data of Sydney residents' perceptions of six short-break destinations. It is evident from the illustration based on the Sydney data that a traditional destination image analysis (type A) would lead to inaccurate managerial conclusions in this particular case. The tourism destinations would have appeared as having very similar image profiles, with the possible exception of differences in the price attribute. PBMS analysis generates a number of distinct profiles across the destinations as a direct result of dropping the assumption that all tourists share the same perceptions (type A analysis) as well as the assumption that it is known in advance which socio-demographic groups will have different image perceptions (type C). The PBMS approach is used to derive uniqueness indices which provide detailed insight into how unique each destination is perceived at each generic position. It reveals distinct destination images which form a good basis for communication images of a particular nature to particular segments of the market. This represents essential strategic marketing knowledge to a destination marketing organization.

It needs to be emphasized that the data has a few limitations which are not necessarily present in all destination image studies. The number of attributes is limited to four, and the data set includes three items that are unfavorable in terms of destination perceptions. Consequently, the emerging generic positions are necessarily negative in

nature. Furthermore, the destinations in this study are regions rather than single destinations, which is likely to blur the image as perceived by the tourists as these regions would, in themselves, be potentially heterogeneous.

The limitations of the PBMS approach are that three-way data is required and that PBMS is exploratory in nature. The advantages are that it represents a non-parametric framework, thus not requiring any data assumptions which may not be met and providing a powerful tool for market structure analysis integrating all aspects of marketing strategy: market segmentation, product positioning and competition.

The PBMS-based approach to destination image measurement as illustrated here can be extended by including tourists' actual destination choices in the past (see original PBMS publications for examples).

To further evaluate the usefulness of the proposed PBMS procedure for destination image measurement, it would be very interesting to conduct comparative studies across numerous different data sets. Such empirical investigations would shed light on the relative validity of the assumptions of image homogeneity and image heterogeneity and to demonstrate the differences in managerial conclusions drawn on the basis of the four types of studies in the typology suggested in this paper.

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Tables and Figures

Table 1: Required data structure for PBMS

Destination	Person	Attribute 1 (e.g. family-friendly)	Attribute 2 (e.g. clean)	Attribute 3 (e.g. lively)	Attribute 4 (e.g. fancy)
Canberra	1	1 (yes)	0 (no)	1	1
Vienna	1	0	1	0	0
Washington D.C.	1	1	0	0	0
Rome	1	0	0	1	0
Paris	1	1	0	0	1
Canberra	2	0	1	1	1
Vienna	2	1	1	0	0
Washington D.C.	2	1	1	1	1
Rome	2	1	1	0	0
Paris	2	1	0	1	0
Canberra	3	0	0	0	1
	….	….	….	….	….

Table 2: Sydney residents' short-break destinations within New South Wales/Canberra

Region	Share (%)
Canberra	4
Central Coast	8
Central West	4
Hunter	11
Mid North Coast	15
South Coast	16
Other New South Wales regions	42
Total	100

* Source: Bureau of Tourism Research (1999)

Table 3: Destination attributes studied

Crowdedness
This tells you how busy it is at the destination and its attractions during your visit.
- *Quiet* (there are not many people around, so you have a lot of personal space)
- *Moderately busy* (there are quite a few people around, but it does not feel overcrowded)
- *Very crowded* (there are vast numbers of people around)

Nightlife
This describes the availability of nightlife at the destination.
- *Active* (a wide variety of nightspots – plenty of restaurants, bars and nightclubs)
- *Moderate* (a limited level of nightlife is available – some bars and restaurants)
- *Hardly any* (destination "closes down" after hours – the odd pub or restaurant)

Price per day
This is the average *all-inclusive* price per adult person per day. This price includes transport, accommodation and food/drinks/entertainment.

Travel time
This is the time it takes to reach the destination. The difference in time is related to the distance but also depends on factors such as the mode of transport (e.g. car vs plane), the amount of traffic, and the quality of road infrastructure (e.g. single-lane road vs freeway).
- *Two hours*
- *Three hours*
- *Four hours*

Type of attraction
This is a broad indicator of the major attraction at the destination.
- *Natural* (e.g. national park, animal park, beaches, general natural beauty and scenery)
- *Cultural/historical* (e.g. museum, architecture, wineries)
- *Mix* (even mix of both natural and cultural/historical attractions)

Table 4: Respondent characteristics (sample proportions)

Accommodation	
Caravan park	15%
Friends/relatives	18%
Guest house/B&B	19%
Hotel/motel	46%
Other	1%

Age	
Mean (years)	35
15-24 years	34%
25-44 years	43%
45-64 years	18%
65 years or over	5%

Gender	
Female	58%
Male	42%

Household income	
< $15,599	13%
$15,600 - $25,999	12%
$26,000 - $36,399	11%
$36,400 - $51,999	20%
$52,000 - $77,999	16%
$78,000 - $104,000	15%
> $104,000	12%

Transport	
Air	13%
Bus/coach	8%
Own vehicle	73%
Rail	7%

Table 5: Uniqueness values of all destinations at generic position 1 (GP1)

	Canberra	Central Coast	Central West	Hunter Valley	Mid North Coast	South Coast
(1) Sole assignment of destination to GP1	52	7	10	15	65	23
(2) Multiple assignments of destinations to GP1	46	15	35	20	47	29
(3) Total assignments of destinations to GP1	98	22	45	35	112	52
(4) Position = Total uniqueness at GP1	0.53	0.32	0.22	0.43	0.58	0.44
(5) Percentage of respondents seeing destination in GP1	0.17	0.04	0.08	0.06	0.19	0.09
(6) Total uniqueness weighted by number of respondents seeing destination in GP1	0.09	0.01	0.02	0.03	0.11	0.04

Table 6: Uniqueness values for Canberra at generic positions 1 and 5

	GP 1	GP 5
(1) Sole assignment to GP	52	39
(2) Multiple assignments to GP	46	93
(3) Total assignments to GP	98	132
(4) Position = Total uniqueness at GP	0.53	0.30
(5) Percentage of respondents seeing Canberra in GP	0.83	
(6) Total uniqueness weighted by number of respondents seeing Canberra in GP	0.41	

Table 7: Uniqueness values of all destinations at generic position 2

	Canberra	Central Coast	Central West	Hunter Valley	Mid North Coast	South Coast
(1) Sole assignment of destination to GP2	33	25	31	60	16	24
(2) Multiple assignments of destinations to GP2	56	58	62	96	34	64
(3) Total assignments of destinations to GP2	89	83	93	156	50	88
(4) Position = Total uniqueness at GP2	0.37	0.30	0.33	0.38	0.32	0.27
(5) Percentage of respondents seeing destination in GP2	0.15	0.14	0.16	0.27	0.09	0.15
(6) Total uniqueness weighted by number of respondents seeing destination in GP2	0.06	0.04	0.05	0.10	0.03	0.04

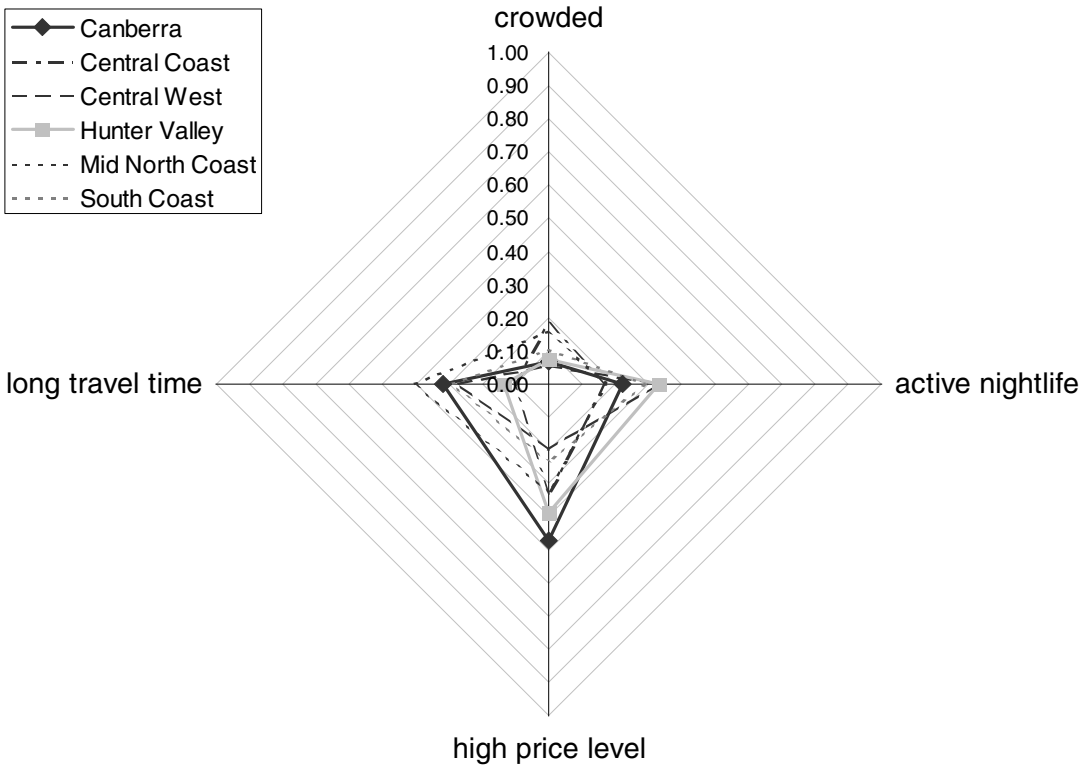
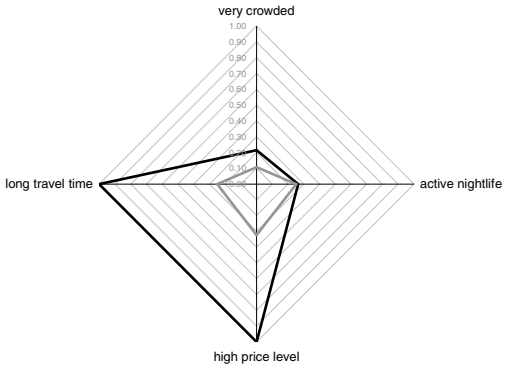
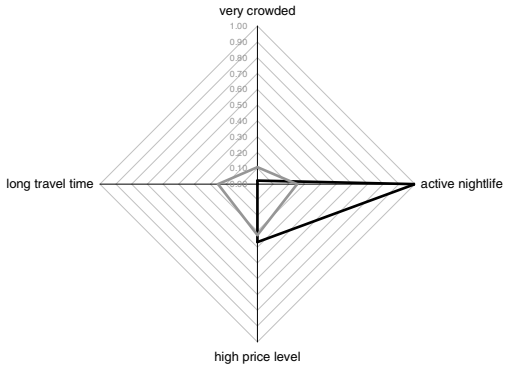


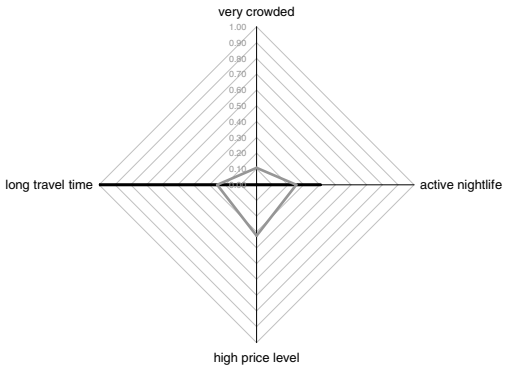
Figure 1: Destination images derived in the traditional way



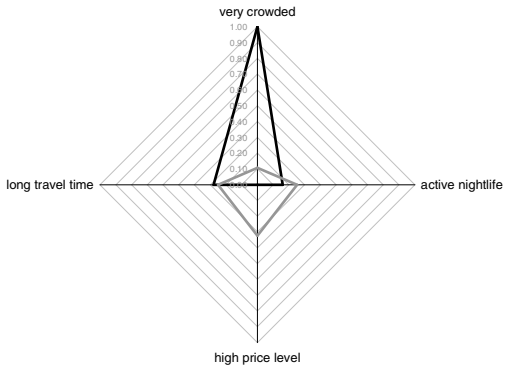
1 – expensive and far away



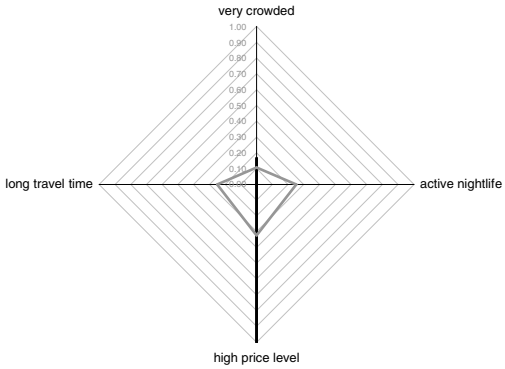
2- active nightlife



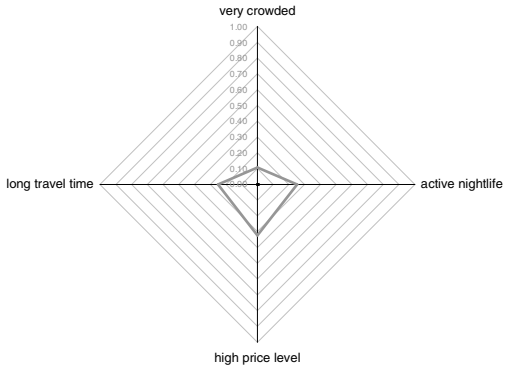
3 – long travel time



4 – very crowded



5 - expensive



6 (answer pattern)

Figure 2: Generic destination brand image positions

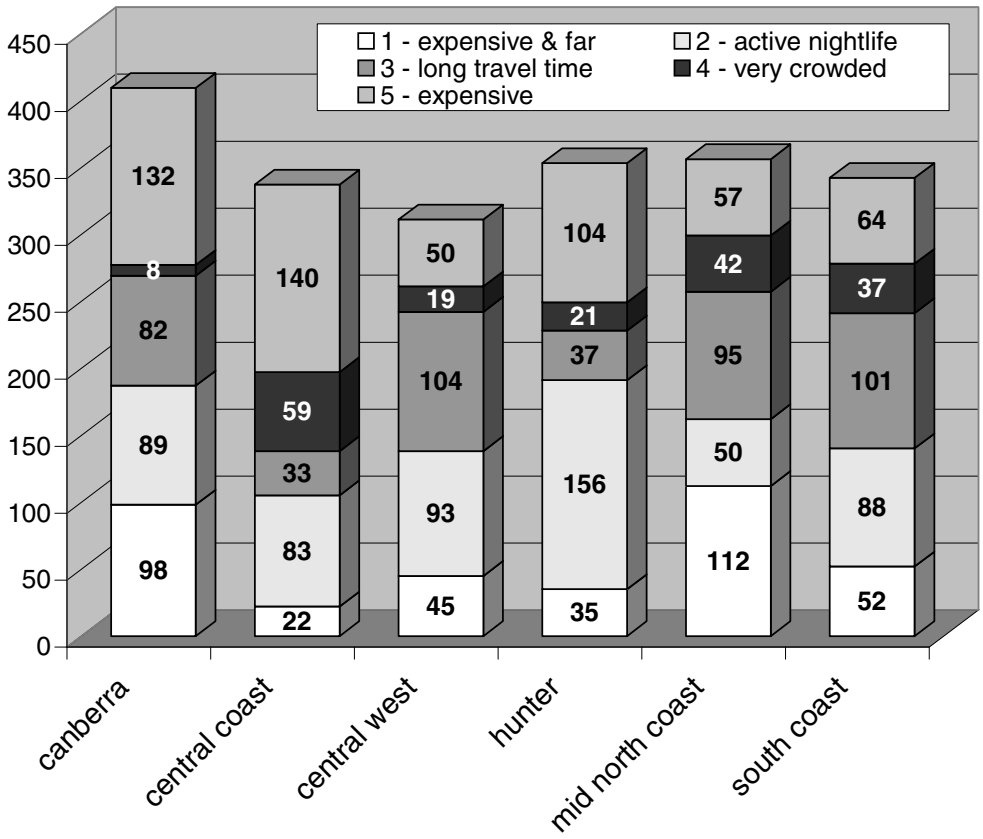


Figure 3: Destination representation at generic destination brand image positions