Matkailututkimus 3(1), 53–71 (2007)

Reconstructing a visitor typology based on recreation experiences

Jana Raadik & Stuart Cottrell
Department of Natural Resource Recreation and Tourism
Colorado State University

This paper 'reconstructs' Cottrell et al.'s (2005) typology of day-use outdoor recreation experience in a Dutch forest preserve using 25-items representing five experience modes: amusement, change, interest, rapture, and dedication. The aim was to apply a cluster analysis (K-means and ipsative) to segment visitors based on their recreation experiences as a visitor typology versus a group allocation technique. Similar to the original study, change was the most represented followed by rapture. An ipsative cluster solution showed a greater diversity of experience preference groups than the K-means and the group allocation procedure. Differences among modal types on experience parameters showed rapture-change and rapture-physical challenge visitors stayed in the forest preserve the longest and tended to stay on a specific trail. Change-amusement came to hike, walk the dog and visit the pancake house the most. Dedication was most satisfied with the area and came to the preserve most often. The Duivelsberg as a forest preserve offers some of the more physically challenging terrain in Holland, as well as a temporal change in a daily context as an escape within nature.

Tourists differ in their appreciation of tourist destinations (Lengkeek 2000) and efforts have been made to examine differences between tourists in a number of typologies (e.g., Murphy 1985; Smith 1995; Swarbrooke & Horner 1999). Many of the typologies have been based on different theoretical constructs and approaches and difficult to compare across settings because of their classification of tourists. This is especially true for activity-based typologies since tourists quite possibly participate in similar activities yet for different reasons (Cottrell, Lengkeek & van Marwijk 2005).

Sociologists work to find an overall theory to explain the tourist and their behavior, yet the elusiveness of the topic poses many challenges to overcome in the development of such theory (Reid 2003). Urry's (1990) argument that tourism is a departure from everyday experience, described as the experience of free-time activity contrasting with daily routine identifiable via 'signs' of significance gained through experience is increasingly contested (Coles, Hall, & Duval 2005; Hall 2005). Lengkeek (2001) argues that typologies based on experience within the context of activities as a means to an experience might apply to typologies tailored to particular free-time activities for comparison across leisure settings. Just as a similar activity performed by several tourists represent different intentions, similar intentions (such as rest and relaxation) may imply a diversity of activities. Managers of leisure destinations wish to know what visitor types visit their areas for effective marketing, to adjust the physical environment and infrastructure to visitor behavior, and to minimize negative social, cultural, and environmental impacts of visitor use; a visitor typology can help to accomplish these goals.

Cottrell *et al*. (2005) examined the extent a typology of tourist experiences could be used in a forest preserve and its potential to link experience types to spatial and/or social conditions in a daily recreational context. Focusing on the definable groups of visitors in the Duivelsberg Forest Preserve, which emerged from the modes of experience (MES) typology (Elands & Lengkeek 2000), they examined the relationship between MES and a visitor profile and their activities in the area (i.e., length of stay, time and day of visit, and places visited).

Cottrell *et al*. (2005) adapted Kugel, Bakker, & Boerwinkel's (1991) group allocation technique to segment each respondent into where they had the highest score. This is a manual means to represent a respondent's mode of experience using 'if' statements in a statistical program to compute a new independent variable representing MES. A variety of literature implies that when inhomogeneous populations are not recognized and accounted for, the use of certain analysis techniques (e.g., group allocation technique) can render results invalid, leading to erroneous management actions (Beaman & Vaske 1995; Greenleaf 1992; Vaske *et al*. 1996). As a secondary analysis, this paper reexamines differences in respondents' modes of experience based on Lengkeek's MES typology using cluster analysis as the segmentation technique. The 'reconstructed' visitor typology is used to compare results to Cottrell *et al*. (2005) examining the relationship between MES and the demographic profile of visitors and visitor activity in the area.

Theoretical context

Cohen (1979) in his "Phenomenology of the tourist experience" provides a theoretical scheme to classify and group tourists into five distinctive forms of experience ranging from the recreational, diversional, experiential, experimental and existential. The

distinctions are based on the way people free themselves from their daily world and take on the 'other' as a means to connect with an imagined, ideal world (Elands & Lengkeek 2004). Lengkeek (2000) reformulated Cohen's (1979) modes of experience using the concept of 'out-there-ness' (instead of Cohen's 'centre-out-there'), since "out-there-ness better fits the idea of relating different experiences according to the parameters of reality to some understanding in terms of language, common or purely metaphorical" (Elands & Lengkeek 2000, 16). Much of the tourism experience is related to the concept 'other' and to some sense of out-there-ness that one cannot really take part in (Elands & Lengkeek 2000).

The advantage of experience based modes as a typology is that it overcomes choices based purely on 'motivational' or 'interactional' approaches in constructing typologies (Cohen 1974; Plog 1972). The benefit of Elands and Lengkeek's (2000) approach is the rooting of typology construction in a fundamental theory of experiences. Use of domain-specific variables also enables a consistent link between leisure experiences in different situations with respect to the various activities. Additionally, one of the more interesting challenges is to investigate the relationship between modes of experience and associated conditions in a material and symbolic context, which arouse certain experiences or positive responses. Elands and Lengkeek (2004) expect that each mode of experience 'claims' its own quality conditions in natural settings with its own landscape preference.

Inspired by Cohen, Elands and Lengkeek (2000) empirically studied MES via seven comparative studies involving both leisure and tourist experiences in the Netherlands and Costa Rica. Their work sought to offer a typology tailored to particular leisure activities and leisure contexts for basis of comparison across leisure settings versus the traditional typology application to tourist experiences; an ideal supported by a variety of more recent literature (Coles *et al*. 2005; Hall 2005). Elands (2001) sketched a number of characteristics from Cohen's modes from which to operationalize statements to measure each mode (Table 1).

Mode	**Characteristics**
Amusement	*Fun*; *Centre-values*: familiar environment, your own language, ease*; Temporality:* a short break.
Change	*Escape:* away from boredom or stress and drag of everyday life; *Relaxation*; *Recovery*: recharge the battery; *Context matters less*.
Interest	*Search for interesting vistas and stories*; *Variation* derived from 'elsewhere' or 'ever'; *Stimulation of imagination*: not necessarily authentic, like to be informed.
Rapture	*Self-discovery*: new awareness of own identity; *Unexpected:* open for the unknown or unexpected; *Crossing borders*: discovery of (physical) boundaries
Dedication	*Quest for authenticity:* a search for the indisputable authentic otherness; *Appropriation and devotion*; *Merge:* being absorbed in a 'back-stage' world; *Timelessness*: wish for a permanent stay.

Source: Elands & Lengkeek, 2000, 19.

Table 1. Characteristics of Elands and Lengkeek's Modes of Experience

Operationalization of Cohen's modes was problematic over the various studies; thus Elands and Lengkeek adjusted and refined the conceptualisation of the five modes from one case study to another (Elands & Lengkeek 2000). Results of their work were 36 MES items with five to nine general (non-context specific) items representing each mode: *amusement, change, interest, rapture, and dedication* (Elands & Lengkeek 2000). Table 2 presents 25 of their *mode of experience* statements used in this study and the associated characteristics of each.

Lengkeek's (2001, 15–16) explanations of the reformulated modes are based on a metaphorical perspective.

> *Mode of amusement* – the stories and metaphors that suspend reality are so well known and trusted that they do not create any tension with everyday reality. In order to avoid confusion with outdoor recreation it is better to use the term amusement to refer to that which Cohen called the 'recreational'. The carefree separation from the ordinary can have an effect on many different types of reality parameters. The traditional fair offers the best 'array' of possibilities: fearful creatures in the haunted house, being spun around on the merry-go-round, having a look at the

Mode	Statements
1. Interest	I read information boards in the Duivelsberg
2. Amusement	I gladly visit here because it attracts many visitors that makes it nice when busy
3. Interest	I use a map as preparation to visit the Duivelsberg
4. Amusement	I come here gladly because I feel at home among the people who come here
5. Rapture	In this area, I finally find time for myself
6. Amusement	*I come to the Duivelsberg because it is cozy to hike here with family and friends*
7. Change	I go to the Duivelsberg to get away from the daily grind
8. Change	I go here regularly for a change of pace
9. Interest	I rather go each time to another area
10. Change	I don't care where I go, I just have to get away
11. Dedication	I rather go to the Duivelsberg because I really consider it as my place
12. Dedication	If I could I would like to live in the Duivelsberg
13. Dedication	I want to know more about the nature and history of the Duivelsberg
14. Interest	I don't feel like visiting historical places when I am here
15. Amusement	I find it nice to be here, but not for too long
16. Change	I come to the Duivelsberg for rest and relaxation
17. Rapture	When I'm here I like to be alone in the great outdoors for hours on end
18. Rapture	I like to be active doing strenuous things such as long treks and cycle tours
19. Amusement	For me, having a nice time here means drinking coffee and eating at the pancake house
20. Rapture	In the Duivelsberg I am searching for sportive challenges and surprises
21. Rapture	I like it the most here when, beforehand, I have no idea where I will go
22. Change	I have such a stressful job that I need to escape once in a while
23. Dedication	Once the Duivelsberg starts getting busy I don't go back again
24. Dedication	In this area I search for wilderness and original landscapes where I won't meet anybody
25. Interest	*Brochures and information boards are not enough, I want to know everything about the area*

Items measured on a 5 point Likert agreement scale 1=strongly disagree to 5=strongly agree
Italic items not from the original MES statements, but added as more specific indicators for the Duivelsberg

Table 2. Mode of experience items used in the study

freaks, having your fortune told and rising high above the earth on the Big Wheel.

Mode of change – the difference with normal, everyday life is more strongly felt. Cohen couples his diversionary mode to a need to break out for a time. This mode refers to a more structural tendency amongst people to experience their identity by sometimes breaking loose (dis-association) from paramount reality. The metaphor that dominates here is that of recharging energy. The suspension of reality may no longer be embedded in the self-evident but the out-there-ness has, as yet, little form.

Mode of interest – the implications in the stories and metaphors are much stronger here than what has been made explicit above. Out-there-ness is created in the sense of attractions, as sketched by MacCannell and repeated by Cohen. Signs, clichés and travel guides bring fantasy into being. On the one hand they have considerable power of attraction; on the other, they contain the quality of the mystical and of something that cannot be fully understood. Fear and respect begin to play a role: a view of an immense depth, stories of human sacrifices made by the Incas, the untamable nature of the primitive 'Other', the feeling that there is more between heaven and earth than we can understand - all are found here.

Mode of rapture – here the tension between the suspension of the ordinary and the inaccessibility of the 'Other' reaches its climax. Amusement and rapture flow from this confrontation. It is not for nothing that Cohen places the emphasis here on the experience of 'self'. The confrontation once again makes the individual aware of his limitations and creates a determination to begin anew and to advance further. Nevertheless, rapture may also be directly linked to space (immensity), time (eternity), sociality (paradise lost) and tension of consciousness (contemplation).

Mode of dedication – the unknown and the inaccessible are opened up, thanks to a new masking of doubt. A new belief comes into being that incorporates the earlier, unreachable out-there-ness. New ideas about what 'nature' really is arise. A hobby becomes fulfillment in life. Migration takes the individual to the promised land. The extraordinary becomes ordinary or is mastered in a niche in which a fixed place has been created for it.

Several sub domains within each mode (see characteristics in italic, Table 1) resulted from the principal components analysis (PCA) conducted in the seven studies by Elands and Lengkeek (2000). Although each study PCA resulted in different factors, there were evident patterns. The five modes were found in each of their studies, yet

varying in context, dependent on the destination and visitor activity. For instance, the amusement mode as an independent factor reflected sub domains as familiarity, comfort, social interests, and temporality while dedication involved greater context specificity such as appropriation, devotion, and timelessness.

Elands and Lengkeek (2000) developed a generally valid and reliable measuring instrument for the general aspects of a tourist experience. The next step was to develop a context specific model since there may be a large difference between tourist experiences for people on a vacation versus a day trip for the weekend. Follow up research showed that the respondent indicated prevailing tourist mode does not correspond with the prevailing modes of experience related to a more local, next door type experience (Bakker & Lengkeek 1999). Therefore, an instrument should be developed that links time-space behavior in a certain area to types of experience and related to background characteristics. This instrument should be tested repeatedly and validated with results obtained from other methods (Elands & Lengkeek 2000). The Cottrell *et al.* (2005) study was one of those steps taken, examining the role of the MES typology as a basis for policy intervention for the Dutch Forest Service to link types of experiences to spatial or social conditions on which they depend. However, the group allocation technique used for segmentation is a contested methodology (Beaman & Vaske 1995; Vaske *et al.* 1996) with limited evidence of its use.

Purpose

The focus of Cottrell *et al.*'s (2005) study was primarily methodological, aiming to operationalize a visitor typology within a day-use outdoor recreation experience context for the Dutch Forest Service. Elands and Lengkeek (2000) assumed that an experience mode requires a compatible context, an assumption they supported via numerous empirical studies. Results implied that people indeed belong to several different modes (or multiple modes) dependent on specific characteristics of the activity engaged in or the setting where they spend their leisure time. Their findings indicate MES's potential application in a leisure or tourism context. Based on their claims, Cottrell *et al.* (2005) constructed a visitor typology based on MES and tested for differences between modal types and recreation behavior. However, we question the application of the group allocation technique versus a clustering approach for group segmentation. Our concerns are based on the limited application of the group allocation technique found in the literature (Elands & Lengkeek 2000; Kugel et al. 1991).

This paper reconstructed a visitor typology using a cluster segmentation technique versus the group allocation method. The core question is: *Do clustering techniques yield different results than group allocation?* Further, if MES results differ, *do cluster findings provide greater explanation in the visitors profile and their participation behavior during their visit in the Forest Preserve*?

Study Setting

The Duivelsberg is a 125-hectare SBB forest preserve located along the Dutch-German border east of Nijmegen in The Netherlands. Primarily a nature reserve, the area offers hiking, mountain biking, and bird watching with minimal recreational amenities including marked trails, information signs, benches, observation points, a pancake restaurant in the interior, and one overnight rental house. Private campgrounds, hotels, restaurants, theme parks, and other recreational related businesses are located within close proximity to the forest reserve. Although small in size, the area receives more than 350,000-day users per year in 2003. Recreational use includes both Dutch and German day users and frequent use by those who live along the borders of the area. The pancake house (Dutch tradition) is a primary attraction in the Duivelsberg.

Methods

The original data (Cottrell *et al.* 2005) from 407 visitors (72% response rate) was collected over a one-week period (May/June 2002) to represent weekly visitation in the Duivelsberg forest preserve. A seven page interviewer completed structured questionnaire was based on the Dutch Forest Service visitor monitor survey. The survey included visitor profile, participation, service quality, and visitor satisfaction items. Additionally, to examine the application of MES in the Dutch Forest Service visitor-monitor, 25 MES items from Elands & Lengkeek (2000) were adapted to the Duivelsberg context with five items to represent each of the modes of experience (see Table 2).

Analysis

A secondary analysis of the original data was conducted to include principal components analysis (PCA), *K*-means with Euclidean distance and ipsative clustering procedures, cross tabulations, and one-way analysis of variance. The first step in the analysis was a PCA to replicate Cottrell *et al.*'s (2005) mode of experience factors to cluster visitors.

Next, *K*-means and *ipsative* clustering procedures were used to segment respondents to the MES modes versus Kugel *et al.*'s (1991) group allocation technique. To understand Elands and Lengkeek's (2000) reason for using group allocation for segmentation versus cluster analysis, a summary of their rationale is given.

Group allocation technique

To construct a generic typology of experiences, the distribution of experiences should be quantified as well as the distribution of tourists across these experiences. Tradi-

tionally, in group segmentation procedures, grouping respondents is conducted on the basis of factor scores with cluster analysis. In this case, where seven different studies were comparatively analyzed, the application of cluster analysis has a disadvantage in that each cluster analysis focuses on the internal variation and distribution of factor scores of the research context in question. This causes problems for comparative analysis of multiple settings. Another disadvantage is that every respondent is forced to one cluster, in spite of relatively divergent factor scores. To overcome these disadvantages, an *allocation technique* was developed. This technique first includes *calculation* of a *weighted sum score* to transform the relative value of each factor into a meaningful value that can be interpreted easily. The original scores, which respondents assigned to statements belonging to a specific factor, were first summed and subsequently divided by the number of summed-up variables. The relative importance of each item contributing to the explanation of a factor was also taken into consideration by multiplying the item score with the factor loading. When given a five-point scale, the final weighted sum score on each factor varies between 1 (strongly disagree) and 5 (strongly agree). The next step of the process involved an *allocation procedure* to attribute each respondent to one or more factors by defining a critical value. In principle, a respondent, in order to 'belong' to a factor, should at least 'agree' on all items of that factor (critical value 4.0). This would be a very strict distinction as only once ticking 'not agree/not disagree' implies exclusion of the factor. For finding the right critical value, theoretical as well as statistical arguments were used. Theoretically, it is possible that people belong to more than one mode, which means that respondents can score positively on different factors. An assumption was made that at least 70% of respondents should be classified within at most two factors. Therefore, it was decided to set the critical value to 3.7. When the items are stable the critical value can be set to 'agree with' (4-value) after repeated research.

Cluster analysis

Although, Elands and Lengkeek's (2000) rationale is clear, we feel that the group allocation technique is limited (Beaman & Vaske 1995; Vaske *et al*. 1996). By segmenting visitors manually based on a critical value (e.g., 3.7) as a cut point, group allocation segments visitors based on their highest scores. *K*-means cluster analysis uses Euclidean distance which is useful for large data sets and when the number of clusters is predetermined. In this case, the researcher specifies in advance the desired number of clusters, K which is the five MES clusters. Initial cluster centers are chosen randomly in a first rotation of the data, then each additional iteration groups observations based on nearest Euclidean distance to the mean of the cluster. That is, the algorithm seeks to minimize within-cluster variance and maximize variability between clusters in an ANOVA-like fashion. Cluster centers change at each rotation. The process continues until cluster means do not shift more than a given cut-off value or

the iteration limit is reached (Harris, Anderson, & Tatham 1990; Johnson & Wichern 2002).

The ipsative (individual) cluster technique can offer a better model than the *K*-means (Beaman & Vaske 1995; Vaske *et al*. 1996) with its focus on group aggregate scores. This technique takes into account the mean response level of individual responses (high or low) versus the group mean level and the range of scores from narrow to wide per individual. Beaman & Vaske (1995) note that the ipsative technique models data structure better than *K*-means for attitudinal data such as MES.

Similar to the original paper, cross tabulations were used to examine associations between the cluster based MES groups and participation behavior. One-way analysis of variance examined relationships between MES and satisfaction with the overall experience for potential management implications. Results are compared to Cottrell *et al.* (2005).

Results

An initial principle components factor analysis (PCA) with varimax rotation on 25 MES 5-point Likert scale items with an Eigenvalue of one resulted in eight factors, accounting for 61% of the total variance. Reliability alpha scores for five factors ranged from .50 to .70 while factors 4, 7 and 8 had low alpha scores as follows [Factor 4 (a=.430), Factor 7 (a=.215), Factor 8 (a=.403)]. To replicate the previous study, the same rational was used to not drop the items in a second PCA procedure to avoid omission of 9 items from the 25 MES statements, which would result in omission of the *interest mode* totally. Thus, as in the original paper, a PCA with a 5-factor extraction to force five factors was run resulting in more clearly defined factors with higher reliabilities overall (Table 3).

Factors were interpreted respectively as in the previous study (Table 3). Factor 1 represents *change*, since it includes four change and one rapture item (i.e., *In this area, I finally find time for myself*) which logically fits a change mode context for escape, relaxation, and recovery. Factor 2, *amusement*, has three amusement and two dedication items. When recoded the two dedication items, in essence, indicate that meeting other people, need for less wilderness, and crowdedness is acceptable as would be expected for *amusement* visitor types. For Factor 3, *interest*, three interest and one dedication item load on this factor. The one dedication item fits this factor logically since it measures interest in more specific information aspects of the Duivelsberg. Factor 4 was more difficult to interpret since five items representing four modes loaded with acceptable scores; however, the two dedication items had negative scores while the items for change, interest and rapture had positive values. After a series of reliability analyses, items 11 and 12, which clearly represent a sense of *appropriation* for the Duivelsberg Forest Preserve (see Elands & Lengkeek 2000), were taken to represent a sub-domain of *dedication*. Recoding items 11 and 12

Statements	Change	Amusement	Interest	Dedication[2] *Appropriation*	Rapture *Physical Challenge*
v7 (Chg) I go to the Duivelsberg to get away from the daily grind	**.733**				
v22 (Chg) I have such a stressful job that I need to escape once in a while	**.731**				
v16 (Chg) I come to the Duivelsberg for rest and relaxation	**.703**				
v8 (Chg) I go here regularly for a change of pace	**.675**				
v5 (Rap) In this area, I finally find time for myself	**.626**				
v6 (Amu) I come to the Duivelsberg because it is cozy to hike here with family and friends					
p.v2 (Amu) I gladly visit here because it attracts many visitors that makes it nice when busy		**.713**			
24 (Ded) In this area I search for wilderness and original landscapes where I won't meet anybody*		**.657**			
v23 (Ded) Once the Duivelsberg starts getting busy I don't go back again*		**.613**			
v4 (Amu) I come here gladly because I feel at home among the people who come here		**.599**			
v19 (Amu) For me, having a nice time here means drinking coffee and eating at the pancake house		**.423**			
v17 (Rap) When I'm here I like to be alone in the great outdoors for hours on end					
v25 (Int) Brochures and information boards are not enough, I want to know everything about the area			**.686**		
v1(Int) I read information boards in the Duivelsberg			**.613**		
v13 (Ded) I want to know more about the nature and history of the Duivelsberg			**.602**		
v3 (Int) I use a map as preparation to visit the Duivelsberg			**.480**		
v14 (Int) I don't feel like visiting historical places when I am here					
v9 (Int) I rather go each time to another area				.667	

v11(Ded) I rather go to the Duivelsberg because I really consider it as my place				**-.544**	
v10 (Chg) I don't care where I go, I just have to get away				.462	
v12 (Ded) If I could I would like to live in the Duivelsberg				**-.431**	
v21 (Rap) I like it the most here when, beforehand, I have no idea where I will go				.420	
v15 (Amu) I find it nice to be here, but not for too long				.398	
v18 (Rap) I like to be active doing strenuous things such as long treks and cycle tours					**.862**
v20 (Rap) In the Duivelsberg I am searching for sportive challenges and surprises					**.770**
Eigenvalue[1]	3.27	2.43	2.12	2.0	1.77
% Variance Explained	16.9	11.3	10.3	10.1	9.7
Alpha Score	.79	.61	.58	.59	.70
Scale Mean	3.50	2.50	2.80	2.60	3.10
Standard Deviation	.69	.65	.65	.99	1.01

Items in bold were used in reliability analysis and to create factor variables
*Item recoded
Note: Items with Factor loading <.40 not included in the results
[1] Factor extraction criteria set to 5 reducing from 8 factor at the Eigenvalue=1 default setting.
[2] Dedication factor difficult to interpret with five items given and recoding not logical. Two dedication items offer best solution for variable construction.

Table 3. Modes of Experience Item Rotated Component Matrix

was not a logical step since that would change each to a negative statement. Meanwhile recoding the other three items was not logical either, even so, the only combination of items with a nearly acceptable alpha scores (.59) were 11 & 12. Factor 5, with two items represents *rapture*, which we label as *physical challenge* (see table 4) since the items reflect preference for strenuous activities and sportive challenges.

While Nunnally (1978) indicates that Cronbach alpha scores equal or greater than .70 are acceptable, Cortina (1993) states that scales with a smaller number of items (i.e., 6 or less) with .60 or greater may be acceptable. The reliability scores for three factors (*amusement, interest and dedication*) are weak to modest at best, however, according to de Heus, van der Leeden, & Gazendam (1995) high alpha scores are not always necessary depending on the context of the series of questions. These items theoretically are meant to measure five factor domains each with two or three sub-domains (i.e., physical challenge) therefore, low alpha scores are expected. Items 6-*Cozy hiking with friends*, 17-*Longer time on my own in nature*, and 14-*no interest in culture sites* did not load at the .40 factor load cutoff, thus no factor loading number shows up. Item 6 (*come to…hike here with family and friends)* - was not one of the original Elands & Lengkeek items, but was put into the study to replace Elands & Lengkeek's centre value factor (see Table 1) that was not applicable to the study of the Duivelsberg, namely 'I like to hear Dutch spoken when I am here'. Item 17 (*alone in the great outdoors for hours on end*) reflects more of a wilderness experience, which the Duivelsberg does not offer because of its limited size, and item 14, *cultural opportunities*, are not specifically available in the Duivelsberg since it is a nature preserve. Consequently, it is logical these items fit the context of the visitor experience less and did not load on any of the factors.

Similar to other studies (Elands & Lengkeek 2000) the most consistent factors tend to be *amusement, change* and *interest. Change* accounted for the most variance explained (17%) followed by *amusement* (11%). Next, factor mode indices were calculated as the sum of each item multiplied by the factor loadings and then divided by the sum of the factor loadings. *Change* had the highest mean (*M*=3.5) on a 5-point scale followed by *dedication* (*M*=3.1), *interest* (*M*=2.8), *rapture* (*M*=2.6) and *amusement* (*M*=2.5). Standard deviations for *change*, *amusement* and *interest* had the narrowest distribution of mean scores (*SD*=.65 to .69) with *rapture* and *dedication* having wider distributions.

To address the question, *Do clustering techniques yield different results than group allocation?,* the *K*-means and ipsative clustering techniques were used to segment visitors. MES types based on the group allocation technique were predominantly change (n=163) followed by rapture (n=112), interest (n=40), dedication (n=35) and amusement (n=27). *K*-means clustering analysis yielded three distinctive clusters with relatively equal proportions (change/amusement, n=119; Rapture, n=123; dedication/change, n=130). Since the aim of the paper was to compare group allocation technique and cluster analysis results, the *K*-means with its three clusters was

limited; the original paper had five modes. *K*-means cluster results did not allow sufficient numbers of respondents per cluster when more than three clusters were used. Further, in *K*-means with Euclidean distance clustering, social aggregates are not well recognized (Beaman & Vaske 1995). Respondents falling into the clusters are not typically homogeneous.

Beaman & Vaske (1995) suggest that similarities between respondents should be based on individual (ipsative) response patterns rather than the absolute values of responses. Therefore, the ipsative clustering technique was the next step in the analysis. Grouping respondents based on their personal response patterns across all items which the ipsative technique provides better results for segmenting groups with similar philosophical orientations than *K*-means clustering, thus matching the theoretical context of Lengkeek's of modes of experience. The ipsative cluster analysis revealed six clusters of respondents with similar response patterns for the five modes of experience index variables (Figure 1).

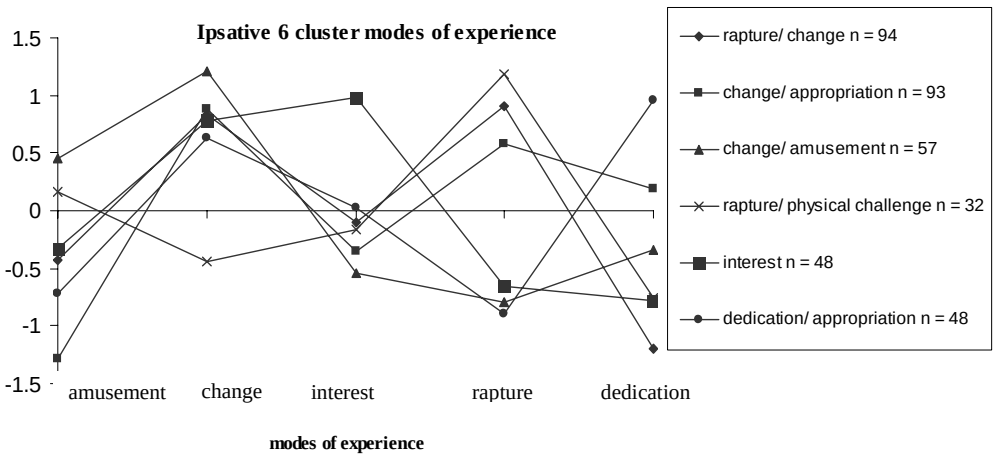

Figure 1. Ipsative 6 cluster modes of experience

According to the unique aspects in scoring for each group, each cluster was assigned a name. Identification of groups was based on Elands and Lengkeek's (2000) modes of experience (see Table 1). The six clusters were labeled according to differences over the modes of experience items: *Change – amusement, change – appropriation, interest, rapture – change, rapture – physical challenge and dedication – appropriation.*

The *rapture- change* mode (n=94; 25%) and *change – appropriation* (n=93; 25%) were the most represented followed by *change – amusement* (n=57; 15%), *dedication – appropriation* (n=48; 13%), *interest* (n=48; 9%) and finally *rapture – physical challenge* (n=32; 9%). Different from the previous study, more than five distinctive groups were identified, with a much greater intermixing of the modes. These results tend to support Elands and Lengkeek's (2000, 2004) arguments that visitors tend to shift between modal types depending on the social and or spatial

context of the experience opportunities at the destination; thereby creating an overlap of experience preferences. *Rapture* mode, reflecting physical activity, clustered on two subgroups, with one being more about *physical challenge (rapture – physical challenge),* and the other one more about *change* (*rapture – change mode)* while engaged in physical activity. Both of those clusters rated low on the *dedication* mode index, showing low appropriation for the area. The main distinction between those clusters was on the change mode index. *Rapture – physical challenge* was the only cluster which was not in the *change* mode. *Change – appropriation* and *change – amusement* differed from each other on *rapture* and *dedication*. *Change – amusement* was only in some aspects of the *amusement* and *change* indexes, rating low on all other mode indices. The *interest* cluster had the highest score on *interest* and lowest on *amusement*, recording low on *rapture* and *dedication* as well. *Interest, change – amusement* and *dedication - appropriation* rated lowest on the *rapture* mode index. There was no distinctively clear *amusement* mode, while leaning more towards *change* via amusing activities (*change – amusement).* The predominant modes, however, were similar to the previous study (i.e., *change* and *physical challenge*) and matched preferences with setting attributes available in the Duivelsberg. This forest preserve has one of the most extensive and challenging hiking and cycling terrains in Holland, thus providing excellent opportunity for visitors inclined towards those activities. Yet, situated in a border area and noting Holland's dense population with few forest areas, Duivelsberg is a place for the more diverse visitors with its opportunity for a temporal change in nature for each visitor.

Visitor participation profile in context of MES using ipsative clustering

Cross tabulations with a *Chi-square* test for association was used to address the second research question; *do cluster findings provide greater explanation in the visitors profile and their participation behavior during their visit?*

Similar to Cottrell *et al*., results showed no association between MES and the demographic measures.

Participation

For the participation items (i.e., specific trail followed, length of stay, mode of travel, frequency of visit, day of visit, reason for coming, and activity participation), significant associations were found for each except length of stay (Table 4).

Forty-two percent of the sample followed a specific trail, with r*apture- change* (61%) following the trail most among the different modes and *dedication* (79%) and *change – amusement* (77%) following a specific trail the least. There were no significant differences between the modes and their length of stay in the area. *Dedication* mode was highest in daily visits to the area (24%), while *interest* was the more likely first time visitors (60%). The highest percentage of weekend visitors was *change - amusement* (53%). *Rapture – physical challenge* was most likely to

		MES Ipsative 6 Cluster solution as Independent Variable (%)					
Dependent variable	% Total Sample	Rapture/ change n=94	Chang/appro- priation n=93	Change/amuse- ment n=57	Rapture/cha llenge n=32	Interest n=48	Dedication n=48
Followed specific trail***							
Yes	42	61	35	23	59	42	21
No	58	39	65	77	41	58	79
Length							
30minutes	8	6	9	14	6	4	13
31-60 minutes	17	12	18	18	22	19	15
1 to 2 hours	41	47	32	51	28	38	42
Longer	34	35	41	17	44	38	31
[1]Travel mode***							
Foot	25	27	29	16	47	8	29
Bike	7	10	7	5	9	13	0
Car	61	52	54	77	44	71	69
Train/bus/other	7	12	11	2	0	8	1
[2]How often you visit***							
First time	30	52	17	12	24	60	12
Daily	12	4	17	15	0	8	24
Weekly	23	15	22	29	24	12	35
Monthly	35	29	44	44	52	20	29
Day of Visit***							
During the week	16	15	17	12	19	13	19
Weekend	36	32	32	53	44	37	29
Weekend & weekday	30	23	40	28	22	19	44
Not applicable	17	30	11	7	16	31	8
[1]Activity***							
Hiking	32	38	31	21	29	38	21
Walking the Dog	9	7	11	18	7	2	9
For Nature	15	14	15	9	10	13	25
Sporting	8	10	18	2	10	2	2
Visit Pancake House	37	31	25	50	45	44	43
[3]Reason for coming***							
Hiking	55	64	61	32	69	52	44
Walking the Dog	9	5	9	23	6	0	13
For Nature	7	3	7	15	0	4	12
Sporting	6	7	11	5	9	2	0
Visit Pancake House	13	12	5	25	9	19	13
Other	10	8	7	2	6	23	19

*** X^2 significant at .001

[1]8 cells have expected count less than 5

[2]5 cells have expected count less than 5

[3]15 cells have expected count less than 5

Table 4. Crosstabulations of respondent participation variables by mode of experience (n=372)

come to the area by foot (47%), although over all the different modes, the most frequent form of transportation was the automobile. The *change – amusement group* came the most by car (77%).

The main reason for coming to the area was for hiking and for the pancake house. Again this finding was consistent with the previous study. A majority of modes came primarily for hiking, *rapture – physical challenge* rating the highest (69%) and *change – amusement* the lowest (32%), while the latter mode was highest on rating the pancake house as the main reason to visit (25%), as well as walking the dog (23%). The

main activities done in the area were pancake house followed closely by hiking. Comparing activities by MES, a majority of the *change - amusement* group (50%) went to the pancake house and rated the highest mode for walking their dog (18%). These results differ compared to Cottrell *et al*. over some activities, while showing similar patterns on others.

Results from a one–way analysis of variance (Table 5) showed generally high satisfaction scores across all the modes. *Dedication – appropriation* [*M* = (8.34), *SD* = (.76)] were the most satisfied followed by *change/appropriation* [*M* = (8.19), *SD* = (.70)] while *interest* and *rapture/change* were the least satisfied. There were no differences found in the previous study.

Cluster group	N	M	SD
Rapture/Change	94	7.82[a]	.76
Change/Appropriation	93	8.19[b]	.70
Change/Amusement	57	7.91	.74
Rapture/Physical Challenge	31	7.94	.73
Interest	48	7.71[bc]	1.05
Dedication/Appropriation	47	8.34[ac]	.76
Total	370	7.99	.81

F-value = 5.45; $p < .001$

Means with same superscript are different at the .05 level

Table 5. Mean satisfaction with the experience by cluster group

Discussion and conclusions

This paper was primarily methodological. Findings show that a visitor typology based on MES using ipsative clustering as a grouping technique may be an improvement over Kugel *et al*.'s (1991) group allocation technique. To address the question, *do clustering techniques yield different results than group allocation*?, the *change* mode was further differentiated as *change – amusement* and *change – appropriation* while the *rapture* mode became *rapture – physical challenge* and *rapture – change*. *Amusement* as a distinctive mode in Cottrell *et al*. merged with the change mode to represent a greater percentage of the respondents overall.

As it pertains to the second research question, *do cluster findings provide greater explanation in the visitors profile and their participation behavior during their visit in the Forest Preserve*? comes with some conflicting results. Different from the previous study, MES from ipsative clustering showed that visitors in the *rapture – physical challenge* and *rapture – change* modes stayed longest in the area, and they were more dedicated to follow a specific trail. This modal group tended to be involved in mountain biking with its designated trails and or training for more strenuous hiking vacations which the Duivelsberg setting is noted for. *Dedication – appropriation* visited the area most often, both daily and weekly. This is what we would expect for dedication oriented users. They were also less inclined to stay on

specific trails. This mode stayed in the area 1 to 2 hours and came mostly by foot and not by bike. This group also showed the lowest interest in physical challenge which corresponds to their lifestage (older age) and activity patterns (more passive). Many of the dedication visitors live nearby and perhaps tend to use the area as an extension of their backyard (Bakker & Lengkeek 1999) as a form of appropriation.

One of the goals of this paper was to determine if more personal patterns of visitor responses over the items measuring the modes of experience provide better or additional findings than the previous study. There was a difference between MES groups and their satisfaction with their experience to the Duivelsberg which was not found when using the group allocation based modal groups. Dedication visitors were the most satisfied with their experience in the area versus the other modal groups. Meanwhile, results noted in Table 4 were more similar than anticipated and supported previous study findings.

Obtaining valid clusters has ramifications for management. As indicated by Cottrell *et al.* (2005), MES may be a useful addition to the Dutch Forest Service's visitor monitoring protocol as a basis for intervention in management and decision making. All visitor types from this study were engaged in activities related to nature, with a primary focus on hiking and most of them rated highly on the change and rapture mode. Thus, visitor activities and preferences in the Duivelsberg tend to support the Dutch Forest Service's goal to manage for nature and outdoor recreation experiences as a means to escape from daily realities.

The previous study found consistencies in the items representing amusement, change, and interest modes supporting Elands & Lengkeek's (2000) conclusions that these were the most stable of the modal types with respect to the items representing each. Cottrell *et al.* (2005) also concluded that items from rapture and dedication tended to load more readily on the amusement, change and interest modes than vice-versa. This may be dependent on the wording of the question and its' contextual fit to the site specifically. For example, one rapture item (i.e., *finding time for myself*) loaded on change and two dedication items (representing the need for less wilderness and preference for crowdedness) loaded on amusement; thus eluding to preference item shifts according to spatial and social conditions of the experience.

In sum, experiences are complex phenomena to measure, as well as are management decisions concerning the recreational experience. Application of MES has been limited to more of a theoretical debate (Elands & Lengkeek 2000, 2004; Lengkeek 2000, 2001; van der Duim *et al*. 2005) or a descriptive profile of visitors (Bakker & Lengkeek 1999; Cottrell *et al*. 2004) versus application to management and policy making situations. The group allocation approach in the original paper was intended to replicate segmentation methods used by Elands and Lengkeek (2000) across their seven studies. This paper follows up on questions raised in the literature about valid segmentation methods by applying ipsative clustering. The value of these findings was the further clarification of experience preferences among respondents providing

further distinctions within modes or the sub-dimensions within. From a methodological perspective, grouping visitors based on their range of scores both high and low across the experience preference items should be a more valid approach to segmentation than group allocation. Further research and application of the MES typology in a recreational experience context is recommended using ipsative clustering.

References

Bakker, J.G. & Lengkeek, J. (1999). Monitoringsonderzoek recreatie Amsterdamste Waterleidingduinen. Wageningen University, Wageningen, NL.

Beaman & Vaske, (1995). An ipsative clustering model for analyzing attitudinal data. Journal of Leisure Research 27:2,168–191.

Cohen, E. (1974). Who is a Tourist? A Conceptual Classification. Sociological Review 22: 527–555.

Cohen, E. (1979). A phenomenology of tourist experiences. The Journal of the British Sociological Association 13: 179–201.

Coles, T., Hall, C.M. & Duval, D. (2005). Mobilising tourism: A post-disciplinary critique. Tourism Recreation Research, 30(2): 31–41

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. Journal of Applied Psychology 78:1, 98–104.

Cottrell, S.P., Lengkeek, J. & van Marwijk, R. (2005). Typology of recreation experiences: Application in a Dutch forest service visitor monitoring survey, Managing Leisure 10:1, 54–72.

Cottrell, S.P., V/d Duim, Ankersmid, P. & Kelder, L. (2004). Measuring the sustainability of tourism in Manuel Antonio and Texel: a tourist perspective. Journal of Sustainable Tourism, 12(5): 409–431.

Elands, B.H.M. & Lengkeek, J. (2000). Typical Tourists: Research into the theoretical and methodological foundations of a typology of tourism and recreation experiences. Backhuys Publishers, Leiden, NL.

Elands, B.H.M. & Lengkeek, J. (2004). The tourist experience of out-there-ness: theory and empiry. Unpublished manuscript.

Greenleaf, E.A. (1992). Improving rating scale measures detecting and correcting bias components in some response styles. Journal of Marketing Research, 29, 176–188.

Hall, C.M. (2005). Reconsidering the geography of tourism and contemporary mobility. Geographical Research, 43(2): 125–39.

Harris, J.F., Anderson, R.E., & Tatham, R.L. (1990). Multivariate Data Analysis. Macmillan Publishing Company, NY, NY.

Heus, P. de, R. van der Leeden, & Gazendam, B. (1995). Toegepaste data-analyse: technieken voor niet-experimenteel onderzoek in de sociale wetenschappen. Lemma, Utrecht, NL.

Johnson, R.A. & Wichern, D.W. (2002). Applied Multivariate Statistical Analysis (5th Edition). Prentice Hall, Upper Saddle River, New Jersey.

Kugel, E., Bakker, J.G., & Boerwinkel, H.W.J. (1991). Opnieuw: Recreatie in Meijendel. Een onderzoek naar natuurgerichte recreatie; trends, beleving en gedrag en sturingsmogelijkheden. Report nr. 10 Centre for Recreation and Tourism Studies, Wageningen Agricultural University, Wageningen.

Lengkeek, J. (2000). Imagination and differences in tourist experience. World Leisure 3, 11–17.

Lengkeek, J. (2001). Leisure Experience and Imagination: Rethinking Cohen's Modes of tourist Experience. International Sociology 16:2, 173–84..

Murphy, P.E. (1985). Tourism: a community approach. Methuen, New York.
Nunnally, J.C. (1978). Psychometric theory, Second edition. McGraw-Hill, New Yori.
Plog, S.C. (1972). Why destination areas rise and fall in popularity. Paper presented at Southern California Chapter of the Travel Research Association 1972.
Reid, D.G. (2003). Tourism, globalization and development: Responsible tourism planning. Pluto Press, London.
Ryan, C. (1995). Researching tourist satisfaction - issues, concepts, problems. Routledge, London.
Smith, S.L.J. (1995). Tourism Analysis: A Handbook. Harlow, Longman Publishing.
Swarbrooke, J. & Horner, S. (1999). Consumer Behaviour in Tourism. Butterworth Heinemann, Oxford.
Urry, J. (1990). The tourist gaze: Leisure and travel in contemporary societies. Sage Publications, London.
van der Duim, R., Peters, K., & Wearing, S. (2005). Planning Host and Guest Interactions: Moving Beyond the Empty Meeting Ground in African Encounters, Current Issues in Tourism, 8(4): 286–305.
Vaske, J., Beaman, J., Stanley, R., & Grenier, M. (1996). Importance performance and segmentation: Where Do We Go From Here? *The Journal of Travel and Tourism Marketing, 5*(3), 225–240.

Edited by Jarkko Saarinen