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Dimensions of cultural consumption among tourists: Multiple correspondence analysis

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HIGHLIGHTS

- Multiple correspondence analysis used to visualise cultural tourism market segments.
- Demonstrates advantages of multidimensional segmentation.
- Identifies static and dynamic dimensions of cultural consumption.
- Distinguishes art and heritage tourists.
- Cultural capital inversely related to accessibility of cultural forms.

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ABSTRACT

The cultural tourism market has diversified and fragmented into many different niches. Previous attempts to segment cultural tourists have been largely unidimensional, failing to capture the complexity of cultural production and consumption. We employ multiple correspondence analysis to visualize the relationship between cultural consumers and attractions in a large data set ($n = 12{,}905$). This indicates that two dimensions describing the ranges between 'static' and 'dynamic' attractions and 'high-brow' and 'low brow' culture effectively discriminate different groups of arts and heritage tourists. The holiday structure itself seems to provide a context that influences the cultural consumption of actors. Thus higher levels of cultural capital are related to more accessible forms of culture, contrary to theoretical expectations. There is also evidence of the development of a cultural tourism 'travel career' with more dynamic cultural forms being characteristic of younger tourists and more high brow and static forms of culture being consumed in later life by those with higher levels of cultural capital.

1. Introduction

'Cultural tourism' is a major market segment of global tourism, accounting for some 360 million international trips a year (OECD, 2009) or 40% of global tourist demand. As the cultural tourism market has expanded, so has the complexity of cultural consumption by tourists (Pulido-Fernández & Sánchez-Rivero, 2010) Recent studies have identified considerable variations in the cultural tourism market, in terms of consumption patterns, travel experiences and socio-economic background (Van der Ark & Richards, 2006). As Pulido-Fernández and Sánchez-Rivero (2010) found 'The cultural tourism market … consists of tourists with increasingly differentiated characteristics, needs, and expectations.' The growing diversity of cultural tourism can be explained by the greatly expanded opportunities for cultural consumption, the growing popularity of tourism as a whole (providing more scope to consume culture on holiday) and changes in the nature of cultural consumption itself.

The diversity of cultural tourism consumption and production, as McKercher, Ho, Du Cros, and Chow (2002) suggest, make the promotion of 'culture' to an undifferentiated tourism market problematic. Solutions to this problem have usually been sought in market segmentation, trying to identify those consumers who prefer certain types of cultural experiences (e.g., Alzua,O'Leary and Morrison, 1998; Dolcinar, 2002; Kastenholz, Carneiro, & Eusébio, 2005). Such actor-centred approaches have the limitation that they cannot account for the interactions between tourists and the

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attractions and events they visit, because visitation not only shapes these structures, but is also shaped by them in the form of recursive practice (Hannam & Knox, 2010). This requires quantitative methodologies that can accurately capture the complex interrelationship of actors and structures.

This growing complexity is also reflected in theoretical discussions about the nature of consumption. Recent studies have indicated that cultural consumption can no longer solely be explained in terms of social class or taste distinctions, as suggested by Bourdieu (1984). Arguably, increasing social mobility and changing tastes have produced more mixing or 'omnivorous' styles of consumption (Barbieri & Mahoney, 2010; Peterson & Kern, 1996). As Stylianou-Lambert (2011) pointed out, there are now many typologies of cultural tourism which attempt to characterize cultural tourists in terms of motivations, interests, experiences sought or activities engaged in. However, her review also shows that few studies have attempted to explain why certain tourists fall into one category or another. She made a large step in filling this gap with her qualitative study of the different 'gazes' in cultural tourism, showing that tourists visiting art museums perceive them in different ways, using different types of 'perceptual filters' that influence their gaze. She found a great variety of different filters and resulting gazes, which indicated that 'strict categorization into cultural tourist types might be misleading and unhelpful as far as it misses the subtle differences between different cultural tourists who might belong to the same category'. She therefore argues that perceptions, rather than individuals should be categorized.

A similar approach was taken by Van der Ark and Richards (2006), who used latent class analysis to differentiate between cultural tourists on the basis of frequency of visit and perceived attractiveness of 19 European cities. They found three classes, corresponding broadly to specific cultural tourists, general cultural tourists and infrequent visitors with a preference for popular culture and entertainment.

Pulido-Fernández and Sánchez-Rivero (2010) also used latent class analysis to segment the cultural tourism market in Spain. They identified three major segments: 'museum culturophiles', who value museums highly but do not visit events, the 'culturally inactive' segment, consisting of persons who attach particular importance to the museum offer but who have a low probability of making actual visits and the 'roaming culturophiles', or tourists who are very likely to make cultural visits during their stay, who take cultural events into account in making their choice of destination, but who have little interest in museums (Pulido-Fernández & Sánchez-Rivero, 2010).

It seems that most previous studies have tended to use a single dimension to approach what is clearly a complex, multidimensional field, and there is also a tendency to concentrate on the classification of actors, without much consideration of the effect of attractions, events and other structures on behaviour. One of the reasons for this is the complexity of analysing multiple dimensions of cultural consumption and tourist behaviour. This paper attempts to develop the cultural tourism segmentation debate by applying multiple correspondence analysis (MCA, often simply called correspondence analysis) to a large-scale data set on cultural tourism consumption. MCA is an exploratory, multivariate analysis technique that is particularly suitable for the description of categorical data (cf. Greenacre, 1984, 2007; Greenacre & Blasius, 2006; Le Roux & Rouanet, 2004).

MCA has been used in a number of different ways in tourism research. Schmitz, de Aranzalbal, and Pineda (2007) used MCA to analyse visitor preferences for different cultural landscapes in the Mediterranean. Gonzalez and Molina (2009) used MCA in Andalusia to explore patterns of tourist behaviour. Huéscar Lerena and Azurmendi López (2004) used MCA factor analysis to segment visitors to the Basque Country. Pina and Delfa (2005) related different rural tourist profiles to different types of accommodation. Studies in Asia (Chen, 2001; Choi, Lehto, & O'Leary, 2007; Mao, Zhang, & Bao, 2005; Miao & Yu, 2006; Tang, Choi, Morrison, & Lehto, 2009) have used MCA to identify differences in destination image and information sources of tourists. Faullant, Matzler, and Füller (2008) used MCA to position ski areas in terms of customer satisfaction. To date however, MCA has not been used as a tool for segmentation in the cultural tourism market, even though it arguably has particular advantages in terms of analysing cultural consumption. Bourdieu (1984) mapped social space using MCA in order to simultaneously show the locations of both individuals and indicators of class positions, clearly visualising taste patterns of different social groups. In this article we use MCA to visualize different groups of cultural tourists using data related both to the form of culture consumed and the nature of the attractions visited. Visualization makes understanding relationships in complex data easier. We use the technique to explore different dimensions of cultural tourism consumption and to analyse the relationship between individual actors and different types of cultural attractions or structures in the practice of cultural tourism.

2. Methods

2.1. Data

The data were drawn from the Association for Tourism and Leisure Education (ATLAS) Cultural Tourism Survey that has collected information on visitors to cultural attractions and events in different countries, during the period 1992–2008 (N = 46,645; Richards, 2010). The ATLAS Surveys were conducted in 1992, 1997, and then annually from 1999 to 2008. We used the largest wave (2004, N = 12,905), for which surveys were collected from 130 sites in 24 countries. The largest wave was used because this yielded the most robust results. The interviews were predominantly conducted face-to-face, although a small proportion were collected via self-completion forms. Thirteen questions were related to cultural consumption. In particular a question on attendance at 13 types of cultural sites and events was designed to analyse a range of different tourism consumption opportunities ranging from 'high' to 'mass' or 'popular' culture (Table 1). Samples of the ATLAS questionnaire can be found via: http://www.tram-research.com/atlas/surveytools.htm.

Respondents were classified by gender, income, age, educational level, type of tourist, and type of holiday (Table 2). Only 5 respondents (<.01%) had missing values on any of the 13 cultural consumption questions; 15.8% of the respondents (predominantly respondents from the local area) did not respond to Type of holiday, and 16.9% did not indicate their annual income; for the other variables the percentage of missingness was between 0% and 2%.

Table 1
Percentages of respondents attending 13 types of cultural events.

Event	Per.	Event	Per.	Event	Per.
Museum (MU)	49.5	Theatre (Th)	13.7	Classical-music f. (CM)	5.4
Monument (MO)	41.6	Heritage centre (HC)	18.7	Dance festival (Da)	7.8
Art gallery (AG)	19.2	Cinema (Ci)	17.2	Traditional festival (TF)	17.8
Religious site (RS)	32.2	Pop concert (PC)	8.1		
Historical site (HS)	42.8	World-music f. (WM)	5.6		

Note: Per. = Percentage, f. = festival.

Table 2
Descriptive statistics of the sample.

Variable	Category	%	Variable	Category	%
Gender	Male	48.7%	Visitor	Short holiday	25.7%
	Female	51.3%	type	Long holiday	26.5%
Income	<€5000	18.7%		Permanent resident	47.8%
	€5001-€10,000	12.3%	Education	Primary school	3.4%
	€10,001-€20,000	13.8%	level	Secondary school	23.9%
	€20,001-€30,000	14.6%		Vocational education	17.2%
	€30,001-€40,000	12.8%		Bachelor degree	37.0%
	€40,001-€50,000	9.6%		Master/Doctorate	18.5%
	€50,001-€60,000	7.0%	Holiday	City trip (City)	16.4%
	>€60,000	11.2%	type	Cultural holiday (Culture)	18.6%
Age	< 15	1.0%		Ecotourism (Eco)	4.6%
	16-19	6.1%		Sun & beach holiday (Sun)	10.0%
	20-29	30.5%		Touring holiday (Tour)	15.4%
	30-39	21.3%		Health/sports (Health)	3.8%
	40-49	17.7%		Other	15.5%
	50-59	13.2%			
	>60	10.2%			

Except for type of holiday, which was considered structural missingness, missing values were replaced by imputed values by means of latent class analysis (Vermunt, Van Ginkel, Van der Ark, & Sijtsma, 2008) using the software program Latent GOLD (Vermunt & Magidson, 2005).

2.2. Multiple correspondence analysis

We used MCA to estimate a low dimensional approximation of the cultural consumption data. For conducting MCA we used the R-package 'ca' (Nenadic & Greenacre, 2007). We used an *MCA contribution biplot* (Greenacre, 2010; Chap. 10) to visualize the low-dimensional data approximation. Moreover, we orthogonally rotated the principal axes for a better interpretation (Lorenzo-Seva, Van de Velden, & Kiers, 2009). Computer code (in R) for creating the graphs is available from the first author. With such visualization of high-dimensional data in the two-dimensional plane, simultaneous consideration can be made of content (type of culture), form (buildings versus events) and consumer demographics and behaviour.

3. Results

3.1. Cultural consumption space

The first principal axis explained 46.6% of the principal inertia, the second principal axis explained 20.4% (hence 67% in total), and none of the remaining 11 principal axes explained more than 6%. This suggests that a two dimensional MCA solution gives a good approximation of the data. Note that only one and two-dimensional MCA solutions can be plotted easily. The two-dimensional MCA solution is depicted in Fig. 1; Fig. 2 shows an enlargement of the central area (dotted-lined square) in Fig. 1. The principal axes in Figs. 1 and 2 were orthogonally rotated 100° which – according to the authors – yielded the best interpretable result: The horizontal axis can be interpreted as a static versus dynamic axis (from relatively static constructions such as monuments and museums to relatively dynamic performances and events such as theatre performances, concerts and festivals) and the vertical axis can be interpreted as a low-brow versus high-brow culture axis.

In Figs. 1 and 2, the origin (0,0) represents the average cultural consumption behaviour. The squares represent attending (black, +)

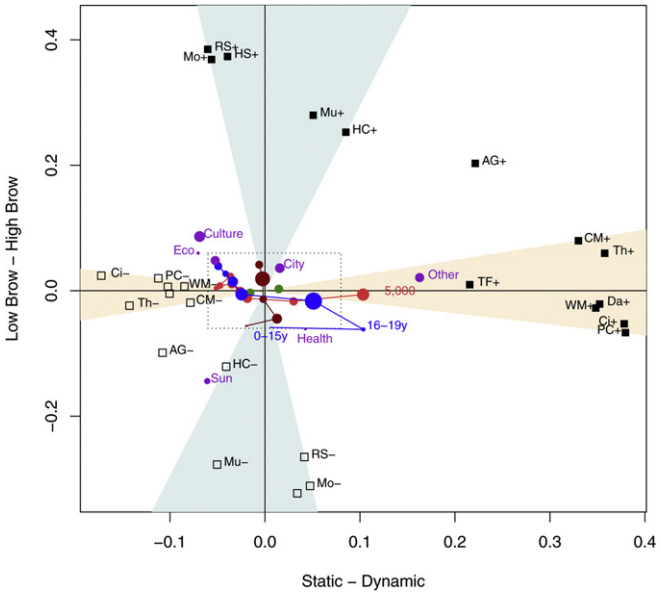

Fig. 1. A two-dimensional MCA solution. For details see text.

and not attending (white, −) the 13 cultural attractions and events (for labels, see Table 1). Lines from the origin to the squares are called *biplot axes.* Because plotting a biplot axis for every cultural attraction would have resulted in a blur, Figs. 1 and 2 have two shaded areas indicating the spaces where the biplot axes should have been plotted. The shaded areas represent two clearly distinct categories in which an attraction or event can fall: heritage attractions such as museums and monuments which group together as more static, high-brow attractions, and arts attractions such as events and performances, which tend to be more dynamic and generally less high brow. This tends to support the division between 'heritage tourists' and 'arts tourists' that is often made in the literature (Hughes, 2000). Note that art galleries fall between the two areas.

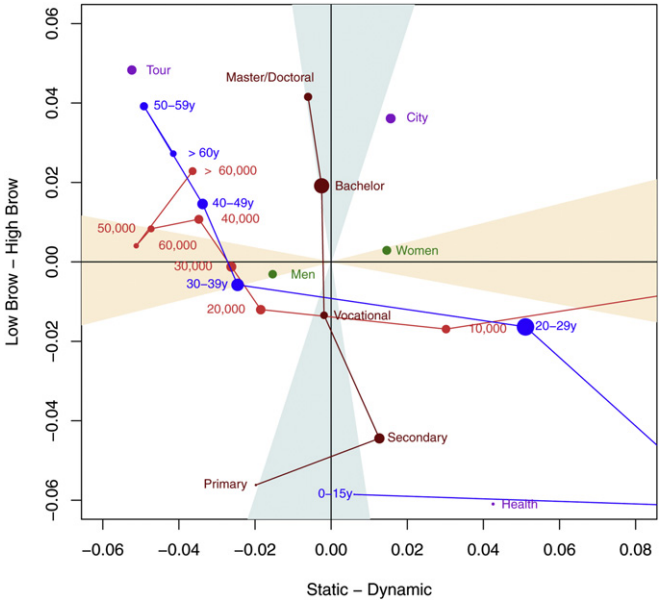

Fig. 2. Enlargement of the central area of Fig. 1. For details see text.

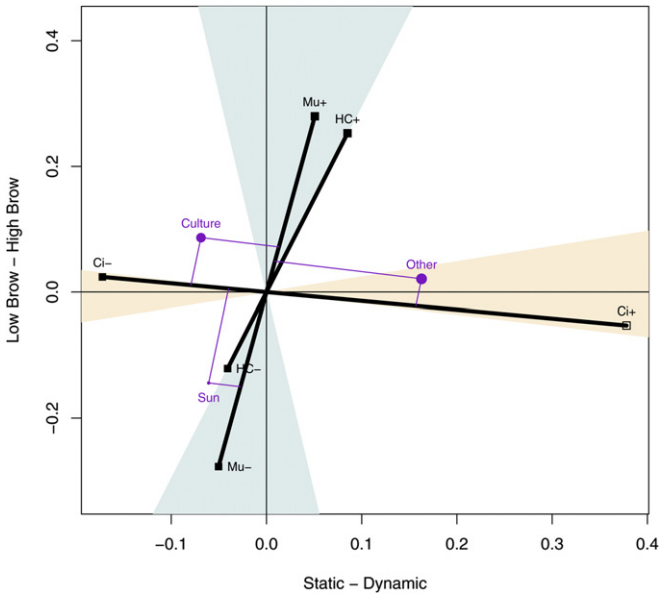

Fig. 3. Examples of biplot axes.

As an example, Fig. 3 depicts the biplot axes of Mu+, Mu−, HC+, HC−, Ci+ and Ci−. Note that biplot axes for going (+) and not going (−) to an attraction or event are on the same line. The lengths of the biplot axes indicate the importance of the attraction or event to the MCA solution. The angles between the biplot axes indicate the associations among the cultural events. The small angle between the biplot axes of Mu+ and HC + indicate a strong association between going to a museum and going to a heritage centre: People visiting a museum are most likely to also visit a heritage centre. The approximately right angle between Mu+ and Ci + indicates that going to a museum and going to the cinema are (almost) unrelated, and the fact that the biplot axes of Mu+ and Mu− are opposite indicates a perfect negative association.

3.2. Segmentation of the cultural consumption space

In Figs. 1 and 2, we plotted supplementary points representing the typical cultural consumption pattern of the different subgroups (Green (in the web version) for gender, blue (in the web version) for age, brown (in the web version) for educational level, red (in the web version) for income, and purple (in the web version) for holiday type; cf. Table 2). The size of the symbols denotes the relative frequencies, and their distance to the origin denotes the deviance from the average cultural consumption. For background variables that have ordered subgroups (income, age and education), adjacent subgroups are connected by line segments.

Fig. 2 shows that women tend to have a more dynamic cultural consumption pattern than men, but the proximity of both additional points to the origin means that differences are small. Except for the very young (0–15 y), as age and income increase, the cultural consumption pattern becomes more static and more high brow. Among the highest income groups (€40,000 and up) the relationships are no longer clear. The same pattern for age and income is not too surprising given the general correlation between age and income. Education also shows a similar pattern, with higher education levels being linked with more static attractions and these trends may hint at the development of a cultural tourism 'travel career' being built up over time, with more 'classic' forms of culture being consumed in later life by those who have accumulated higher levels of cultural capital. Further cohort research would be one means of testing this hypothesis in future studies.

Usual holiday type has the strongest effect on cultural consumption: It tends to be high brow yet static for cultural holidays, ecotourism holidays, and touring holidays; low brow yet dynamic for health and sports holidays; relatively high brow and more dynamic for city trips; low brow for sun holidays; and dynamic for the rest group (other). The latter consists of many locals who may visit dynamic events in their own region but not so many monuments and museums.

3.3. Segmentation of the cultural attractions and events

From Figs. 1 and 2 one can also derive which subgroups of respondents tend to go to which cultural attraction or event by projecting the supplementary point of a subgroup at a right angle to the biplot axis of a cultural event or attraction. As an example, in Fig. 3, sun tourists, cultural tourists and the rest group (other) are projected on the museum biplot axis and the cinema biplot axis. Fig. 3 shows that people on another type of holiday (including residents as non-holiday-takers) tend to go to the cinema most often, whereas cultural tourists tend to go least; sun tourists tend not to go to museums, whereas cultural tourists and the rest group go more often than average.

Projecting the supplementary points on the heritage attractions shows that people on a cultural, ecotourism, and touring holiday typically attend heritage attractions but not art attractions whereas young adults and people on a health and sports holiday tend to do the opposite; tourists on a sun holiday tend to visit neither whereas people on an 'other' type of holiday (including residents) tend to do both.

4. Discussion

These patterns show that cultural tourists differ significantly in their consumption of different types of cultural attractions. Interestingly, the field of taste in cultural tourism reveals different patterns to those identified by Bourdieu (1984). In general, Bourdieu found a direct relationship between decreasing economic capital and increasing cultural capital, with those with the highest levels of cultural capital consuming more 'complex' and less 'popular' cultural forms. In cultural tourism, increasing cultural capital (as represented by education level) is less strongly related to classical music and theatre, and more strongly related to museums and historical sites, which in general are more easily accessible.

It may well be that holidays themselves create their own structures that modify established relationships between cultural capital and the forms of culture consumed. Access to arts performances, which often require higher levels of cultural capital to consume, are on holiday often restricted by barriers of language and problems of obtaining tickets (Hughes, 2000). This may tend to redirect the generally higher level of cultural consumption of individuals towards more accessible static attractions, reversing the patterns observed at home.

In addition, holiday type has a strong influence on cultural consumption. Respondents who claim to be on a cultural holiday also have the most high brow and static cultural consumption pattern. Typically, they visit museums and sites but not festivals. Respondents who are on a sun and beach holiday typically do not attend any cultural event. Respondents on a city trip are closest to the average, although they seem to be a little more high-brow and they also tend to exhibit more mixing of cultural forms than other tourists. This underlines the tendency for particular types

of holiday practice to influence the level and types of cultural consumption. Such patterns also provide arguments against purely 'postmodern' and 'omnivorous' mixing of different forms of culture, but rather suggest a strong influence of the physical context on cultural tourism behaviour.

Through their travel career, which is generally related to higher incomes and levels of cultural capital, consumers also seem more likely to identify their holidays as 'cultural'. This is significant, since it suggests that those younger tourists who are least likely to consider themselves 'cultural tourists' are more likely to be at the leading edge of 'new' areas of cultural and creative tourism consumption, such as contemporary art, modern architecture, etc, and may position themselves more as 'creative tourists' (Pappalepore, Maitland, & Smith, 2010; Richards, 2011).

4.1. Limitations and suggestions for future research

MCA in general assumes that all of the relevant variables are included in the analysis (Hair, Anderson, Tatham, & Black, 1995). Since it is an exploratory data analysis, the technique is also not suitable for hypothesis testing. Further, we chose to display the MCA solution by means of a *contribution biplot* but other types of plots can also be used. Other types of plots (for an overview, see Greenacre, 2010) have different relative distances between the row points (tourists) and the column points (cultural attractions and events) may sketch a somewhat different picture of the cultural consumption space.

In terms of this specific study, the data collected in the ATLAS research are based on convenience sampling by an international group of researchers. This methodology generates a large amount of data, but tends to reduce consistency. Differences in sampling between survey sites or methods of site selection may introduce extraneous patterns into the data.

However, we would argue that these limitations are far outweighed by the potential of MCA to provide interesting graphical representations to assist in understanding the richness of the information contained in large data sets. In addition MCA deals specifically with the frequency data that is most usually available from surveys in the social sciences (Blasius & Thiessen, 2000).

The findings of this research also point to a number of potentially interesting avenues for future research. In particular the ability of MCA to deal with multidimensional data makes it particularly useful for exploring the factors influencing the cultural consumption of different groups of consumers. For example, discussions about the rise of omnivorous cultural consumption (Peterson & Kern, 1996) have created a need to analyse the relationships between consumers, their socio-demographic characteristics and complex consumption patterns across a range of culture genres. MCA is also potentially interesting for the analysis of longitudinal data. By using different survey waves over time, for example, cohort effects on cultural consumption could be separated from age effects or the effect of changing consumer taste on the visitation of different types of attractions and events. With the increasing availability of panel data from major tourism surveys in a number of countries, this provides an interesting avenue for the exploration of the development of tourism practices.

5. Conclusions

Visualization through MCA is useful because it enables us to deal with rich data to examine the relationships between tourist characteristics and behaviour and structural factors such as attraction and event characteristics. Whereas many previous studies of cultural tourism have been based on dichotomies related to behaviour (for example 'general' and 'specific' cultural consumption) or clustering of consumers based on latent class analysis, MCA enables us to visualise the relationships between groups of actors and the structures that recursively influence their behaviour. Not only can we establish that there are a number of different 'gazes', as Stylianou-Lambert (2011) suggests, but it seems that these gazes are also determined by the types of attractions and events that cultural tourists visit. The simultaneous analysis of multiple variables relating to characteristics, behaviour, attitudes and lifestyles should help to enrich our view of the dynamic field of cultural tourism in the future.

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