

Choosing between *superstars* and less renowned archaeological sites: motivation-based segmentation of visitors in the Vesuvian area

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This paper provides an empirical analysis of tourists' motivations that trigger their choice of visiting one specific archaeological site among those that exist in the Vesuvian area, near Naples (Italy). In this area, alongside some "superstars" archaeological attractors (Pompeii and Herculaneum) some less renowned sites (Oplontis, Stabiae and Boscoreale) exist. While the latter are definitely less famous, they are very important from the cultural and historical perspective. The paper proposes an empirical analysis based on original data collected through a survey of visitors. Data analysis is carried out in two steps. First, a Multiple Correspondence Analysis is carried out in order to identify latent motivations that inspired the visit to the Vesuvian Area. Second, a multinomial logistic regression analysis is performed in order to investigate the correlation existing between latent motivations and the choice of the specific archaeological site to be visited. Results contribute to the expanding literature focusing on motivations of cultural tourism.

Keywords: archaeological site, motivations, visitor segmentation, multiple correspondence analysis

1. Introduction

Over last decades cultural tourism has registered a significant growth, being fostered by the rise of citizens' income and education. Consistently, scholars have devoted a growing interest for the investigation of tourists' demand for cultural heritage. The existing contributions highlight that visits to cultural heritage are not necessarily linked to strictly cultural motivations but may arise from recreational motives. While these motives are usually considered to depend on cultural capital, recent contributions highlight that motivations have they own relevance in explaining demand for cultural heritage (Brida et al., 2015). This is particularly true when dealing with territories where a number of alternative cultural sites exist. This is the case of the Vesuvian area, near Naples, where in a rather limited space (25 km²) a number of important archaeological sites coexist. The whole area undeniably represents a hugely significant testimony of archaeological cultural heritage, even if the five sites composing it differ substantially from the point of view of visitor's attractiveness. Pompeii and Herculaneum are the so-called *high-volume attraction* (De Simone, 2012) by reason of the huge number of tourists visiting them every year. On the other side, Oplontis, Stabiae

and Boscoreale, the *low-volume attractions* (De Simone, 2012), which will be called “minor” sites in the following, represent cultural sites being often little and unknown, which attract less visitors, although their recognized importance from the archaeological point of view.

The underlying hypothesis of this paper is that a difference can be observed between the demand for the most renowned sites and the one for the others. The extent of tourist flow involving Pompeii and Herculaneum is typical of the mass tourism; the two sites host thousand visitors per month, including all tour operator organized and cruises groups. These two sites are in the must-do list of almost all tourists coming in the South of Italy. Oplontis, Stabiae and Boscoreale, instead, do not risk suffering congestion problems, considering the numbers of tourists they host. It seems that people interested in visiting such places cannot be included in the category of mass tourists; instead they seem to be reaching a different kind of experience. In other words, reasons why people choose to visit one of these “minor” sites can be linked to specific motivations such as the willingness to deepening their archaeological knowledge or their preference for non- crowded places.

The aim of the paper is two-fold. First it analyses how visitors to this area may be segmented by looking at their motivations. Second it checks whether visitors’ individual motivations are significantly linked to the choice of the specific site to be visited. In other words, this paper aims to test whether *motivation matters* (Brida et al., 2015) in visiting an archaeological site. Two hypotheses are proposed:

H1: There are substantial differences in terms of motivations among visitors of the different archaeological sites in the Vesuvian area. More specifically, there is a polarisation between people who look for a more intimate experience of the visit and “mass tourists”, whose visit to a site is mainly due to its fame.

H2: Motivations help in explaining why do visitors of the Vesuvian area choose one specific archaeological site to visit among those investigated.

The paper proposes an empirical analysis based on data collected through an original survey (n=2689) carried out in the Vesuvian Area (Naples, Italy) in 2015. A two-step analysis was implemented. First, drawing on respondents’ answers to 12 original motivational items included in the questionnaire used for the survey, two latent variables were extracted through a multiple correspondence analysis. The first latent variable indicates motivations related to the fame of a site, which is a “must-visit” place, while the second exhibits motivation related to the interest in deepening the knowledge of a site. In the second step of the analysis, instead, these latent motivations are included among regressors in a multinomial regression analysis where the dependent variable is a categorical one whose categories identify the archaeological sites existing in the Vesuvian area. Findings show that the probability of visiting less renowned sites increases for people whose interested in deepening their knowledge, whereas it decreases for people more oriented towards the visit of top rated tourist attractions.

The paper is structured as follows: in next section the existing empirical research that focuses on tourists’ motivation is briefly surveyed. Section 3 presents the case study while section 4 is devoted to a brief presentation of the original survey carried out and of the data extrapolated

from it for this study. Section 5 illustrates the methodologies applied for the empirical analysis. Results are presented and discussed in section 6. Finally conclusions are proposed in section 7.

2. The empirical literature on motivations and cultural tourism

The present work relates both to the cultural economic literature, since it investigates cultural participation and more specifically archaeological sites attendance, and to the cultural tourism literature, since it analyses the link between motivation and cultural visit. “Cultural tourism” defines a segment of the tourism market composed of people whose interest in cultural aspects is greater than that of other tourists. The economic literature on cultural tourism studies the composition of this group of people investigating if they are similar, in term of characteristics, needs and desires. This branch of research widely concentrates on segmentation analyses on the basis of several criteria, such as demographics, psychographics and motivations. Among others, McKercher (2002) segments the cultural tourist market on the basis of two dimensions: the importance of cultural motives and the depth of visit experience. Nyaupane et al. (2006), instead, implement a motive-based segmentation of heritage sites in Arizona identifying three groups of visitors.

Many authors concentrate on the analysis of the specificity of cultural tourists, focusing on their “specific cultural motivation”, pinpointing the emerging need of segmentation based on motivation also in the domain of heritage tourism (Hughes and Allen, 2005; Kerstetter et al., 2001; McKercher, 2002; McKercher and du Cros, 2003; Ryan and Huyton, 2000; Nyaupane et al., 2006).

Looking more specifically at the tourism literature, motivation is recognised as the most effective method of segmentation (Park and Yoon, 2009). Motivations are identified as the main driver of the choice of a site to visit and therefore result to be very useful for identifying homogeneous groups of visitors. Motive-based approaches are implemented in order to study cultural assets demand and to define visitor profile and to investigate those trigger factors that influence tourists’ choices and behaviour.

Over recent years, a growing literature focuses on motivations that push people visiting a site (Bedate et al., 2001; Devesa et al., 2010) In line with this, for example, Brida et al. (2015) reveal that *motivation matters* in explaining museum attendance, especially the occasional cultural attendance which is very widespread among museum visitors.

3. The Vesuvian area case study

The territory under investigation includes the archaeological sites of Pompeii, Herculaneum, Oplontis, Stabiae and Boscoreale, in an area of approximately 25 km² downstream the Vesuvius. Geographically, the sites are located in a propitious position; the closest site from Naples, Herculaneum, is 10 km distant and the farthest, Stabiae, is 34 km apart from Naples and 17,8 km far from Sorrento, an international renowned touristic locality.

All sites are managed by the *Soprintendenza Pompei*, which is a decentralized body of the *Ministero dei beni e delle attività culturali* (MIBACT), whose sphere of competence concerns the preservation, conservation and public utilization of archaeological resources.

The area represents a great collection of archaeological testimonies of past ages and it is a unique example of this kind, probably not just in Italy, but also all over the world. It includes five archaeological sites containing ruins dated back from the 6th century B.C. to the 1st century A.D., which are located in a relatively small area. Among those sites, two of the most glorious cultural places in the world are situated: Pompeii and Herculaneum. Not far from the two “superstars”, one can find three less famous excavations: Oplontis, Stabiae and Boscoreale. Their relevance from cultural and historical point of view is undeniable; nevertheless the position does not seem to favour them, since the great majority of tourist flow privileges Pompeii and Herculaneum. Probably, if those sites were located in other places they would have been the major visitors’ attractions of the zone; in this circumstance instead, most of all for Stabiae and Boscoreale, people who know them are few and mostly residents and insiders.

4. Survey and data

Data were collected through an on-site survey carried out during the first two weeks of July 2015. The weight of each site in the area in the final sample was set in accordance to each site total number of visitors in 2014 as reported by the official data provided by the *Soprintendenza di Pompei*. The survey included two distinct questionnaires, the first one has been provided in order to obtain data useful to an application of Travel Cost Method analysis (TCM) and the other one has been structured in order to perform Contingent Valuation and Choice Experiment methodologies (CV). The total number of questionnaires collected is 2691: 1409 CV and 1282 TCM.

Besides questions strictly devoted to the valuation methodologies, a common section with identical questions was included in the two questionnaires, so that the analyses of motivations could be implemented on the total sample. The above mentioned section included questions asking country of origin, if it was the first visit, motivation, if the respondent is member of a cultural association, how many times did the respondent visit the site before and some socio-demographics questions related to gender, age, labour status and income. A short description of categorical variable is offered in Tab. 1.

Looking at the sample composition, the 54,31% of respondents are female and the remainder 45,69% are men. Most of respondents do not live in Campania; the majority of respondents come from Europe. In most of the sites, Italians represent a small part of the total number of visitors. Boscoreale is the site with the minor discrepancy between Italian and foreign visitors, since the 40% of people visiting this site lives in Italy. Among the sites considered, only in Oplontis the share of visitors declaring to be resident in the region overtakes the 20%. The average age of respondents considering the whole sample is around 38 years. On average, the level of education is relatively high. Cases of “no formal education” and “low secondary education” are infrequent; on the contrary people who achieved a BA represent the majority

in most of the sites. Upper secondary and postgraduate degree, instead, are more frequent in Oplontis, Stabiae and Boscoreale.

Dummy variables that measure motivations of the visit are presented in Tab. 2. Motives considered trace those suggested by the existing literature (Bedate et al., 2001; Devesa et al., 2010; Brida et al., 2015). The list has been built in order to contain all the aspects that are supposed to be potentially important in explaining why do visitors' visited the site where they were interviewed. Two variables reflect the desire of learning something new and improving education and knowledge; they are labelled as LEARN and ENHANCE EDU. The variable identified as STUDY/JOB suggests a professional reason (working or studying) for visiting; the variable labelled as LEISURE catches one of the major determinants of tourism since it deals with relaxing and having fun. Two motivations labelled as ADVANTAGE ART and EMOTION VISIT recall the importance of personal experience in visiting one place and deal with a an intimate feelings. Instead, a subgroup composed by three variables, labelled as PLACE IDENTITY, OWN HERITAGE and HISTORIC AGE mainly refers to the importance of the archaeological sites chosen, either because of its contribution to the cultural identity of one area or because of its role of historical testimony, relevant *per se* or as part of visitor's own heritage. The motivation identified as SPECIFIC INTEREST describes the circumstance where a visit is specifically triggered by the allure or interest for a certain attraction. Finally, two motivations are considered in order to take into account the peculiarity of the area under investigation; these variables, labelled as WORLD FAMOUS and PEOPLE VISIT, focus on the fame of the archaeological site. In other words, they are marked by those visitors whose visit was driven by the fact that the archaeological site that they chose is highly renowned. All these dummy variables assume the value of one when the corresponding motivation has been selected by respondents and the value of zero otherwise.

Summary statistics and correlations among these dummy variables are presented on Tab. 3 and Tab. 4 respectively. Some motivations, such as HISTORIC AGE, were definitely chosen more frequently by people than others (OWN HERITAGE and STUDY/JOB). Surprisingly, correlations resulted to be very low among the variables considered.

5. Methodology

5.1 Visitors' segmentation according to motivations: multiple correspondence analysis

Multidimensional analyses are among the most common methods used for segmentation analysis in cultural and tourism economics (Kim et al., 2007; Nyaupane et al., 2006; Brida et al., 2015; Park & Yoon, 2009). Because of the typology of variables used in order to catch the Vesuvian area's visitors' profile, our analysis is based on multiple correspondence analysis (MCA), which is an extension of Analysis of Correspondence that allows studying simultaneously more than two variables that are not continuous. In more detail, by means of MCA it is possible to synthesize the information of the original variables, and specifically the information given by each modalities, in some latent variables (factors). These variables represent a non additive synthesis of the original variables.

The analysis was carried out by using the software Stata12 that automatically runs an analysis through the Burt method and the Benzécri correction (1979).

5.2 The link between motivations and site choice: multinomial logistic regression

Starting from this interpretation of visitors' latent motivation, it is possible to investigate whether they are important in determine the choice of a specific archaeological site, among the five that are scrutinized. In order to carry out this investigation, a multinomial logistic regression has been run. Multinomial logistic regression is an extension of binary logistic regression that allows for more than two categories of the dependent variable. It is used to predict the probability of observing a specific category of the dependent variable based on multiple independent variables. The independent variables can be either dichotomous or continuous and for each of them the method allows the computation of odds-ratios. Like binary logistic regression, multinomial logistic regression uses maximum likelihood estimation to evaluate the probability of categorical membership.

A multinomial logistic model is carried out in order to specify the probability of observing the value j with $j=(1)$ Pompeii, (2) Herculaneum, (3) Oplontis, (4) Stabiae, (5) Boscoreale for a given set of covariates (X) as:

$$\Pr(x = j|X) = \frac{\exp(\beta_j \cdot X_i)}{\sum_{k=1}^J \exp(\beta_k \cdot X_i)} \quad \text{for } j = 1, 2, \dots, J; \quad j \neq k \quad (1)$$

where X identifies a set of covariates and β the estimated coefficients.

The estimated equation provides a set of probabilities for the J choices with characteristics X_i . Model identification requires one of the choices to be set to zero and coefficients calculated for other choices are interpreted with respect to that reference group. The multinomial logit model uses individual characteristics to explain the choice of an alternative, and estimates $J-1$ parameter vectors for the $J-1$ alternatives. The model used for this analysis tries to explain the choice of a site to visit, among the five investigated, as function of the latent variables resulting by the multiple correspondence analysis plus a wide set of socio-demographic control variables.

6. Results

6.1 Segmentation by motivations

The first two dimensions considered by our MCA analysis explained 26,46% of the overall inertia of the phenomenon under investigation; this result is not unsatisfying since when treating dummy variables through MCA it is usual to get a very low level of inertia explained. The extraction of a third dimension did not determine any relevant change, since its

contribution to the inertia explained was only 4%. MCA considers all the modalities of the selected variables, which, in our case, are two for each of the motivational items considered. In order to simplify the interpretation of our results all the variables have been codified with “yes” if their value is one and “no” if their value is zero. The original variables’ contributions in determining our latent motivational variables are reported in Tab. 5 while the factorial plan determined by the two dimensions extracted by the analysis is shown in Fig. 1.

The variables with major positive coordinates on the first axis are PEOPLE VISIT (5.286), LEARN (3.050) and WORLD FAMOUS (2.521), while negative major contributions concern EMOTION VISIT (-2.427) PLACE IDENTITY (-1.982), OWN HERITAGE (-1.978). On the second axis, instead, the greatest positive contribution is given by the variable STUDY/JOB, which has a positive coordinate of 6.181, followed by OWN HERITAGE (3.386) and ADVANTAGE ART (2.713). On the negative side PLACE_IDENTITY has the biggest coordinate (-1.875), followed by HISTORIC AGE (-1.251) and WORLD FAMOUS (-1.113). Latent variables can be interpreted by looking at these contributions of the original variables used in the analysis.

Our results suggest that the first axis can be interpreted as the *interest for site reputation*. Indeed, it is mainly positively characterised by the variables related to the fact that other people visit the site (PEOPLE VISIT), to the will to learn something new (LEARN) and to the fact that the site is world famous (WORLD FAMOUS). At the same time, this axis is negatively characterized by those variables that reflect motivations that give more importance to the search for a personal experience, such as EMOTION VISIT and OWN HERITAGE which measure a profound interest and connection with the site that people visited. This interpretation of the first latent dimension extracted by the MCA analysis does not make any distinction between “superficial” and “deep” motivations; instead it defines two different latent reasons that trigger the visit of the Vesuvian area. On the one side, a motivation inspired by others’ opinions, by “what people choose and prefer”, and another being more oriented to the search for a personal experience and giving more importance to the context where the site is located and to the meaning that this site has for this context.

These results induce to accept the first hypothesis proposed so far. Indeed, it seems to exist a difference between visitors driven by sites celebrity and public success and those driven by the search for a more “intimate” experience.

The second latent motivation identified by the MCA analysis can be interpreted as *deepening the knowledge* about archaeological sites. Indeed, the major positive contribution on the second factorial axis is given by the variable concerning study and/or job visiting motives (STUDY/JOB); the second and third most important variables in determining this axis refer to the fact that the site chosen is part of the own respondent’s heritage (OWN HERITAGE) and to the advantage of enjoying art in person (ADVANTAGE ART). Due to the proportionally high coordinate of the variable STUDY/JOB, it seems possible to describe the positive side of the second axis as the one corresponding to a research-oriented motivation. Undeniably this is, in turn, associated to the pleasure of seeing live a piece of art and culture that one is studying or working on.

Taken together, the three above-mentioned variables contribute to define the search for in-depth analysis and knowledge of the place. At the same time, variables that negatively contribute to the second axis are: PLACE IDENTITY, HISTORIC AGE and WORLD FAMOUS. In this case the level of deepening seems to be less important for respondents, and the motivation seems to be more related to the symbolical power of a place, which is basically determined by its fame recognised at global level, its importance for the area where it is located and its nature of testimony of an historical age.

Overall, these results induce to accept the first hypothesis proposed so far. Indeed, there seem to exist significant differences among visitors in terms of motivation of their visit to the Vesuvian area.

6.2 Motivations and site choice

Tab. 6 displays our multinomial logit regression results. Pompeii is used as the omitted category of the dependent variable. Relative risk ratios, which correspond to exponentiated coefficients, are reported; they can be interpreted like odds ratio. Indeed, the relative risk ratio shows how the outcome relative to the referent group is expected to change by a factor of the respective parameter estimate given the variables in the model are held constant. The relative risk ratios show the impact that a unit change in each of the predictors has on the logit of the dependent variables' outcome changes relative to the referent group (Pompeii).

In order to ease the interpretation of these exponentiated coefficients, one can identify the base reference individual and, hence, analyse every categorical variables coefficient as a change from that reference. The individual profile defined as the reference is an Italian woman visiting Pompeii for the first time, who is not part of any cultural association, who has no formal education, no income and is unemployed.

Factors 1 and 2 are the most important variables for the purpose of this study. The first one represents respondents' score on the first axis calculated by MCA and is interpreted as respondents' *interest for site reputation*; the second one represents the respondents' score on the second axis resulting from MCA which is labelled as *deepening of knowledge*.

Looking at our results, *interest in site reputation* is negatively correlated with the choice of the following archaeological sites in the area under investigation: Herculaneum, Oplontis and Stabiae. This result turns out to be highly statistically significant. More specifically, an increase of *interest in site reputation* by one unit involves that the probability of visiting Herculaneum instead of Pompeii decreases by 23%, the probability of choosing Oplontis instead of Pompeii decreases by 36% and that the probability of visiting Stabiae instead of Pompeii decreases by of the 41%.

Deepening of knowledge also exhibits statistically significant coefficients for three of the alternative sites used as dependent variable. In more detail, *ceteris paribus*, an increase in the motivation related to the will of in-depth analysis and knowledge is correlated to an increase by 67% of the odds of visiting Oplontis instead of Pompeii. The same concerns Stabiae and Boscoreale, since an increase of one unit in *deepening of knowledge* entails an increase by 60% of

the probability of visiting Stabiae instead of Pompeii and an increase by 49% of odds of visiting Boscoreale instead of Pompeii.

Moving to the analysis of the other covariates, the variable measuring respondents' age turns out to be statistically significant for all the sites considered and the corresponding odds ratio exhibits a value higher than one for all the sites investigated. *Ceteris paribus*, an increase of one unit of the variable *age* leads to 5% higher probability of visiting Herculaneum instead of Pompeii, and to 3% higher probability of visiting Oplontis, Stabiae or Boscoreale instead of Pompeii. According to this result, the older the people are the lower should be their preference for the Pompeii archaeological site.

Looking at the categorical covariates, the variable *first visit* turns out to be statistically significant and its coefficient is positive for Herculaneum and Boscoreale. This result suggests that, keeping all the other variables constant, people who are not visiting for the first time will visit Herculaneum instead of Pompeii with the 50% higher probability and will be 3 times more likely to visit Boscoreale instead of Pompeii.

Being a foreigner decreases the probability of visiting Boscoreale instead of Pompeii by 39%. The variable labelled as *association* shows a positive and statistically significant link with all the sites, except Oplontis. *Ceteris paribus*, people being members of cultural association are almost two times more likely to visit Herculaneum, three times more likely to choose Boscoreale, and almost four times more likely to visit Stabiae instead of Pompeii.

Looking at the *labour status*, when compared with unemployed people, freelance, students, employed and retired people have respectively 89%, 86%, 91% and 86% lower probability to visit Oplontis instead of Pompeii. Non-active people, instead, are less likely to visit Oplontis instead of Pompeii in respect to unemployed people, even if in this last case IRR value is extremely small.

The variable *income* exhibits few statistically significant coefficient; level of income between 1500€ and 3000€ reports a positive coefficient of 2.526. This means that an individual with all characteristics of the base reference individual who earns between 1500€ and 3000€, will be more likely to visit Stabiae instead of Pompeii in respect to the base individual with the same characteristics who earns less than 500€. On the other side, *ceteris paribus*, people who earn between 3000€ and 5000€ is almost three times more likely to visit Oplontis instead of Pompeii. Finally, respondents who earn more have a higher probability to visit Oplontis instead of Pompeii and a lower probability of choosing Boscoreale instead of Pompeii.

Overall, these results demonstrate that the relation between the “profiles” emerged by the multiple correspondence analysis and the choice of a site to visit seem to confirm somewhat the underlying hypothesis. Indeed, individuals exhibiting high scores on the first factorial axis, labelled as *interest in site reputation*, have less probability to visit Herculaneum, Oplontis and Stabiae instead of Pompeii. According to these results, Herculaneum, although is a world famous site, appears to be less attractive than Pompeii, in respect to people interested in site reputation. Meanwhile, individuals exhibiting high scores on the second factorial axis, labelled as *deepening of knowledge*, have more probability to choose minor sites instead of Pompeii.

Hence, results allow accepting *H2* since it emerges that the motivation has an important role in the choice of the archaeological site to visit among those existing in the Vesuvian area. Indeed, people who judge important to visit attractions that are famous and well recognised by others do show a lower probability of visiting less renowned sites. On the other hand, those who are more interested in deepening and improving their knowledge show a higher probability of visiting low volume attraction.

Besides motivations, also socio-demographic variables exhibit interesting results. Indeed, people visiting the Vesuvian area for at least the second time, seem less likely to visit Pompeii, maybe because they already visited it during their preceding visit. Being member of any cultural association, which could be interpreted as a proxy of cultural consumption, has a positive effect on the choice of minor sites, such as Stabiae and Boscoreale and also Herculaneum instead of Pompeii. This result indicates that probably people showing higher level of cultural interest and addiction prefer to visit minor sites.

6. Conclusions

The results of the analyses implemented allow improving knowledge of the demand for archaeological sites in the Vesuvian area. As a consequence, they can be useful from a managerial point of view and also to support policy decisions, since they delineate visitors' profile. The analyses exhibit the polarization of visitors among the archaeological sites and show the importance of investigating the demand making reference to visitors' motivations.

Multiple correspondence analysis highlights a difference existing among visitors in terms of their motivation to visit and confirm the importance of analysing cultural tourism by using the psychological elements of tourism, or rather motivations (McKercher and du Cros, 2003). Two dimensions are identified: the importance of site's reputation and the interest of deepening and knowledge. Regression analysis highlights that visitors interested in site relevance would prefer to visit the superstar Pompeii instead of less-known sites and that cultural demand for the major site of the area probably refers to occasional cultural tourists (Brida et al., 2015). Furthermore, people exhibiting high level of cultural interest tend to choose minor sites and Herculaneum, instead of Pompeii.

Hence, visitor profile that is delineated seems to underline that people visiting Pompeii show characteristics of mass tourists and probably do exhibit a weak cultural motivation in respect to tourists visiting other sites. Nevertheless, an interesting outline concerns the fact that people who are not at the first visit, tend to do not choose Pompeii. This result indicates that there is probably a flow of visitors interested in discovering different sites. Furthermore, the empirical evidence seems to be in line with Poria et al. (2003, 2004) theory about the difference existing between heritage tourists and people visiting heritage. Indeed, our analysis reveals a clear distinction between people whose visit to archaeological sites in the Vesuvian area is motivated by the fact of visiting a place pertaining to their own heritage and people visiting because of the archaeological sites' fame.

Appendix

<i>label</i>	<i>values</i>	<i>modalities</i>
<i>first visit</i>	0	no
	1	yes
<i>foreigner</i>	0	Italian
	1	foreigner
<i>association</i>	0	no
	1	yes
<i>gender</i>	1	male
	2	female
<i>education</i>	1	low secondary
	2	upper secondary
	3	bachelor
	4	post lauream
<i>labour status</i>	1	unemployed
	2	freelance
	3	student
	4	housekeeper
	5	non active
	6	employed
	7	retired
<i>income</i>	1	500€ - 1500€
	2	1500€ - 3000€
	3	3000€ - 5000€
	4	more than 5000€

Tab. 1 Categorical variables description

MOTIVATION	VARIABLE LABEL
Because the site represents a historical age	HISTORIC AGE
Leisure	LEISURE
I recognize the importance of this site for the place identity	PLACE IDENTITY
For the aesthetic and/or artistic emotion of the visit	EMOTION VISIT
To enhance my education	ENHANCE EDU
To take advantage of art in person	ADVANTAGE ART
Because a lot of people visit it	PEOPLE VISIT
It is part of my study/job	STUDY/JOB
I have a specific interest for this attraction	SPECIFIC INTEREST
To learn something new	LEARN
Because it is part of my heritage	OWN HERITAGE
Because it is a world-famous site	WORLD FAMOUS

Tab. 2 List of the motivations and label variable of reference

	Obs.	Mean	Sd	Min	Max
HISTORIC AGE	2689	.6742283	.4687496	0	1
LEISURE	2689	.1762737	.3811237	0	1
PLACE IDENTITY	2689	.3306062	.4705189	0	1
EMOTION VISIT	2689	.2350316	.4240974	0	1
ENHANCE EDU	2689	.2766828	.4474415	0	1
ADVANTAGE ART	2689	.1175158	.3220938	0	1
PEOPLE VISIT	2689	.0312384	.1739937	0	1
STUDY JOB	2689	.0624768	.2420645	0	1
SPECIFIC INTEREST	2689	.1889178	.3915161	0	1
LEARN	2689	.2138341	.4100874	0	1
OWN HERITAGE	2689	.0736333	.2612218	0	1
WORLD FAMOUS	2689	.2614355	.4394984	0	1
<i>N</i>	2689				

Tab. 3 Summary statistics of the variables concerning motivations

	HIST. AGE	LEISUR E	PLACE ID	EMO. VISIT	ENH. EDU	ADV. ART	PEOPL E VISIT	STUDY JOB	SPE. INT	LEARN	OWN HERIT
LEIS.	-0.1303	1									
PLACE											
ID.	0.0331	-0.0492	1								
EMO.											
VISIT	-0.0339	-0.1183	-0.0372	1							
EN.											
EDU	-0.0685	-0.153	-0.0724	-0.0605	1						
ADV.											
ART	-0.1159	-0.0415	-0.1018	-0.0171	-0.0682	1					
PEOP. VISIT	-0.0713	0.0347	-0.0535	-0.0844	-0.0585	-0.0191	1				
STU.											
JOB	-0.1648	-0.063	-0.0769	-0.0307	0.0224	-0.0322	-0.011	1			
SPEC.											
INT.	-0.0943	-0.131	-0.1231	-0.0771	-0.067	-0.0463	-0.0484	0.001	1		
LEARN	-0.1039	-0.0175	-0.1795	-0.1265	-0.057	-0.0608	-0.0207	-0.0822	-0.108	1	
OWN											
HER.	-0.0653	-0.0856	-0.068	-0.0119	-0.063	0.0165	-0.0424	-0.0022	-0.0088	-0.088	1
W.FAM.	-0.0487	-0.1064	-0.1627	-0.1521	-0.1466	-0.0962	0.0148	-0.0871	-0.0623	-0.0048	-0.0997

Tab. 4 Correlation matrix of the motivations variables

	Coordinates dimension 1	Coordinates dimension 2
HISTORIC AGE [NO]	1.295	2.589
HISTORIC AGE [YES]	-0.626	-1.251
LEISURE [NO]	-0.458	0.230
LEISURE [YES]	2.142	-1.074
PLACE IDENTITY [NO]	0.979	0.926
PLACE IDENTITY [YES]	-1.983	-1.875
EMOTION VISIT [NO]	0.746	-0.157
EMOTION VISIT [YES]	-2.427	0.510
ENHANCE EDU [NO]	0.407	-0.458
ENHANCE EDU [YES]	-1.063	1.198
ADVANTAGE ART [NO]	-0.014	-0.361
ADVANTAGE ART [YES]	0.104	2.713
PEOPLE VISIT [NO]	-0.170	0.015
PEOPLE VISIT [YES]	5.286	-0.450
STUDY JOB [NO]	0.037	-0.412
STUDY JOB [YES]	-0.558	6.181
SPECIFIC INTEREST [NO]	0.045	-0.540
SPECIFIC INTEREST [YES]	-0.194	2.317
LEARN [NO]	-0.830	0.065
LEARN [YES]	3.050	-0.239
OWN HERITAGE [NO]	0.157	-0.269
OWN HERITAGE [YES]	-1.978	3.386
WORLD FAMOUS [NO]	-0.892	0.394
WORLD FAMOUS [YES]	2.521	-1.113

Tab. 5 Coordinates of the variables on the two axes – MCA

	Herculaneum	Oplontis	Stabiae	Boscovale
<i>interest in site reputation</i>	0.867** (0.0622)	0.642*** (0.0955)	0.599*** (0.0835)	1.270 (0.187)
<i>interest in deepening of knowledge</i>	1.038 (0.0730)	1.674*** (0.223)	1.601*** (0.163)	1.490*** (0.204)
<i>first visit</i> [yes]				
no	1.495** (0.304)	1.508 (0.582)	1.355 (0.412)	2.880** (1.536)
<i>foreigner</i> [Italian]				
foreigner	1.329 (0.263)	0.882 (0.281)	1.007 (0.326)	0.380** (0.160)
<i>association</i> [non member]				
member	1.855*** (0.354)	1.576 (0.622)	3.559*** (0.902)	2.946** (1.307)
<i>gender</i> [female]				
male	0.754** (0.107)	0.660 (0.192)	1.328 (0.315)	1.279 (0.445)
<i>age</i>	1.047*** (0.00650)	1.026** (0.0120)	1.031*** (0.0106)	1.031** (0.0148)
<i>education</i> [low secondary education]				
upper secondary education	1.300 (0.534)	2.629 (2.840)	8.356* (9.246)	2.159 (2.470)
bachelor	1.003 (0.408)	2.006 (2.189)	3.068 (3.350)	1.831 (2.159)
post lauream	0.955 (0.408)	2.884 (3.215)	5.380 (5.834)	3.977 (4.776)
<i>labour status</i> [unemployed]				
freelance	1.104 (0.626)	0.111*** (0.0791)	0.500 (0.438)	0.943 (1.139)
student	0.751 (0.451)	0.141*** (0.105)	0.990 (0.881)	0.140 (0.182)
housekeeper	0.814 (0.683)	0.533 (0.500)	0.570 (0.793)	1.436 (2.138)
non active	1.765 (1.659)	0.000000954*** (0.000000627)	2.926 (3.174)	1.675 (2.656)
employed	1.227 (0.676)	0.191*** (0.118)	0.379 (0.315)	1.252 (1.409)
retired	0.848	0.241*	0.657	2.333

	Herculaneum	Oplontis	Stabiae	Boscotrecase
	(0.520)	(0.190)	(0.622)	(2.989)
<i>income</i> [less than 500€]				
500€ - 1500€	0.769 (0.235)	1.318 (0.776)	1.569 (0.675)	0.502 (0.348)
1500€ - 3000€	1.112 (0.339)	1.904 (1.188)	2.526** (1.036)	0.467 (0.290)
3000€ - 5000€	0.943 (0.313)	2.835* (1.793)	0.900 (0.487)	0.393 (0.299)
more than 5000€	0.701 (0.255)	3.365* (2.331)	1.983 (1.081)	0.0863** (0.100)
N	2426			
<i>Pseudo R</i> ²	0.106			
Exponentiated coefficients				
Standard errors in parentheses				
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$				

Tab. 6 Regression results of multinomial logistic regression

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