Zoran Paunović / Darko Prebežac

# Developing a Typology of Hostel Visitors Using the Bagged Clustering Approach

## Abstract

This article is the first study to present a nuanced analysis of hostel visitors. Using the bagged clustering approach, a typology of hostel visitors was developed, involving four distinctive types of hostel visitors: (i) Hostel lovers, (ii) Landing point visitors, (iii) Flashpackers look-alikes, and (iv) Classical backpackers.

*Keywords:* hostel tourists, segmentation, typology, bagged clustering

## 1. Introduction

In recent years B.C. (before Corona), the hostel market has experienced constant growth in visitors and new hostel accommodation capacity. Despite being a specific tourist segment that goes beyond classical backpacker identity (Chen et al., 2020), relatively few studies have so far focused on hostel visitors (e.g. Nash et al., 2006; Thyne et al., 2012; Brochado et al., 2015; Mikulić et al., 2016; Seyitoğlu et al., 2020). The present note thus aims to contribute to this research stream and address the following research question: What types of tourists are staying in hostels, and what are their main characteristics? Applying a marketing strategy based on segments, rather than treating the whole market in the same way, may translate into significant competitive advantages, thus reflecting the practical relevance of this research question.

A bagged clustering approach is combined with the framework of "push and pull" factors of tourism motivation using the Croatian hostel market as research setting to achieve this goal. A disproportionate quota sample was used, thereby controlling for the geographical distribution of hostels, the diversity of hostel locations (continent/sea), and the size and type of hostels (small, medium, or large). Out of 34 hostels included in the sample and contacted, 28 agreed to participate in the study. Overall, 693 questionnaires were collected, of which 642 were usable for the subsequent analysis. The data collection combined several methods of communication with respondents (personal interviewing, self-completion and online surveying). A copy of the questionnaire containing all items underlying the segmentation variables is provided in Appendix A.

## 2. Analysis

The ranking and validation of the segmentation variables were performed using the "Random Forest" algorithm in the software package "R" based on decision tree classification. Decision trees are becoming increasingly popular in tourism research due to their applicability to categorical and numerical variables and good performance when working with significant variables. Recent tourism research shows the strength of the decision tree in profiling hotel visitors, segmenting tourists depending on travel characteristics and perceptions, as well as different behaviours (Pokryshevskaya & Antipov, 2017).

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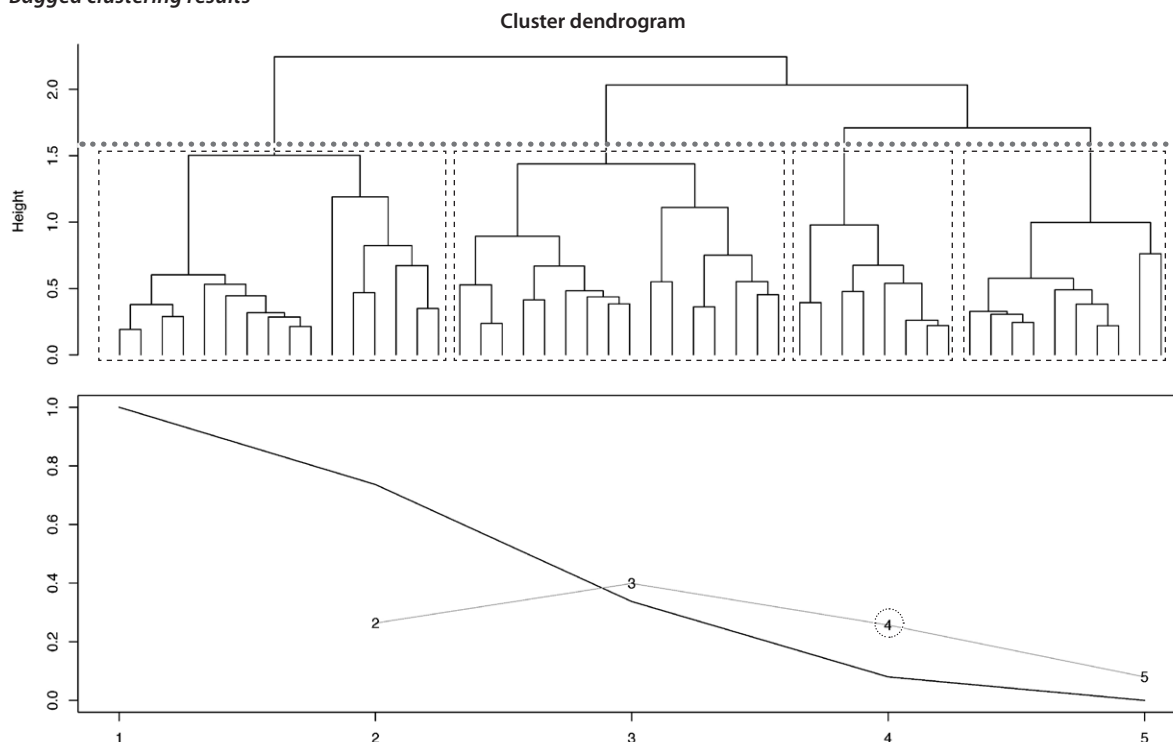
The algorithm ranked 25 segmentation variables that covered various push and pull factors elicited via in-depth interviews, focus groups, and a review of relevant literature (Appendix B). Rankings were obtained by ranking variables characterized by the highest disagreement levels. The bagged clustering algorithm was applied, keeping intra-group homogeneity at minimum levels and inter-group heterogeneity at maximum levels. Table 1 shows the final ranking of segmentation variables.

**Table 1**
*Ranking of segmentation variables*

| Rank | Segmentation variable | Mean squared error (MSE) | Node purity |
|------|----------------------|--------------------------|-------------|
| 1 | Additional services offered by the hostel (extended hostel offer) | 4.588 | 4.714 |
| 2 | Private car parking | 4.499 | 4.877 |
| 3 | Privacy at the hostel | 4.306 | 4.908 |
| 4 | Bar within the hostel | 4.214 | 4.567 |
| 5 | Landing point (first place when arriving at the destination) | 4.210 | 4.394 |
| 6 | Common rooms | 4.204 | 4.156 |
| 7 | Meeting new people | 4.186 | 3.065 |
| 8 | Entertainment and relaxation | 4.101 | 4.483 |
| 9 | Activities at the destination | 3.653 | 4.230 |
| 10 | Safety level at the hostel | 3.642 | 4.274 |
| 11 | *Historical and cultural attractions* | *3.278* | *2.088* |
| 12 | *Breakfast option* | *3.259* | *3.930* |
| 13 | *Information at the reception* | *3.121* | *3.579* |
| 14 | *Experience (general)* | *2.718* | *3.162* |
| 15 | *Lifestyle* | *2.601* | *4.050* |
| 16 | *Atmosphere at the hostel* | *2.523* | *2.146* |
| 17 | *Beautiful scenery at the destination* | *2.514* | *1.618* |
| 18 | *Prices* | *2.087* | *2.359* |
| 19 | *Hostel location* | *2.066* | *3.200* |
| 20 | *Hostel rankings on search engines* | *2.039* | *2.436* |
| 21 | *Rest and relaxation* | *1.996* | *3.752* |
| 22 | *Internet at the hostel* | *1.935* | *2.234* |
| 23 | *Kitchen at the hostel* | *1.867* | *3.388* |
| 24 | *Cleanliness* | *1.797* | *1.867* |
| 25 | *Escape from daily routine* | *1.739* | *2.662* |

The ten highest-ranked variables were then selected for the bagged-clustering-based segmentation analysis (Figure 1).

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**Figure 1**
*Bagged clustering results*



The first graph of Figure 1 displays the dendrogram after processing results. The thicker line on the graph below the dendrogram shows the standardized height at which each cluster is aggregated. The second thinner line, with the numbers on the lower graph of the image, shows the first difference in the standardized heights. More prominent folds of the lighter line suggest that hostel visitors can be divided into three or four groups. The analysis also indicates that a five-cluster solution is possible. Still, the four-cluster solution was finally selected to avoid creating a typology that was too fragmented with small groups. The horizontal dotted line on the dendrogram indicates the desired height when choosing a solution with the number of clusters. The size of the clusters is as follows: Cluster 1. - 140 (22%); Cluster 2. - 212 (33%); Cluster 3. - 196 (30%); Cluster 4. - 94 (15%). Central values of the segmentation variables across the identified clusters are presented in Table 2.

**Table 2**
*Central values of segmentation variables across clusters*

| Segmentation variable | Central values | | | | Arithmetic mean |
| --- | --- | --- | --- | --- | --- |
| | Cluster 1 | Cluster 2 | Cluster 3 | Cluster 4 | |
| Activities at the destination | 2.583 | 1.659 | 2.506 | 2.667 | 2.291 |
| Meeting new people | 1.090 | 1.234 | 1.565 | 1.207 | 1.276 |
| Entertainment | 1.445 | 1.518 | 2.354 | 1.859 | 1.787 |
| Landing point | 2.746 | 1.661 | 2.415 | 2.597 | 2.304 |
| Common rooms | 1.400 | 1.487 | 2.093 | 1.766 | 1.676 |
| Bar within the hostel | 1.886 | 1.785 | 2.528 | 2.703 | 2.164 |
| Privacy at the hostel | 2.081 | 1.464 | 1.481 | 2.723 | 1.794 |
| Safety at the hostel | 1.587 | 1.330 | 1.741 | 2.214 | 1.620 |
| Additional services offered | 1.496 | 1.645 | 2.374 | 2.263 | 1.903 |
| Private car parking | 2.307 | 1.652 | 1.853 | 2.787 | 2.016 |

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# 3. Results and discussion

The following features of each cluster can be observed by analyzing the deviations across individual clusters together with respective socio-economic and demographic respondent characteristics (Appendix C).

### Cluster 1 (22%) – True hostel lovers

For visitors that belong to the first cluster, a hostel is primarily a place where they can socialize with other people of similar interests and is perceived as a place for fun. They favour hostels over different types of accommodation and choose them intentionally. They are happy buyers of all the activities organized by the hostel, such as pub crawls, walking tours, excursions, etc. It is essential for them that the hostel has a bar and large common areas, but on the other hand, parking spaces and private rooms are not vital to them. Members of this cluster are mostly single (81.2%) and travel with friends (75.7%).

Concerning the frequency of staying in hostels, 60% of respondents in this cluster always choose a hostel as the place to stay. Although, in general, hostel visitors are mostly educated, this segment is by far the most educated - more than 86% are highly educated, of whom 14.4% are postgraduates. Usually, they stay in a particular hostel for 2-3 days, and their average journey lasts one month. More than any other segment, they prefer to travel by train and bus. Since members of this cluster like to stay in hostels and use everything hostels have to offer, the most appropriate name for them is "True Hostel Lovers".

### Cluster 2 (33%) – Landing point visitors

This is the largest cluster of hostel guests (33%). Members of this cluster perceive hostels as a fun place that serves as the "landing point", where they first arrive at their destination until they find better accommodation. They have a slightly higher financial standard, and when choosing a hostel, they consider a bar important and, unlike cluster 1, also private rooms (ensuite) and private parking. Security is of utmost importance to them, and they highly rate a safe and/or a place where they can lock up personal items as one of their essential features in choosing a hostel. Shopping is one of the main motivating factors that drive members of this cluster to travel. They are not as loyal to hostels as the first cluster and are happy to book other types of accommodations as well. They spend an average of 30 days on the road, and they mostly prefer to travel by plane, while the train is a form of transport they least use. With this cluster, two characteristics stand out when compared with other clusters - shopping and landing point (the place of the first arrival). Because of this, this cluster was named "Landing point visitors".

### Cluster 3 (30%) – Flashpackers look-alike

Cluster 3 includes hostel users who primarily value peace and privacy. They need private parking and private rooms, and the idea that hostels are commonly a place for partying is very annoying to them. Although they are happy to stay in a hostel, they do not have a strong desire for socialization, so they are indifferent to whether the hostel has a bar or other social areas. They also do not care much about the hostel's extra activities. Similarly, Cluster 2 members do not often stay in hostels. A few Cluster 3 members said they remained in a hostel when they had no other choice. Their average travel time is the shortest of all other groups (an average of 16.4 days); they like to travel as quickly as possible and stay fewer days at the destination. Members of this cluster are usually full-time employed and have, on average, the highest disposable income (more than 40% earn 1,500 euros or more per month). Also, this cluster has the lowest number of singles, and they are primarily with life partners. On average, it is the oldest segment, with almost 18% of its members over 35. As per the mode of transport, this segment mostly travels by car. Long-distance buses and public transport are the least preferred modes of travel. Characteristics of this segment have a lot of similarities to Flashpackers - a segment described in other studies and mentioned in focus groups when conducting exploratory research. Therefore, this segment has been named "Flashpackers look-alike", with new features discovered during this research.

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**Cluster 4 (15%) – Classical backpackers**

Hostel visitors that were grouped in the fourth cluster, in essence, are the opposite of those in Cluster 2 and, at the same time, most like those in Cluster 1. When going on the trip, a push factor that is the least motivating for them is shopping. They see hostels as places to socialize with people of similar interests. They often choose it as a place to stay, and it is not essential to them if a hostel has a bar, private rooms, private parking or a safe. However, unlike Cluster 1, they rarely consume the additional services the hostel offers. They usually do not stay more than 2-3 days per hostel. They are the longest ones on the road (43.7 days on average), primarily students. This segment has the lowest monthly income (34% have less than 500 euros, and 29.7% have 500 to 1,000 euros a month available). They are also the youngest segment (74% are 18-25). They do not prefer to travel by car, except for hitchhiking, which a small part of this cluster frequently does. Mostly, they travel by bus and train, and the least frequent mode of transportation they use is by plane. This cluster has the highest number of hostel visitors travelling alone. Since it has all the features of typical backpackers, the best choice is to call them "Classical backpackers".

# 4. Limitations and future research directions

There are two limitations associated with the presented typology of hostel tourists. First, although in line with recommendations regarding the relationship between the number of variables and the sample size (56 statements plus socio-economic and demographic variables), a larger sample would facilitate more accurate and detailed descriptions of individual clusters. For example, if 1,200 respondents were surveyed, 20 statements could be included in the segmentation algorithm (instead of 10 formed in the present study). The second limitation is related to the fact that the research was conducted in Croatia. Although being a propulsive destination in recent years, it would be interesting to see whether the obtained typology also applies to other markets and whether some new niche segments would be discovered in different research settings.

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# Appendix A

## Questionnaire for hostel guests

Thank you for taking the time to share information about yourself, your background, and reasons for visiting hostels. Your feedback is very valuable to us and all information that you provide will be used in the strictest confidence!
THANK YOU FOR YOUR TIME!

For each statement below please tick "Agree" box if that description applies and "Disagree" box if it does not apply. If you neither agree nor disagree with the statement, please tick box "Neither Agree nor Disagree".

**I travel because I want to:**   *use ✗ to indicate your choice*

**Travel motives (general)**

| | | | | |
|---|---|---|---|---|
| M1 | Escape from my daily routine | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| M2 | Feel free | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| M3 | Find adventure | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| M4 | Visit famous cultural and historical attractions | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| M5 | Interact with local people | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| M6 | Meet new people | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| M7 | See some beautiful natural scenery | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| M8 | Go shopping | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| M9 | Physically relax and rest during my travel | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| M10 | Party | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| M11 | Enjoy outdoor activities | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| M12 | Enjoy sport activities | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| M13 | Learn about the new culture | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| M14 | Visit festivals (music, food, wine, film, motorbike, etc.) | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |

For each statement below please tick "Agree" box if that description applies and "Disagree" box if it does not apply. If you neither agree nor disagree with the statement, please tick box "Neither Agree nor Disagree".

**Generally, hostels are:**   *use ✗ for indicate your choice*

**Perceptions and attitudes (hostels)**

| | | | | |
|---|---|---|---|---|
| P1 | Lots of fun | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| P2 | Inexpensive | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| P3 | Cleaner than other types of accommodation | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| P4 | Best way to get info about the destination (at the reception desk) | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| P5 | Not a good way to get information about destination | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| P6 | Lifestyle choice | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| P7 | Places with unique atmosphere | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| P8 | Places to easily meet new people | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| P9 | Places to socialize with other people with similar interests | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| P10 | Place to party | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| P11 | Good value for money | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| P12 | Place to relax | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| P13 | "Landing point" before I find better accommodation | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| P14 | Place to feel young again | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |

For each hostel facility below please tick "Agree" box if that description applies and "Disagree" box if it does not apply. If you neither agree nor disagree with the statement, please tick box "Neither Agree nor Disagree".

**When choosing a hostel to stay, it is very important to me that hostel has:**

| | | | |
|---|---|---|---|
| F1 Good reviews on booking sites | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F2 Free Wi-Fi | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F3 24h reception | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F4 Up to date information at the reception about destination | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F5 Reception staff that speaks my language | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F6 Clean premises (bedrooms, toilets, social areas, etc.) | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F7 Good value for money | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F8 Big social areas | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F9 Location in the city center | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F10 Good atmosphere/character of the hostel | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F11 Bar inside the hostel | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F12 Private bedrooms in the hostel | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F13 Separate male/female dorms in the hostel | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F14 Bunk beds with private curtains | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F15 Safety lockers | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F16 Safety deposit box | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F17 Safety luggage storage | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F18 Activities organized by hostel (pub crawls, walking tours, etc.) | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F19 Travel desk for tours info | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F20 Laundry facilities | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F21 Bicycle parking | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F22 Transfer service to other destinations or/and airports | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F23 Complementary coffee | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F24 On-site restaurant that serves local food | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F25 Private car parking | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F26 Common kitchen | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F27 Optional breakfast | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |
| F28 Interactive hostel staff | ☐ Agree | ☐ Neither Agree nor Disagree | ☐ Disagree |

*Hostel facilities*

**Respondent characteristics**

**Generally, I travel**
- ☐ Once a year
- ☐ Twice a year
- ☐ Every 3 months
- ☐ Every month
- ☐ Every weekend
- ☐ Other _____

**Generally, when traveling I prefer** (Select up to 2 answers)
- ☐ Car
- ☐ Bus
- ☐ Train
- ☐ Hitchhiking
- ☐ Plane
- ☐ Motorbike
- ☐ Bicycle
- ☐ Other _____

**Generally, when traveling, I travel with** (Select up to 2 answers)
- ☐ Friends
- ☐ Partner
- ☐ Family
- ☐ Alone
- ☐ Other _____

**How often do you stay in hostels**
- ☐ Always
- ☐ Not very often
- ☐ It's my first time
- ☐ When I do not have other choice

**How long do you usually stay in one hostel**
- ☐ 1 day
- ☐ 2-3 days
- ☐ 3-5 days
- ☐ 1 week
- ☐ 1 to 2 weeks
- ☐ 2-4 weeks
- ☐ >1 month

**How long will this particular trip last before you return home** _____

**Education level**
- ☐ High school or equivalent
- ☐ University/collage degree
- ☐ Post-graduate degree
- ☐ Other _____

**Employment status**
- ☐ Full time
- ☐ Part time
- ☐ Not employed
- ☐ Student
- ☐ Other _____

**Approximate monthly income**
- ☐ up to 500 €
- ☐ 501 - 1000 €
- ☐ 1001-1500 €
- ☐ 1501 - 2000 €
- ☐ > 2000 €

**Marital status**
- ☐ Single
- ☐ Cohabitate
- ☐ Married/no children
- ☐ Married/with children
- ☐ Divorced
- ☐ Other _____

**Age**
- ☐ < 18
- ☐ 18-25
- ☐ 26-30
- ☐ 31-35
- ☐ 36-40
- ☐ > 41

**Gender**
- ☐ Male
- ☐ Female

**Country of your citizenship** _____

## Thank you for your time!

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# Appendix B

## Hostel tourist segmentation variables

| Segmentation variables | Source/elicitation | Pull or push factor | Relation to Likert items |
|---|---|---|---|
| 1. Internet access at the hostel | In-depth interview | Pull factor | F2 |
| 2. Information at the reception | In-depth interview | Pull factor | F3, F4, F5, P4, P5 |
| 3. Cleanliness | In-depth interview | Pull factor | F6, P3 |
| 4. Prices | In-depth interview | Pull factor | F7, P2, P11 |
| 5. Common rooms | In-depth interview | Pull factor | F8 |
| 6. Meeting new people | In-depth interview | Push factor | M5, M6, P8, P9 |
| 7. Hostel location | In-depth interview | Push factor | F9 |
| 8. Activities at the destination | In-depth interview | Pull factor | M3, M8, M11, M12, M14 |
| 9. Atmosphere (character) at the hostel | In-depth interview | Pull factor | F10 |
| 10. Beautiful scenery at the destination | In-depth interview | Pull factor | M7 |
| 11. Historical and cultural attractions | In-depth interview | Push factor | M4, M13 |
| 12. Bar within the hostel | In-depth interview | Pull factor | F11 |
| 13. Lifestyle | In-depth interview | Push factor | P6, P14 |
| 14. Privacy at the hostel | In-depth interview | Pull factor | F12, F13, F14 |
| 15. Safety at the hostel | In-depth interview | Pull factor | F15, F16, F17 |
| 16. Additional services offered by the hostel (extended offer) | In-depth interview | Pull factor | F18, 19, 20, 21, 22, 23,24 |
| 17. Private car parking | In-depth interview | Pull factor | F25 |
| 18. Kitchen at the hostel | In-depth interview | Pull factor | F26 |
| 19. Breakfast option | In-depth interview | Pull factor | F27 |
| 20. Entertainment | In-depth interview | Push factor | P1, P7, P10, P12, M10 |
| 21. Experience (general) | In-depth interview | Push factor | F28 |
| 22. Escape from daily routine | Literature review | Push factor | M1, M2 |
| 23. Rest and relaxation | Literature review | Push factor | M9 |
| 24. Landing point | Focus group | Pull factor | P13 |
| 25. Hostel rankings on search engines | Focus group | Pull factor | F1 |

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# Appendix C

## Socio-economic and demographic characteristics by cluster

| | 1. N=140 | 2. N=212 | 3. N=196 | 4. N=94 | p.overall |
|---|---|---|---|---|---|
| Travel frequency: | | | | | 0.369 |
|     Once a year | 35 (26.1%) | 61 (29.2%) | 42 (21.8%) | 25 (26.9%) | |
|     Twice a year | 52 (38.8%) | 89 (42.6%) | 88 (45.6%) | 41 (44.1%) | |
|     Every three months | 35 (26.1%) | 36 (17.2%) | 45 (23.3%) | 17 (18.3%) | |
|     Every month | 10 (7.46%) | 15 (7.18%) | 11 (5.70%) | 8 (8.60%) | |
|     Every weekend | 1 (0.75%) | 7 (3.35%) | 3 (1.55%) | 0 (0.00%) | |
|     Other | 1 (0.75%) | 1 (0.48%) | 4 (2.07%) | 2 (2.15%) | |
| Frequency of staying at hostels | | | | | <0.001 |
|     Always | 83 (59.7%) | 85 (40.7%) | 79 (40.5%) | 56 (60.2%) | |
|     Not too often | 38 (27.3%) | 87 (41.6%) | 91 (46.7%) | 20 (21.5%) | |
|     This is my first time | 17 (12.2%) | 21 (10.0%) | 10 (5.13%) | 11 (11.8%) | |
|     When I have no other option | 1 (0.72%) | 16 (7.66%) | 15 (7.69%) | 6 (6.45%) | |
| Duration of stay at the hostel | | | | | 0.004 |
|     1 day | 11 (7.91%) | 26 (12.4%) | 28 (14.4%) | 6 (6.45%) | |
|     2-3 days | 89 (64.0%) | 119 (56.9%) | 125 (64.1%) | 72 (77.4%) | |
|     3-5 days | 26 (18.7%) | 34 (16.3%) | 25 (12.8%) | 12 (12.9%) | |
|     1 week | 3 (2.16%) | 15 (7.18%) | 12 (6.15%) | 3 (3.23%) | |
|     1-2 weeks | 2 (1.44%) | 10 (4.78%) | 5 (2.56%) | 0 (0.00%) | |
|     2-4 weeks | 4 (2.88%) | 2 (0.96%) | 0 (0.00%) | 0 (0.00%) | |
|     > 1 month | 4 (2.88%) | 3 (1.44%) | 0 (0.00%) | 0 (0.00%) | |
| Travel duration: | 34.4 (51.7) | 29.5 (72.1) | 16.4 (33.5) | 43.7 (94.3) | 0.005 |
| Education: | 0.214 | | | | |
|     Highschool or similar | 18 (12.9%) | 46 (22.0%) | 32 (16.4%) | 17 (18.3%) | |
|     College / University degree | 100 (71.9%) | 125 (59.8%) | 125 (64.1%) | 66 (71.0%) | |
|     Postgraduate degree | 20 (14.4%) | 37 (17.7%) | 38 (19.5%) | 10 (10.8%) | |
|     Other | 1 (0.72%) | 1 (0.48%) | 0 (0.00%) | 0 (0.00%) | |
| Employment: | | | | | 0.165 |
|     Full time | 58 (42.3%) | 86 (41.5%) | 96 (49.7%) | 30 (32.3%) | |
|     Part-time | 19 (13.9%) | 33 (15.9%) | 25 (13.0%) | 11 (11.8%) | |
|     Unemployed | 14 (10.2%) | 19 (9.18%) | 13 (6.74%) | 10 (10.8%) | |
|     Student | 45 (32.8%) | 68 (32.9%) | 55 (28.5%) | 42 (45.2%) | |
|     Other | 1 (0.73%) | 1 (0.48%) | 4 (2.07%) | 0 (0.00%) | |
| Monthly income: | | | | | 0.013 |
|     <=500 € | 46 (33.3%) | 51 (24.4%) | 46 (23.6%) | 31 (34.1%) | |
|     501-1000 € | 21 (15.2%) | 45 (21.5%) | 35 (17.9%) | 27 (29.7%) | |
|     1001-1500 € | 20 (14.5%) | 44 (21.1%) | 35 (17.9%) | 10 (11.0%) | |
|     1501-2000 € | 19 (13.8%) | 31 (14.8%) | 30 (15.4%) | 15 (16.5%) | |
|     >2000 € | 32 (23.2%) | 38 (18.2%) | 49 (25.1%) | 8 (8.79%) | |
| Marital status: | | | | | <0.001 |
|     Single | 112 (81.2%) | 138 (66.0%) | 96 (49.2%) | 73 (78.5%) | |
|     Partnership | 20 (14.5%) | 51 (24.4%) | 73 (37.4%) | 18 (19.4%) | |
|     Married / no children | 3 (2.17%) | 11 (5.26%) | 8 (4.10%) | 2 (2.15%) | |
|     Married / with children | 1 (0.72%) | 6 (2.87%) | 13 (6.67%) | 0 (0.00%) | |
|     Divorced | 2 (1.45%) | 3 (1.44%) | 2 (1.03%) | 0 (0.00%) | |
|     Other | 0 (0.00%) | 0 (0.00%) | 3 (1.54%) | 0 (0.00%) | |
| Age | | | | | <0.001 |
|     < 18 | 0 (0.00%) | 3 (1.44%) | 1 (0.51%) | 0 (0.00%) | |
|     18-25 | 88 (63.3%) | 133 (63.6%) | 87 (44.6%) | 69 (74.2%) | |
|     26-30 | 34 (24.5%) | 37 (17.7%) | 55 (28.2%) | 17 (18.3%) | |
|     31-35 | 14 (10.1%) | 23 (11.0%) | 18 (9.23%) | 3 (3.23%) | |
|     36-40 | 2 (1.44%) | 8 (3.83%) | 13 (6.67%) | 2 (2.15%) | |
|     >41 | 1 (0.72%) | 5 (2.39%) | 21 (10.8%) | 2 (2.15%) | |

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**Socio-economic and demographic characteristics by cluster** *(continued)*

| | | | | | |
|---|---|---|---|---|---|
| Gender: | | | | | 0.939 |
|    Male | 76 (55.1%) | 108 (51.7%) | 103 (52.8%) | 50 (53.8%) | |
|    Female | 62 (44.9%) | 101 (48.3%) | 92 (47.2%) | 43 (46.2%) | |
| Mode of traveling-car: | | | | | <0.001 |
|    No | 103 (73.6%) | 142 (67.0%) | 97 (49.5%) | 73 (77.7%) | |
|    Yes | 37 (26.4%) | 70 (33.0%) | 99 (50.5%) | 21 (22.3%) | |
| Mode of traveling-bus | | 0.007 | | | |
|    No | 76 (54.3%) | 103 (48.6%) | 125 (63.8%) | 44 (46.8%) | |
|    Yes | 64 (45.7%) | 109 (51.4%) | 71 (36.2%) | 50 (53.2%) | |
| Mode of traveling-train: | | | | | <0.001 |
|    No | 64 (45.7%) | 148 (69.8%) | 125 (63.8%) | 45 (47.9%) | |
|    Yes | 76 (54.3%) | 64 (30.2%) | 71 (36.2%) | 49 (52.1%) | |
| Mode of traveling-hitchhiking: | | | | | 0.037 |
|    No | 138 (98.6%) | 202 (95.3%) | 185 (94.4%) | 85 (90.4%) | |
|    Yes | 2 (1.43%) | 10 (4.72%) | 11 (5.61%) | 9 (9.57%) | |
| Mode of traveling-plane: | | | | | 0.721 |
|    No | 89 (63.6%) | 125 (59.0%) | 119 (60.7%) | 61 (64.9%) | |
|    Yes | 51 (36.4%) | 87 (41.0%) | 77 (39.3%) | 33 (35.1%) | |
| Mode of traveling-motorbike: | | | | | 0.314 |
|    No | 136 (97.1%) | 210 (99.1%) | 194 (99.0%) | 94 (100%) | |
|    Yes | 4 (2.86%) | 2 (0.94%) | 2 (1.02%) | 0 (0.00%) | |
| Mode of travelling-bike: | | | | | 0.175 |
|    No | 138 (98.6%) | 209 (98.6%) | 187 (95.4%) | 91 (96.8%) | |
|    Yes | 2 (1.43%) | 3 (1.42%) | 9 (4.59%) | 3 (3.19%) | |
| Travelling with friends: | | | | | 0.886 |
|    No | 34 (24.3%) | 55 (25.9%) | 55 (28.1%) | 24 (25.5%) | |
|    Yes | 106 (75.7%) | 157 (74.1%) | 141 (71.9%) | 70 (74.5%) | |
| Traveling with partner: | | | | | <0.001 |
|    No | 104 (74.3%) | 140 (66.0%) | 96 (49.0%) | 75 (79.8%) | |
|    Yes | 36 (25.7%) | 72 (34.0%) | 100 (51.0%) | 19 (20.2%) | |
| Traveling with family | | | | | 0.459 |
|    No | 117 (83.6%) | 168 (79.2%) | 166 (84.7%) | 75 (79.8%) | |
|    Yes | 23 (16.4%) | 44 (20.8%) | 30 (15.3%) | 19 (20.2%) | |
| Travelling alone: | | | | | <0.001 |
|    No | 93 (66.4%) | 167 (78.8%) | 163 (83.2%) | 57 (60.6%) | |
|    Yes | 47 (33.6%) | 45 (21.2%) | 33 (16.8%) | 37 (39.4%) | |
| Travelling with others: no | 140 (100%) | 212 (100%) | 196 (100%) | 94 (100%) | |

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