APPENDIX 1

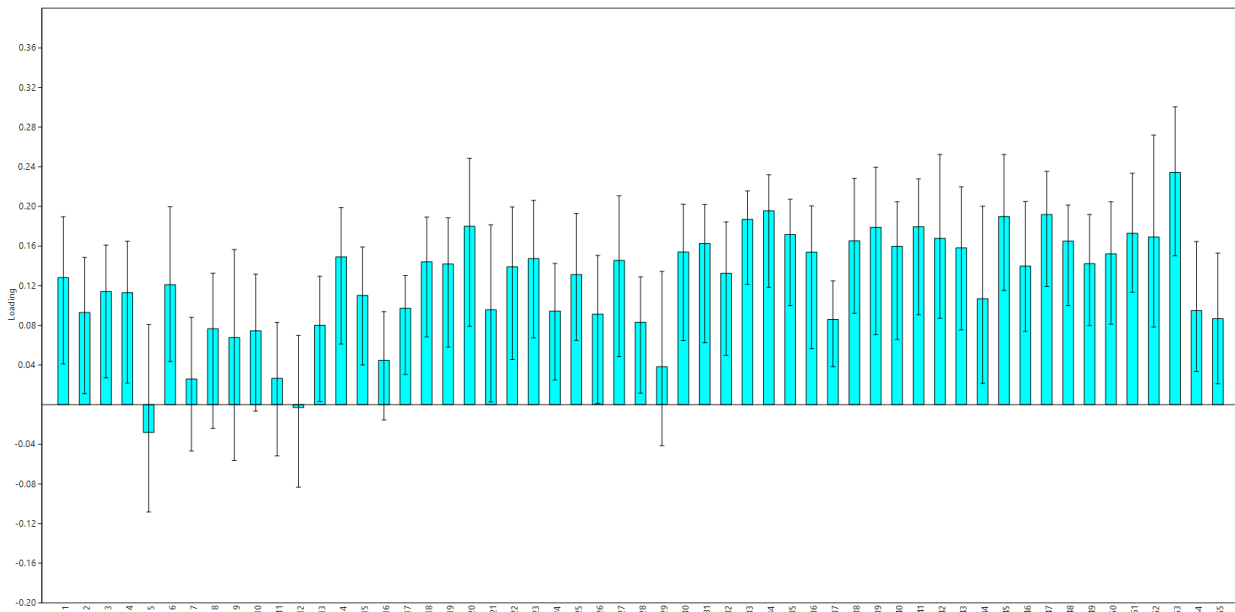## Hiking guides questionnaire: questions and statistics

Figure A1 Bootstrap analysis of correlations between the first principal component (PC1) and the original variables.

Table A1 Questions whose answers are categorical variables. Numbers (No.) with * identify close-ended questions, with the set of possible answers being reported in parentheses. Numbers without * are open-ended questions.

No.	Questions
1*	Gender (Male; Female; Transgender)
2	Age
3	Citizenship
4	Educational qualifications
5	First language
6	Second language
7	Other languages spoken
8*	Is guiding tourists on hiking trails your main job? (Yes; No)
9	Do you have any other form of employement?

10*   In which National Park are you an accredited hiking guide? (FCNP; ALNP; PNP; ANP)

11*   Do you know what an old-growth forest is? (Yes; No)

12*   Would you be able to identify an old-growth forest? (Yes; No)

13*   Did you know that European old-growth beech forests are a UNESCO World Heritage Serial Site? (Yes; No)

14*   Do you think that old-growth forests are the main reason why tourists choose to visit the park? (Yes; No)

15*   How do you judge forestry management practices in a protected area? (Negatively due to impact on wilderness; A necessary management activity; An economic activity)

16*   Do you know what *rewilding* consists of, i.e. the returning to nature of rural areas? (Yes; No)

17*   What do you think about the ongoing rewilding process? (Positive; Negative; No opinion)

18*   In your opinion, biodiversity is: (At risk due to human pressure and climate change; The result of natural adaptation; I have no opinion on the matter)

19   From which part of the world do over 50% of park visitors come from?

20   From which part of the world do 25-50% of park visitors come from?

21   From which part of the world do the remaining 0-25% of park visitors come from?

22   How long do your guided tourist excursions with the same tourist/group last, on average? (Days or part of a day)

23*   How many people do your excursion/guided groups usually consist of? Indicate no more than 2 options. (Single; Families; Up to 4 people; Up to 12 people; Up to 24 people; More than 50 people)

24*   In your experience, what form of transport do most people use to reach the park area? Indicate no more than 2 options. (Plane; Train; Car; Caravan; Camper; Coach; Bus; Commercial vehicle; Motorbike; Bicycle; On foot)

25*   Once inside the park, how do people move from one area to another? Indicate no more than 2 options. (Car; Coach; Bus; Commercial vehicle; Motorbike; Bicycle; On foot)

26*   How would you describe tourists who ask for your services as a hiking guide? (All-inclusive; Emotional/dreamer; Passionate; Nature lover; Organizer; Occasional; Adventurous; Regular visitor)

27*   What are the most popular excursions chosen by tourists? Indicate no more than 3 options. (Enogastronomic tours; Hiking; Narrative hiking itineraries; Walking; Horse-riding; Educational workshops; Mountain biking; Canooing; Kayaking; Rafting; Downhill mountain biking; Nordic walking; Rock climbing)

28*   In your opinion, what would be the best strategy to enhance the ecotourism value of the park? (Give importance to strategic tourist attractions; Highlight new tourist destinations; Amplify and diversify the tourist offer; Digitalisation; Improve infrastructure; Update tourist offer with the aim of developing management practices with low environmental impact, involving employees working in the sector; All answers, except number 5)

29   What do you think about the role of bodies/agencies promoting tourism in the park?

30*   Does the park organize training activities for guides? (Yes; No)

Table A2 Quantitative question scores. Mean values for all four National Parks (Mean) and relative standard deviation (SD) together with mean values for each National Park are reported. For each question, PC1 loading values are also shown. PCA loading values in bold highlight the positive correlated values from bootstrapping. Numbers (No.) in red highlight questions aimed to receive the hiking guides' own opinion, whereas numbers in black identify questions aimed to know the feedback that hiking guides get from tourists. 1 = Foreste Casentinesi, Monte Falterona and Campigna National Park (FCNP); 2 = Abruzzi, Lazio and Molise National Park (ALNP); 3 = Pollino National Park (PNP); 4 = Aspromonte National Park (ANP).

No.	Questions	Mean	SD	1	2	3	4	PC1 loadings
1	In your experience, to what extent is the park fulfilling its role in combatting environmental deterioration? (1 not doing enough, 5 doing a lot)	3.7	1.0	3.7	3.9	3.2	3.9	**0.13**
2	In your experience, to what extent do Parks contribute to nature conservation? (1 not very much, 5 a lot)	3.9	0.9	4.0	4.4	3.4	4.0	**0.09**
3	In your opinion, how much do tourists care about the environment? (1 not very much, 5 a lot)	3.7	0.8	3.6	3.5	3.7	3.9	**0.11**
	In your opinion, what are the main reasons for tourists wanting to visit the National Park? (1 not very much, 5 a lot)							
4	Hiking and Trekking	4.2	1.0	4.1	4.2	4.0	4.7	**0.11**
5	Picnicking	3.2	1.2	3.1	3.4	3.3	3.0	-0.03
6	Visit villages	3.4	1.0	3.0	2.9	3.7	4.2	**0.12**
7	Recreational walking	3.6	1	3.8	3.9	3.5	3.3	0.03
8	Wildlife photography	3.2	1	3.2	3.5	2.9	3.4	0.08
9	Wildlife	3.2	1.1	3.5	4.1	2.4	2.8	0.07
10	Visitor centres	2.1	0.9	2.0	2.5	1.4	2.5	0.07
11	Horse riding excursions	1.9	0.9	1.8	2.8	1.4	1.9	0.03
12	Other	2.2	1.1	2.1	2.2	2.0	2.6	0
	In your opinion, which aspects do tourists consider most important in choosing a location? (1 not very important, 5 very important)							
13	Accessibility	4	0.8	4.0	3.8	4.1	3.9	**0.08**
14	Information services	3.8	0.9	3.5	3.6	4.0	3.9	**0.15**
15	Friendliness of local residents	4	0.8	3.9	4.1	4.0	4.2	**0.11**
16	Food quality and variety	4.1	0.7	4.1	4.0	4.1	4.3	0.04

17	Landscape and nature	4.6	0.7	4.7	4.5	4.4	4.6	**0.1**
18	Cultural and artistic attractions	3.8	0.9	3.9	3.3	3.8	4.2	**0.14**
19	Environmental conservation	3.9	0.9	4.0	3.9	3.6	4.1	**0.14**
20	Efficiency of public services	3.3	1.1	3.5	3.4	3.0	3.5	**0.18**
21	Leisure activities and entertainment	3.1	1.1	2.8	3.2	3.0	3.3	**0.1**
22	Lack of pollution	3.8	1.1	3.8	3.9	3.7	3.7	**0.14**

How do tourists usually choose a tourist-hiking guide? (1 rarely, 5 frequently)

23	Specialized press	2.7	1.1	2.7	2.4	2.6	3.2	**0.15**
24	Tips from friends/family	4	0.9	4.4	3.7	3.9	3.9	**0.09**
25	Tourist information offices	3.3	1.0	3.5	3.1	3.0	3.7	**0.13**
26	Membership of specialized networks	3.6	1.0	3.5	3.5	3.7	3.6	**0.09**
27	Environmental certifications (Ecolabel, EMAS)	2.6	1.1	2.4	2.6	2.4	3.1	**0.15**
28	Internet	4.5	0.8	4.6	4.4	4.5	4.4	**0.08**
29	Associations	3.6	1.0	3.4	3.6	3.4	4.2	0.04

In your opinion, how important are the following factors in increasing sustainability for tourist staying in the park? (1 not very important, 5 very important)

30	Active planning	3.8	1	3.6	3.5	3.9	4.1	**0.15**
31	Visitors' environmental awareness	4.1	0.9	4.2	4.0	4.1	4.0	**0.16**
32	Staff training	4.4	0.8	4.4	4.3	4.6	4.5	**0.13**
33	Investment in water saving	3.4	0.9	3.4	3.5	3.3	3.4	**0.19**
34	Investment in energy saving	3.6	1.0	3.6	3.5	3.7	3.7	**0.2**
35	Investment in better waste management	3.9	0.9	4.1	3.7	3.8	4.0	**0.17**
36	Promotion of alternative mobility	4	1.0	4.2	3.8	4.0	4.1	**0.15**
37	Use local and organic food	4.4	0.7	4.4	4.1	4.6	4.6	**0.09**
38	Customer satisfaction questionnaires	3	1.1	2.8	3.2	2.9	3.2	**0.17**
39	Environmental quality certification	3.3	1.2	2.9	3.3	3.3	3.8	**0.18**

In your opinion, how do tourists evaluate the territory with regard to the following factors? (1 not very important, 5 very important)

40	Water management	2.9	0.9	3.2	2.6	2.9	2.9	**0.16**
41	Saving energy	3	1.0	3.2	2.8	3.0	3.0	**0.18**
42	Waste-disposal management	3.6	1.2	3.6	3.2	3.5	4.2	**0.17**
43	Alternative mobility	3.4	1.3	3.6	3.4	3.1	3.6	**0.16**
44	In your opinion, how important is it for sustainability to have tourist structures certified according to environmental management standards? (1 not very important, 5 very important)	4	0.9	4.0	3.9	4.0	4.1	**0.11**

Give your opinion with respect to the main elements constituting the services offered to tourists (1 negative/unsatisfied, 5 positive/very satisfied)

45	Accessibility	2.9	1.1	3.0	2.6	2.7	3.2	**0.19**
46	Buildings (aesthetic/architectural aspects)	3.2	1.0	3.4	3.2	2.9	3.4	**0.14**
47	Professionalism/training of staff	3.7	1.0	3.4	3.3	3.9	4.1	**0.19**
48	Welcoming and reception system	3.9	0.9	3.5	3.8	4.0	4.5	**0.17**
49	Value for money	3.8	0.9	3.5	3.5	4.1	4.1	**0.14**
50	Quality of the accomodations (hotels)	3.6	0.9	3.3	3.8	3.3	3.9	**0.15**
51	Quality of services	3.6	0.9	3.4	3.3	3.7	3.7	**0.17**
52	Quality of the road network	2.7	1.2	2.8	2.4	2.4	3.0	**0.17**
53	Adequacy sustainable, slow mobility network (cycling routes and paths)	3.1	1.3	3.7	2.8	2.4	3.6	**0.23**
54	Can you give an opinion on the Park's contribution towards promoting natural heritage? Indicate how much on a scale from 1 to 5 (1 minimum level, 5 maximum level)	3.2	1	3.2	3.4	2.5	3.8	**0.09**
55	Does the Park promote sustainable tourism? (To what degree)	3	0.9	3.3	2.9	2.2	3.5	**0.09**

Table A3 Original variables (questions) which exhibit the higher correlation with LD1; for each question, correlation and p-values are shown, together with the relative question number reported in Tab. A2.

Variable	LD1		Tab. A2
	cor.	p-value	No.
In your experience, to what extent do Parks contribute to nature conservation?	-0.2773	0.016	2
In your opinion, what are the main reasons for tourists wanting to visit the National Park? (Wildlife)	-0.2855	0.013	9
In your opinion, what are the main reasons for tourists wanting to visit the National Park? (Visitor centres)	-0.3844	0.001	10
In your opinion, what are the main reasons for tourists wanting to visit the National Park? (Horse riding excursions)	-0.4629	0.000	11
Give your opinion with respect to the main elements constituting the services offered to tourists (Quality of the accomodations)	-0.2328	0.046	50
How much does the park promotes its activities? Does the Park promote sustainable tourism? (To what degree)	-0.3383	0.003	55

Table A4 Original variables (questions) which exhibit the higher correlation with LD2; for each question, correlation and p-values are shown, together with the relative question number reported in Tab. A2.

Variable	LD2		Tab. A2
	cor.	p-value	No.
In your experience, to what extent is the park fulfilling its role in combatting environmental deterioration?	0.2380	0.041	1
In your experience, to what extent do Parks contribute to nature conservation?	0.3903	0.001	2
In your opinion, what are the main reasons for tourists wanting to visit the National Park? (Visit villages)	-0.3270	0.004	6
In your opinion, what are the main reasons for tourists wanting to visit the National Park? (Recreational walking)	0.2505	0.031	7
In your opinion, what are the main reasons for tourists wanting to visit the National Park? (Wildlife)	0.4928	0.000	9
In your opinion, what are the main reasons for tourists wanting to visit the National Park? (Visitor centres)	0.2515	0.030	10
In your opinion, what are the main reasons for tourists wanting to visit the National Park? (Horse riding excursions)	0.2343	0.044	11
Give your opinion with respect to the main elements constituting the services offered to tourists (Welcoming and reception system)	-0.2657	0.022	48
Give your opinion with respect to the main elements constituting the services offered to tourists (Value for money)	-0.2773	0.016	49
How much does the park promotes its activities? Does the Park promote sustainable tourism? (To what degree)	0.2815	0.015	55

Table A5 Original variables (questions) which exhibit the higher correlation with LD3; for each question, correlation and p-values are shown, together with the relative question number reported in Tab. A2.

Variable	LD3		Tab. A2
	cor.	p-value	No.
In your opinion, what are the main reasons for tourists wanting to visit the National Park? (Hiking and Trekking)	0.2489	0.032	4

In your opinion, what are the main reasons for tourists wanting to visit the National Park? (Picnicking)	0.2502	0.031	5
In your opinion, what are the main reasons for tourists wanting to visit the National Park? (Wildlife)	-0.2486	0.032	9
In your opinion, which aspects do tourists consider most important in choosing a location? (Cultural and artistic attractions)	-0.3491	0.002	18
How do tourists usually choose a tourist-hiking guide? (Tourist information offices)	-0.2571	0.027	25
How do tourists usually choose a tourist-hiking guide? (Associations)	-0.2948	0.010	29
In your opinion, how do tourists evaluate the territory with regard to the following factors? (Waste-disposal management)	-0.3293	0.004	42
Give your opinion with respect to the main elements constituting the services offered to tourists (Adequacy sustainable, slow mobility network unsatisfied)	-0.3327	0.004	53
Can you give an opinion on the Park's contribution towards promoting natural heritage? Indicate how much on a scale from 1 to 5	-0.3868	0.001	54
How much does the park promotes its activities? Does the Park promote sustainable tourism? (To what degree)	-0.5346	0.000	55

Table A6 Sex ratio and age metrics of the surveyed hiking guides

National Park	Male %	Female %	Max age	Min age	Mean age	DS age
FCNP	57	43	71	32	46	± 10.3
ALNP	53	47	68	29	50	± 8.2
PNP	86	14	58	31	49	± 8.7
ANP	84	16	62	33	42	± 7.8