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How do online reviewers' cultural traits and perceived experience influence hotel online ratings?

Article

Supplemental Material

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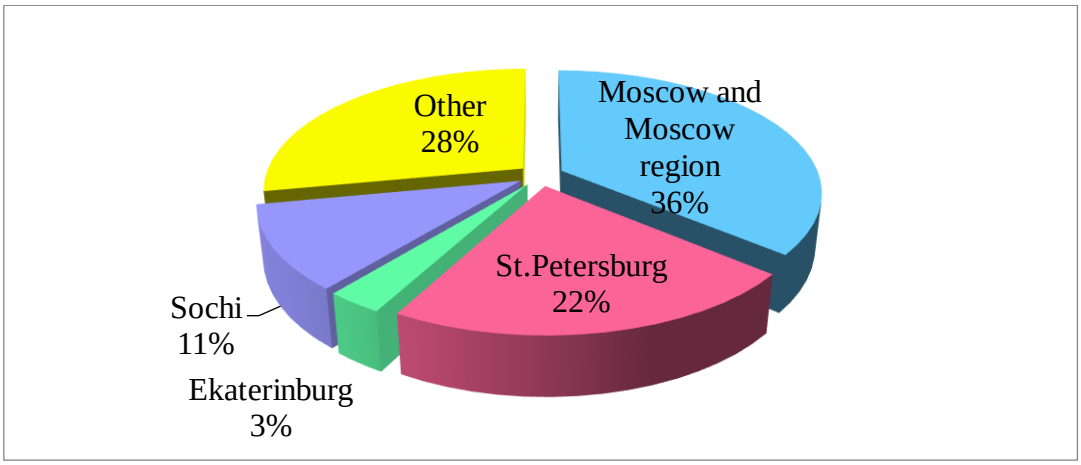

Figure 1. Distribution of the number of hotels (international hotel chains) in Russian cities

Table 1 – Variables description

Variable	**Description**
Rating	Online rating posted by a reviewer
Individualism (IDV)	Preference for a loosely-knit social framework in which individuals are expected to take care of only themselves and their immediate families*
Masculinity (MAS)	Preference in society for achievement, heroism, assertiveness, and material rewards for success*
Uncertainty Avoidance (UA)	Degree to which the members of a society feel uncomfortable with uncertainty and ambiguity*
Power Distance (PD)	Degree to which the less powerful members of a society accept and expect that power is distributed unequally*
Reviewer Experience (RE)	Value that represents the number of reviews written in the past by the reviewer on the platform (i.e., the reviewer' online experience in writing online reviews)
Observed Average Rating (Obs_Avg_Rat)	Hotels' review average rating as observed by the reviewing guest at the time when s/he posted her/his review
Reviewer knowledge (RK) of the destination	It represents the special badge named Destination GURU given by Booking.com to knowledgeable reviewers of a destination (dummy variable: 0 if not present)
Length of Stay (LoS)	Number of nights spent in the hotel by the reviewer
Trip Purpose (Leisure)	It is a dummy variable that is equal to 1 if the reviewer is travelling for leisure, and zero otherwise

*Definition borrowed from https://www.hofstede-insights.com/models/national-culture/

Table 2 – Descriptive statistics

	Mean	**SD**	**Min**	**Max**
IDV	54.77	22.48	6	91
MAS	49.94	19.23	5	100
UA	68.85	20.63	8	100
PD	54.98	21.62	13	100
Rating	8.21	1.61	2.5	10.0
RE	11.36	16.33	1	312
Log (RE)	1.69	1.22	0	5.74
RK	0.09	0.28	0	1
Obs_Avg_Rat	8.17	0.72	2.5	10.0
LoS	3.07	2.20	1	36

Table 3. Effects of the Hofstede dimensions and online reviewers' experience on online ratings (OLS regression)

Independent Variable	**Coefficient (Std. Err.)**	**Coefficient (Std. Err.)**
Individualism	-0.0006**	-0.0006**
	(0.0003)	(0.0003)
Masculinity	-0.0023****	-0.0023****
	(0.0003)	(0.0003)
Uncertainty avoidance	-0.0005*	-0.0005*
	(0.0002)	(0.0002)
Power distance	-0.0021****	-0.0021****
	(0.0003)	(0.0003)
Observed average rating	0.9275****	0.9276****
	(0.0098)	(0.0098)
Log (RE)		-0.0007**
		(0.0048)
Reviewer's knowledge	-0.0449**	-0.0437**
	(0.0190)	(0.0206)
Length of stay	0.0031	0.0030
	(0.0024)	(0.0024)
Travel type (Leisure)	0.2690****	0.2690****
	(0.0127)	(0.0127)
Comp_Family	0.0311*	0.0311*
	(0.0226)	(0.0226)
Comp_Group	0.0594***	0.0594***
	(0.0178)	(0.0178)
Comp_People with friends	0.1754**	0.1755**
	(0.0878)	(0.0878)
Solo_Traveller	-0.0025	-0.0025
	(0.140)	(0.140)
Constant	0.5299****	0.5301****
	(0.0936)	(0.0936)
Company Controls		
Hotel Star rating	Yes	Yes
Chain	Yes	Yes
R^2	0.1606	0.1607
Adjusted R^2	0.1604	0.1605
Observations	74,284	74,284

Notes: *p<0.10; **p<0.05; ***p<0.01; ****p<0.001

Table 4. Effects of the Hofstede dimensions and online reviewers' experience on online ratings (Tobit regression)

Independent Variable	**Coefficient (Std. Err.)**	**Coefficient (Std. Err.)**
Individualism	-0.0013***	-0.0013***
	(0.0004)	(0.0004)
Masculinity	-0.0026****	-0.0026****
	(0.0003)	(0.0003)
Uncertainty avoidance	-0.0006*	-0.0006*
	(0.0003)	(0.0003)
Power distance	-0.0032****	-0.0032****
	(0.0004)	(0.0004)
Observed average rating	1.0723****	1.0740****
	(0.0118)	(0.0118)
Log (RE)		-0.0156***
		(0.0058)
Reviewer's knowledge	-0.0697***	-0.0442**
	(0.0190)	(0.0247)
Length of stay	0.0029	0.0023
	(0.0029)	(0.0029)
Travel type (Leisure)	0.3167****	0. 3174****
	(0.0153)	(0.0153)
Comp_Family	0.0392*	0.0379*
	(0.0273)	(0.0273)
Comp_Group	0.0671***	0.0662***
	(0.0215)	(0.0215)
Comp_People with friends	0.2807***	0.2820***
	(0.1075)	(0.1075)
Solo_Traveller	-0.0094	-0.0097
	(0.169)	(0.169)
Constant	0.3726***	0.3685***
	(0.1125)	(0.1125)
Company Controls		
Hotel Star rating	Yes	Yes
Chain	Yes	Yes
Log likelihood	-133,306.49	-133,302.9
LR chi2	12,386.7 (p=0.000)	12,393.89 (p=0.000)
Pseudo R2	4.44%	4.44%
Observations	74,284	74,284

Notes: *p<0.10; **p<0.05; ***p<0.01; ****p<0.001

Appendix 1 - Country of origin frequencies

ID	Country of Origin Reviewer	Freq.	Percent
1	Germany	6,871	9.25
2	Ukraine	5,821	7.84
3	Italy	5,358	7.21
4	China	4,351	5.86
5	Israel	3,956	5.33
6	Turkey	3,954	5.32
7	United Kingdom	3,701	4.98
8	France	3,599	4.84
9	Spain	2,927	3.94
10	USA	2,417	3.25
11	Latvia	2,222	2.99
12	Switzerland	2,148	2.89
13	Netherlands	1,677	2.26
14	Poland	1,604	2.16
15	Estonia	1,591	2.14
16	Czech Republic	1,393	1.88
17	Belgium	1,096	1.48
18	United Arab Emirates	1,067	1.44
19	Brazil	1,029	1.39
20	Lithuania	954	1.28
21	Finland	949	1.28
22	Sweden	848	1.14
23	Argentina	798	1.07
24	Australia	749	1.01
25	South Korea	729	0.98
26	Thailand	675	0.91
27	Japan	663	0.89
28	Greece	638	0.86
29	India	638	0.86
30	Hungary	617	0.83
31	Serbia	593	0.8
32	Canada	574	0.77
33	Slovakia	534	0.72
34	Bulgaria	516	0.69
35	Norway	459	0.62
36	Hong Kong	432	0.58
37	Romania	420	0.57
38	Egypt	386	0.52
39	Iran	368	0.5
40	Portugal	367	0.49
41	Denmark	338	0.46
42	Slovenia	304	0.41
43	Chile	299	0.4
44	Mexico	278	0.37
45	Saudi Arabia	275	0.37
46	Ireland	259	0.35
47	Taiwan	245	0.33
48	Colombia	236	0.32
49	Singapore	191	0.26
50	Croatia	183	0.25
51	South Africa	180	0.24
52	Lebanon	153	0.21
53	Malaysia	134	0.18
54	Indonesia	124	0.17
55	New Zealand	121	0.16
56	Luxembourg	117	0.16
57	Vietnam	117	0.16
58	Kuwait	101	0.14
59	Uruguay	89	0.12
60	Malta	82	0.11
61	Peru	82	0.11
62	Jordan	74	0.1
63	Morocco	68	0.09
64	Ecuador	67	0.09
65	Pakistan	64	0.09
66	Iraq	54	0.07
67	Venezuela	43	0.06
68	Philippines	42	0.06
69	Sri Lanka	41	0.06
70	Iceland	38	0.05
71	Bangladesh	19	0.03
72	Dominican Republic	17	0.02
73	Costa Rica	14	0.02
74	Guatemala	14	0.02
75	Angola	13	0.02
76	Panama	13	0.02
77	Albania	12	0.02
78	Ghana	12	0.02
79	Syria	12	0.02
80	Kenya	10	0.01
81	El Salvador	9	0.01
82	Nepal	9	0.01
83	Libya	7	0.01
84	Nigeria	7	0.01
85	Tanzania	6	0.01
86	Jamaica	5	0.01
87	Namibia	5	0.01
88	Honduras	4	0.01
89	Ethiopia	2	0.00
90	Senegal	2	0.00
91	Trinidad and Tobago	2	0.00
92	Mozambique	1	0.00
93	Zambia	1	0.00
	Total	**74,284**	**100**

Appendix 2 - Country of origin frequencies

Hypotheses	**Coefficient (Std. Err.)**		
	OLS regression	Tobit regression	
H1: Reviewers' individualism (IDV) is negatively related to online review ratings; as such online hotel reviewers from cultural groups with higher individualism (IDV) tend to give lower online ratings.	-0.0006** (0.0003)	-0.0013*** (0.0004)	Supported
H2: Reviewers' masculinity (MAS) is negatively related to online review ratings; as such online hotel reviewers from cultural groups with higher masculinity (MAS) tend to give lower online ratings.	-0.0023**** (0.0003)	-0.0026**** (0.0003)	Supported
H3: Reviewers' uncertainty avoidance (UA) is negatively related to online review ratings; as such online hotel reviewers from cultural groups with higher uncertainty avoidance (UA) tend to give lower online ratings.	-0.0005* (0.0002)	-0.0006* (0.0003)	Supported
H4: Reviewers' power distance (PD) is negatively related to online review ratings; as such online hotel reviewers from cultural groups with higher power distance (PD) tend to give lower online ratings.	-0.0021**** (0.0003)	-0.0032**** (0.0004)	Supported
H5: The higher the reviewers' perceived experience, the lower the online ratings they will give.	-0.0007** (0.0048)	-0.0156*** (0.0058)	Supported