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Disintermediation and user-generated content: A latent segmentation analysis

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Abstract

This research investigates the perceptions of different groups of consumers for and against the disintermediation of travel agencies also considering the relative power in influencing the tourist's choices exerted by user generated-content (UGC). A web-based survey is carried out in Spain and 961 complete questionnaires was obtained. A latent segmentation was applied on factors identified running an exploratory factor analysis on a list of 16 statements, the use and frequency of use of the Internet to make hotel reservations, if consumers are bookers or lookers, and they have changed hotel reservations after having read UGC. Findings revealed that different clusters exist based on the identified factors and aforementioned variables, and that significant differences between these clusters based on sociodemographic characteristics, their behavior in using the Internet for searching for information and/or buying, and the extent to which they change the accommodation that had been suggested by a travel agent after having read UGC. The generalization of this research is limited by its method of sampling. This study provides further insights into the scientific debate on disintermediation also considering the relative power of UGC in influencing the tourist's choices. Further, it suggests that hotel marketers should use different types of online and offline distribution channels according to the different characteristics of the consumers who use them and of the products they are looking for.

1. Introduction

In recent years the Internet has been growing at a tremendously fast pace, opening new ways of running effectively marketing operations and dramatically changing the role of traditional travel agencies. More recently, the most significant development in Internet applications has been in the area of User Generated Content (UGC)

and peer-to-peer applications, with UGC and Travel 2.0 applications being one of the most important sources of information for consumers making a purchasing decision (Del Chiappa, G. 2013a).

In 2012, by 54.6% of the persons who had made purchases online, holiday accommodation were the top category of products/service most often purchased online in 2012 in Spain with other travel services accounting for 49.7% and tickets for entertainment at 40.3% (Statistic Spanish Institute [Instituto Nacional de Estadística] 2012). 71% of Spanish social media users make use of peer-to-peer travel applications for travel-related purposes (Amadeus 2011). The aforementioned data and figures allow us to observe the importance of the Internet as a heavily growing channel used by Spanish travellers to book hotel accommodations, provoking a strong on going disintermediation process.

Until now, there has been very little research examining the perceptions of different groups of online buyers of hotel rooms with different online purchasing experiences. Prior researches (Del Chiappa, G. 2013a, 4] focused on specific geographical areas, but no work has yet investigated the views of Spanish buyers either for or against the disintermediation of hotel reservations. Further, until now, research aimed at examining whether consumers are more or less likely to change the accommodation suggested by a travel agency based upon UGC do exist just in the context of Italy (Del Chiappa, G. 2013a). This study therefore intended to address this point by presenting and discussing the findings obtained and applying cluster analysis to a sample of 986 Spanish travellers.

2. Literature Review

The disintermediation hypothesis, that is, the idea that the role of the middleman will be eliminated, has captured the attention of both researchers and practitioners. Prominent arguments exist in literature for and against disintermediation of the tourism distribution channel. Among the arguments in favour of disintermediation are, for example, the great flexibility and variety of consumer choice made possible by internet, the poor level of training and competence of travel agency personnel and the fact that travel agencies are biased towards suppliers who offer overriding commissions (Buhalis, D. 1998). On the other hand, among the arguments against disintermediation, we can consider, for example, the time-saving that travel agencies grant their customers, the human touch they provide, the reduction in uncertainty and insecurity they ensure by assuming the responsibility for all arrangements (Buhalis, D. 1998) and the possibility for consumers to avoid to face the sort of information overload that the large amount of information available online can create (Anckar, B. 2003). Tourists using the Internet to make their hotel bookings can be divided into those who only wish to acquire information ("lookers") and those who also use it to buy tourism services and products ("bookers"). According with previous research, lookers" differ from "bookers" in several socio-demographic characteristics and in their Internet usage. For instance, it was shown that the propensity to purchase online increases with age, education level and income (Law, R., Leung, K., & Wong, J. 2004). Further, younger groups were found being less likely than senior group to prefer travel agents when searching for information; contrariwise, people older than 59 years and on an organized tour were reported being likely to choose the combination of travel agents and face to face (Grønflaten, Ø. 2011). Consumers' information search differs also by travel product characteristics; for example, people usually buy convenience and standard goods online, while they rely heavily on traditional intermediaries when buying complex products (Wertener, H. & Klein, S. 1999). Finally, the greater the distance travelled (Snepenger, D. J., Meged, K., Snellig, D. & Worral, K. 1990) and the longer the period of the stay (Woodside, A.G. & Ronkainen, I. A. 1980), the greater is the number of travellers using travel agencies.

3. Methodology

The present study targeted exclusively adults resident in Spain and at least 16 years old. A structured questionnaire was developed that took into account previous literature evaluating the perception of travelers on disintermediation in travel services (Del Chiappa, G. 2013a, Buhalis, D. 1998, Law, R. 2009, Del Chiappa, G.

2013b). A snowball sampling technique was used which is often used with hidden population segments who are difficult for researchers to access (Wrenn, B., Stevens, R. E., & Loudon, D. L. 2007). This technique was considered the best choice to obtain a large sample of consumers who reside in Spain and to cope with the financial constraints we faced in managing the research project.

The survey used was divided into two parts. In the first part, respondents were asked to reply to some general demographic questions. In the second part of the questionnaire respondents were asked a) if they had any previous experience of booking hotel rooms online; b) how many times a year they usually use the internet to make hotel reservations differencing between bookers and lookers; c) if they have ever changed the accommodation suggested by a travel agency based on reviews and comments posted online; d) to express to what extent they agree or disagree with a list of 16 statements specifically chosen to investigate online buyers' views for and against the disintermediation of hotel reservations and to analyze to what extent their choices are influenced by UGC. A 5-point Likert scale was used (1=completely agree; 5=completely disagree) to indicate their answers. A total of 961 complete questionnaires were collected in a two months survey period. The first step was to apply an exploratory factor analysis (EFA). To this purpose, principal components analysis (PCA) was run. Finally, 12 items were used to develop the factorial analysis due to the standardized loadings of the others four variables were lower than 0.6 (Lévy, J. P., & Varela, J. 2006). The factor scores created during the factor analytic process were used as variables to develop a cluster analysis. Specifically, a latent segmentation methodology was used to define the segmentation and profiling of the Spanish tourists who make hotel reservations (Latent Gold 4.5 statistical software was used)

4. Findings

4.1. Principal component factor analysis (PCA)

The first step in developing an EFA is to analyse the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's test of sphericity. The KMO was greater than 0.85 and Bartlett's test of sphericity was highly significant (0.0000), thus indicating good model acceptability and allowing us to proceed with a factor analysis for the data. Further, Cronbach's alpha values higher than 0.7 indicate the reliability of the extracted factors. After factor extraction, an orthogonal varimax rotation was performed on the factors with eigenvalues ≥1.0, thus allowing us to minimize the number of variables having high loadings on a particular factor. Three factors resulted from the analysis, accounting for 68.74 of the symptomatic variance (Table 1). The factor structure was consistent because all the variables have a factor loading >0.5 for the factor that they allowed.

Table 1. Factor loadings of EFA

Items (I) about perception of travellers on disintermediation in travel services	Factor 1. Preference for the Internet	Factor 2. Preference for travel agencies	Factor 3. Preference for 2.0 tools
I2-Internet allows to obtain more easily many choices about possible hotels	.668		
I7-Websites which allow to buy a hotel reservation, offer more possibilities and flexibility than physical travel agencies	.732		
I13-Internet allows people to use their time in a very productive way as they can search for information and make reservations whenever they want	.841		
I14-Internet provides tourist information in such a way that it is easy to choose hotels and spend free time online	.840		
I15-Internet allows to save money when making hotel reservations	.743		
I1-Travel agencies offer a human touch and interface with the hotel industry		.712	
I3-Travel agencies are professional counselors for hotel rooms and offer valuable service and advice		.817	
I6-Travel agencies can reduce booking insecurity as they are responsible for all arrangements		.678	

I11-Travel agencies advice customers very personalized travel solutions		.823	
I12-Travel agencies understand the customer's tastes and needs and, consequently, offer adequate hotel solutions		.802	
I9-When choosing hotels I search for information through the Internet and I check reviews, comments, photo and video uploaded online by tourists			.820
I10-I trust the tourism information available online through reviews and comments posted online in blogs, social network and online travel agencies			.849
% Explained variance	44.179	18.086	6.510
Cumulative variance	44.149	62.235	68.745
Cronbach's alpha	.874	.840	.870

KMO = 0.883; Bartlett's test of sphericity: χ2=5985.552; df=66; Sig.=0.000
Only the variables contribution have been included in this table

Factor 1, preference for the Internet, is the first predominant factor with 44.17% of explained variance. Factor 2, preference for physical travel agencies, is the second predominant factor with 18.08% of explained variance. Thirdly, the construct named preference for 2.0 tools to do hotel reservation, is the lowest predominant factor with 6.51% of explained variance.

4.2. Confirmatory factor analysis

The indicators for the next latent segmentation were based on the different constructs of the factorial constructs obtained in EFA explained in epigraph 4.1.

A CFA was carried out with EQS 6.1 in order to contrast if our constructs proposed as indicators for the latent segmentation post-analysis would provide a good fit to the data. In order to use previous factorial constructs in the cluster segmentation, the content, convergent and discriminant validity and reliability of the constructs, were assessed within the CFA containing all the multi-item constructs in our framework using the robust maximum likelihood method. This led us to delete one item based on non-significant or loading estimates lower than 0.6. It supposed eliminate 4 items (I4, I5, I8, and I16) from original 16 proposed in the questionnaire (Del Chiappa, G. 2013a, Law, R. 2009, Del Chiappa, G. 2013b). Results of the final CFA suggest that our re-specified measurement model provides a good fit to the data on the basis of a number of fit statistics. Firstly, content validity can be assured as all the items included in the scale have been previously used in the literature about user's perceptions about disintermediation in hotel reservations (Del Chiappa, G. 2013a, Del Chiappa, G. 2013b). Secondly (Table 2), reliability of the scales demonstrates high-internal consistency of the constructs seen that Cronbach's alpha exceeded 0.70. Thirdly, convergent validity is verified, as t scores obtained for factor loadings were significant (p<0.01). Further, the size of all the standardized loadings are higher than 0.60 (Table 2) and the average of the item-to-factor loadings are higher than 0.70. AVE is higher than 0.5 and CR higher than 0.7 for each construct (Lévy, J. P., & Varela, J. 2006).

Table 2. Internal consistency and convergent validity

Construct	Indicators	Loadings	Robust t-value	Cronbach's alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Factor 1. Preference for the Internet	I2	.723	21.230	.874	.807	.587
	I7	.674	23.067			
	I13	.810	29.732			
	I14	.875	35.969			
	I15	.734	27.100			
Factor 2. Preference for physical travel agencies	I1	.711	29.386	.840	.745	.526
	I3	.784	28.525			
	I6	.603	18.724			
	I11	.763	26.577			
	I12	.753	25.891			

Factor 3. Preference for 2.0 tools	I9	.906	37.799	.870	.839	.772
	I10	.851	33.600			

Robust goodness of fit index: S-Bχ^2 (51 df) = 274.8424 (p=0.00); NFI= .945; NNFI= .941; CFI=.954; RMSEA=.068.
All statistics have been extracted through robust method due to the Mardia's coefficient normalized estimation >5.00. The normalized estimate = 21.2110 suggests clearly a non-normal sample.
S-Bχ^2: Satorra-Bentler sacle Chi-Square - df: Degree of freedom - NFI: Normed Fit Index - NNFI: Non-Normed Fit Index - CFI: Comparative Fit Index - RMSEA: Root Mean-Squeare Error of Approximation

Finally, discriminant validity of the measures was also provided seen that: a) none of the 95 per cent confidence intervals of the individual elements of the latent factor correlation matrix contained a value of 1.0; b) the shared variance between pairs of constructs was always less than the corresponding AVE (Table 3).

Table 3. Discriminant validity of the theoretical construct measures

	F1	F2	F3
F1	**.587**	[-.337;-.485]	[.791;.695]
F2	.168	**.526**	[-.329;-.112]
F3	.552	.160	**0.772**

The diagonal represents the AVE, while above the diagonal de 95% confidence interval for the estimated factors correlations is provided, below the diagonal, the shared variance (squared correlations) is represented.

4.3. Latent segmentation: A typology Spanish users based on their perceptions on disintermediation and use of the Internet as bookers and/or lookers in hotel reservation

Based on the factor loadings obtained in the PCA, we applied a cluster analysis to segment the Italian tourists according to their perceptions of and attitude toward the topic of disintermediation. To achieve this aim, we also used four additional questions: "Have you ever used the internet to make reservations for hotel rooms when you travel?, "How many times a year they usually use the Internet to make hotel reservations" and "If they have ever changed the hotel accommodation that had been suggested by a travel agency after having read reviews and comments posted online" (measured as yes or no). Based on the positioning of the different individuals, with regard to these variables, we have obtained some groupings that fulfill the principles of maximum internal coherence and maximum external differentiation. Table 4 shows the estimation process summary and the fit indexes for each of the eight models. The fit of the model was evaluated according to the Bayesian Information Criterion (BIC) that allows the identification of the model with the least number of classes that best fits to the data. The lowest BIC value was considered as the best model indicator (Vermunt, J. K & Magidson, J. 2002).

Table 4. Estimates and fix indexes

Number of conglomerates	LL	BIC(LL)	Npar	Class.Err.	E$_s$	R^2
1-Cluster	-6664.8919	13947.901	90	.0000	1	1
2-Cluster	-6385.6696	13540.552	112	.0253	.7639	.8031
3-Cluster	**-6201.9725**	**13324.253**	**134**	**.0891**	**.8588**	**.8650**
4-Cluster	-6133.8026	13339.009	156	.0904	.8895	.8843
5-Cluster	-6079.8562	13382.211	178	.1555	.8937	.8829
6-Cluster	-6030.5267	13434.648	200	.1480	.9101	.8987

7-Cluster	-5956.8309	13438.352	222	.1341	.9265	.9151
8-Cluster	-5853.5886	13482.963	244	.1283	.9417	.9300

LL=log-likelihood; BIC=Bayesian information criterion; Npar=number of parameters; Class.Err.=classification error; E_s= entropy statistic (*entropy R-squared*); R^2=Standard R-squared

In this case, four different user groups represented the best alternative, as the BIC is minimized in this case. The statistic values included in Table 4 indicates that the model has a good fit (E_s and R^2 near 1). The Wald statistic was analyzed in order to evaluate the statistical significance within a group of estimated parameters (Table 5). For all the indicators a significant p-value associated with the Wald statistics was obtained, confirming that each indicator discriminates between the clusters in a significant way (Vermunt, J. K & Magidson, J. 2002). Table 5 also contains the profiles of the obtained clusters. In the upper part the size and name assigned to the three groups is shown: the cluster named "mixed looker and booker" includes 49.75% of travellers surveyed; the "online looker and booker" segment 33.36%, and the "offline looker and booker" cluster 16.89%. In addition, Table 5 shows the average score that takes each segment in each of the indicators (note that these can take values between 0 and 5, since items that composed each scale were measured with five-point Likert scales). Clusters are ordered from lowest to highest size of sample according to travelers' preferences and habits about use of online and/or offline way to make hotel reservations in order to analyze the level of disintermediation that new technologies are causing on traditional travel agencies sector.

Table 5. Travellers' profile (indicators): The impact of disintermediation in physical travel agencies

		Clusters				
		Mixed lookers and bookers	**Online lookers and bookers**	**Offline lookers and bookers**	**Wald**	**p-value**
Cluster Size		49.75%	33.36%	16.89%		
Factor 1. Preference for the Internet		3.7275	**4.4960**	2.2483	633.7550	2.4e-138
Factor 2. Preference for the physical travel agencies		3.5619	2.8601	**4.3136**	250.3216	4.4e-55
Factor 3. Preference for 2.0 tools		3.3850	**4.2468**	1.5965	765.2596	6.7e-167
Look and/or book in physical travel agencies and/or the Internet	Internet for looking and booking	.5822	**.9365**	.0273	37.9095	1.2e-6
	Internet for looking and travel agencies for booking	**.2433**	.0240	.1155		
	Physical travel agencies for looking and the Internet for booking	**.0827**	.0393	.0116		
	Physical travel agencies for looking and booking	.0919	.0002	**.8456**		
Times at year that you make hotel reservations over the Internet	Never	.1295	.0257	**.8672**	48.7003	2.7e-11
	1-2	**.5792**	.4720	.1300		
	3-4	.2191	**.3241**	.0027		
	5-6	.0494	**.1034**	.0001		
	7-8	.0124	**.0340**	.0000		
	9-10	.0025	**.0086**	.0000		
	More than 10	.0078	**.0322**	.0000		
Times at year that you make hotel reservations over physical travel agencies	Never	.2035	**.4876**	.0581	50.3818	1.1e-11
	1-2	.7288	.5009	**.7457**		
	3-4	.0600	.0112	**.1458**		
	5-6	.0049	.0003	**.0218**		
	7-8	.0023	.0000	**.0178**		
	More than 10	.0005	.0000	**.0109**		

Change the hotel after having read online comments	Yes	.5058	**.5931**	.1170		
	No	.4942	.4069	**.8830**	35.3804	2.1e-8
In bold has been indicated the highest representative value in each variable per cluster.						

Related to the composition of the three segments, the profile of the resulting groups according to the information from other variables was analyzed. Table 6 shows the groups' composition based on a number of descriptive criteria included in the analysis. Independence tests associated with statistic Wald conclude that significant differences exist between the segments (≥95% confidence level) regarding the age, and education. There are not significant differences between the segments respect to gender and income.

Table 6. Travellers' profile (covariates): Descriptive criteria

| Descriptive criteria | Categories | Clusters | | | Wald | p-value |
		Mixed lookers and bookers	Online lookers and bookers	Offline lookers and bookers		
Gender	Male	43.64%	45.55%	48.90%	1.4370	.49
	Female	56.36%	54.45%	51.10%		
Age	< 18	**49.64%**	45.76%	11.68%	67.1105	2.7e-15
	18-35	14.21%	**17.85%**	2.96%		
	36-65	14.33%	**19.74%**	13.06%		
	>65	21.82%	16.64%	**72.30%**		
Education	Primary school	6.77%	1.84%	**29.42%**	22.0452	.0012
	Secondary school	**81.75%**	**83.24%**	56.84%		
	University degree	11.27%	12.18%	2.48%		
	Without studies	.20%	2.74%	**11.26%**		
Monthly household income (€)	< 1000	14.76%	14.40%	20.49%	.8245	.66
	1000-3000	44.20%	39.88%	43.03%		
	3001-7000	22.41%	22.86%	19.44%		
	More than 7000	18.63%	22.86%	17.04%		

In bold has been indicated the highest representative value in each variable per cluster.

Based Tables 5 and 6, three different profiles of Spanish travellers were found, namely: "mixed lookers and bookers", "online lookers and bookers" and "offline lookers and bookers".

The "mixed online lookers and bookers" cluster presents higher mean in F1-Preference for the Internet (4.4960) and F3-Preference for 2.0 tools (4.2468). Clearly, this group has opted by use of new technologies to look and book hotel reservations and, in consequence, with a positive opinion about disintermediation of tourism sector. Moreover, this segment affirms to use the Internet for looking and booking (.9365), carrying out from three to more than ten times per year online hotel reservations. This segment never prefers to make hotel reservations by physical travel agencies respect to the other clusters (.4876). These travellers would change the hotel after having read online comments in higher proportion than the others clusters (.5931). This group is younger than "offline looker and booker" cluster whose studies are Secondary school and University degree. Respect to gender and monthly household income, important differences between three clusters do not exist (although, we can observe that this cluster has on average higher income than "offline lookers and bookers").

"Offline lookers and bookers" is the smallest segment (16.83%) and it presents higher mean in F2-Preference for the physical travel agencies (16.83%). Indeed, the most part of consumers belonging to this segment (86.72%) never makes hotel reservations over the Internet; contrariwise, they were reported making hotel reservation trough physical travel agencies from one to more than ten times per year. The number of travelers who would not change the hotel after having read online comments is higher (88.30%) than in all the other clusters, thus confirming that the dislike and distrust internet and UGC. The most part of consumers belonging to this cluster is

old, 72.30% of them were reported being aged more than 65 years old. Respect to gender and monthly household income, important differences between three clusters do not exist (although, we can observe that this cluster has less income than "online looker and booker" cluster). The "mixed lookers and bookers" is the biggest cluster and it is characterized by a "middle position" with respect to the three clusters. Indeed, consumers belonging to this cluster do not show a clear preference; on the contrary, they like to use Internet, physical travel agencies and 2.0 tools to make hotel reservations in similar proportion. Further, sometimes they were reported using the Internet for looking and travel agencies for booking (24.33%) and vice versa (8.11%). One or two times per year, they make hotel reservations through the Internet (57.92%), with similar proportion in the case of making through traditional channel (72.88%) respect to the "offline looker and booker" cluster. The middle of group would change the hotel after having read online comments (50.58%) and the rest of group would not change it (49.42%). In consequence, the impact of disintermediation on this group is middle. The youngest travellers compose this group in major proportion (49.64%) whose education is Secondary school (81.75%).

5. Conclusion and managerial implications

Applying a latent segmentation statistical technique to a sample of 961 tourists residing in Spain and aged more than 16 years, this study identified three different segments of consumers based on their views for and against the topic of disintermediation, that is: "mixed bookers and lookers", "online lookers and bookers" and "offline looker and bookers". Findings revealed that the preference for the Internet to look and book belong to middle aged and educated travellers, making hotel reservation over the Internet frequently during the year and being influenced in their choices by UGC thus confirming prior research showing that frequent travellers value peer reviews the most and are more likely to be influenced by them (Gretzel, U., Yoo, K. H. and Purifoy. 2007). Contrariwise, older and less educated Spanish consumers were reported looking and booking hotel rooms using street travel agencies. Further, they never would change the hotel after having read online comments thus confirming prior research showing that those aged 65 years or over are less likely to read other travellers' reviews, whilst younger travellers find reviews more important in deciding where to stay (Gretzel, U. & Yoo, K. H. 2008). A big group of travellers were reported preferring a mixture of both behaviors (the so called "mixed bookers and lookers"). Specifically, they are youngest and very implicated with online technology and 2.0 tools even if they book the hotel using both the Internet and physical travel agencies.

These conclusions are significant for both researchers and hospitality managers. On the one hand, they provide further insights into the scientific debate on disintermediation, explicitly also considering the relative power in influencing tourists' choices that UGC has with respect to information delivered by travel agencies and giving a snapshot of the context of Spain, where little research exists on the topic. On the other hand, these findings offer suggestions to both hotel marketers and traditional travel agencies. Given consumers' heavy reliance on the Internet for searching for information and/or booking hotel rooms, the lodging industry should design its websites to be more attractive and effective for Spanish middle-aged and educated people who travel often and are heavy users of the Internet as a tool for both searching for and booking hotels. According to prior research, for example, hotel marketers should emphasize web usability, security, website functionality, customer responsiveness and information quality, with information on reservations contacts being a crucial element of hotel website design. Hotel marketers should not only focus on direct sales, but should also monitor their brand reputation as projected in the reviews and comments that consumers upload online. On the other hand, travel agents should create and maintain a presence in the electronic marketplace in order to survive and recover their competitiveness (Anckar, 2003). For the same purpose, they should move away from being booking offices and become travel managers, advisers and consultants (Buhalis, D. 1998). Aside from the theoretical and managerial contributions of the study, the main limitation of this study is that it was carried out exclusively in the context of Spain, thus its findings cannot be generalized.

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