

Combination of Information Sources in Travel Planning

A cross national study

Ingvar Tjøstheim^a, Iis P. Tussyadiah^a, Sigrid Oterholm Hoem^b

^aTemple University
{ingvar, iist}@temple.edu

^bInnovation Norway
Sigrid.Oterholm.Hoem@invanor.no

Abstract

This paper presents results from a study about the Internet as an information source for travel planning based on interviews with travelers in 13 countries in 2005. In 1997, a similar large scale survey was carried out in 15 European countries. The study shows a dramatic but well known change in information sources used by travelers since 1997. The Internet has become the most preferred information source by approximately 50% of the travelers. Travelers using the Internet as their primary source of information mostly combine it with other sources such as friends and relatives, brochures, guidebooks, and travel agents. A logistic regression analysis was performed in order to study the significance of demographics and countries on the preference of Internet as the first information source.

Keywords: Internet, information source, information search, travel planning, consumer behavior, cross-national study.

1. Introduction

The Internet is one of the most important marketing and distribution channels in the travel and tourism industry. Many travelers are using the Internet to seek information and purchase tourism-related products. The Internet has been widely used as a source of information as it saves cost and time invested for information searching process (e.g. for transportation, phone calls, etc). Another reason is that the internet can provide highly tailored content to users according to their preferences because it can be customized to a great extent (Newhagen and Rafaeli 1996).

Consumer behavior research on information search has been going on quite extensively since the early 1970s (Arndt 1986). There are a number of studies focusing on different aspect related to this topic in the field of travel and tourism (Schul and Crompton 1983; van Raaij 1986; Fodness and Murray 1997; 1999; Vogt and Fesenmaier 1998; Gursoy and Umbreit 2004). Travelers may need different information; the content of information that the travelers seek depends on a number of factors. For instance, extensive information acquisition may be expected for

unknown destination and for expenditures involving large financial outlays (van Raaij 1986).

Information is used in deciding among different alternatives such as destinations, holiday activities, transportation modes, accommodation, departure date and duration of a trip. Dellaert, et al. (1998) presents a conceptual framework for travel decisions in which information search precede each of these choices. It is also possible to look at information from a different perspective. An example is Snepenger and Snepenger (1993: 830) who write: "*For many vacationers, gathering, processing, and evaluating information is an integral part of the travel experience.*" Not all travelers are spending a lot of time on information search, but it seems that on most occasions the tourists are using a relatively long time on this activity before a trip (Dellaert 1999).

Information search process can be divided into internal and external search. Initially, information search takes place internally when people use their long-term memory for relevant product knowledge as a basis to make decisions in traveling (Fodness and Murray 1997; Vogt and Fesenmaier 1998). When internal search cannot provide sufficient information, people turn to external sources, which can be marketing dominated such as brochures from tour operators, guidebooks, advertising and commercials, etc, or non-marketing dominated sources such as friends, relatives, and personal experiences (Engel, Blackwell and Miniard 1990; Pan and Fesenmaier 2006).

Information sources for travelers and tourists can be classified in different ways. Fodness and Murray (1997: 507) divide between *source* of information (commercial or noncommercial) and *type* of information (impersonal or personal) in their classification. Fodness and Murray (1997) state that: "*Leisure tourists differ in their information search behavior such that homogenous groups can be formed on the direction of their search, defined by the specific source(s) used.*" Vogt and Fesenmaier (1998) distinguish the information sources into several categories: social, personal, marketing, and editorial. The Internet, as a form of information source, can fall into different categories. A travel portal and tourism board websites belong to the marketing category even though their contents are normally not labeled as marketing. Some travelers might have their private websites where they share their travel experiences. These personal websites as well as commercial websites also contain recommendations from/to travelers (Dellaert 1999). The Internet is an interactive medium and communication between travelers in the Internet is quite common. Newspapers, magazines and other publishers are also using the web as a medium to publish travel stories or what can be labeled as editorial content. Hence, the Internet can also belong to the other categories.

In this paper, a cross national survey of experienced travelers is used in order to study information sources in a travel planning context. The following research questions are explored:

- How important has Internet become compared to other information sources,

- What are the differences and similarities pertaining travelers from the 13 countries,
- Based on a logistic regression analysis, are demographic and nationality variables associated with the preference for Internet as the most important information-source?

2. Method

In 2005, the Norway national tourist board, called “*Innovation Norway*,” commissioned a trans-national survey from the market research company, *MMI Synovate*. This survey (named the 2005 survey) was targeted to travelers that had taken a vacation abroad in the last three years; a vacation that lasted more than four days and was not paid by an employer. *First*, approximately 1000 telephone (CATI) interviews were carried out in each of the 13 countries: Denmark, Finland, Sweden, Germany, Spain, France, Italy, the Netherlands, UK, Norway, Russia, USA, and Poland. The purpose at this stage was to use a probability sample to estimate the travel population and the targeted market segments for the tourist board. To be included in the targeted population, an individual needs to have preference for an activity, such as nature-oriented vacation. Individuals who were interested in a typical package holiday to a destination in the Mediterranean region, for example, were excluded from the web-based survey. *Secondly*, a web-based survey was used for a follow up study targeted at individuals with the Internet access and relevant travel profiles, i.e. individuals that meet the above mentioned criteria. In this follow-up survey, the respondents were asked questions regarding what type of vacation they prefer, which could be nature and scenery oriented, out-door activities, culture, etc.

A number of useful studies have used convenience samples. However, when the purpose of a study is to make estimates about market size or to describe a current trend, it is important to collect data with good validity. The data set presented in this paper should not be regarded as a random sample in the strict sense of the term (e.g. with very low or no non-response), but it is a good quality data set in particular compared to most convenience samples or self-recruited samples.

Table 1 presents the results of the two surveys: (1) a telephone survey used to estimate size of potential markets and (2) a web based survey used for a follow-up study in topics related to travel behavior, information sources, motivation for travel, destinations of interest, etc. Column (2) and (3) of Table 1 present the total population in each country with 18+ years of age and the percentage of the population who use Internet frequently. Column (4) and (5) present the number of targeted population for the web survey in each country (individuals that meet the criteria) and the percentage of frequent internet users in the targeted population. Based on the figures in column (4) and (5), even though not all respondents that had been on a vacation abroad the last three years were Internet users, they comprise a high percentage. It is important to notice that a high percentage of the respondents in the

web-base survey were frequent Internet users. Hence, it is possible to argue that the survey is somewhat biased toward Internet and Internet usage.

Table 1 – Total population and Internet/population (CATI survey) and targeted populations (web-based survey)

Countries	Population 18+ yrs of age	Internet- population in % of total population	Targeted population, travelers, web survey	% frequent internet users / targeted population
(1)	(2)	(3)	(4)	(5)
<i>(Countries in both surveys)</i>				
Denmark	4.2m	76%	2.9m	78%
Finland	3.9m	69%	2.6m	74%
Sweden	7.1m	80%	5.5m	85%
Germany	67.3m	56%	36.7m	64%
Spain	35.7m	48%	16.5m	65%
France	45.8m	51%	20.3m	62%
Italy	47.2m	43%	21.3m	62%
Netherlands	12.2m	83%	8.6m	86%
UK	44.8m	63%	23.7m	68%
<i>(Additional countries, 2005 survey)</i>				
Norway	3.5m	75%	2.5m	78%
Russia	143m	36%	8.3m	60%
USA	218m	80%	122.9m	85%
Poland	30m	51%	15.9m	73%
<i>Total Respondents</i>	N=13001	N=13001	N=13668	N=13668

Table 2 presents the most important source of information for vacation planning according to the respondents, i.e. the primary source they used in the information search process. It is important to keep in mind that only Internet users can answer a web-based questionnaire. It is possible to present the Internet as an alternative information source to non-Internet users, but it is given that a non-Internet user will not prefer this information source.

According to the figures in Table 2, the Internet is chosen as the primary information source by respondents from all countries (Poland by 37%, and all other countries by more than 40% of the respondents). Additionally, the Internet is more than three times as popular as the second most preferred alternative for most countries. The facts show that the Internet has widely become the most important source to seek information in travel planning context. This is a key finding in this study.

Table 2a. – Primary information sources (web survey)

Information Sources	Total Targeted Population	1	2	3	4	5	6
Internet	47%	41%	45%	49%	52%	42%	43%
Guidebooks	13%	13%	12%	15%	9%	13%	14%
Friends and family	12%	19%	16%	9%	8%	11%	12%
Travel agent	10%	6%	5%	10%	4%	13%	8%
Brochures from tour operator	4%	7%	6%	1%	18%	6%	5%
TV documentaries	3%	4%	4%	1%	3%	6%	4%
Local tourist office	2%	2%	1%	2%	0%	1%	1%
Magazines	2%	1%	2%	1%	1%	1%	1%
Travel fair	1%	0%	1%	1%	1%	1%	1%
Advertisement	1%	1%	1%	1%	1%	1%	0%
Newspapers	0%	3%	3%	4%	2%	0%	1%
Radio	0%	0%	0%	0%	0%	0%	0%
TV commercial	0%	0%	0%	0%	0%	0%	0%
Other	3%	2%	2%	4%	3%	3%	6%
None	3%	1%	1%	1%	0%	2%	3%
	N=13668	N=1433	N=1475	N=1137	N=643	N=1000	N=1000

Countries: 1 = Sweden, 2 = Norway, 3 = Denmark, 4 = Finland, 5 = Germany, 6 = Netherlands, 7 = UK, 8 = France, 9 = Italy, 10 = Spain, 11 = Poland, 12 = Russia, 13 = USA

Table 2b – Primary information sources (web survey)

Information Sources	7	8	9	10	11	12	13
Internet	48%	48%	45%	45%	37%	45%	51%
Guidebooks	9%	11%	14%	13%	18%	5%	13%
Friends and family	13%	13%	7%	10%	14%	22%	12%
Travel agent	7%	7%	13%	15%	9%	8%	9%
Brochures from tour operator	9%	10%	7%	4%	5%	2%	1%
TV documentaries	3%	2%	3%	3%	3%	5%	3%
Local tourist office	2%	2%	2%	2%	2%	1%	1%
Magazines	1%	2%	3%	2%	2%	3%	2%
Travel fair	0%	1%	1%	1%	0%	1%	1%
Advertisement	1%	1%	0%	0%	1%	1%	1%
Newspapers	1%	0%	0%	0%	0%	1%	0%
Radio	0%	0%	0%	0%	0%	0%	0%
TV commercial	0%	0%	0%	1%	1%	0%	0%
Other	3%	1%	2%	3%	4%	7%	2%
None	2%	2%	2%	2%	5%	2%	4%
	N=1000	N=1000	N=1000	N=1000	N=1000	N=1000	N=1000

Countries: 1 = Sweden, 2 = Norway, 3 = Denmark, 4 = Finland, 5 = Germany, 6 = Netherlands, 7 = UK, 8 = France, 9 = Italy, 10 = Spain, 11 = Poland, 12 = Russia, 13 = USA

Travelers are using more than one kind of information source (Tjostheim 2002; Gursoy and Umbreit 2004). Hence, it is important to look at the combination of sources used by potential travelers. Table 3 presents the additional information sources used by the respondents in combination with the Internet (the respondents could chosen more than one sources). Four sources that are mostly used as additional sources in combination with the Internet are friends and relatives, brochures, guidebooks, and travel agents.

The importance of friends and relatives as information sources is highlighted in previous studies (Fodness and Murray 1999; Bieger and Laesser 2004). Bieger and Laesser (2004) point out that informal information from friends and relatives is important in travel planning, and is even more important and discriminates travel behavior after a definite trip decision. Travel programs and documentaries in television rank high utility as information sources. In eight out of 13 countries (i.e. Finland, Germany, UK, France, Italy, Spain, Russia, and USA), TV documentaries are the second largest additional information sources used by those using Internet as the primary source. Tourists are likely to refer to multiple publications by tour operators (such as brochures) for more detailed information on specific activities or attractions in the destination. Travel agents are often used as information source by those who want to reduce risks (Bieger and Laesser 2004).

Table 3a – Additional information sources used in combination with the Internet

Information Sources	All 13 countries	1	2	3	4	5	6
Friends and family	50%	59%	62%	57%	40%	35%	50%
Guidebooks	49%	54%	53%	54%	49%	52%	48%
Travel agent	37%	32%	31%	42%	43%	36%	34%
Brochures	49%	55%	60%	57%	52%	43%	47%
TV documentaries	26%	35%	35%	15%	39%	27%	28%
Newspapers	18%			30%	30%		
Magazines	31%					28%	25%

Countries: 1 = Sweden, 2 = Norway, 3 = Denmark, 4 = Finland, 5 = Germany, 6 = Netherlands, 7 = UK, 8= France, 9 = Italy, 10 = Spain, 11 = Poland, 12 = Russia, 13 = USA

Table 3b – Additional information sources used in combination with the Internet

	7	8	9	10	11	12	13
Friends and family	38%	26%	40%	35%	50%	38%	26%
Guidebooks	38%	43%	49%	52%	48%	38%	43%
Travel agent	34%	40%	43%	36%	34%	34%	40%
Brochures	54%	46%	52%	43%	47%	54%	46%
TV documentaries	20%	22%	39%	27%	28%	20%	22%
Newspapers	29%	34%	30%	28%	25%	29%	34%
Magazines							

Countries: 1 = Sweden, 2 = Norway, 3 = Denmark, 4 = Finland, 5 = Germany, 6 = Netherlands, 7 = UK, 8= France, 9 = Italy, 10 = Spain, 11 = Poland, 12 = Russia, 13 = USA

3. A regression analysis on demographics and nationality

Stepwise logistic regression can be used in the exploratory phase of research task (Menard, 2002). Gursoy and Umbreit (2004) argue that culture, represented by countries in their analysis, is one of the most important factors to influence which source(s) of information travelers utilize to make travel decision. This study seeks to find other important factors that would likely to influence the choice of information source(s) other than cultural background. Demographics variables were chosen as the independent variables additionally to countries (nationalities). In this study, a forward stepwise logistic regression analysis (5 steps) was performed to find out variables that predict respondent's choice on primary information source, i.e. the internet or others. A binary dependent variable can be made by coding "Internet as the preferred information source" as one (1) and "others (not Internet) as the preferred information source" as zero (0).

The first output of the logistic regression is presented in table 4. The results show that a number of independent variables are significant in predicting the model (i.e. with p-value less than the critical point 0.05). However, it is important to present more output results before the model can be accepted as good.

Table 4 – Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 5			101.037	12	.000	
Denmark						
Finland	-.019	.090	.044	1	.834	.981
France	.148	.106	1.969	1	.161	1.160
Italy	-.106	.092	1.318	1	.251	.899
Netherlands	-.252	.097	6.808	1	.009	.777
Norway	-.135	.094	2.056	1	.152	.874
Poland	-.241	.085	8.013	1	.005	.786
Russia	-.550	.094	34.323	1	.000	.577
Spain	-.347	.091	14.476	1	.000	.707
Sweden	-.381	.092	16.977	1	.000	.683
Germany	-.383	.087	19.310	1	.000	.682
UK	-.286	.096	8.795	1	.003	.751
USA	-.025	.092	.072	1	.789	.976
Age 18-29 yrs old			237.973	4	.000	
Age: 30-39	.940	.072	168.965	1	.000	2.560
Age 40-49	.898	.072	156.704	1	.000	2.455
Age 50-59	.601	.072	69.860	1	.000	1.823
Age 60+	.444	.072	37.505	1	.000	1.559
Gender male/female	.272	.036	58.724	1	.000	1.313
Education: low			29.864	2	.000	
Education: medium	-.328	.063	27.062	1	.000	.721
Education: high	-.134	.041	10.998	1	.001	.874
Income: low			16.835	3	.001	
Income: medium	-.019	.058	.109	1	.741	.981
Income: high	.112	.053	4.460	1	.035	1.119
Income: unwilling to answer	.179	.060	8.910	1	.003	1.196
Constant	-.786	.100	61.756	1	.000	.456

The Hosmer and Lemeshow Goodness-of-Fit Test divides subjects into deciles based on predicted probabilities and then computes a chi-square from observed and expected frequencies. If the Hosmer and Lemeshow Goodness-of-Fit test statistic is 0.05 or less, then the null hypothesis is rejected, i.e. no difference between the observed and predicted values of the dependent implying that the model's estimates fit the data at an acceptable level.

The classification table is a 2 x 2 table which tallies correct and incorrect estimates for the null model with only the constant. The columns are the two predicted values of the dependent, while the rows are the two observed (actual) values of the dependent. In the logistic regression model, a classification table compares the predicted values for the dependent variable with the observed values in the data. A high percentage means that the chosen regression equation (with the chosen independent variables) predicts correctly most of the time. The outputs for these two tests are presented in the table 5 and 6.

Table 5 – The Hosmer and Lemeshow test

Step	Chi-square	Df	Sig.
1	.000	3	1.000
2	6.628	8	.577
3	4.465	8	.813
4	8.442	8	.392
5	4.233	8	.835

Table 6 – Classification table

Observed	Predicted		
	Others 0	Internet 1	Percentage correct
Others 0	5675	1857	75.3
Internet 1	3823	2323	37.8
Overall percentage			58.5

According to table 5 one should not imply that the model estimates fit the data at an acceptable level. Moreover, the overall percentage is not high enough; only 58.5% of the data set can be explained by the model. Hence, nationality and demographic variables are not appropriate enough to predict the behavior of information source choice, i.e. associated with the question of who prefers and does not prefer the Internet as the most important information source.

However, the finding can be a useful input for those who will perform similar surveys. There are many sub-categories in the internet, but the Internet is only considered as one category in this survey. As many travelers seek information on

various types of websites, future survey should consider distinguishing many sub-categories of internet as information source. The choice of information sources in travel planning can also be influenced by other factors shaping travelers segmentation in a different way; i.e. not by nationalities and demographics but by interests and types of information sought. Hence, future surveys should emphasize on e.g. motivational statements of the respondents, expectations of the future vacation, and types of information they are trying to search specifically on destinations, accommodations, activities, etc. These variables are likely to have influences on type of information source that the travelers will use in planning their travel.

4. Discussion and concluding remarks

The respondents in this survey are individuals who are more experienced in traveling than the average citizen of the country. For the travel and tourism industry, the “non-travelers” and those who do not travel abroad are not as important as the more frequent travelers. Additionally, from the point of view of a national tourism board, knowing the behavior of international travelers is particularly important.

Gursoy & Umbriet (2004) studied information sources on a transnational survey that has many similarities with the one presented in this paper. Nine of the countries were the same in both surveys and both focused on the use of information sources by travelers in planning a vacation. As expected, the Internet has become much more important since 1997 when this survey was performed. It is likely that the Internet will be even more important in the future.

Gursoy and Umbriet conclude, based on their analysis for EU travelers in 1997, that the national-culture of travelers is likely to influence their information search behavior. A key finding from the 1997 study is that travel agents are the most frequently utilized external information source by international travelers from almost all EU member states vacationing in other European countries. Moreover, in the study they identified five traveler segments and only in one of these segments Internet is an important (distinct) information sources. It is important to notice that the respondents in the 1997 were not asked to choose the most important information source as in the 2005 survey, only which ones they are using. However, an important change has taken place. Brochures from travel agents were the most frequently used information sources in 1997. While 45% answered that Internet was the most important information source, only 14% (all 13 countries) answered brochures from tour operator or travel agents (e.g. telephone conversation, meeting at travel agents office) in 2001. There are some differences between the 13 countries in the 2005 survey; nevertheless Internet is in a division by itself. A significant change has taken place; Internet has become the most important information source for many travelers. According to the 2005 study, around 47% chose Internet as number one. In addition, 73% of those that chose another information source as their primary source also use Internet as an additional source. It means that approximately 85% of all the respondents did use Internet when planning a vacation.

There was no distinction between package holiday and individual travel in the 1997 survey, and in the 2005 survey, potential respondents who were only interested in package holiday were excluded from the sample. A study by Tjostheim (2002) based on a survey in 2001 showed that individuals planning a package holiday chose brochures as the most important information source while Internet was chosen as the most important information source by individual travelers.

There are limitations to the 2005 survey and to the analysis presented in this paper. It is a weakness of this study (as in the 1997 survey) that Internet is considered as one category of information source and is not divided into a number of different sources. It is necessary and appropriate to distinguish between sub-categories of Internet (Tjostheim, 2002). Information sources for travel planning can be a website of a national tourism board, travel agent or other intermediaries, personal websites, etc. A survey on the use of each subcategory of internet can be valuable to draw implications on designing travel websites and providing customized information to travelers in different countries.

The model fit with demographics and nationalities is not acceptable in this paper. Nevertheless there are some implications for further studies on travelers' choice of information sources for travel planning. Despite using demographics and nationalities, further studies can emphasize on characteristics of travelers/respondents such as their travel motivation and types of information sought.

It is likely that Internet will become even more important in the future for travelers. This study focuses on the pre-travel phase; the planning phase. As the use of the mobile Internet (wireless phones and PDAs) increases and more and more hot spots are built, Internet will also become very important as information source in the travel phase for travelers on the move. The trend will broaden research potentials on internet as a primary information source in tourism and travel planning context in the future.

5. References

- Arndt, J. (1986). "Paradigms in Consumer Research: A Review of Perspectives and Approaches." *European Journal of Marketing* 20(8): 23-40.
- Bieger, T., & Laesser, C. (2004). Information Sources for Travel Decisions: Toward a Source Process Model. *Journal of Travel Research* 42(4), 357-371
- Dellaert, B. G. C. (1999). The Tourist as Value Creator on the Internet. in *Information and Communication Technologies in Tourism 1999*. Innsbruck. Springer Wien New York. 66-76
- Dellaert, B. G. C et al. (1998). "Multi-faceted tourist travel decisions: a constraint-based conceptual framework to describe tourists' sequential choices of travel components." *Tourism Management* 19(4): 313-320.
- Engel, J. F.; Blackwell, R. D. and Miniard, P. W. 1990. *Consumer behavior 6th ed.* Fort Worth, Texas: The Dryden Press.

- Fodness. D. and B. Murray (1997). "Tourist Information Search." *Annals of Tourism Research* 24(3): 503-523.
- Fodness. D. and B. Murray (1999). "A Model of Tourist Information Search Behavior." *Journal of Travel Research* 37(February): 220-230.
- Gursoy. D and W. Umbriet (2004) Tourist Information Search Behaviour: Cross Cultural Comparison of European Member States. *International Journal of Hospitality Management* 23:55-70
- Menard. S. (2002) Applied Logistic Regression Analysis.
- Newhagen, J. E., & Rafaeli, S. (1996). Why communication researchers should study the Internet: A dialogue. *Journal of Communication*, 46, 4-13
- Pan, B., & Fesenmaier, D.R. (2006). Online information search and vacation planning process. *Annals of Tourism Research*, 33(3): 809-832
- Rosen. K. T. and A. L. Howard (2000). "E-retail: Gold Rush or Fool's Gold." *California Management Review* 42(3): 72-100.
- Schmidt. J. B. and R. A. Spreng (1996). "A Proposed Model of External Consumer Information Search." *Journal of Academy of Marketing* 24(3): 246-256.
- Schul. P. and J. L. Crompton (1983). "Search Behavior of International Vacationers: Travel-Specific Lifestyle and Sociodemographic Variables." *Journal of Travel Research* 22(3): 25-30.
- Snepenger. D. and M. Snepenger. (1993). Information Search by Pleasure Travelers. in VNR'S Encyclopedia of Hospitality and Tourism. New York. Van Nostrand Reinhold. 830-835.
- Tjøstheim. I. (2002). The Internet in Competition with the Traditional Information Sources: A study of Vacation Planning for Package vs. Non-Package Travel. in Information and Communication Technologies in Tourism 2002. Innsbruck Springer Wien NewYork: 166-176
- van Raaij. W. F. (1986). "Consumer Research on Tourism. Mental and Behavioral Constructs." *Annals of Tourism Research* 13: 1-9.
- Vogt. C. A. and D. R. Fesenmaier (1998). "Expanding the Functional Information Search Model." *Annals of Tourism Research* 25(3): 551-578.