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## The role of demographics and travel motivation in travellers' use of the internet before, during, and after a trip

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**Abstract:** This paper explores travellers' use of the internet before, during and after a trip. Data for the study were obtained using an internet-based questionnaire completed by members of an online panel of 513 respondents. Differences across socio-demographic characteristics confirm that the young, well-educated and affluent tend to be the first movers in taking advantage of the internet. A factor analysis identified eight motivational factors that are thematically similar to those found in other studies on travel motivation. The results show that the acquisition and sharing of travel information depends upon travel motivations. Travellers motivated by nature- and culture-related factors are characterised by intensive pre- and during-trip research and little information sharing, in contrast to travellers motivated by relaxation or social factors, who do less research but are more likely to share travel information and photos after their trips. The article ends with a discussion of the managerial implications of these findings for tourism service providers and destinations.

**Keywords:** socio-demography; tourism motivation; the internet; travel information search; information sharing.

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**Biographical notes:** Jan Møller Jensen is an Associate Professor at the Department of Marketing and Management, University of Southern Denmark, Odense. He finished his PhD at the University of Southern Denmark, Odense, in 1990. His research interest covers a wide range of topics in consumer behaviour, including family decision-making, customer loyalty, and consumer behaviour in tourism. His research has been published in various international journals as for example *European Journal of Marketing*, *Journal of Consumer Marketing*, *International Journal of Tourism Research*, *Tourism Review International* and *Scandinavian Journal of Hospitality and Tourism*.

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## **1 Introduction**

In the last two decades, the internet has led to profound changes in the marketing of tourism services and destinations (Buhalis and Law, 2008). Travel-related information can increasingly be retrieved electronically and Internet research has become a dominant source of information in terms of travel planning (Grønflaten, 2009; Pan et al., 2011). In spite of radical technological changes, there is a remarkable lack of insight into the relationship between travel motivations and online search behaviours. There is also still a deficiency of studies that aim to understand travel motivations on the one hand and the use of social media for sharing travel information on the other hand (Xiang and Gretzel, 2010).

The purpose of this article, based on a representative survey, is to depict how and to what extent travellers use the internet for collecting and sharing travel-related information. The article will subsequently investigate how the information search patterns of travellers relate to socio-demographic characteristics and travel motivations. In this way, the research aims to add new components to the study of online travel information-seeking behaviour and to connect it with the well-consolidated previous travel motivation research. The following research questions are raised:

- Q1 What information sources do travellers use for their inspiration in connection with choosing a destination?
- Q2 To what extent do travellers use offline and online resources to search for information before and during their trips?
- Q3 To what extent do travellers use the Internet for sharing travel-related information with family and friends during and after their trips?
- Q4 What are the effects of demographics and travel motivation on these behaviours?

To provide answers to the above-mentioned research questions, the rest of the article is organised as follows. First, the article briefly summarises the existing literature on tourism motivations and tourism information search. Second, the empirical study providing data for the article is developed. Next, the findings of the research are presented. Finally, managerial implications and directions for future research are discussed.

## **2 Background from the literature**

Studies on motivation are becoming increasingly important as destination loyalty declines (Yoon and Uysal, 2005). Early and seminal research contributions on tourism motivation, such as those provided by Cohen (1979), Crompton (1979), Dann (1981) and Ross and Iso-Ahola (1991), convey the basic premise that the motivations of tourists vary significantly. Travellers choose their destinations and make plans based upon several considerations, and many attempts have been made to meaningfully categorise these. The tourism literature contains well-known behavioural and psychographic dichotomies, such as those of familiarity versus novelty-seeking (Yiannakis and Gibson, 1992), sacred versus profane (Wickens, 2002), introvert versus extravert (Eachus, 2004), structure versus independence (Yiannakis and Gibson, 1992), and allocentric versus psychocentric (Plog, 1973).

A concise understanding of motivations and behaviours is of immense importance for planning and resource management in the tourism industry and at destinations (Gnoth, 1997). Promotions and communications need to align with the underlying motivations of customers to be successful (Loker and Perdue, 1992). Motivation research in tourism increasingly addresses how travellers seek information, and how their communicative behaviour relates to their basic motives for travel and the benefits that they are seeking during their trips; Fodness (1994), in a seminal work, has contributed to this area with important classifications. The expansion of marketing and communication channels and the swelling costs related to their use enhances the current attentiveness for most enterprises and destinations to cautiously save money (Goossens, 2000). The possibilities to lower marketing costs through the intensification of Web-based marketing, including through the stimulation of electronic word-of-mouth, are prevalent (Hays et al., 2012; Soteriades, 2012).

There are numerous studies on how tourists seek information, such as those excellently reviewed by Grønflaten (2009) and those concerned with the information communication technology (ICT) by Jacobsen and Munar (2012), Pan et al. (2011) and Xiang and Gretzel (2010). These surveys of tourists' information search behaviour frequently correlate their findings with a range of socio-demographic factors and destination characteristics. Snepenger (1987) launches a research agenda investigating roles and tourist segments in great depth; he finds that 'organised mass tourists' use information sources very differently from 'individual mass tourists' and 'explorers' in terms of mode and extent of information search. Fodness (1994) pursued motivational aspects and connected them to particular features of information services, and more recent studies have followed to shed light on special circumstances, as is the case, for example, in situations dealing with emerging tourist destinations (Dey and Sarmay, 2010) and in the case of risk perception (Alvarez and Asugmant, 2006). The overall information search process depends on how acquainted the tourists are with the destination and the perception of risk (Jacobsen and Munar, 2012).

The motivation of tourists to share information and utilise a joint knowledge base as a substitute or supplement to commercial and official information is an emerging research field to which demographic and motivational aspects are being added. While social media previously tended to be a medium for the youngest and most technically capable segments of the population, Parra-Lopez et al. (2011) suggest that these segments are broadening and the motivations for this are becoming many-faceted and go beyond mere information seeking.

This brief review of the literature demonstrates the need to proceed with the investigation of demographic and motivational factors related to travel information search and in particular the variance connected to the sequences in the travel process.

### **3 Methodology**

#### *3.1 The survey instrument*

A web-based questionnaire was designed to collect information about the travel motivations underlying the respondents' most recent holiday (excluding business travel), their search for travel information in relation to this particular holiday and, more specifically, their actual use of the internet before, during and after this trip. In addition, respondents were asked to provide information on various socio-demographic variables including gender, age, education level and income.

Travel motivations were gauged by asking respondents to rate the importance of 23 motivational items on a 5-point Likert scale. The items were selected on the basis of a thorough review of previous studies (e.g., Jang and Wu, 2006; Park and Yoon, 2009; Pearce and Lee, 2005; Yoon and Uysal, 2005). This study measures eight selected motivational "push" factors that are also frequently identified in the literature. The eight motivational factors and their corresponding statements are listed in Table 1.

In terms of information search, respondents were first asked to indicate, from a list of 18 sources (e.g., friends/relatives, travel brochures, travel agent's home page, etc.) whether they had used any of these as inspiration for their choice of destination. The selection of items was inspired by previous studies (e.g., Bieger and Laesser, 2004; Choi et al., 2007; Fodness and Murray, 1999; Grønflaten, 2009; Jacobsen and Munar, 2012). Second, the respondents were asked to specify, from a list of 15 items, what type of information they had sought to plan their holiday (e.g., currency rates, accommodation, sights etc.) and whether they sought these items offline or online. The selection of these items was also inspired by previous studies (e.g., Bieger and Leasser, 2004; Choi et al., 2007; Fodness and Murray, 1999; Jacobsen and Munar, 2012).

In four brief questions, the respondents were then asked to indicate whether they had emailed or shared pictures or other travel related information with their friends or relatives via social media (for example Facebook or Twitter) during or after their trip.

#### *3.2 Data collection and sample*

The sampling frame comprised a representative panel of Danish online users belonging to a private marketing research institute and made available for this study. In the first part of November 2010, approximately 1500 randomly selected panel members were invited to participate in the study. A total of 513 adequately completed questionnaires were received, resulting in a response rate estimated to be approximately 34%. The gender of the respondents was evenly distributed (males 49.9% and females 50.1%). More than half of the respondents (54.3%) were between 35 and 54 years old, 21.1% were 34 or

younger, and 24.6% were 55 or older. Three out of four (73.9%) were married or co-habiting and about one fourth (26.1%) were single. Nearly half (45.8%) of the respondents had at least three years of higher education, while only a few had only a high school degree. About two thirds (64.1%) of the respondents had an annual household income of DKK 500,000 or more.

## 4 Data analysis

### 4.1 *Assessment of reliability and validity of the eight motivational factors*

An important part of this study is the investigation of how travel motivations relate to the information sought by travellers. A confirmative factor analysis (CFA) was initially carried out to determine the convergent and discriminant validity of the proposed motivational factor measurements. The results are displayed in Table 1.

The  $\chi^2$  statistic was significant (505.874,  $p < 0.001$ ), indicating that the suggested measurement model does not fit the data absolutely. However, as recommended by Hair et al. (2010), other indices of fit, which are less influenced by the large sample size, were also reported. The  $\chi^2/df$  ratio = 2.504, goodness-of-fit index (CFI) = 0.954 and root mean square error of approximation (RMSEA) = 0.054 indicate an acceptable overall fit between the model and the observed data when compared with commonly used standards (Hair et al., 2010).

The results support the convergent validity of each of the latent variables (motivational factors). The indicators' factor loadings (standardised regression weights) were higher than .60 and very significant ( $t$ -value  $> 2.64$ ;  $p < 0.01$ ), which demonstrates that the chosen statements for each of the motivational factors reflect a single underlying construct possessing convergent validity (Fornell and Lacker, 1981).

The reliabilities and the estimates of average variance extracted (AVE) were computed, using indicator factor loadings and measurement errors (Hair et al., 2010). Because the reliability of all the latent constructs was above the recommended threshold of 0.60 (Cortina, 1993), the measures were deemed to be reliable.

To confirm discriminant validity, the average variance extracted for each motivational factor (i.e., values as reported in Table 1 are displayed as diagonal entries in Table 2) was compared with the squared correlations between constructs (i.e., displayed as non-diagonals). An examination of the matrix in Table 2 shows that shared variance between constructs is, for all figures, close to zero, and the extracted variance of each construct is higher than the shared variance with other constructs. Accordingly, the measurements for the eight motivational factors meet the requirements for discriminant validity (Fornell and Lacker, 1981).

To assess the importance attributed to each motivational construct, a 'summated scale' was employed to calculate the average score of the items loaded on each factor. The mean scores for each motivational construct and their corresponding standard deviations are displayed in the last column of Table 1. The results indicate that Danish travellers perceive relationship with family/friends ( $\eta_1$ ) as their most important travel motive. This is followed, in descending order of importance, by escape/relaxation ( $\eta_2$ ), food experience ( $\eta_3$ ), experiencing new cultures ( $\eta_4$ ), nature experience, ( $\eta_5$ ), shopping ( $\eta_6$ ), sun and beach ( $\eta_7$ ), and status ( $\eta_8$ ).

**Table 1** Confirmative factor analysis (CFA)

Construct/indicator	Factor loading	Standard error <sup>1</sup>	t-value	Construct reliability <sup>2</sup>	Extracted variance <sup>3</sup>	Construct average (stdv.)
<i>η1 Family/friends relationship</i>				.8944	.7389	4.09 (1.12)
Spend time with family/friends	.824	-	21.896			
Share experiences with family/friends	.838	.044	23.409			
Do something together with family/friends	.914	.042		.8508	.6571	3.68 (1.08)
<i>η2 Escape/relaxation</i>						
Escape from work responsibilities/stress	.819	-	16.812			
Seek release from pressure at work	.713	.047	19.583			
Get away from everyday life/routine	.890	.057		.8577	.7508	3.13 (1.14)
<i>η3 Food experience</i>						
Gastronomic experiences	.864	-	18.788			
Visit local restaurants	.869	.054		.8635	.6790	3.03 (1.13)
<i>η4 Experience new culture</i>						
Visit cultural/historical sites	.837	-	21.336			
Visit famous sites and heritage sites	.865	.048	18.906			
Experience new or different cultures	.767	.047		.8805	.7113	3.03 (1.12)
<i>η5 Experience nature</i>						
Experience sites of natural beauty	.906	-	22.634			
Spend time in natural surroundings	.829	.039	21.351			
Experience nature in other countries	.791	.042		.8696	.6901	2.38 (1.09)
<i>η6 Shopping</i>						
Shop in other cities	.856	-	21.314			
Go shopping	.782	.046	19.621			
Visit stores with different merchandise				.9280	.8112	2.24 (1.31)
<i>η7 Sun and beach</i>						
Stay at the beach	.936	-	31.124			
Sunbathe	.886	.031	30.577			
Go swimming	.879	.033		.6565	.5921	2.06 (.83)
<i>η8 Status</i>						
Visit a place that will impress friends	.645	-	9.165			
Travel to a destination that friends and relatives have never been to	.626	.156	9.031			
Experience something to tell others about	.600	.147				

Notes:  $\chi^2(202) = 505.874$ ;  $P = 0.000$ ;  $\chi^2/DF = 2.504$ ;  $GFI = 0.922$ ;  $RMSEA = 0.054$ ;  $HI(90) = 0.060$

<sup>1</sup>The first item for each construct was set to 1.

<sup>2</sup>Calculated as 
$$\frac{\sum (\text{Std. loadings})^2}{\sum (\text{Std. loadings})^2 + \sum \xi_j^2}$$

<sup>3</sup>Calculated as 
$$\frac{\sum \text{Std. loadings}^2}{\sum \text{Std. loadings}^2 + \sum \xi_j^2}$$

**Table 2** Discriminant validity of constructs

	$\eta 1$	$\eta 2$	$\eta 3$	$\eta 4$	$\eta 5$	$\eta 6$	$\eta 7$	$\eta 8$
$\eta 1$ Family/friends relationship	0.74							
$\eta 2$ Escape/relaxation	0.10	0.66						
$\eta 3$ Food experience	0.06	0.09	0.75					
$\eta 4$ Experience new culture	0.01	0.01	0.28	0.68				
$\eta 5$ Nature experience	0.00	0.03	0.01	0.17	0.71			
$\eta 6$ Shopping	0.02	0.05	0.06	0.14	0.14	0.69		
$\eta 7$ Sun and beach	0.03	0.12	0.06	0.00	0.01	0.07	0.81	
$\eta 8$ Status	0.00	0.05	0.15	0.18	0.11	0.14	0.03	0.39

Notes: Diagonals represent the average amount of extracted variance for each construct; non-diagonals represent the shared variance between constructs (calculated as the squares of correlations between constructs).

#### 4.2 Information sources for destination choice

The search for information in connection with holiday planning is a process with several stages (Fodness and Murray, 1999). In this survey, a distinction is made between the preparation phase, connected to the selection of a travel destination, and the subsequent information-gathering phase, where bookings and more detailed planning might be undertaken. Table 3 displays the results connected to the selection-of-destination phase. The total column indicates the proportion of travellers who used each of the listed sources as inspiration in choosing the destination of their most recent holiday. The sources are divided in three categories: online, offline, and internal, including word-of-mouth and previous experiences. Table 3 confirms that in general, the Internet represents an important information source, with more than half of travellers (51.4%) using online searches via a computer to choose destinations. Only around 1% searched for a destination on their smartphones, emphasising that the use of this resource is limited in regard to choosing destinations. Travel agent's homepages and destination websites were used to the same extent as traditional offline sources such as travel brochures and travel books/guides. Travel portals appealed to a smaller number of travellers. The bottom of the table shows the significant influence of friends and family (Prebensen et al., 2010) and the importance of the habitual behaviour and destination loyalty that is common among travellers, most likely as an effect of the wish to reduce the need for systematic information search as well as transaction costs (time, money and risk). In this context, destination marketing based on offline sources seems to be of comparatively limited importance in regard to affecting travellers' destination choices.



**Table 3** Information source for choosing destination by demographics (percent<sup>1</sup>)

	Gender		Age		Education level		Income DKK		Household		
	Total	Male	Female	18-34	35+	High school or less	Higher	Less than 500,000	500,000+	Single	Couple
<i>Online external information sources</i>											
Online search via computer	51.3	52.7	49.8	51.9	51.1	47.8	53.6	47.7	53.8	43.2	54.8*
Online search via smartphone	1.4	1.6	1.2	3.7	.7*	.5	1.9	1.9	1.1	1.5	1.3
Travel agent's home page	17.0	16.8	17.1	17.6	16.8	15.6	17.9	17.4	17.0	17.4	17.1
Destination home page	13.8	18.4	9.3***	5.6	16.0**	12.7	14.6	13.5	16.0	9.1	15.5
Travel portals, e.g., LonelyPlanet, Tripadvisor	4.1	4.3	3.9	11.1	2.2***	3.4	4.5	6.5	2.5	3.8	4.3
<i>Offline external information sources</i>											
Travel brochures	14.0	14.8	13.2	16.7	13.3	17.6	11.7*	11.5	15.2	11.4	15.2
Travel books/guides	13.5	13.3	13.6	21.3	11.4**	9.8	15.9	9.7	14.8	12.9	13.9
Travel magazines and news media	10.1	12.1	8.2	6.5	11.1	6.8	12.3*	9.0	11.2	8.3	11.0
<i>Internal information and WOM</i>											
Previous visit to the destination	43.1	43.4	42.8	28.7	46.9***	38.5	46.1	41.9	45.1	43.2	43.3
Recommendations from friends/relatives	29.0	27.7	30.4	49.1	23.7***	26.8	30.5	23.2	30.7	33.3	27.5
Previously heard/read about the destination	28.1	30.1	26.1	37.0	25.7*	24.4	30.5	32.9	25.3	27.3	28.6

Notes: <sup>1</sup>Entries represent the proportion (in percent) of travellers who used the respective information sources. \*\*\*p < .001, \*\*p < .01, \*p < .05 based on a  $\chi^2$  test

**Table 4** Information source for choosing destination by travel motivation (mean differences<sup>1</sup>)

	Mean differences <sup>1</sup>							
	Family/ friends	Escape/ relaxation	Food experience	Experiencing new cultures	Experiencing nature	Shopping	Sun and beach	Status
<i>Online external information sources</i>								
Online search via computer	.25**	.39***	.36***	.33***	.31**	.14	.26*	.16*
Online search via smartphone	.49	1.05**	.30	-.37	-.13	.05	.28	.12
Travel agent's home page	.05	.44***	.41**	.27*	.47***	.05	.85***	.08
Destination home page	-.05	-.03	.13	.02	.23	-.06	-.41*	.08
Travel portals, e.g., LonelyPlanet, Tripadvisor	.19	.53*	.14***	.89***	.22	.33	-.57*	.19
<i>Offline external information sources</i>								
Travel brochures	.03	-.05	.28*	.13	.32*	-.13	.59***	.18
Travel books/guides	.13	-.03	.30*	.70***	.25	.11	-.45**	.11
Travel magazines and news media	-.58	-.62*	-.10	.36	.18	.22	-.16	.42
<i>Internal information and WOM</i>								
Previous visit to the destination	-.02	.13	.03	-.24*	-.19	.10	.09	-.21**
Recommendations from friends/relatives	.36***	.02	.08	.26**	.13	.18	-.11	.13
Previously heard/read about the destination	-.12	-.23*	.13	.40***	.08	-.01	-.18	.09

Notes: <sup>1</sup>Mean differences calculated by subtracting, for each motivational factor, the mean score of those who did not use the respective information source from the mean scores of those who used the information source.

\*\*\*p < .001, \*\*p < .01, \*p < .05 based on two-sided t-test

On the right of the total column in Table 3, the usage of information sources was assessed in relation to five demographic variables: gender, age, education level, income and household status. For analytical purposes and to simplify the presentation of our results, age, education and income were subdivided into two groups. With respect to age, the group ranging in age from 18–34 represents young adults and the group of people aged 35 and up represents older adults and senior travellers. It was expected that the younger travellers would use online sources to a greater degree when compared to older travellers. With respect to education, respondents with a high school education or less were separated from the group with higher education. It was expected that those with higher education would search for more information when compared to those with a high school education. Finally, income was subdivided into households earning less than 500,000 DKK as the lower income group and a the higher income group earning 500,000 DKK or more.

The results show few significant differences between demographic segments. Online searches via a computer are significantly more common among couples than singles, and among high-income travellers compared to lower income earners. Not surprisingly, smartphones are more common as an information source among the younger segment, aged between 18 and 34. Males are more likely than females to use destination home pages as inspiration for their destination choice (18.4% and 9.3%, respectively,  $p < .001$ ). Destination homepages are also more likely to be used among the segment aged 35 years or more, while the younger segment often approaches this choice via travel portals. In regard to internal information and word-of-mouth, results show that previous visits to the destination are almost twice as common among the older segment than among the younger segment (46.9% and 28.7%, respectively). In contrast, the younger segment is much more likely to rely on recommendations from friends/relatives (49.1% compared to 23.7%,  $p < .001$ ) and is more likely to be influenced by what they have heard or read about the destination (37.0% compared to 25.7%,  $p < .05$ ).

To examine the importance of travel motivation in traveller information source choices, for each of the 15 listed information sources, the sample was subdivided into those who marked that they used that particular information source and those who did not. Subsequently, for each of the 15 subdivisions, users and non-users of the respective information sources were compared in terms of their average scores on each of the 8 travel motivational factors. Table 4 depicts, for each motivational factor, the calculated mean differences and their corresponding significance levels based on a series of independent t-tests comparing the users and non-users of each of the information sources. In general, the motivation for travelling seems to influence their online search methods prior to choosing a destination. The table demonstrates that significant mean differences were found for all motivational factors except shopping.

The results show that those travellers who base their choices upon recommendations by friends/relatives are more likely to be motivated by the family/friends factor (mean difference = .36,  $p < .001$ ). Those with such social motivations also search more on the Internet. 'Escape'-motivated travellers are more likely to seek inspiration from a wide range of online sources, notably also via their smartphones (mean difference = 1.05,  $p < .001$ ). New culture seekers are also influenced by the opinions and experience of others (mean difference = .26,  $p < .01$ ). This last motivational factor is more prevalent among travellers who choose their destinations based on what they have previously heard/read about the destination (mean difference = .40,  $p < .001$ ), search for inspiration

on travel portals (mean difference = .89,  $p < .001$ ) and consult travel books/guides (mean difference = .70,  $p < .001$ ). New culture travellers are less likely to visit the same destination again (mean difference =  $-.24$ ,  $p < .05$ ). Interestingly, travellers motivated by food experience and nature experience also seek inspiration for their destination choices to a large extent from the same sources as those motivated by experiencing new cultures. Those motivated by nature experiences are largely internet users, but travel brochure distributors can also find audiences among those motivated by nature.

The sun and beach motivated travellers are more likely to choose their destination from searching sources such as travel agents' home pages (mean difference = .85,  $p < .001$ ) and travel brochures (mean difference = .59,  $p < .001$ ) and are less likely to use destination homepages (mean difference =  $-.41$ ,  $p < .05$ ), travel portals (mean difference =  $-.57$ ,  $p < .05$ ) and travel books/guides (mean difference =  $-.45$ ,  $p < .01$ ).

Travellers who seek status and to augment their self-esteem are less likely to visit the same places again (mean difference =  $-.21$ ,  $p < .05$ ). While they may consult travel agencies' home pages and commercial travel brochures, guidebooks obviously have little to offer travellers with these motives.

#### 4.3 *Information seeking before the trip*

Once a decision has been made about the destination, the search for information may continue. Table 5 provides a general overview of information search patterns prior to the respondents' last trips. Search content is grouped in three categories: environment (e.g., currency rates), services (e.g., accommodation) and destination activities (e.g., excursions). Preparations at home are often quite extensive, with six of the listed information content items sought by more than half of the respondents. The six most sought after information content items are, in descending order: sights (67.8%), climate/weather (67.3%), accommodation (54.8%), excursion opportunities (51.7%), activities at destination (51.7%), and attractions/theme parks (50.1%). At first glance, search for accommodation seems to be relatively low, but this is possibly an effect of travellers often purchasing travel packages including accommodations and that many Danes own or borrow summerhouses or visit friends and relatives (VisitDenmark, 2012). Table 5 clearly supports the importance of the Internet in the planning phase of the trip. Offline sources only play a role in providing information about sights and excursions (10.3% and 8.8%, respectively), with travellers possibly inspecting guidebooks and gaining inspiration from the media.

Support for the intensity of pre-trip searches and the superiority of online searches can be seen on the upper part of Table 6, which addresses the scope of online and offline searches. Indicators of the scope of online and offline searches were calculated as the average of the sum of content items shown in the lower part of the table (.67 and 5.76, respectively). Online sources are significant in the sense that they can supply information about a range of issues, while offline sources tend to be specific. This underlines the advantages of online search methods and the rationale for their rapid adoption. Again, the scope of information sought by well-educated respondents and high-income earners is wider. Although not shown in the table, it should be mentioned that there is no correlation between online and offline search intensity. This suggests that the two modes are neither complementary nor substitutes.

**Table 5** Information content of searches before the trip (percent<sup>1</sup>)

<i>Information content</i>	<i>Search</i>	<i>Online sources</i>	<i>Offline sources</i>
	<i>Percentages<sup>1</sup></i>		
Climate/weather	67.3	65.8	3.7
Currency rates	30.2	26.7	4.5
Health and safety	17.0	15.0	2.1
Accommodation	54.8	53.0	3.7
Car rental	15.0	14.4	1.0
Flights and prices	42.3	42.3	0.2
Local transport	28.5	26.7	3.3
Activities at destination	51.7	50.7	5.3
Attractions/theme parks	50.1	48.2	7.0
Excursion opportunities	51.7	48.7	8.8
Sights	67.8	65.1	10.3
Restaurants	32.6	30.0	5.7
Shopping	26.5	25.2	2.7
Sporting activities	14.4	13.9	1.4
Wellness	9.7	9.7	0.0

Notes: <sup>1</sup>Entries show the proportion of travellers (in percent) who searched for each of the listed items (first column). Entries in the second and third columns depict those who searched online and those who searched offline, respectively.

It is noteworthy that males are significantly more likely to search for attractions/theme parks (52.0% to 42.8%,  $p < .05$ ), health and safety (17.6% to 11.3%,  $p < .05$ ) and wellness (12.5% to 7.0,  $p < .05$ ) than females. The younger segment, below 35 years of age, searches significantly more online for content related to finances, such as currency rates (37.0% to 24.0,  $p < 0.01$ ) and flights and prices (58.3% to 37.5%,  $p < .001$ ). Segments with higher education and higher incomes are generally more likely to search online for accommodation, sights, excursions opportunities, and wellness when compared to their counterparts.

Table 7 proceeds with the addition of motivational factors to pre-trip search behaviour. When addressing the issue of scope, the correlations in the upper line illustrate that offline sources – possibly in the form of guidebooks or travel magazines – have a certain importance in relation to culture tourism ( $r = .155$ ,  $p < .001$ ). However, as illustrated in the second line, the use of the internet as an information source is positively related to all of the motivations, although clearly less in relation to holiday decisions motivated by family/friends and sun and beach.

**Table 6** Pre-trip information search by demographics (mean scores and percentages<sup>1,2</sup>)

	Gender		Age		Education level		Income DKK		Household		
	Total	Male	Female	18-34	35+	High school or less	Higher	Less than 500,000	500,000+	Single	Couple
<i>Extent of search<sup>1</sup></i>											
Offline content	.67	.52	.81	.89	.61	.68	.66	.74	.72	.69	.67
Online content	5.76	5.99	5.52	5.66	5.76	5.28	6.07*	4.95	6.21***	5.41	5.86
<i>Information content online<sup>2</sup></i>											
						Percentage					
Currency rates	26.7	27.3	26.1	37.0	24.0**	29.8	24.7	28.4	26.0	33.3	23.8*
Climate/weather	63.7	62.5	65.0	66.7	63.0	59.0	66.9	52.9	68.3**	58.3	65.2
Health and safety	14.4	17.6	11.3*	17.6	13.6	14.6	14.3	14.8	14.1	18.9	12.6
Accommodation	52.2	51.6	52.9	50.0	52.8	45.9	56.5*	43.9	58.8**	48.5	53.2
Car rental	14.4	17.2	11.7	13.9	14.6	12.7	15.6	9.7	17.7*	12.1	15.0
Flights and prices	41.9	40.2	43.6	58.3	37.5***	40.0	43.2	39.4	42.2	49.2	38.8*
Local transport	25.3	24.2	26.5	28.7	24.4	20.5	28.6*	25.8	25.6	27.3	24.3
Activities at destination	59.7	50.0	49.4	47.2	50.4	46.3	51.9	39.4	54.2**	43.2	52.7
Attractions/theme parks	47.4	52.0	42.8*	48.1	47.2	44.4	49.4	35.5	54.2***	38.6	50.5*
Excursion opportunities	48.1	50.8	45.5	39.8	50.4	45.4	50.0	38.1	54.9***	38.6	51.6**
Sights	63.9	63.3	64.6	63.0	64.2	56.6	68.8**	51.6	69.7***	54.5	66.8*
Restaurants	28.5	32.0	24.9	29.9	28.1	24.4	31.2	25.2	30.3	23.5	30.2
Shopping	24.8	24.2	25.3	27.8	24.0	24.4	25.0	25.2	23.5	25.8	24.9
Sporting activities	13.5	14.8	12.1	13.0	13.6	10.7	15.3	16.1	13.0	14.4	13.4
Wellness	9.7	12.5	7.0*	7.0	10.4	6.3	12.0*	6.5	11.6	6.8	11.0

Notes: <sup>1</sup>Entries represent the average number (out of the 15 items listed in the lower section of the table) of the information content sought offline and online before the trip.

<sup>2</sup>Entries represent the proportion of travellers who searched for the particular information content online before the trip. \*\*\*p < .001, \*\*p < .01, \*p < .05 based on a two-sided t-test in upper section and  $\chi^2$  test for rows in lower section

**Table 7** Pre-trip information search by travel motivation (correlations and mean differences<sup>1,2</sup>)

Extent of search	Pearsons correlation coefficients <sup>1</sup>							
	Family/ friends	Escape/ relaxation	Food experience	Experiencing new cultures	Experiencing nature	Shopping	Sun and beach	Status
Offline content	.05	-.05	.02	.16***	.02	-.02	-.07	.01
Online content	.11*	.15**	.22***	.33***	.18**	.23***	.09*	.24***
<i>Mean difference<sup>2</sup></i>								
Currency rates	-.11	-.03	.04	.44***	.35***	.36***	.09	.25**
Climate/weather	.26*	.22*	.39***	.39***	.48***	.18	.45***	.11
Health and safety	-.12	.16	.22	.41**	.55***	.16	.37*	.33*
Accommodation	-.04	.12	.22*	.44***	.01	.38***	-.36***	.12
Car rental	.24	.29*	.42**	.29*	.38**	.31**	-.17	.31***
Flights and prices	.09	.15	.28**	.61***	-.01	.35***	.35***	.20**
Local transport	.40***	.29**	.22*	.45***	.52***	.17	.34**	.25**
Activities at destination	.28**	.34***	.20*	.36**	.37**	.11	.19	.25**
Attractions/theme parks	.31**	.26**	.34***	.52***	.16	.32**	-.03	.34**
Excursion opportunities	.29**	.24**	.29***	.41***	.42***	.15	.27*	.27*
Sights	.20	.16	.43***	.93***	.33**	-.06	-.41*	.08
Restaurants	.16	.18	.53***	.24*	.11	.47***	.05	.21**
Shopping	.09	.13	.34**	.40***	-.07	.93***	-.11	.24*
Sporting activities	.25*	.13	.10	-.20	.40**	-.20	.68***	.08
Wellness	.07	.31	.36*	-.16	.23	.16	.64***	.29*

Notes: <sup>1</sup>Entries in the upper two rows represent the Pearson's correlation coefficient between offline content and online content on the one hand and each of the motivational factor scores on the other hand

<sup>2</sup>Entries in the lower sections show the mean differences calculated by subtracting the mean score of those who did not search the respective type of information from the mean scores of those who did.

\*\*\*p < .001, \*\*p < .01, \* p < .05 based on two-sided t-tests

A more exhaustive description of the information content items illustrates a number of significant and interesting relationships with travel motivations. A broad palette of information content is relevant to those who are motivated to travel for new experiences, such as with nature, food and new cultures. Decision factors (accommodation, flight prices, local transportation, and car rental) also show fairly obvious relationships with motivational factors. Thus, family/friends and sun and beach motivated holidays tend to be pre-settled with respect to accommodation (mean difference =  $-.04$ ,  $p > .05$  and mean difference =  $-.36$ ,  $p < .001$ , respectively) and therefore do not cause any increase in search for car rental. Some of the attraction factors relate naturally to corresponding motivational factors, as for example, shopping and restaurants in relation to the motivational factors of shopping (mean difference =  $.93$ ,  $p < .001$ ) and food, respectively. Likewise, wellness may be an issue relevant for those who like food, beaches and those who are status-oriented.

#### *4.4 Information seeking during the trip*

Table 8 shows that once the trip has begun search activities change quite radically. Offline sources become more prevalent. Upon arrival at the destination, the extent of online searches decline somewhat, although it is observed that online information sources still play a major role. At the time of travel, accommodation and travel arrangements tend to have been organised, and the information sought is therefore more focused on the attractions, sights and activities at the destination. Offline sources become conceivably more important, for example, in the form of leaflets, maps and guides handed out at a hotel or visitor centre.

The described decline in the information sought during the trip compared to the planning phase is supported by Table 9. An inspection of the first two lines in the first column, in comparison with the corresponding figures in Table 5, shows an overall decline in the scope of sought information. Although there is a noticeable shift away from online information searches towards more offline search techniques, online sources still account for a higher scope of information content than offline sources (1.64 to 1.22,  $p < .01$ ).

The survey shows very limited search content variance in relation to socio-demographic factors. However, differences in gender are observed, with females in particular shifting from computer to paper when searching for information at destinations. Men are significantly more likely to search online for attractions and excursions than women (21.5% to 13.3%,  $p < .05$  and 18.4% to 12.1%,  $p < .05$ , respectively).

Although not shown in the table, it should be mentioned that there is a significant negative correlation between online and offline search intensity ( $r = -.142$ ,  $p < .001$ ). This suggests that the two search modes substitute for one another during the trip.

Table 10 depicts the importance of travel motivation for during-trip online information searches. Entries in the two upper lines represent correlation coefficients for the scope of online and offline search content on the one hand and each of the eight motivational factors on the other hand. While sun and beach motivated travellers are more likely to search for offline content ( $r = .109$ ,  $p < .05$ ), online content is more intensively accessed by those who are motivated by experiencing new cultures, nature experience, food experience, shopping and status.



**Table 8** Information content searched for during the trip (percent)

<i>Information content</i>	<i>Search</i>	<i>Online sources</i>	<i>Offline sources</i>
	<i>Percentage<sup>1</sup></i>		
Currency rates	6.6	5.1	1.8
Climate/weather	32.0	25.3	7.8
Health and safety	2.3	1.8	.6
Accommodation	13.3	12.5	1.2
Car rental	6.0	3.1	2.9
Flights and prices	7.0	6.6	0.8
Local transport	20.3	7.4	13.5
Activities at destination	26.7	13.3	14.4
Attractions/theme parks	31.6	18.5	14.6
Excursion opportunities	29.0	16.4	14.4
Sights	40.5	28.7	18.5
Restaurants	30.4	16.9	14.6
Shopping	20.3	10.2	10.3
Sporting activities	7.6	3.7	4.1
Wellness	4.7	2.0	2.7
Other things	21.2	11.3	10.5

Notes: <sup>1</sup>Entries show the proportion of travellers (in percent) who searched for each of the listed items (first column). Entries in the second and third columns show those who searched online and those who searched offline, respectively.

To examine the relationship between travel motivation and the type of information that travellers search for online during their trips, for each of the 15 items of information content, the sample was subdivided into those who marked that they searched for that particular information and those who did not. Subsequently, for each of the 15 subdivisions, searchers and non-searchers of the respective information content were compared on their average scores on each of the 8 travel motivational factors. Table 10 depicts the calculated mean differences and corresponding significance levels for each motivational factor, based on a series of independent t-tests comparing the searchers and non-searchers of each of the information types.

The figures in the lower part of the table add little to this general picture, and identified patterns are very similar to the relationships found for pre-trip information searches.

**Table 9** During-trip information search by demographics (mean scores and percentages<sup>1,2</sup>)

	Gender		Age		Education level		Income DKK		Household		
	Male	Female	18-34	35+	High school or less	Higher	Less than 500,000	500,000+	Single	Couple	
<i>Extent of search<sup>1</sup></i>											
Offline content	1.22	1.14	1.30	1.47	1.16	1.10	1.30	1.34	1.21	1.26	1.20
Online content	1.64	1.88	1.41*	1.63	1.64	1.75	1.57	1.45	1.68	1.40	1.70
<i>Information content online<sup>2</sup></i>											
	<i>Mean scores</i>										
Currency rates	4.9	5.9	3.9	6.5	4.4	7.8	2.9*	5.2	3.6	4.5	4.8
Climate/weather	22.0	24.2	19.8	19.4	22.7	20.5	23.1	17.4	22.7	16.7	23.5
Health and safety	1.6	2.0	1.2	1.9	1.5	2.9	0.6*	1.3	1.1	1.7	1.3
Accommodation	11.5	14.1	8.9	6.5	12.8	11.7	11.4	9.7	12.3	8.3	12.8
Car rental	2.7	3.5	1.9	3.7	2.5	3.4	2.3	3.2	2.2	1.5	3.2
Flights and prices	6.4	7.8	5.1	9.3	5.7	6.8	6.2	9.7	3.6**	7.6	5.9
Local transport	6.4	6.6	6.2	6.5	6.4	5.9	6.8	7.7	5.8	7.6	5.6
Activities at destination	13.3	14.8	11.3	13.0	13.1	15.6	11.4	13.5	12.6	12.9	13.1
Attractions/theme parks	17.3	21.5	13.3*	14.8	14.3	12.7	15.6	14.2	18.4	13.6	18.4
Excursion opportunities	15.2	18.4	12.1*	10.2	16.5	16.6	14.3	11.0	16.2	12.1	16.3
Sights	22.6	26.2	19.1	23.1	22.5	24.4	21.4	16.8	26.4*	18.9	23.8
Restaurants	14.4	17.2	11.7	14.8	14.3	12.7	15.6	11.0	16.2	12.1	15.0
Shopping	9.2	9.4	8.9	7.4	9.6	8.8	9.4	7.1	9.4	8.3	9.4
Sporting activities	3.3	3.9	2.7	5.6	2.7	3.4	3.2	3.9	2.9	1.5	3.7
Wellness	1.8	1.6	1.9	2.8	1.5	1.0	2.3	0.6	1.8	0.0	2.4

Notes: <sup>1</sup>Entries represent the average number (out of the 15 items listed in the lower section of the table) of the information content sought offline and online during the trip.  
<sup>2</sup>Entries represent the proportion of travellers who searched for the particular information content online during their trip.  
\*\*\*p < .001, \*\*p < .01, \*p < .05 based on a two-sided t-test in upper section and  $\chi^2$  test for rows in lower section

**Table 10** During-trip information search by travel motivation (correlations and mean differences<sup>1,2</sup>)

	Pearsons correlation coefficients <sup>1</sup>						
	Family/ friends	Escape/ relaxation	Food experience	Experiencing new cultures	Experiencing nature	Shopping	Sun and beach
<i>Extent of search during-trip</i>							
Offline	.058	.034	.033	.047	.062	-.062	.109*
Online	.064	.076	.116	.179***	.119**	.134**	-.009
<i>Mean differences<sup>2</sup></i>							
<i>Pre-trip online information content</i>							
Currency rates	-.30	-.22	.03	.25	.06	.40	.02
Climate/weather	.11	.26*	.26*	.23	.35**	.14	.04
Health and safety	-.21	.45	.56	.05	.30	.71	.08
Accommodation	.14	.18	.23	.48**	.43**	.10	-.15
Car rental	.13	.21	.27	.28	.82**	.19	.58
Flights and prices	.10	-.18	-.19	.28	.15	.14	.02
Local transport	.15	.11	.44*	.60***	.21	.47*	.02
Activities at destination	.11	.05	.14	.39**	.41**	.25	.00
Attractions/theme parks	.11	.26*	.24	.42**	.18	.29*	-.03
Excursion opportunities	.34*	.20	.23	.31*	.34*	.23	-.06
Sights	.31**	.11	.30*	.56***	.32**	.22	-.18
Restaurants	-.06	.10	.39**	.26	-.14	.58***	-.24
Shopping	-.02	.19	.16	.42*	.15	.76***	-.24
Sporting activities	.60***	.31	.47	-.11	.49	-.07	.81***
Wellness	.47	-.12	-.19	.26	-.22	.51	-.44

Notes: <sup>1</sup>Entries in the two upper rows represent the Pearson's correlation coefficient between offline content and online content on the one hand and each of the motivational factor scores on the other hand.

<sup>2</sup>Entries in the lower sections show the mean differences calculated by subtracting the mean score of those who did not search for the respective type of information from the mean scores of those who did.

\*\*\*p < .001, \*\*p < .01, \*p < .05 based on two-sided t-tests

#### 4.5 *Sharing information during and after the trip*

As indicated by Parra-Lopez et al. (2011) and Yoo and Gretzel (2011), tourists increasingly rely on online content uploaded on the many travel platforms, such as TripAdvisor, or on Facebook and other social media, by friends and family or complete strangers. This survey reveals some of the features of this issue by asking respondents to indicate whether they shared travel-related information with family and friends during and/or after their trips, either by sending emails or uploading pictures or other travel related information on social media such as Facebook or Twitter.

The first column in the upper part of Table 11 shows that approximately one fourth (23.8%) of travellers sent emails to family/friends during their trips. In contrast, only 3.7% of travellers shared travel-related information on social media during their trip. An inspection of the figures in the lower part of the first column reveals that approximately one sixth of travellers shared travel-related information with their friends/relatives either on social media and/or via emails (17.9% and 16.6%, respectively). Thus, email seems to be the preferred medium for sharing travel-related information during the trip whereas social media becomes more prevalent after returning home. An explanation for this pattern may be the relative ease of sending emails on smartphones during the trip.

An inspection of the next columns in Table 11 reveals, not surprisingly, that sharing travel-related information via the Internet is most prevalent among younger travellers. Furthermore, sharing photos or other travel-related information on social media after returning home is more popular among females than males (females 23.7% and males 12.7%,  $p < .001$ ) and among singles than couples (25.6% to 15.0%,  $p < .001$ ). Singles are without companions and possibly more eager to share holiday experiences with friends and relatives at home.

The use of social media is rapidly growing (Xiang and Gretzel, 2010), and its adoption and use be related to travel motivations. To examine the relationship between travel motivation and traveller propensity for sharing travel-related information during and after a trip, the sample was subdivided into those who marked that they sent emails and/or shared travel-related information via social media during and/or after their trip and those who did not. For each of the four subdivisions, users and non-users were subsequently compared on their average scores on each of the eight travel motivational factors. Table 12 depicts, for each motivational factor, the calculated mean differences and their corresponding significance levels based on a series of independent t-tests comparing users and non-users of internet and social media.

The upper part of Table 12 shows that travellers motivated by family/friends are more likely to share travel-related information with family/friends, whether by emails or social media. Those who sent emails during their trips are significantly more motivated by the experiencing nature factor when compared to those who did not, and travellers prone to using social media during their trips are significantly more motivated by food experience and shopping. When looking at post-trip information sharing, it is evident that travellers motivated by family/friends, escape/relaxation, shopping and status are more likely to share travel information on social media after returning home as opposed to travellers motivated by food, new cultures, nature and sun and beach. E-mails, which might be considered a more old-fashioned and less rapid medium, is preferred by the food, nature and culture seekers though the status-oriented groups are also sharing their holiday experiences this way.

**Table 11** Information sharing by demographics (percent)

	Total	Gender		Age		Education level		Income DKK		Household	
		Male	Female	18-34	35+	High school or less	Higher	Less than 500,000	500,000+	Single	Couple
<i>During-trip information sharing</i>											
Shared holiday travel information/photos on social media	3.7	3.5	3.9	7.4	2.7*	3.4	3.9	3.0	3.0	3.5	3.8
Sent emails to family/friends with travel information	23.8	24.6	23.0	29.6	22.2	19.5	26.6*	22.7	24.3	24.3	20.5
<i>Post-trip information sharing</i>											
Shared holiday travel information/photos on social media	17.9	12.1	23.7***	38.9	12.3***	18.0	17.9	21.3	14.1	25.6	15.0**
Sent emails to family/friends with travel information	16.6	16.8	16.3	20.4	15.6	16.1	16.9	16.8	16.2	15.9	16.8

Notes: <sup>1</sup> Entries represent the proportion of travellers who performed the particular activity during or after their trip.

\*\*\*p < .001, \*\*p < .01, \*p < .05 based on a  $\chi^2$  test

**Table 12** Information sharing by travel motivation (mean differences<sup>1</sup>)

	Family/ friends	Escape/ relaxation	Food experience	Experiencing new cultures	Experienc- ing nature	Shopping	Sun and beach	Status
	Mean differences <sup>1</sup>							
<i>During-trip information sharing</i>								
Shared holiday travel information/photos on social media	.60***	.39	.66***	.43	.48	.95***	-.16	.31
Sent emails to family/friends with travel information	.35**	.22	.12	.19	.40**	.16	.12	.03
<i>Post-trip information sharing</i>								
Shared holiday travel information/photos on social media	.47***	.35**	.09	.11	.05	.30*	.16	.25**
Sent emails to family/friends with travel information	-.02	-.18	.25*	.36**	.32*	-.03	-.03	.31**

Notes: <sup>1</sup>Mean differences are calculated by subtracting, for each motivational factor, the mean score of those who did not perform the respective activities from the mean scores of those who did.

\*\*\*p < .001, \*\*p < .01, \*p < .05 based on two-sided t-tests

## **5 Conclusions and implications**

This study provides new evidence about the information search patterns of travellers before and during a trip, demonstrating interesting associations between socio-demographic factors and travel motivations. A comparison of information searches before and during the trip demonstrates a number of imperative findings. First, it is shown that the search for information is generally more intensive before rather than during the trip. Second, following arrival at a destination, the nature of sought information shifts away from travel and accommodation towards the localisation of attractions and facilities at the destination. Pre-trip searches are predominantly conducted online, while searches during the trip make greater use of offline media, although online searches continue to represent the greatest scope and intensity.

Survey responses indicate that information search in general is highest among the well-educated and affluent segments, as also shown by Luo et al. (2005). This is the case both before and during trips, although the most intensive searchers tend to finish their search before they leave for their destination. Not surprisingly, younger travellers are the first-movers in taking advantage of online media.

A study of motivational associations demonstrates that travellers motivated by a curiosity about culture, food or nature have a higher propensity to seek information both prior to and during the trip. However, the detailed nature of the study allows informative conclusions to be drawn about the information content sought in relation to all motivations, as well as which categories of information are sought both prior to and during the trip.

This study does not take into account the full range of social media and other opportunities to share travel-related information, and its findings can therefore only indicate the fringes of this phenomenon. It is, however, important to conclude that the use of social media for information sharing is consistently related to socio-demographic factors as well as to travel motivations.

Studies of information search and travel motivations are not only of a general academic interest, but are also crucially important for destinations and tourism service providers. This study pinpoints a number of interesting issues that may have wider implications. The importance of online searches in finding information before a trip is unquestionable. Taking into account the behaviour of the younger segments, the era of printed travel brochures as a comprehensive and feasible marketing measure for destinations and service providers will soon come to an end. There is a strong case for suggesting that electronic media tend to out-compete offline media both prior to the trip and at a destination.

There is good evidence for the importance of targeted information. Some motivational categories are found to be fairly information-immune, such as beach holidaymakers, escapers and families. However, details in the study reveal that there are types of information and dissemination circumstances that can generate interest also among low information seekers. One example is sports activities, as families may look for suitable entertainment once at a destination. Targeting this audience requires micro-marketing measures adapted to the particularities of the destination. Searches for sporting opportunities are primarily undertaken by travellers who are motivated by nature and sun and beach, though those motivated by families/friends and escape are also

interested in sports activities. Providers of sports facilities are unlikely to attract attention before the visitors are actually at the location.

Culture- and food-motivated holidaymakers are information-craving. It is questionable whether their needs are sufficiently met by electronic and offline media. Accommodation searches at a destination are not an issue for most motivational groups.

The study tentatively puts forth findings about sharing information with friends and family on social media and by email after the trip. Most interestingly, it appears that social status/self-esteem motivations seem to drive the sharing phenomenon. Taking into account the importance of worth-of-mouth for the total information acquisition and decision-making processes, both before and during the trip, the particularities of status-related motivations are crucial. The driving force for trendsetting, which is motivated by self-promotion and social staging, is a travel motivation that need further investigation.

As with any study of this nature, there are some limitations that should be considered in assessing its contribution to knowledge about tourism. The study drew the sample from an online panel which may have biased the proportion of travellers that use the Internet. Respondents were recruited in Denmark and it could be questioned whether the results are generalisable to other countries. It would be of value to conduct similar studies in other countries. Finally, the respondents' use of social media in this study was restricted to social networks as such as Facebook and Twitter. Future studies may also include review sites such as TripAdvisor.

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