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# Evaluating Travelers' Response to Social Media Using Facets-based ROI Metrics

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# Evaluating Travelers' Response to Social Media Using Facets-based ROI Metrics

## Introduction

As social media technology continues to mature the scope and scale of its impact on tourism grows more complex as there are now hundreds of social media channels from which destination managers can choose for communicating with potential visitors. Yet as these options continue to expand, uncertainty grows as to which social media should be used to reach past, present, and future visitors. This diversity in social media requires a better understanding of the ways in which travelers use social media for travel-related decisions so that destination marketing managers can develop more effective and efficient social media marketing strategies. Using a mid-Atlantic city located in the United States as a case study, this research examines the characteristics of travelers that use social media, their motivations for using social media for travel planning, and the ways in which they use social media for travel planning. A facets-based model of destination advertising response is then applied in order to examine the extent to which social media use influences various aspects (i.e., facets) of both pre-trip and *in situ* travel decisions.

## Literature Review

Recent studies (Chan & Guillet, 2011; Huang, 2012; Huang, Basu, & Hsu, 2010; Leung, Law, van Hoof, & Buhalis, 2013; Munar, 2012; Xiang & Gretzel, 2010) suggest that social media is not only an important information search tool for tourists, but also one of the key marketing tools for destination management organizations (DMOs). However, while more DMOs continue to adopt social media as one of their marketing tools, the majority are just “beginning to realize the power of social media” (Stankov, 2010); and, Leung et al. (2013) argue that the tourism industry has made slow progress in responding to the business opportunities brought on by social media. Discussing DMOs adoption of social media, Hays, Page, and Buhalis (2013) contend that DMOs are still at the beginning stages of understanding and experimenting in using social media to promote their destinations and that most DMOs struggle to assess the return on investment (ROI) of their social media strategies.

A conventional approach to determining the ROI of a destination marketing program has been the conversion study, which yields a ‘conversion ratio’ based on the number of visits to a destination that can be attributed to the campaign (Woodside, 1990, 2010). Recently, Stienmetz, Maxcy, and Fesenmaier (2015) proposed the Destination Advertisement Response (DAR) model, which improves upon traditional approaches to conversion analysis by evaluating advertisements’ impact not only on destination choice, but on all major facets of the trip (i.e. destination choice as well as decisions concerning accommodations, attractions, food and beverage, events, and shopping). The DAR model is based on classic advertisement response theory and argues that due to the multi-faceted and hierarchical nature of travel planning and decision making each facet of the travel experience is influenced differently by advertising (Stienmetz et al., 2015). Additionally, demographic characteristics (such as household income) also influence advertisement response (Moutinho, 1987).

While the facets-based DAR model greatly improves upon traditional methods of advertisement evaluation, additional controls for the channels and the timing of advertisement exposure and decision making are needed for social media marketing. Recent research indicates that travelers develop unique information search strategies defined by their selection of

information sources and channels and that different combinations of social media channels used for planning may influence traveler decisions differently (Grønflaten, 2009). Social media involvement, measured as frequency of social media use, as well as the informational needs/motivations for using social media for travel planning are also expected to mediate the influence of social media on each separate facet decision (Gursoy & McCleary, 2004). Further, Bieger and Laesser (2004) indicate that many trip decisions are being postponed until the last minute. As such, this provides sufficient information challenging the efficacy of most destination advertisement evaluation models which emphasize pre-trip decisions with little or no consideration being made for how marketing influences decisions that are made during the trip (Hwang & Fesenmaier, 2011; Wang, Xiang, & Fesenmaier, 2014). Based on this literature, it is expected that the social media channels that a traveler is exposed to will have an influence on the advertisement response for each main travel facet. It is further argued that the DAR model can easily be extended to evaluate the effectiveness of social media as part of a destination marketing strategy in terms of both pre-trip and *in situ* decisions.

## Methods

Using a mid-Atlantic American DMO as a case study (i.e., the Baltimore Tourism Office), this research seeks to address the following three research questions: 1) What are the characteristics of travelers using various types of social media (i.e. the motivations, behaviors, and specific social media channels being used to plan and then experience their destination)? 2) To what degree are various travel decisions (i.e. accommodations, attractions, restaurants, events, and shopping) influenced by the social media related promotion activities of the DMO? And, 3) Can social media user groups with different sensitivities to advertisements be identified?

In the Fall of 2014 all persons contacting Visit Baltimore on their website and through a variety of social media over a 32 month period (May, 2011 – December, 2013) were contacted and invited to participate in a follow-up online survey whereby respondents were contacted up to three times during the week. A 2.7 percent response rate was achieved and after controlling for invalid data, the final sample analyzed for this study included 585 non-resident leisure travelers that visited the city and used social media. Analysis followed a three step process. In particular, frequency analysis was first conducted to examine the characteristics, motivations, and social media channel use of the visitors; also, this analysis examined the extent to which key decisions are influenced by social media. Then, five separate binary logistic regression models were specified in order to evaluate the role individual characteristics and social media behaviors impact response to social media in driving both pre-trip and *in situ* decisions (hence, 10 models were estimated). Advertising response (e.g. did use of social media influence your travel decision? Yes=1, No=0) for each travel facet (e.g. accommodations, attractions, restaurants, events, and shopping) was the dependent variable; traveler characteristics, motivations, and use of social media were the independent variables used in each respective model.

## Results

Table 1 reports the popularity of the social media channels used for travel planning before a trip starts and for making final decisions once the trip has begun. The results indicate that travel review sites such as Trip Advisor and Yelp are clearly the most useful to travelers, followed by social networking sites (such as Facebook and Google Plus). Relatively few travelers consider microblogging sites (such as Twitter) useful for travel planning before or during the trip.

**Table 1: Social Media Channel Preference for Pre-Trip and In Situ Decisions**

<b>Social Media Type</b>	<b>Percent of Sample (n = 585)</b>	
	<b>Most useful SM for planning before the trip</b>	<b>Most useful SM for decision making during the trip</b>
Travel reviews	77.4	68.7
Social networking	36.8	23.8
Photo/video sharing	16.4	7.4
Personal blogs	11.6	5.0
Special interest communities	20.3	13.2
Microblogs	2.6	1.4
Other	10.1	9.7
None of the above	13.5	19.1

Analyses were also conducted to examine the impact of social media advertising on the various decisions which comprise the trip planning process. In particular, this study compared the conversion rates for five different trip decisions facets (e.g. accommodations, attractions, restaurants, events, and shopping). An ‘influence’ rate for each aspect of the trip was calculated as the ratio of those that were exposed to social media and those that were influenced by the social media to visit specifically featured destination facets (i.e. accommodations, attractions, restaurants, events, and shopping). Table 2 summarizes the results of this analysis for both pre-trip planning and *in situ* decisions and indicates that attractions and restaurants are substantially influenced by social media.

**Table 2: Probability of Social Media Influence on Facet Decisions**

<b>Trip Facet</b>	<b>Pre-Trip Influence Rate</b>	<b>In-Situ Influence Rate</b>
Visiting a featured attraction	63.6%	50.4%
Visiting a featured restaurant	46.2%	42.7%
Staying at featured accommodations	28.8%	20.5%
Attending a featured event	28.3%	25.6%
Visiting a featured store or shop	20.7%	15.4%

A final series of analyses examined the marginal impact of traveler characteristics, social media use, motivations, and behaviors on the social media response for each major destination facet while holding constant the impact of other variables believed to effect advertising response. In particular, a total of ten binary logistic regression models were analyzed in which social media response for each facet for both the pre-trip and *in situ* context was a dependent variable. The results of the logistic regression analyses for each of the models are reported in Table 3. Examination of the regression coefficients reveals the relative marginal impact each variable has on the log likelihood of social media response for each facet. The results indicate that the variables which significantly affect the likelihood of social media response for each facet decision are different. This finding lends support to the conclusion that each facet of the

destination should be considered separately when developing social media metrics for advertisement response.

**Table 3: Regression Results for Pre-Trip and In Situ Facet Response**

	Attractions -BEFORE	Attractions- DURING	Restaurant -BEFORE	Restaurant -DURING	Events- BEFORE	Events- DURING	Shopping- BEFORE	Shopping- DURING	Hotels- BEFORE	Hotels- DURING
Model Sig.	.003	.026	.056	.183	.000	.001	.001	.083	.020	.001
Cox & Snell R Square	.336	.418	.279	.354	.380	.502	.354	.384	0.302	.501
Nagelkerke R Square	.460	.557	.372	.476	.544	.749	.550	.658	.440	.797
Classification Table (% Correct)	79.4	78.5	72.1	77.6	85.5	96.3	90.9	92.5	81.2	95.3
Income less than \$50,000	.780	.357	-.385	-.841	-1.795	-5.801	1.377	.292	.651	-14.525*
Income \$50,000-\$74,999	1.053	.951	.402	.743	-1.531	-.928	-.116	2.458	-.088	7.566
Income \$75,000-\$99,999	.818	-1.847	.392	2.786*	-1.404	-.787	1.415	.415	.890	-4.625
Income \$100,000-\$149,999	1.672*	-2.094	.459	2.822*	-.912	-1.865	-.512	-4.526	1.226	7.086
Income \$150,000-\$199,999	-.478	22.039	-1.618	1.145	-23.140	-2.059	-.177	-14.838	-.571	46.109*
Income \$200,000 or more	.060	-4.488	-2.242	.221	-2.739	-25.666	-22.575	-20.943	-.761	-19.749
Most useful SM -Travel reviews	1.356	-.271	1.945*	1.502	.624	1.176	.569	-4.092	3.604*	5.767
Most useful SM -Social Networking	1.024	2.262	.911	-.196	1.622*	1.594	.924	-3.219	-.343	12.690
Most useful SM - Photo and video sharing	-.383	-.779	-.280	.541	1.092	3.520	.843	-1.466	1.742*	7.619
Most useful SM - Personal blogs	-1.014	-.409	.301	2.532	-1.236	6.506	-.429	7.616	.213	22.539*
Most useful SM - Special Interest or online communities	.889	-.515	.293	-.582	.084	-3.304	-.869	-1.178	-1.517*	-2.570
Most useful SM - Microblogs	.913	-.308	-1.551	-3.479	.167	12.579	.435	1.272	-2.850	-11.078
Most useful SM - Other	1.249	-1.467	.968	3.724*	2.223*	3.773	.499	1.052	.760	6.543
Freq. of SM use - Several times a week	-.181	-1.076	1.434*	1.473	-.349	-.055	-1.645	1.595	-.060	-7.798
Freq. of SM use - About once a day	-.565	-1.482	.021	.480	-1.907	-3.287	-2.497	-.209	-1.829	-11.981*
Freq. of SM use - Several times a day	-1.505*	.279	.684	.290	.369	-.208	-.683	3.381	-1.137	-12.821*
Freq. of SM use - About once an hour or more	-3.406	-3.025	3.320	-21.328	-4.00	-39.643	1.071	3.131	-19.225	-47.386
Total Number of DMO SM accounts followed	.450	-.069	-.041	-.700	-1.265*	-2.171	-.934	-.296	-.143	6.200
Why have you followed DMO - Participate in exclusive events or offers	-.539	-.225	-.096	-.318	.773	4.987*	-.799	-2.687	1.063	-3.412
Why have you followed DMO - Find new event information	1.404*	.256	-.315	.088	1.612*	.454	.555	1.587	-1.494*	4.043
Why have you followed DMO - Keep informed through news for events/activities, etc	.228	-1.678	.130	1.394	1.217	-1.023	.061	1.785	-.960	12.015*
Why have you followed DMO - Read interesting or entertaining content	.488	-.900	.100	1.190	.969	2.280	1.438*	.323	.733	-26.165
Why have you followed DMO - Look at material tourists have posted	.812	.924	.375	-.246	-.769	-2.377	-.780	1.938	.327	15.643
Why have you followed DMO - Look at material other residents have posted	1.094	3.141*	.189	-2.312	.128	-5.992	1.903*	2.567	1.178	4.534
Why have you followed DMO - I want to show others that I am interested	-.488	-2.708	-.909	.191	-1.973	-23.798	1.685	.321	-.274	16.358
Why have you followed DMO - Other people I know follow DMO social media	-.288	-4.639	-.026	.222	1.377	34.903	1.872	52.406	-.640	-14.179
Why have you followed DMO - I am interested in meeting new people	18.295	3.811	2.244	3.634	7.752*	96.340	7.488	-5.472	1.970	-4.857
Why have you followed DMO - Other	1.971*	.818	.309	1.282	-1.818	-4.101	-1.096	6.718	.805	27.408
SM activities - Commented on a post (text, photo, or video)	.033	-3.319	.135	-.908	.786	6.087	1.660	-1.385	-1.365	-31.627*
SM activities - Shared a post (text, photo or video) with others	1.896*	2.969*	.195	.353	1.113	.549	1.668	5.575	.455	14.271
SM activities - Expressed your support (eg like, pin, fave)	.368	-2.355	.100	-2.536	-2.259*	-27.752	1.950*	2.489	.459	4.949
SM activities - Became a fan or follower	-.465	.125	.571	-.832	.452	.292	.601	1.664	.132	2.388
SM activities - Downloaded an application	-.778	.011	3.013	1.856	1.299	-15.516	1.399	.299	-.483	1.229
SM activities - Shared positive experiences	2.028*	2.966*	.876	1.965*	1.024	2.068	1.224	4.022	1.795*	14.303*
SM activities - Shared negative experiences	-1.244	.090	-1.962	.507	-6.491*	-3.183	-3.307	3.030	.008	.830
SM activities - Asked questions	-.217	-1.061	.617	-2.487	-1.021	-32.313	1.961	-19.713	.924	-25.330
SM activities - Answered questions	1.942	-.206	-.718	1.994	.638	5.319	-3.266	-29.640	-2.374	-28.599
SM activities - Participated in a discussion	-3.221*	-.120	-.721	1.879	-2.360	-6.682	-4.897*	-2.327	2.930*	34.064
SM activities - Other	.965	2.043	-.674	-2.954	-2.040	-28.165	1.536	5.170	-.350	5.245
Constant	-3.911*	.807	-3.525*	-3.906*	-1.759	1.740	-3.318	-8.315*	-4.219*	-40.010*

Note: \*p>.05

## Discussion

The results of this study indicate that travelers use different social media channels for both pre-trip and *in situ* decisions, and that while social media is used more frequently pre-trip for all facets of decision making, it also has considerable impact on *in situ* travel. Importantly, the regression analyses suggest that response to social media marketing can be reliably estimated for most facets of both pre-trip and *in situ* decisions and that traveler characteristics, social media use, motivations, and behaviors influence response to social media marketing differently by facet type and context.

There are several important implications for this research. First, the findings clearly suggest that DMOs must be aware of the numerous information search strategies employed by travelers so as to develop appropriate social media strategies. Second, key indicator variables for each facet of both pre-trip and *in situ* facets can be used to predict social media marketing response. For example, DMOs can predict the effectiveness of their social media marketing for the attractions, restaurants, and accommodations facets by monitoring the number of positive experiences that are shared on their social media channels. Finally, facets-based conversion ratio metrics for social media marketing must be used in order to effectively determine social media ROI. Given the estimated spending associated with each major facet of a trip (accommodations, attractions, restaurants, events, and shopping), each facet's conversion ratio metrics can be used to provide an estimation of the actual value of social media in terms of induced destination expenditure compared to the known cost of a DMO's social media program.

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