ISSN (PRINT): 1994 - 7658 ISSN (ONLINE): 1314 - 0817

VARNA UNIVERSITY OF MANAGEMENT

European Journal of Tourism Research

http://ejtr.vumk.eu

Encounter norms among visitors at a national park in Turkey

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Received: 17/02/2016 Accepted: 13/12/2016

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Abstract

This article examined response format effects on norm prevalence (i.e., the percent of individuals who could specify a norm). Data were collected in Dilek Peninsula Büyük Menderes Delta National Park, in Turkey. Respondents were randomly assigned to one of two conditions. In the "semi-open" response format, respondents (*n* = 458) "wrote a number" for an acceptable number of visitor encounters. In the "closed" format, respondents (*n* = 459) "circled a number" of acceptable encounters, along a range of possible responses. Results showed that encounter norm prevalence was significantly and consistently higher for the closed format of the survey, as compared to the semi-open version. In addition, among those reporting a norm, the average tolerance levels were statistically higher in the semi-open format. Implications for applying the normative approach across different cultures are discussed.

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***Keywords*:** encounter norms, norm prevalence, response format, Turkey.

Citation: Bingül, M., J. Vaske, M. Donnelly (2017) Encounter norms among visitors at a national park in Turkey. *European Journal of Tourism Research* 17, pp. 206-214

Introduction

Outdoor recreation managers are interested in visitors' evaluations of social, resource and managerial conditions (Manning, 2011). Norm theory and related empirical methods have been developed as a useful way to measure and interpret these evaluations (Shelby, Vaske and Donnelly, 1996; Manning, 2007; Anderson, Manning, Valliere and Hallo, 2010; Bell, Needham and Szuster, 2011; Needham, Szuster and Bell, 2011; Needham, Rollins, Ceurvorst, Wood, Grimm and Dearden, 2011; Ceurvorst and Needham, 2012; Vaske, Heesemann, Loomis and Cottrell, 2013; Needham, Vaske, Whittaker and Donnelly, 2014). One line of research defines norms as standards that individuals use for evaluating activities, environments, conditions, or management strategies as good or bad, better or worse (Vaske, Shelby, Graefe and Heberlein, 1986).

Norms provide a basis for measuring indicators and standards of quality. *Indicators* are the

biophysical, social, managerial, or other conditions that managers and visitors care about for a given experience (Manning, 2011; Needham, 2013; Needham, Ceurvorst and Tynon, 2013). *Standards* restate management objectives in quantitative terms and specify the appropriate levels or acceptable limits for the impact indicators (i.e., how much impact is too much for a given indicator) (Manning, Rovelstad, Moore, Hallo and Smith, 2015; Vaske, Donnelly and Bingül, 2016). "Standards identify conditions that are desirable (e.g., no litter, no trail erosion), as well as the conditions that managers do not want to exceed (e.g., encounters with other people, human-wildlife conflict)" (Vaske, Whittaker, Shelby and Manfredo, 2002, p. 145). Indicators and standards of quality are prominent in management and planning frameworks, such as Limits of Acceptable Change (LAC, Stankey, Cole, Lucas, Peterson and Frissell, 1985), Carrying Capacity Assessment Process (C-CAP, Shelby and Heberlein, 1986), Visitor Impact Management (VIM, Graefe, Kuss and Vaske, 1990), Visitor Experience and Resource Protection (VERP, National Park Service, 1997) and Visitor Use Management (VUM, Interagency Visitor Use Management Council, 2016).

In outdoor recreation, *reported encounters* are subjective counts of the number of other visitors that an individual remembers seeing during their visit to a given location (Vaske and Donnelly, 2002; Needham *et al*., 2014). *Encounter norms* refer to standards that individuals use for evaluating their acceptance or tolerance of increasing numbers of encounters with other people (Shelby *et al*., 1996; Manning, 2007). Research has examined encounter norms or the maximum number of people that users will accept in a given setting (see Vaske, Donnelly and Shelby, 1992; Shelby *et al*., 1996; Donnelly, Vaske, Whittaker and Shelby, 2000; Manning, 2007, 2011; Bell *et al*., 2011; Needham *et al*., 2011; Vaske *et al*., 2013; Anderson and Manning, 2013; Randall and Rollins, 2013; for reviews). Other applications have extended this approach to different indicators and impacts, such as campsite or site sharing (Heberlein and Dunwiddie, 1979; Shelby, 1981), fishing site competition (Martinson and Shelby, 1992; Whittaker and Shelby, 1993), instream flows for recreation (Whittaker and Shelby, 2002), discourteous behavior (Whittaker and Shelby, 1988, 1993; Whittaker, Vaske and Williams, 2000), resource indicators such as litter and campsite impacts (Shelby, Vaske and Harris, 1988; Vaske, Whittaker, Shelby and Manfredo, 2002) and facility indicators (e.g., tramway, trail road) (Kim, Shelby and Needham, 2014).

Norm prevalence refers to the percent of respondents giving a norm, and can range from 0% to 100%. If norm prevalence is low, the issue may not be relevant to respondents, or the measurement technique may be confusing or difficult. If prevalence is high, the norm is probably salient for respondents. Donnelly and colleagues (2000) found that question response format was one of several variables that influenced norm prevalence. Besides question response format, differences in norm prevalence were suggested for: types of recreation areas [frontcountry vs. backcountry] (e.g., Manning, Johnson and VandeKamp 1996; Vaske, Beaman, Stanley and Grenier, 1996), types of activities [consumptive vs. nonconsumptive] (e.g., Vaske, Donnelly, Heberlein and Shelby, 1982), and types of encounters [conflict vs. no conflict] (Vaske, Donnelly, Wittmann and Laidlaw 1995).

Methodologies for measuring norms have undergone a variety of transformations and refinements. The original method, based on work by Jackson (1965), asked respondents to evaluate the acceptability of varying levels of some impact, such as the number of encounters on a trail or the amount of bare ground at a campsite (Heberlein and Vaske, 1977; Shelby, Vaske and Harris, 1988). For example, a series of questions might be used to ask respondents if they could tolerate seeing 5, 10, 15, 20, 25 … other individuals in a particular context (e.g., on a trail, or on a river). Answers have been coded on 5-point or 7-point scales ranging from "highly unacceptable" to "highly acceptable (i.e., closed-ended responses). This approach allows the researcher to assess the acceptability of a range of specific encounters; information that can be used to calculate an impact acceptability curve (See Vaske *et al*., 1986; Shelby *et al*., 1996; for reviews). A

disadvantage of the methodology is that numerous questions are necessary, which can be problematic, especially if multiple indicators are included in the study (e.g., number of encounters, amount of bare ground).

To overcome this limitation, some researchers have adopted a semi-open, fill-in-the-blank-format (Hall and Roggenbuck, 2002; Manning, Lawson, Newman, Laven and Valliere, 2002). Using this approach, a typical question might ask respondents to give the highest number of encounters they would tolerate (e.g., I would tolerate encountering no more than ____ other visitors), or to check a category, which says "makes no difference to me." Some investigations (Roggenbuck *et al*., 1991; Vaske *et al*., 1995; Hall and Shelby, 1996; Hall *et al*., 1996; Manning *et al*., 1996) have included a third response category. Rather than forcing a choice between "giving a number" or indicating that the number of encounters "makes no difference," respondents may check a category "makes a difference but can't give a number." This is especially important in frontcountry or high-density areas where respondents may find it difficult to specify exact numbers representing their acceptance or tolerance levels. In the Donnelly *et al*. (2000) comparative analysis, the average norm prevalence was highest for the 2- category format (M = 87%), and lowest for the 3- category response format (M = 52%) across the 56 evaluation contexts examined.

A recent experiment by Vaske *et al*. (2016) explored a variant of these two approaches. In the "semi-open" response format treatment, respondents "wrote in a number" for an acceptable number of visitor encounters. In the "closed" format treatment, individuals "circled a number" of acceptable encounters along a range of possible responses. In other words, in contrast to the initial work by Jackson (1965), only one encounter norm question was asked. As predicted, the percent reporting a norm was statistically higher in the "closed" as opposed to the "semi-open" treatment. A second hypothesis predicted that the mean tolerance level would differ for the two treatments. Results failed to support this hypothesis; the average tolerance levels for the closed and semi-open formats were statistically equivalent.

The Vaske *et al*. (2016) experiment was conducted in Rocky Mountain National Park (ROMO) in the United States. ROMO has a combination of backcountry and frontcountry landscapes. The article here replicates the Vaske *et al*. experiment in Dilek Peninsula Büyük Menderes Delta National Park, in Turkey. The objective was to determine if the findings from the United States would replicate in a different country in a Turkish National Park, where the density of visitors is substantially higher than in the U.S. The following hypotheses were examined:

H_1: *Norm prevalence will be greater for the closed than the semi-open response format*.
H_2: *Among those reporting a norm, the average response will vary by response format*.

Methods

Study Area

Data for this article were obtained from visitors to Dilek Peninsula Büyük Menderes Delta National Park (DPNP), in Turkey. This area is located in the Aegean Region, Aydın City in Kuşadası and Söke Districts. The park consists of two different geographic areas; Dilek Peninsula (10,985 hectares) and Menderes Delta (41,224 acres). Dilek Peninsula has attractive sandy and clay beaches and Menderes Delta has lagoons and swamps. Swimming, sunbathing, and picnicking are common activities at the four beaches: Icmeler, Aydinlik, Kavakliburun and Karasu. Icmeler Beach is 320 m in length and is approximately 45,000 m^2 with a capacity of about 1,000 people (Kilicaslan, Deniz, Goktug, Kara and Kutsal, 2011). Icmeler Beach is the only sandy beach in the park and the closest beach to the main entrance. Aydinlik Beach is 860 m long and has 62,000 m^2 beach area; the estimated capacity of the beach is around 800 visitors. Kavakliburun beach is the longest beach, at 1,640 m and has 80,600 m^2 of beach area; the beach capacity is approximately 1,200 persons. Karasu Beach is 480 m long and is the farthest from the entrance. The beach area is 40,400 m^2 and has a capacity of approximately 400 visitors (Kilicaslan *et al*., 2011). According to park statistics, the park hosts approximately 620,000 domestic and foreign visitors annually (General Directorate of Nature Conservation and National Parks, 2015).

Data Collection

Data were collected between June and August, 2014, from visitors to the Dilek Peninsula. Randomly selected visitors completed on-site, self-administered surveys at the four beaches in the park. In total, 968 visitors were approached and 917 completed the survey (response rate = 95%). Sample sizes at each location included 342 at İçmeler Beach, 237 at Aydınlık Beach, 201 at Kavaklıburun Beach, and 137 at Karasu Beach.

To measure reported encounters, visitors were asked, "Please estimate the number of other visitors you saw at the beach." Responses were open-ended (i.e., fill-in-the-blank) and there was no limit on the number of people that a visitor could specify. This approach has been applied widely for measuring reported encounters in outdoor recreation (see Vaske and Donnelly, 2002; Manning, 2011; Needham, Haider and Rollins, 2016, for reviews).

To measure encounter norms, visitors were asked, "What is an acceptable number of other visitors to see while you are using the beaches at the DPNP?" Two versions of the questionnaire were constructed. One version used a "semi-open" format, where respondents were asked to 'write in a number' for the acceptable number of other visitors. The second version used a "closed" format, where respondents were asked to 'circle a number' along a scale with numeric intervals, to specify their norms. In both versions, norm questions also allowed respondents to indicate: "it does not matter to me" or check a category "it matters but I cannot specify a number." Both approaches for measuring encounter norms in recreation areas have been used extensively (e.g., Roggenbuck *et al*., 1991; Hall and Shelby, 1996; Hall *et al*., 1996; Manning, Valliere, Wang and Jacobi, 1999; Cole and Stewart, 2002; Vaske and Donnelly, 2002; Vaske *et al*., 2016).

Approximately equal numbers of the two survey versions were completed: 458 with the semi-open response category and 459 with the closed version. At İçmeler Beach, 51% of the surveys used the semi-open response [n=175], and 49% use the closed response [n=167]). Comparable figures for Aydınlık Beach, were 56% semi-open [n=132] and 44% closed [n=105]); at Kavaklıburun Beach, 41% semi-open [n=83] and 59% closed [n=119]); and at Karasu Beach, 50% of respondents answered the semi-open format [n=68], while the other 50% were asked the closed response question [n=68]) (Table 1).

Results

Table 2 examines the number of reported encounters for visitors at the four park locations. At İçmeler Beach, 22% of respondents saw over 1,000 other visitors, and

Table 1. *Number of completed surveys to each of the four study locations*

	Survey Locations*			
Survey version	İçmeler Beach (*n*=342)	Aydınlık Beach (*n*=237)	Kavaklıburun Beach (*n*=201)	Karasu Beach (*n*=137)
Semi-open	51	56	41	50
Closed	49	44	59	50

* Cell entries are percentages of responses from visitors to for locations (Icmeler Beach, Aydinlik Beach, Kavakliburun Beach, and Karasu Beach) in the Dilek Peninsula Buyuk Menderes Delta National Park.

Table 2. *Reported Encounters at the four locations in the DPNP*

	Number of other visitors seen*			
Survey Locations	**< 100**	**100-500**	**500-1000**	**1001 +**
İçmeler Beach (*n*=342)	1	35	43	22
Aydınlık Beach (*n*=237)	6	81	11	1
Kavaklıburun Beach (*n*=201)	25	70	4	1
Karasu Beach (*n*=137)	29	59	9	3

* Cell entries are percentages of responses from visitors to for locations (Icmeler Beach, Aydinlik Beach, Kavakliburun Beach, and Karasu Beach) in the Dilek Peninsula Buyuk Menderes Delta National Park.

43% reported seeing between 500 and 1,000 other people. At Aydınlık Beach, 81% of respondents reported that they saw between 100-500 people. Similarly, 70% of respondents at Kavaklıburun Beach and 59% at Karasu Beach reported that the number of people they saw was between 100-500.

Table 3 shows encounter norm prevalence for the 'semi-open' and 'closed' response format conditions. The closed version of the survey resulted in a statistically higher percentage of the visitors giving a norm than the semi-open version, in all locations. At İçmeler Beach, for example, 65% of the respondents reported a norm in the closed version, compared to 41% in the semi-open version. At Aydınlık Beach, 70% of the respondents reported a norm in the closed version, while 50% of visitors reported a norm in the semi-open version. The same pattern of results was noted for the other survey sites (at Kavaklıburun Beach, 64% and 42%; and at Karasu Beach, 71% and 47%, respectively). Norm prevalence at the four locations was consistently higher with the 'closed' format when compared to the 'semi-open' format. All chi-square tests were statistically significant and the effect size

Table 3. *Encounter Norm Prevalence at the Different Beach Locations in the DPNP*

	Response Format[1]			
Acceptable number of visitors at:	**Semi-Open**	**Closed**	χ^2	**Cramer's *V***
İçmeler Beach (*n*=342)	(*n*=175)	(*n*=167)		
Reported a norm	40.6	65.3		
It doesn't matter to me	37.7	18.0	23.2**	0.259
It matters but I can't specify a number	21.7	16.8		
Aydınlık Beach (*n*=237)	(*n*=132)	(*n*=105)		
Reported a norm	50.0	69.5		
It doesn't matter to me	33.3	14.3	12.8*	0.228
It matters but I can't specify a number	16.7	16.2		
Kavaklıburun Beach (*n*=201)	(*n*=83)	(*n*=119)		
Reported a norm	42.2	63.6		
It doesn't matter to me	25.3	21.2	10.9*	0.233
It matters but I can't specify a number	32.5	15.3		
Karasu Beach (*n*=137)	(*n*=68)	(*n*=68)		
Reported a norm	47.1	71.0		
It doesn't matter to me	20.6	14.5	8.8*	0.252
It matters but I can't specify a number	32.4	14.5		

[1] Cell entries are percentages of responses from visitors to two versions of the questionnaire.
* $p < 0.05$ ** $p < 0.001$ based upon Chi-square analysis.

Table 4. *Norm Tolerance Limits by Survey Version*

Locations	Mean	Median	SD	Range	*F*-value	*p*-value	*η*
İçmeler Beach							
Semi-open (*n*=175)	381.7	250	387.1	2000	44.9	<0.001	0.449
Closed (*n*=167)	126.2	150	75.9	200			
Aydınlık Beach							
Semi-open (*n*=132)	240.9	200	202.8	1000	25.9	<0.001	0.399
Closed (*n*=105)	110.8	100	77.0	200			
Kavaklıburun Beach							
Semi-open (*n*=83)	182.2	100	191.1	795	8.26	0.005	0.267
Closed (*n*=119)	109.4	100	74.5	195			
Karasu Beach							
Semi-open (*n*=68)	219.8	175	213.3	1000	18.7	<0.001	0.438
Closed (*n*=68)	77.9	50	69.8	200			

(Cramer's *V*) was consistently between "minimal" (.1) and "typical" (.3) (see Vaske, 2008 for additional explanation). These findings support Hypothesis 1.

Tolerance levels for norms were based on means (*M*), medians and standard deviations (*SD*), (Table 4). Among those reporting a norm, the average norm tolerance levels for the closed and semi-open formats were statistically different across all four locations. For example, at İçmeler Beach, visitor norms for seeing others were statistically higher using the semi-open format (M = 381.7), compared to the closed format (M = 126.2, F = 44.9, $p < 0.001$), and the eta effect size was substantial (η = 0.449 see Vaske 2008 for an explanation of the cut points for eta). At Aydınlık Beach, visitor norms were also statistically higher (F = 25.9, $p < 0.001$) using the semi-open format (M = 240.9) compared to the closed format (M = 110.8). The eta effect size was also substantial (η = 0.339). Similar results were found at the other two beaches, supporting Hypothesis 2.

Discussion

Studies to understand the impacts of visitor numbers in recreation settings have concentrated on normative explanations. This article examined response format effects on encounter norm questions in Dilek Peninsula Büyük Menderes Delta National Park. Respondents were randomly assigned to one of two survey versions. In the "semi-open" response format, respondents were asked to "fill-in-the-blank" with an acceptable number of other visitors. The "closed" response format version asked individuals to "circle a number" of acceptable other visitors along a range of possible responses given on the survey. Results demonstrated that encounter norm prevalence (i.e., the percent of individuals who could specify a norm) was significantly and consistently higher for the closed format of the survey as compared to the semi-open version. In addition, among those reporting a norm, the average tolerance levels were statistically higher in the semi-open format.

A recent experiment (Vaske *et al*., 2016) conducted in Rocky Mountain National Park manipulated the same two treatment conditions ('semi-open' response format and 'closed' response format) as manipulated here. Similar to the study reported here, results indicated that a statistically higher percentage of the visitors reported a norm (i.e., norm prevalence) for the closed-ended response format of the survey compared to the semi-open treatment condition. Unlike our experiment where the average tolerance levels were statistically higher in the semi-open format, the ROMO study found that the average tolerance levels for the closed and semi-open formats were statistically equivalent. Several explanations might be offered to account for this difference.

First, the survey conducted in Turkey replicated the same endpoint (i.e., 200) as the ROMO survey for the closed version of the survey. Given the dramatically different densities between the beaches in Turkey and the survey sites in Rocky Mountain National Park, the highest value for the closed version in Turkey should have been much larger. For example, 92%, 56%, 38% and 34% of the visitors at Icmeler, Ayadinik, Karasu, and Kavakliburun, respectively, reported seeing more than 200 other visitors. By comparison, less than 4% of the visitors to any of the sites in ROMO reported seeing more than 200 other visitors. These findings highlight the importance of selecting scale values reflective of the research site, and not simply replicating earlier work.

Second, frequency of visitation might explain the differences in visitors' tolerance norms. Vaske, Donnelly, and Heberlein (1980), for example, demonstrated that the conditions that existed during a person's first visit to a setting influenced their evaluations of what is acceptable. Similarly, Basman *et al*. (1996) found that as visitation to a setting increased, respondents' ability to recall their norm increased. In our survey in Turkey, many of the visitors were frequent visitors and were likely to have established a norm for what is an acceptable number of other visitors. The visitors in the Rocky Mountain National Park sample reflected a broader range of visitation patterns. For example, 46% of the ROMO visitors were first time visitors, who may not have had a well-established encounter norm for the park.

Third, cultural differences might have influenced visitors' ability to specify a norm in a

giving setting. For example, in a cross-cultural comparison of visitors to the Columbia Icefield in Jasper National Park (Vaske *et al*., 1996), visitors from different countries varied in their ability to report an encounter norm. The percent of visitors giving a norm ranged from a low of 50% for American tourists to a high of 90% for British visitors. The Turkey beach visitors appear to be more like the British visitors.

Overall, this article has demonstrated that norm prevalence was consistently higher when respondents circled a number from a range of values (closed survey version), as opposed to writing in a number (semi-open survey version). Among those reporting a norm, the average norm tolerance levels for the closed and semi-open formats were statistically different across all four locations. These findings supported both hypotheses. Future research using different methodologies, cultural groups, and settings is necessary to determine whether this study's findings can be generalized.

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