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Niche tourism attributes scale: a case of storm chasing

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In spite of the rapid and large growth of niche tourism, and the proliferation of tour operators catering to such markets, limited information is available on the measurement of tour operator attributes that are critical to maximise the experience and needs of their tourists. Thus, a study was conducted to comprehensively evaluate different operational attributes of small storm-chasing tour operators. Findings reveal high internal reliability and utility for this niche market; additional testing is suggested to evaluate such scale among other small niche tourism operators.

Keywords: niche tourism; importance; satisfaction; storm chasing; tour guides and operators

Introduction and theoretical background

Globalisation and technological changes in the last two decades have led to the development of the concept of 'New Tourism', characterised by the appearance of a niche tourism market that aims to maximise tourists' values and experiences (Lew, 2008). Many forms of niche tourism, such as surf tourism, shark diving, whale watching, and voluntourism, emerged or have significantly grown in the last two decades and are expected to continue expanding in the future (Buckley, 2002; Raymond & Hall, 2008; Topelko & Dearden, 2005). Along with such development, many commercial and not-for-profit tour operators have emerged aiming to cater to the group of tourists seeking those specialised experiences (Lew, 2008; Tomazos & Butler, 2010).

Storm-chasing tourism, defined as travelling in organised tours to experience severe atmospheric phenomena for recreation (Xu, Barbieri, Wilhelm Stanis, & Market, 2012), is one type of niche tourism that has gained popularity since the mid-nineties (Cantillon & Bristow, 2001). The 'Tornado Alley', a corridor going through several states in the central USA, has become a popular destination for storm-chasing tourism because this is where tornadoes are more likely to occur, especially during spring and early summer (Brooks, Doswell, & Kay, 2003). To accommodate the growing interest and popularity of storm chasing, specialised tour operators surfaced to provide technical assistance and guidance to individuals wishing to participate in this activity (Cantillon & Bristow, 2001).

In spite of the rapid growth of niche tourism and the proliferation of tour operators catering to such markets, limited information is available on the simultaneous

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measurement of the various tour operational attributes that are critical to maximise niche tourists' experience and specific needs. Most studies on perceptions of operational attributes have focused on attributes applicable to the hospitality sector such as facilities, security, food, and recreation (Chu & Choi, 2000), or to specific destinations such as hot springs (Deng, 2007). Among those studies, price, attributes of the staff (e.g. friendly attitude), and delivering appropriate information especially related to safety and environmental issues appear as predominantly examined (Chu & Choi, 2000; Deng, 2007; Zhang & Chow, 2004; Ziegler, Dearden, & Rollins, 2012). However, no studies yet have comprehensively examined different operational attributes applicable to small niche tourism operators, especially those offering tours of extended duration such as storm chasing.

Thus, a study was conducted to comprehensively evaluate different operational attributes of small storm-chasing tour operators. Specifically, the purpose of this research note is to propose the Niche Tourism Attributes Scale (NTAS) developed for such purpose. Its preliminary application in two consecutive tornado seasons demonstrated consistent high internal reliability and utility for this type of niche market, thus suggesting that it should be further tested and validated in future studies, especially among other small niche tourism operators.

Methods

Participants of organised storm-chasing tours in the USA were queried about their behavioural, personality, and socio-demographic characteristics and their perceptions of the operational attributes of their tours. This research letter focuses on the latter information by examining the perceived importance and satisfaction of 22 attributes representing four niche tour operational components: *Tour Operator* (seven items; e.g. 'Experience of guides'), *Tour Package* (four items; e.g. 'Price of the tour'), *Logistics* (seven items; e.g. 'Provision of meals'), and *Education and Information* (four items; e.g. 'Safety instructions during the chase'). Those attributes were measured on five-point scales ranging from one (very unimportant/very unsatisfied) to five (very important/very satisfied). Similar to Wong and McKercher's (2012) process to assess day tour itineraries, NTAS was developed through a multi-stage protocol. A preliminary list of items was compiled from previous studies assessing the perceptions of certain tourism and hospitality tour attributes (e.g. Chu & Choi, 2000; Zhang & Chow, 2004). Then, two atmospheric science academic experts with on the ground storm-chasing experience were consulted to provide insights into the applicability to this form of tourism. Finally, partnering storm-chasing tour operators were asked to provide their feedback.

Storm-chasing tour operators distributed a three-page questionnaire among their tourists at the end of each tour during the 2009 and 2010 peak storm-chasing seasons (April–August). A total of 84 completed questionnaires were returned (2009: $n = 50$; 2010: $n = 34$). Although nine (out of 14) storm-chasing tour companies operating in North America agreed to partner in this study, due to various reasons (e.g. limited tornado activity; 2009 economic crisis) only five companies returned completed surveys from their tourists. Therefore, we cannot claim that the sample is representative of this entire industry. Statistical analysis revealed that the 2009 and 2010 samples are comparable in terms of demographic characteristics; they share similar age, education level, family structure, employment status, and gender composition. However, the 2010 sample had significant higher household income than the 2009 sample ($p = 0.013$), most likely associated

with the global economic crisis in that only individuals with greater disposable income could afford these niche tours.

Descriptive statistics were used to profile participating storm-chasing tourists and to examine the importance and satisfaction of tour operational attributes. Means were created for each tour operational component by averaging their comprising attributes; then, Cronbach's alpha was computed to assess the internal reliability of each operational component for each sample separately, and then over both samples combined.

Results

The majority of responding tourists were male (64.3%), middle aged ($M = 41.4$ years old), and white (95.1%). Most were single without any children (54.2%), held at least a 2-year college degree (62.4%), and full-time employees (73.8%); a large proportion reported at least $75,000 of pre-tax annual household income (40.3%). Most respondents were North American tourists (60.3%); the remaining came from Europe (24.4%), Australia (14.1%), and Venezuela (1.3%).

Overall, storm-chasing tourists reported both high importance of tour operational attributes, as well as high levels of satisfaction (Table 1). Regarding importance, respondents

Table 1. Importance and satisfaction of tour operator attributes.

	Importance[a]		Satisfaction[b]	
Operational attributes ($n = 83$)	*M*	SD	*M*	SD
Tour Operator	4.67	0.52	4.67	0.41
Experience of guides	4.88	0.50	4.82	0.39
Knowledge of guides	4.84	0.54	4.80	0.40
Friendly attitude of guide/staff	4.75	0.60	4.75	0.44
Driving skills of guides/staff	4.70	0.72	4.64	0.58
Responsiveness of tour operator	4.70	0.58	4.58	0.65
Ease to contact/reach the tour operator	4.44	0.79	4.59	0.63
Ease of booking/registration	4.37	0.78	4.55	0.69
Tour Package	4.33	0.55	4.40	0.57
Number of people per group	4.39	0.79	4.40	0.80
Price of tour	4.34	0.74	4.14	0.88
Length of tour	4.30	0.77	4.68	0.50
Tour design and itinerary	4.26	0.74	4.39	0.79
Education and Information	4.27	0.67	4.45	0.59
Learning during the trip	4.35	0.77	4.36	0.84
Safety instructions during the chase	4.33	0.84	4.60	0.58
Website information	4.22	0.85	4.46	0.71
User friendly website	4.16	0.84	4.38	0.70
Logistics	3.89	0.64	4.21	0.61
Weather forecasting equipment	4.54	0.75	4.57	0.65
Vehicle comfort and reliability	4.48	0.79	4.45	0.85
Lodging and accommodations	4.09	0.79	4.25	0.88
Activities during 'non-action' time	3.88	0.97	4.19	0.98
Provision of meals	3.68	0.93	3.99	0.85
Provision of snacks and drinks	3.51	0.96	3.96	0.82
Souvenir and memorabilia offerings	3.01	1.15	3.96	0.75

[a]Measured on a five-point scale from (1) very unimportant to (5) very important.
[b]Measured on a five-point scale from (1) very unsatisfied to (5) very satisfied.

Table 2. Reliability of tour operator attribute business components.

	Importance[a]			Satisfaction[b]		
Business components	2009 ($n = 49$)	2010 ($n = 33$)	Combined ($n = 83$)	2009 ($n = 50$)	2010 ($n = 32$)	Combined ($n = 83$)
Tour Operator	0.929	0.858	0.913	0.873	0.873	0.872
Tour Package	0.729	0.642	0.688	0.740	0.736	0.732
Education and Information	0.803	0.859	0.822	0.810	0.899	0.853
Logistics	0.792	0.855	0.818	0.846	0.867	0.856

[a]Measured on a five-point scale from (1) very unimportant to (5) very important.
[b]Measured on a five-point scale from (1) very unsatisfied to (5) very satisfied.

indicated that the experience ($M = 4.88$) and knowledge ($M = 4.84$) of the guide, and the friendly attitude of guide/staff ($M = 4.75$) were the most important tour attributes. Although still somewhat important, respondents ranked the souvenir and memorabilia offerings ($M = 3.01$), and the provision of snacks/drinks ($M = 3.51$) and meals ($M = 3.68$) as the least important attributes. When considered by tour operational components, the *Tour Operator* ($M = 4.67$) emerged as the most important component, followed by *Tour Package* ($M = 4.33$), *Education and Information* ($M = 4.27$), and *Logistics* ($M = 3.89$). In terms of satisfaction, the tour operational attributes for which respondents were most satisfied with were the experience ($M = 4.82$) and knowledge ($M = 4.80$) of the guide, as well as the friendly attitude of guide/staff ($M = 4.75$). Respondents were least satisfied with the souvenir and memorabilia offerings ($M = 3.96$), and the provision of snacks/drinks ($M = 3.96$) and meals ($M = 3.99$). Examined by tour operational components, respondents were most satisfied with the *Tour Operator* ($M = 4.67$), followed by *Education and Information* ($M = 4.45$), the *Tour Package* ($M = 4.40$), and *Logistics* ($M = 4.21$).

Cronbach's alpha computed over the importance rankings of the attributes included in each tour component showed strong internal reliability for the *Tour Operator* ($\alpha = 0.913$); *Education and Information* ($\alpha = 0.822$), and *Logistics* ($\alpha = 0.818$) components (Table 2). The *Tour Package* was the component with the weakest although acceptable internal reliability ($\alpha = 0.688$). Satisfaction results confirmed high reliability within each of the four components: *Tour Operator* ($\alpha = 0.872$), *Logistics* ($\alpha = 0.856$), *Education and Information* ($\alpha = 0.853$), and *Tour Package* ($\alpha = 0.732$). Similar strong alphas were also obtained when the 2009 and 2010 data sets were examined separately, confirming the strong internal reliability obtained on the *Tour Operator*, *Logistics*, *Education and Information* tour components, and the acceptable reliability on the *Tour Package* component.

Discussion and conclusions

Findings reveal the NTAS developed to assess the performance of different business components of storm-chasing operators demonstrates utility and high internal reliability for this niche market. Acceptable-to-high internal reliability consistently obtained among the 2009, 2010, and combined samples suggest that NTAS may be a useful tool for emerging niche tourism operators to examine their tour services. In particular, NTAS may be applicable to those niche tours in which participants remain within the same small group of guides and fellow tourists for a relatively long period (e.g. 1–2 weeks), such as storm chasing, wildlife

safaris, and whale watching, among others. On such tours, not only are the quality of the guides and overall tour services important, but given the inclusive nature of the tours, elements such as meals and transportation comfort also become essential. This study also reveals that providing additional educational opportunities and activities during tour downtime (e.g. while waiting for storms to form or wildlife to show up) are also important for the overall enjoyment of tourists on small inclusive and lengthy tours.

Given that NTAS has only been applied with two different samples within the same niche tourism industry, future research and application of NTAS is recommended among other types of niche tourism, upon minor word adjustments (e.g. replacing 'chase' with 'tour' or 'safari' as appropriate for the 'Safety instructions during the chase' attribute). Minor word changes in scales are common practice when evaluating various constructs in recreation/tourism (e.g. motivations, constraints, and place attachment). Also, open-ended questions could be used to capture additional specific-niche tourism attributes that NTAS may not reflect. Similarly, when weather forecast equipment is not applicable, it can be replaced with other types of specialised instruments (e.g. hydrophones for whale watching).

The NTAS has key practical implications for understanding those attributes that are both important to tourists and contribute to their levels of satisfaction. For example, small niche tourism operators can use NTAS in importance-performance analysis (IPA) to simultaneously examine and compare the importance and satisfaction of different operational attributes of their tours to inform their management and marketing decisions (Martilla & James, 1977; Oh, 2001), thus increasing service quality and tourists' satisfaction (Deng, 2007; Oh, 2001; Zhang & Chow, 2004). Indeed, the NTAS was examined through IPA among the 2009 study sample and provided valuable managerial and marketing information on the storm-chasing industry (Chen, Wilhelm Stanis, Barbieri, & Xu, 2012).

The small sample size of this study, which was not surprising considering the small and dispersed market of storm-chasing tourism, constrained the capacity to conduct additional scale development analyses on the NTAS. For example, a confirmatory factor analysis to assess the tour operator components' factorial validity (Byrne, 2010) was not feasible due to insufficient cases. Therefore, additional research with a larger sample size and other tourism markets is strongly encouraged to further examine the NTAS. Furthermore, although findings demonstrate high internal reliability, additional research is still recommended to examine other types of errors, such as stability over time (Cortina, 1993).

In conclusion, this study presents a scale with demonstrated high internal reliability for comprehensively examining different operational attributes of small storm-chasing tour operators. Findings suggest promising applications and utility of NTAS for niche tourism operators. Future research and application of this scale are recommended among other types of niche tourism operators, as well as additional testing with larger samples.

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