The B&B sector in Nova Scotia: Some preliminary evidence from TripAdvisor reviews

ABSTRACT

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The following paper examines small accommodations firms, specifically 190 B&B operations in Nova Scotia, Canada in terms of recent online reviews on TripAdvisor. In particular the paper initially provides an overview of the bed-and-breakfast (B&B) sector in terms of select characteristics. It then examines TripAdvisor reviewers' ratings in terms of TripAdvisor's six sub elements, overall star ratings provided by TripAdvisor itself, and B&B participation in a provincial-government tourism program and a national star-rating system for accommodations. The extent to which B&B owners/managers respond differentially to poor and terrible reviews relative to very good and excellent reviews is also considered. Relationships between B&B prices and TripAdvisor reviewer overall ratings, TripAdvisor star ratings, the reviewers' rating of the six attributes, and tendency of owners/managers to respond to TripAdvisor are also examined. Lastly, implications of the findings for the B&B sector are discussed along with limitations to this study and directions for future research.

Keywords: Online reviews, Bed-and-breakfast sector

INTRODUCTION

The tourism and hospitality industry (THI) continues to be a changing and competitive industry and challenges such as global transparency, safety and security, sustainability, improving customer service, competition, and dealing with human resources are quite prevalent (Dornan & Moufakkir, 2015). Further, changes in technology provide opportunities as well as additional challenges (Dornan & Moufakkir, 2015; Martin, Rosenbaum, & Ham, 2015; Wang & Sparks, 2014). Within this context improving customer service for THI firms has been identified as an issue that is a key to success (Dornan & Moufakkir, 2015). Good customer service is important in building brand loyalty and garnering repeat business (Manhasa, & Tukamushabab, 2015). Others suggest that service innovation is a key to improved customer service and to repeat business (Wang & Juan, 2016) and total quality services improve competitive advantage (Singh, 2015).

Guest feedback provides THI operators with information to improve service and enhance offerings. Such feedback can occur through expert and consumer reviews (Torres, Adler, Lehto, Behnke, & Miao, 2013). Further, feedback can be from traditional sources, for example, customer letters and telephone calls and it can be from online sources. However,

the use of various forms of online reviews has increased dramatically and travelers can and do use online sites to provide feedback to THI operators through various online sites such as TripAdvisor, Expedia, Travelocity, and others. Indeed, online reviews have been seen as helpful, for example, hotels improved their loyalty programs based on such online feedback (Mest, 2016). However, such feedback is not only available to members of the traveling public, but it has become a major part of travel research and planning processes (Anderson & Han, 2016). Further, online feedback can have a positive or negative impact on an organization's reputation (Limberger, dos Anjos, de Souza Meria, & dos Anjos, 2014).

The purpose of this paper is to examine B&Bs in Nova Scotia in terms of guest feedback provided through TripAdvisor. Initially an overview of the B&B industry in Nova Scotia is presented. An overview of TripAdvisor and a rationale for its use in this study is then provided. Literature relevant to the examination of TripAdvisor reviews is examined and guiding questions for the study are presented. The study concludes with analysis of results, discussion, conclusions, and directions for future research.

B&B'S IN NOVA SCOTIA

Accommodations are a major part of a traveler's experience (Ekiz, Khoo-Lattimore, & Memaradeh, 2012) and much research on online reviews has focused on luxury hotels, but research should focus on other accommodation types to gain a broader understanding of the accommodations industry (Ekiz, Khoo-Lattimore, & Memaradeh, 2012). The bed and breakfast (B&B) industry sector in Nova Scotia presents such an opportunity. B&Bs generally provide short-term lodging and are defined as establishments that,

Provide guest rooms in private homes or in small buildings converted for this use, and they often possess a unique or historic character. Bed and breakfast homes are characterized by a highly personalized service, and the inclusion, in the room rate, of full breakfast, served by the owner or owner-supervisor staff (Government of Canada, 2016a)

The B&B sector in Nova Scotia is relatively small in number of units, approximately 350 B&Bs were listed by Tourism Nova Scotia (2016a). According to the Government of Canada (2016b), 59% of B&Bs in Nova Scotia are indeterminate (i.e., are non-employers) and 41% are employers, that is they have at least one employee. Further, of those that do have employees 83% have only one to four employees and 17% have five or more employees. The B&B sector has seen the number of room-nights sold steadily decrease over the period from 2005 to 2014. In 2005, 77,200 room-nights were sold compared to 73,400 in 2007, 61,800 in 2009, 51,800 in 2011, and 46,974 in 2014. However, the B&B occupancy rate has tended to remain steady between 22% and 25%, with the rate at 24% in 2012, 23% in 2013, and 25% in 2014. The latter statistics suggest a number of B&B exits during that period (Tourism Nova Scotia, 2016b). Further, the sector could well be on the upswing with numerous opportunities available. Nova Scotia tourism revenues have been increasing steadily from $2.02 billion in 2010, to $2.26 billion in 2011, to $2.32 in 2012, and to $2.34 in 2013. Further, a doubling of tourism revenues to $4 billion annually by 2024 is a tourism target (Tourism Nova Scotia, 2014).

B&Bs in Canada have been the subject of research, including various topics such as internet usage by B&B owners (Lituchy & Rail, 2000), the extent of environmental practices by B&B owners (Dodds & Holmes, 2011; Van Haastert, & de Groisbois, 2010), and the impact on domestic space when some areas of the home, often privately used by the home owners, are used for commercial purposes (Kozak, 2010). Getz and Petersen (2005) examined orientations of owners of B&Bs and found that some were growth and profit-oriented, but B&B owners were predominantly life style and autonomy oriented. However, no research that examined Canadian B&Bs and TripAdvisor reviews was located. Further, within this context there is very little research that has examined the B&B sector in Nova Scotia in general, and specifically in terms of online reviews. Given the importance of service in the tourism and hospitality industry a review of B&B ratings from online sources seems a reasonable approach.

TripAdvisor
TripAdvisor was chosen as a source of data because it is one of the largest and most popular travel websites (Ekiz, Khoo-Lattimore, & Memaradeh, 2012; TripAdvisor, 2016). The reliability of TripAdvisor scores has often been of some concern. However, several sources (Barsky & Honeycutt, 2011) suggest that TripAdvisor, although providing more high and low scores relative to traditional survey methods, is a reliable source of reviews.

TripAdvisor reviews have been used in a wide variety of studies including tourist attractions in New Orleans (Fang, Ye, Kucukusta, & Law, 2016), top hotels in Las Vegas (Hsu, Chen, & Ting, 2012), upscale hotels in the USA (Torres, et al., 2013), and luxury hotels in Paris and New York (Rishi & Gaur, 2012). Numerous writers have reported that online reviews such as those on TripAdvisor do have influence on travelers' decisions (Hsu, et al., 2012), and Vásquez (2011) stated that "the impact and influence of such internet-based texts is potentially powerful and far reaching" (p.1709). Xie, Zhang, and Zhang (2014) found that approximately 75% of travelers consider online reviews when planning their trips. Further, Casaló, Flaviá, Guinalíu, and Ekinci (2015) reported that reviews of travelers provided on more well-known travel communities are more credible and useful than those reviews provided by less well-known travel communities. For example, travelers had more favorable attitudes and stronger booking intentions for those hotels that appear in best hotel lists than for hotels that appeared on a worst hotel list, such as lists provided by TripAdvisor. Xie, Chen, and Wu (2016) found that quantity and quality of TripAdvisor reviews increased the popularity of reviewed hotels.

B&BS AND TRIPADVISOR RATINGS

Racherla, Connolly, and Chrisodoulidou (2013) have suggested that star ratings on various review sites tended not to be normally distributed. They examined accommodation reviews and ratings posted on a popular travel advisory website and results indicated a J-shaped distribution of ratings with the distribution skewed in favour of positive ratings. For example, 5-star and 4-star reviews constituted 60% and 22% of the reviews respectively, whereas 1-star and 2-star ratings represented only 1% and 3% of reviews respectively. In a study of the top-ten Las Vegas hotels Hsu, et al. (2012) reported similar distributions of reviewers' ratings. The percentage of positive reviews (i.e., Very Good and Excellent) ranged from 81.8% to 94.5%, average reviews ranged from 3.1% to 7.2%, and negative reviews ranged from 2.0% to 11.0%. Phillips, Zigan, Silva, and Schegg

(2015) reported that 80% of reviews of Swiss hotels (i.e., those on TrustYou) were positive. More recently, Molinillo, Ximénez-de-Sandoval, Fernández-Morales, and Coca-Stefaniak (2016) found that TripAdvisor ratings by reviewers for hotels in Portugal and Spain tended to be favourable. For example, more than one-half of the hotels had ratings ranging from 4 to 5, whereas only 4.98% had ratings between 1.5 and 2.5. Further, these overall ratings varied somewhat across various regions within the area examined. In a study of B&Bs in Portugal, dos Santos, Chaves, and Pedron (2014) reported that 96.9% of 450 TripAdvisor reviews were either 5-star (Excellent) or 4-star (Very Good), and that less than 0.3% were 1-star (Terrible). The above findings suggest that online reviews tend to be positive, especially for firms in the accommodations sector, however, there might be some variation in ratings across regions. Thus, a reasonable first question is, how do B&Bs in Nova Scotia fare in light of TripAdvisor review ratings? Within the province of Nova Scotia, the tourism and hospitality sector is divided into seven regions (see Exhibit 1). Secondly, do online review ratings vary by region?

B&Bs in Nova Scotia also operate on a year-round or seasonal basis. Seasonality and the tourism and hospitality industry and its causes and outcomes, among other issues, have been discussed by numerous writers (see for example, Pegg, Patterson, & Gariddo, 2012). However, seasonality is of particular concern to the accommodation sector, given its high fixed costs (Koenig & Bischoff, 2004), and various industry responses to managing seasonality have been presented. For example, Jolliffe and Farnsworth (2003) discuss the strategies of embracing seasonality and challenging seasonality and their associated impacts on human resource management functions such as staffing, training, appraising performance, and compensating. Further, Reichel and Haber (2005) have highlighted the importance of dividing the accommodation sector into various subsectors to better understand the various strengths and weaknesses of each sector. Although no studies were found that examined B&Bs and TripAdvisor ratings in terms of seasonal versus year-round operations, Parilla, Font, and Nadal (2007) found that accommodation-based firms with higher star ratings tended to have a longer operating period than did those with lower star ratings. Thus, it seems reasonable to pose a third question – do online review ratings vary by seasonal versus year-round operational basis?

Overall reviewer ratings have been examined in terms of relationships to overall TripAdvisor star ratings awarded to individual properties, as well as to measures of six individual attributes of review. For example, Liu, Schuckert, and Law (2015) reported that overall ratings (i.e., averages of TripAdvisor reviewer ratings) of Hong Kong hotels were positively related to hotel star ratings as provided by TripAdvisor (ranging from 1-5 stars). Further, Singh, Torres, and Robertson-Ring (2016) showed that the greater the number of TripAdvisor stars a hotel has the higher it ranks in the local market and thus, "online ratings awarded by consumers to hotels exhibit a statistically significant impact on the market rankings of the properties" (p.45). The possible links between reviewer ratings and TripAdvisor stars has not been examined for B&Bs. What is the relationship, if any, between TripAdvisor reviewer ratings and the number of stars awarded by TripAdvisor?

Additionally, researchers have suggested that the six attributes of accommodations identified by TripAdvisor – Value, Location, Sleep Quality, Rooms, Cleanliness, and Service – are related to star ratings provided by reviewers. For example, Racherla et al. (2013) proposed that overall star ratings (as provided by reviewers) would correlate with

the scores provided for various elements of accommodations properties such as cleanliness and service. Their results suggested that value for money, cleanliness and comfort were the attributes that tended to most affect overall ratings. Further, Rhee and Yang (2015) found that of the six attributes value and rooms are the key attributes, sleep quality, service, and cleanliness were second-most important and location was the least important attribute for reviews of one hotel. The ratings of these attributes tended to vary across various types of travellers and between domestic and international travelers.

In terms of ratings by groups external to TripAdvisor, For example, Torres, et al. (2013), examined four- and five-diamond hotels based on ratings of the American Automobile Association (AAA) and found that improved guest satisfaction was associated with those AAA ratings. Further, star ratings provided by *Forbes* were moderately associated with guest satisfaction. B&Bs in Nova Scotia can obtain various provincial and national quality ratings from external agencies. One such provincial rating system is the Nova Scotia Approved Quality First Program (2016). This program does not provide service-level ratings, however, it indicates whether or not a benchmark of quality has been attained and its ratings are associated with cleanliness and comfort. A second system of rating, at the national level, is that of Canada Select (2016), which uses a star-rating system. A 1-star rating indicates modest accommodations that meet "basic standards of cleanliness, comfort & safety" whereas a 5-star rating is indicative of luxurious accommodations that provide "an outstanding range of facilities, guest amenities and services." It is also possible to obtain half-star ratings, for example, 1.5, 2.5 and so on (Canada Select, 2016). Although neither system provides an evaluation of service levels, it seems reasonable, based on the above evidence that B&B ratings will be associated with the ratings provided by the provincial and national systems described above.

Based on the above research, several questions ensue – are the star ratings provided by B&B reviewers related to hotel star ratings as provided by TripAdvisor? Are the star ratings provided by B&B reviewers related to the six attributes of accommodations identified by TripAdvisor? Are the star ratings provided by B&B reviewers related to provincial and national rating systems?

One area of focus with TripAdvisor responses has been that of complaints and harsh evaluations. For example, Ekiz, et al. (2012, p. 100) identified several themes of complaints in their study of luxury hotels in Kuala Lumpur – rooms (e.g., room was small or had no modern technology), poor staff (e.g., rudeness by staff), failure to respond (e.g., not responding to complaints), poor delivery (e.g., slow check-in/out), cleanliness (e.g., dirty linen), amenities (e.g., lack of toiletries), and billing (e.g., extra charges for parking). However, the first two themes were the most common and the analysis and recommendations focused on those. For example, managers should focus on improved cleanliness of facilities along with enhancing rooms so that basic needs such as Wi-Fi are available. Indeed, paying attention to and managing user-generated content (UGC) is an important element of operating accommodation businesses (Phillips, et al., 2015). Further, Wang, Wezel, and Forges (2016) reported that hotels in London were more likely to respond to harsh evaluations than less harsh evaluations. However, Xie, So, and Wang (2017) reported that hotel managers tend to be more responsive to positive ratings than they are to negative reviews. Such research on B&Bs is not in evidence, so a reasonable

question is – do B&B owners/managers tend to respond more to poor and terrible reviews than they do to very good and excellent reviews?

TripAdvisor ratings and price
Price has been shown to be an important element for travellers and the accommodations sector (Leung, Guillet, & Law, 2014; Lu, Berchoux, Marek, & Chen, 2015; Scolz, Pfeiffer, & Rothlauf, 2017). Indeed, those firms that have an online presence will likely face stiffer price competition than those that are offline (Loginova & Mantovani, 2015). Further, there has been some research that has considered links between TripAdvisor reviewer ratings and price. For example, in terms of restaurants Lei and Law (2015) reported that more expensive restaurants in Macau had a higher percentage of negative comments than did less expensive restaurants. However, reviews also play a role in booking accommodations in that travellers might tend to book a higher price accommodation than a lower price if the UGC indicated that they might enjoy a better experience (Noone & McGuire, 2013a; Noone & McGuire, 2013b). Further, Oh and Jeong (2010) reported that star rating systems tend to be correlated with price, a result also found by Öğüt and Taş (2012). Given the lack of research on B&B prices and star rating it is reasonable to ask - is there is a relationship between B&B prices and TripAdvisor star rating?

More recently, Zhang, Khan, and Shih (2015) examined the relationship between reviewer ratings on TripAdvisor and hotel prices of hotels in the USA and elsewhere in the world, for example, London, Paris, and Bangkok. Results indicated a positive relationship between hotel price and reviewer ratings, a result also found by Öğüt and Taş (2012). Further, Zhang et al. (2015) found the value ratings for hotels, one of the six attributes of TripAdvisor reviews, were significantly positively correlated with hotel price. However, there has been little or no research that has examined the B&B sector and links between TripAdvisor reviewer ratings and room price. Is there a relationship between B&B prices and TripAdvisor reviewer ratings? Is there a relationship between B&B prices and TripAdvisor reviewer ratings for the six attributes?

Paying attention to and managing UGC is an important element of operating accommodation businesses (Phillips, et al., 2015). Further, Liu, et al., (2015) reported that hotels in the high-class bracket are more likely to have a response-management strategy than those hotels in lower brackets, but hotels in different categories respond at the same rate to reviews. However, Xie, et al. (2017) found that, although managers responded to positive and negative reviews, response rates varied across hotel classes. In excess of 99% of managers' responses to reviews came from the mid-range hotels (i.e., mid-market had a rate of 33.7% response, full service had 39.4%, and above average had a response rate of 26.0%) with budget hotels having a response rate of 0.6% and luxury hotels having a response rate of 0.3% (p. 104). Is there a relationship between B&Bs prices and tendency of owners/managers to respond to TripAdvisor ratings?

In summary, the questions considered by this study are:

1. How do B&Bs in Nova Scotia fare in light of TripAdvisor review ratings?
2. Do online reviewer ratings vary by region?
3. Do online reviewer ratings vary by seasonal versus year-round operational basis?

4. Are the star ratings provided by B&B reviewers related to hotel star ratings as provided by TripAdvisor?
5. Are star ratings provided by reviewers related to the scores for the six attributes of accommodations identified by TripAdvisor?
6. Are star ratings provided by B&B reviewers related to provincial and national rating systems?
7. Do B&B owners/managers tend to respond more to poor and terrible reviews than they do to very good and excellent reviews?
8. Is there a relationship between B&Bs prices and TripAdvisor star ratings, TripAdvisor reviewer overall ratings, the reviewers' rating of the six attributes, and tendency of owners/managers to respond to TripAdvisor ratings?

METHODOLOGY

B&Bs for this study were identified through three key sources – BBCanada.com (2016), the Nova Scotia link; the Nova Scotia Bed and Breakfast Association (2016), and the *2016 Doers and Dreamers Guide* produced by Tourism Nova Scotia (2016c). Initially, 349 potential B&Bs were identified. B&Bs typically are owner operated, are located in the owners' home, have five or fewer bedrooms, provide a breakfast in the price, but generally do not provide lunch or evening meals or other services that might be expected of inns (Greene, 2014) or other types of properties such as motels and lodges. Ultimately 253 of these properties were appropriately identified as B&Bs, not inns, lodges, cottages or motels. Of the 253 B&Bs, 59 had no reviews available on TripAdvisor and four were closed. Consequently, the analysis of online reviews is based on a sample of 190 B&Bs.

TripAdvisor reviews from January 2014 to the early summer of 2016 were selected because the researchers felt that such a strategy would provide reasonably recent and sufficient comments for analysis. Data were collected with respect to B&B location within Nova Scotia, the number of bedrooms available, and the type of operation, seasonal versus year-round. In addition, reviewer ratings for B&Bs were collected for "Excellent," "Good," "Average," "Poor," and "Terrible" along with reviewer ratings for the six accommodation attributes – value, location, sleep quality, rooms, cleanliness, and service. The rating provided by TripAdvisor was also collected for each property along with an average price for double occupancy during the high season. Lastly, data with respect to numbers of owner/management responses to reviewer ratings were collected.

RESULTS AND DISCUSSION

An overview of the B&Bs in the study in terms of regional location, the number bedrooms, the seasonality of operation, the frequency distribution of star ratings, and membership in Nova Scotia Approved Quality First program is presented in Exhibit 1.

As shown in Exhibit 1, all seven tourist regions of Nova Scotia are represented in the study. The B&B industry is indeed a small sector with an average of 3.18 beds per operation with 37% operating on a seasonal basis and 63% operating on a year-round basis. Participation in ratings programs is somewhat mixed with 69% possessing a Canada Select rating and 58% participating in the Nova Scotia Approved Quality First Program.

Table 1: B&B's in Halfiax, Nova Scotia

Region	N
Bay of Fundy/Annapolis Valley Range	52
Cape Breton	45
Eastern Shore	10
Halifax	23
Northumberland Shore	18
South Shore	34
Yarmouth/Acadian Shore	8
Total	190

Operational Status	N
Seasonal	68
Year-round	116
Total	184

Star-rating	N
5-star	9
4.5-Star	41
4-Star	52
3.5-Star	25
3-Star	5
No star rating	58
Total	190

Note:
average room size = 3.18, s.d. 1.02

Exhibit 2 presents frequency counts and percentages for ratings overall, for owner responses to ratings, and weighted-average scores and ranges for six select review characteristics – value, location, sleep quality, rooms, cleanliness, and service.

This study's first question is, "How do B&Bs in Nova Scotia fare in the light of TripAdvisor review scores?" More than 95% of reviews resulted in very good or excellent ratings, findings that are similar to those in other studies of reviewer ratings for hotels (Hsu, et al., 2012; Molinillo, et al., 2016; Phillips, et al., 2015; Racherla, et al., 2013) and B&Bs (dos Santos, et al., 2014). Based on the results presented in Exhibit 2, B&B operations in Nova Scotia overall are doing very well in terms of TripAdvisor reviews.

The second question asked, "Do online reviewer ratings vary by region?" Broadly speaking, based on an analysis of variance of weighted-average ratings for the regions, the answer to this question is "No." Scores for excellent (One-way ANOVA, F = 1.44, p-value = 0.209); very good (One-way ANOVA, F = 0.34, p-value = 0.914); average (One-way ANOVA, F = 0.60, p-value = 0.729); poor (One-way ANOVA, F = 0.76, p-value = 0.603); and terrible (One-way ANOVA, F = 0.79, p-value = 0.578) did not differ statistically significantly so across regions. This finding differs somewhat from that of Molinillo, et al.

(2016) who found regional variations in TripAdvisor scores across regions for hotels in Spain and Portugal.

Table 2: Ratings, Categories, and Owner Responses

Overall Rating		N
Excellent		3,141
Very Good		434
Average		90
Poor		33
Terrible		29
	Total	3,727
Rating Categories		N
Value		4.47
Location		4.52
Sleep Quality		4.62
Rooms		4.61
Cleanliness		4.73
Service		4.71
Owner Responses by Overall Rating		N
Excellent		569
Very good		57
Average		21
Poor		9
Terrible		6
	Total	662

Notes:
Rating range 1-5, 1 = Terrible
The means for the six TripAdvisor characteristics are weighted,
not all reviewers rated all characteristics

The third question asked, "Do online reviewer ratings vary by operational basis?" Again, based on an analysis of variance of weighted-average reviewer ratings for seasonal versus year-round operations, the answer to this question is "No." Scores for excellent (t = -0.38, p-value = 0.704); very good (t = -0.49, p-value = 0.621); average (t = -0.51, p-value = 0.611); poor (t = -1.17, p-value = 0.243); and terrible (t = -1.03, p-value = 0.304) did not differ statistically significantly so on an operational basis, a finding different from that suggested by Parilla et al. (2007). B&B TripAdvisor reviewer ratings are not only quite good, but they are also consistent across regions and seasonal and year-round operations.

The fourth question asked, "Are the star ratings provided by B&B reviewers related to hotel star ratings as provided by TripAdvisor?" A correlational analysis of star ratings by reviewers and hotel star ratings from TripAdvisor resulted in a significant and positive, but moderate relationship (Spearman rho, 0.304, p-value = 0.000). This finding for B&Bs is similar to those findings of Liu, et al. (2015) and Singh, et al. (2016) for hotels, that higher reviewer ratings for hotels are associated with higher local market rankings. Also, high proportions of travelers use TripAdvisor and other sites (Xie, et al., 2014) and such better-known sites have credibility and utility and site users have positive attitudes and

booking intentions (Casaló, et al., 2015). Further, the quantity and quality of reviews were positively related to hotel popularity (Xie, et al., 2016). Based on the above, B&B operators should pay attention to their quantity and quality of reviews and encourage guests to provide more reviews.

The fifth question asked, "Are the scores for the six attributes of accommodations identified by TripAdvisor related to star ratings provided by reviewers?" Due to problematic diagnostic plots multiple regression was considered inappropriate for use here. Consequently rank correlations and p-values between star rating and value, location, sleep quality, rooms, cleanliness, and service are provided – reviewer star rating and value (r=0.052, p=0.575); location (r=0.159, p=0.088); sleep quality (r=0.250, p=0.006); rooms (r=0.233, p=0.010); cleanliness (r=0.169, p=0.066; and service (r=0.145, p=0.100). Thus, sleep quality has the strongest positive association with reviewer overall rating, followed by rooms. At the 5% significance level we cannot conclude that there is an association between value, location, cleanliness or service and the reviewer star rating.

The above results are similar to, but also different from some existing research on hotels in that reviewer star ratings were related to some of the six attributes. For example, Racherla et al. (2013) found that value for money, cleanliness and comfort were the attributes that tended to most affect overall ratings. Rhee and Yang (2015) found that of the six attributes value and rooms are the key attributes, sleep quality, service, and cleanliness were second-most important and location was the least important attribute for reviews of one hotel. However, there was little agreement, with the exception of the rooms attribute, which was related to reviewer staring in this study and that of Rhee and Yang (2015). Clearly, there is some variability in the marketplace for accommodations, in terms of links between reviewer ratings and the six TripAdvisor attributes.

The sixth question asked, "Are B&B TripAdvisor reviewer ratings related to provincial and national rating systems?" Based on t-tests, weighted-average reviewer ratings for those rated by the Nova Scotia Approved Quality First Program versus those operations that were not, were not statistically significantly different, and the answer, with respect to provincial rating, is "No". The t-test results for participants and non-participants were as follows, excellent (2-sample t-test, t = 0.83, p-value = 0.406), very good (2-sample t-test, t = 0.83, p-value = 0.409, average (2-sample t-test, t = -0.02, p-value = 0.987), poor (2-sample t-test, t = 2.01, p-value = 0.046), and terrible (2-sample t-test, t = 1.56, p-value = 0.310). Participation in this program seemed to have no relationship to weighted-average reviewer ratings.

In terms of star ratings from Canada Select, correlational analysis indicated that there is evidence of association/non-zero correlation (r=0.464, p=0.000) between star rating and excellent ratings. However, there is no statistically significant evidence of association between star rating and very good ratings (r=0.018, p=0.835), between star rating and average ratings (r=0.017, p=0.847), between star rating and poor ratings (r=0.102, p=0.245), and between star rating and terrible ratings (r=-0.89, p=0.310). The findings here are slightly mixed. The positive and significant relationship between excellent ratings and a higher star rating is consistent with the findings of Torres, et al. (2013) who found that higher levels of guest satisfaction were associated with those AAA ratings.

The seventh question asked, "Do B&B owners/managers tend to respond more to poor and terrible reviews than they do to very good and excellent reviews?" Exhibit 3 presents the observed and expected frequencies of owner response by rating type. A chi-square analysis indicated an association between response and rating (χ^2=10.759, df=4, p=0.029). Overall response rates were 17.7%, with 20.7% for terrible, 27.3% for poor, 23.3% for average, 13.1% for very good, and 18.11% for excellent.

Based on the observed and expected frequencies in Exhibit 3 it is clear that the relationship between reviewer rating and owner response rates is not independent. In fact, slightly more responses to terrible, poor, average, and excellent reviews were observed than expected and somewhat fewer responses to very good reviews were observed than were expected. These findings are somewhat in line with those of Wang, et al. (2016) who found that hotels in London were more likely to respond to harsh evaluations than less harsh evaluations. However, the findings of this study are also somewhat similar to the findings of Xie at al. (2017) who found that hotel managers were more responsive to positive ratings than they were to negative reviews. The mixed findings suggest that owner response is perhaps not as strategic as it could be.

Regardless, response rates appear to fall short of suggested response rate of 40% indicated by Anderson and Han (2016), a rate beyond which can lead to greater harm than good. However, as suggested by Cormier-MacBurnie, Mombourquette, Sneddon, & Young (2017) owners should respond to all negative reviews.

Table 3: Owner's Responses to Reviews

Overall Rating	Yes Observed (Expected)	No Observed (Expected)	All
Excellent	569 (557.9)	2,572 (2,583.1)	3,141
Very Good	57 (77.1)	377 (356.9)	434
Average	21 (16.0)	69 (74.0)	90
Poor	9 (5.9)	24 (27.1)	33
Terrible	6 (5.2)	23 (23.8)	29

The eighth question contained several parts, "Is there a relationship between B&B prices and TripAdvisor star ratings, TripAdvisor reviewer overall ratings, the reviewers' rating of the six attributes, and tendency of owners/managers to respond to TripAdvisor ratings?"

B&B prices and TripAdvisor star ratings and reviewer overall ratings
B&B prices were based on double occupancy in the high season. Correlational analysis indicated no significant relationship between price and TripAdvisor rating (rank correlation=0.113, p=0.120). This finding is not consistent with the findings of Oh and Jeong (2010) and Öğüt and

Taş (2012). However, there was a moderately strong, positive relationship (r=0.53, p=0.000) between price and weighted-average reviewers' ratings. Clearly, higher priced B&B operations have higher TripAdvisor reviewer ratings than do lower priced operations. This study's findings are consistent with those of Öğüt and Taş (2012) and Zhang, et al. (2015) who found a positive relationship between hotel price and reviewer ratings.

B&B prices and the reviewers' rating of the six attributes
Correlational analysis indicated a significant negative rank correlation between price and value (r=-0.242, p=0.002). However, the correlations between price and the other attributes were all nonsignificant, location (r=0.092, p=0.246), sleep quality (r=0.083, p=0.289), rooms (r=0.061, p=0.437), cleanliness (r=0.050, p=0.525), and service (r=-0.062, p=0.120). The negative correlation for price and value is unusual, but a plot of the data shows most value ratings around "5" regardless of the price. For those with value ratings below "5" there is a slight negative pattern in the relationship between value and price. The negative relationship between price and value was inconsistent with the findings of Zhang, et al. (2015) who found price and the value ratings for hotels were significantly positively correlated. However, Lu et al. (2015) found that hotel guests view satisfaction in terms of the value received for the price paid and from time to time guests' value expectations were not met. Clearly, understanding of the "perceptions and motivations of the guest in detail" will help to "minimize negative incidents and maximize positive experiences" (p. 180).

B&B prices and tendency of owners/managers to respond to TripAdvisor ratings
The average prices were based on double occupancy in the high season and were divided into three groups – Below-average, Average, and Above-average. The below-average group was $95.00 or less (which is 44 B&Bs, or about 25% of the data), the Average group was $95.01-$140.00 (which is 101 B&Bs, or about 50% of the data), and the Above-average group was above $140.00 (which is 45 B&Bs, or about 25%). The average price was $120.72.

Exhibit 4 provides observed and expected frequency counts and percentages for owner responses by price group. A chi-square analysis of the data in Exhibit 3 indicated that price range and owner response tendency were not independent (χ^2=84.599, p=0.000), so the owner-response rate is much higher for the Above-average price B&Bs.

Based on the observed and expected frequencies in Exhibit 4 it is clear that the relationship between price and owner response rates is not independent. In fact, somewhat fewer responses by Below-average properties were observed than expected and somewhat more responses by Average-priced and Above-average priced properties were observed than were expected. Response rates were 1.9% for below-average priced B&Bs, 18.2% for average-priced B&Bs, and 21.9% for above-average priced B&Bs. These rates are below those response rates for the mid-market hotels, but above the rates for budget and luxury hotels reported by Xie, et al. (2017). However, these findings are somewhat similar to those of Xie, et al. (2017) in that responses were provided across all price categories, but they do tend to be more likely from the Average and Above-average price range B&Bs.

Table 4: Owner Response by Price-group

Overall Rating	Yes Observed (Expected)	No Observed (Expected)	All
Below-Average (<=$95)	8 (71.7)	396 (332.2)	404
Average ($95.01-$140.00)	361 (352.2)	1,622 (1630.8)	1,983
Above-average (>$140.00)	293 (238.0)	1,047 (1,101.9)	1,340

CONCLUSIONS AND IMPLICATIONS

The first conclusion of this study is that B&B operators in Nova Scotia are doing well in terms of reviewer ratings. Further, ratings are consistent across regions of the province and across seasonal versus year-round operations. In addition, the reviewer ratings for the six TripAdvisor characteristics of value, location, sleep quality, rooms, cleanliness, and service also seem reasonable on average. The answers to the first three questions suggest not only good ratings and reviews, but a certain homogeneity within and across regions, and between seasonal and year-round operation in terms of reviewer ratings.

However, it is also quite likely that B&B operators will want to see continued high ratings and this study provides some specific direction for B&B operators. The first implication of this study, given the links between reviewer ratings and TripAdvisor overall ratings and their impact in the marketplace, is that B&B operators might well pay attention to and use TripAdvisor data for their properties. Further, they can encourage guests to provide high-quality reviews to help provide credibility and utility for travelers as well as trying to increase and maintain the star rating of their own properties, perhaps through the provision of a small incentive. The reviewer ratings and TripAdvisor ratings can serve as a measure of effectiveness, but operators can also use the data as a means of keeping touch with their guests so that amenities and offerings can be adjusted to suit guests' preferences.

Although links between the six attributes vary across different studies and types of accommodations, sleep quality and rooms had the strongest positive associations with reviewer overall rating in this study. Such a finding implies that B&B operators in Nova Scotia should pay close attention to those two attributes, in particular, to make sure that they meet guest wants and expectations. Slippage in these two areas could lead to decreases in overall ratings and perhaps a less positive image in the marketplace.

Some might question the operation's participation in a program such as the Nova Scotia Approved Quality First Program, given the lack of relationship between reviewer ratings and program participation. However, to participate in Tourism Nova Scotia partnership programs, to be listed on the government's website, and to have a listing in the *Nova Scotia Doers and Dreamers Guide* a B&B operation must have the Approved Accommodation status (Nova Scotia Approved Quality First Program, 2016). As such,

B&B operators should likely consider such a partnership given the opportunity to market their properties. The slightly mixed findings with respect to relationships between reviewer ratings and star ratings from Canada Select, suggest that five-star operations should promote the fact that they are five-star. Further, those operators with four stars and four and one-half stars, given that they are close to five-star ratings, might consider making the adjustments necessary to move up in the star ratings categories.

A second conclusion of this study is that the guests of B&Bs in Nova Scotia are providing a great deal of UGC, both good and bad in terms of B&B operations. Further, the findings that operators are more likely to respond to terrible, poor, average, and excellent reviews than to very good ones is surprising, given the researchers' initial expectations. Owner responses to negative reviews will help owners to protect the properties' images and reputations as well as help them address problems that can be corrected quickly. Negative reviews can help operators to determine guests' wants and needs, and they should respond to all negative reviews quickly (Cormier-MacBurnie, et al., 2017). Further, "B&B owners/manager should develop UGC-response strategies to negative reviews that are friendly/informal and constructive. Further, they should respond appropriately (i.e., using an informal, professional manner) and in a timely fashion (i.e., with 24 hours)" (p. 60). However, positive reviews can be useful in that they indicate what guests like and can reinforce the things that owners are doing.

B&B operators might well ask what it is that their clients are seeking and to what extent they are meeting client expectations. Such a question can partially be answered through examination of the negative and positive UGC for specific properties. Based on the results of an analysis of UGC the operator might be able to make some simple adjustments to the property in question, with the potential to increase guest ratings and credibility on TripAdvisor.

The findings with respect to price and various factors are somewhat mixed and inconclusive. For example, the lack of a relationship between price and TripAdvisor star ratings is surprising and goes against the grain of similar research, but the positive relationship between price and reviewers' ratings is very much in line with the research on hotels. The negative relationship between price and the attribute of value might well be related to expectations of guests in high-price properties. Such a finding suggests that more research be conducted with B&B guests to determine their expectations and any relationships with price.

The overall owner-response rates (17.7%) to reviews appear to be relatively low for Nova Scotia B&B owners, which implies that owners across all price ranges should be responding to positive and negative reviews at greater rates than they are currently. Such a strategy is important given the value that travellers place on value and accommodation response to UGC. However, higher priced B&Bs tend to respond to reviewer ratings more so than do lower priced B&Bs, which might well indicate that higher priced property operators are more aware of UGC and/or have a response strategy in place. Such a notion is worthy of further research.

Limitations and Future Research

This study has several limitations. First, it is based on a relatively small sample in one province. Further, additional statistical tests on other variables can be applied to larger samples.

Future research could include a larger, regional or national sample of B&Bs and/or a regional or national sample of Inns. Further, the usage of online reviews and response strategies by B&B owners/managers could be assessed. Additionally, further research should examine the linkage between price and various ratings factors such as guest expectations. Research examining B&B guests, as providers of UGC and users of UGC, could be conducted, for example examining guest preferences for and response to star-ratings programs.

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