

**Brand Loyalty and Response Volatility:
An Empirical Study**

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Abstract. As the consumer generated media (CGM) on TripAdvisor.com remains a strong influence over potential consumers, and hotels believe their frequent return guests have positive perspectives of the brand, it was important to investigate and see if there was a difference between brand loyalist and non-brand loyalist reviewing habits. This study searched for a difference in the volatility of ratings the two groups of contributors had given to hotels to see if there was any evident unknown bias from the brand loyalist group. It was found that there was not a significant difference in the volatility of ratings between the groups, however it was found that the less volatile a contributor's ratings are, the more likely they are to have a higher average rating. Of the two groups, the brand loyalists had a stronger correlation between average rating and response volatility.

Keywords. Brand loyalist, Contributor, Response volatility

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1. Introduction.

Websites that focus on user-generated content (UGC) are gaining popularity and influence on consumers. This study aims to see if there is a notable difference between the variability in ratings by TripAdvisor.com (TA) contributors based on their apparent brand loyalty. To determine relevant trends, senior contributors in the hotel sector of TripAdvisor have been defined and classified into two groups: brand-loyal contributors and non-brand loyal contributors. With the possibility that these two groups have different rating habits based on their previous hotel experiences, this study aims to see if there are significant differences in these behaviors.

Currently on TripAdvisor there is no indication of brand loyalty or preference. If there is a difference in the way these two groups of contributors are rating properties, a potential consumer may be influenced without any knowledge of the bias or lean of the review. It is important to specifically extend this study to users classified as “contributors” on TripAdvisor as opposed to “reviewers” because of the frequency of postings. To properly identify trends in ratings and brand loyalty, it is important to analyze users whose activity on TripAdvisor recognizes that they have visited many hotels, and clearly shows if they have a preference for a certain brand.

With these things being considered, a few thoughts were recognized. Can it be justified to believe that brand loyal contributors have different volatility in their reviewing habits than non-brand loyal contributors? Does this volatility level have any correlation to a contributor’s average rating? If so, does brand-loyalty status create a difference in this correlation between the groups? These questions are hypothesized below.

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2. Theoretical Background.

There are many online platforms for hotel guests to post opinions and read reviews, but TripAdvisor.com calls themselves the largest online network of travel consumers with more than 60 million members and 170 million reviews (tripadvisor.com, 2016). Besides being the largest, the site has also emerged as the leader (Munar, Gyimóthy, & Cai, 2013; O'Connor, 2010). To understand TripAdvisor's reliability, studies have investigated the site and not been able to find much evidence of false posters, making it a trust-worthy platform for research (O'Connor, 2008). Additionally, as its popularity has increased, it has been shown that there is a correlation between a hotel's performance and the ratings of the reviews given on the site, demonstrating the website's strong influence over consumers (Tuominen, 2011).

Since websites with heavy user-generated content have become much more popular and influential, their electronic word-of-mouth, or eWOM, has an important influence on whether or not a potential consumer will purchase a product. It is suggested by Gruen, Osmonbekov and Czaplewski (2005) that the exchange of customer-to-customer know-how impacts customer perception of a product's value and the likelihood to recommend the product. This exchange of know-how is particularly important for the hospitality and tourism industry since there is always an intangible service looking to be purchased. Potential consumers reading reviews prior to booking are strongly influenced by the eWOM since every review reflects a prior experience (Litvin, Goldsmith, & Pan 2006). Due to the wide reach of the internet, each individual posting can be seen by millions of potential consumers. This broadens the influence of each post and increases the importance in determining if there is any unforeseen bias.

Before booking a trip many people browse reviews in hopes of an honest perspective about previous stays. In a study by Gretzel and Yoo (2008, 39-40), "97.7 percent of respondents who use the Internet for travel planning say they have read other travellers' reviews in the process of planning a pleasure trip. Of those who read other travellers' reviews, 57.8 percent do so every time they plan a pleasure trip while 26.1 percent read

them very often. Over 10 percent read reviews frequently, 5.3 percent regularly, and only 0.2 rarely.” If travellers’ seek out reviews to determine the expected experience at a certain hotel, then the eWOM is very influential to their perspective and the potential brand loyalist bias would be impactful.

A 1999 study by Shoemaker and Lewis discussed how hospitality marketing needs to steer away from conquest marketing, or the continual search for new customers, and endorse the importance of brand loyalty. Their research discussed the economic benefit of return customers. Not only will they come more often than another guest, but they often spend more than the non-brand loyal guests (Bowen & Shoemaker, 1998). With the customer loyalty being beneficial to the hotel through spending, the hotel brand also hopes to gain positive marketing from the guest through eWOM. The only risk with assuming brand loyalists will help your image is that brand loyalty does not have to mean satisfaction. Shoemaker and Lewis (1999, 352-353) also explained how customer loyalty is not the same as customer satisfaction by defining the two conditions: “Customer satisfaction measures how well a customer’s expectations are met by a given transaction, while customer loyalty measures how likely a customer is to repurchase and engage in partnership activities.” They also mention the link between customer satisfaction and customer loyalty was the weakest relationship in the service-profit-chain model (Heskett, Sasser, & Schlesinger, 1997). Yet, it has been found that customer loyalty is positively correlated to a hotel’s image and overall customer satisfaction (Suhartanto, 2000).

An important aspect to explore is whether or not a reviewer’s background impacts the way they review. The current research explored brand loyalty. A potential consumer can read an individual review, but as of now, the only way to know if a reviewer is loyal to a brand would be to analyze the reviewer’s previous posts in the way it was done for this study. This search can highlight trends in ratings and brand loyalty, however it is time consuming and unlikely a reader of reviews would analyze each contributor that closely. The impact of this can be a type of consumer with higher volatility in their ratings, and this could change the influence a review has on a potential consumer without realizing it. The ideas discussed in this section lead to different implications discussed below.

2.1 Hypothesis 1: There are differences between habits of brand-loyal and non-brand loyal guests. This proposes that senior contributors in the hotel sector of TripAdvisor who are brand loyal users will have a higher volatility in their reviews.

The discussions about brand loyalty and satisfaction imply that a brand loyal guest may not always be a hotel's most favorable reviewer. These contributors have higher expectations as they have most likely stayed in this type of property before, giving them a previous experience to compare it to. When considering the previous stays with the brand, they may be more critical of the service and amenities. With the limitations of a quantitative study, this hypothesis only refers to the volatility of the actual 1-5 rating. Written content in the comments were not considered.

Since there are questions about the variability of a contributor's, questions then arise about the average rating given by a user. Every rating given has an impact on the volatility and average rating, leading to questions about a correlation with the two factors.

2.2 Hypothesis 2: The calculation of average rating directly relates to the variability of ratings. This implies a connection with volatility, and is suggested that a higher average rating will lead to a lower volatility. It would be likely to see a stronger correlation between these variables for the brand loyal group.

Due to the direct mathematical impact variability has on average rating, it was hypothesized that as the average rating of a contributor increases, the volatility will decrease. This correlation will determine if the two factors change at a similar rate. As with the previous questions asked, it is suggested that brand loyalty will make a difference. Here it is believed that brand loyalists will have a lower correlation between volatility and average rating because of their rating habits being more volatile.

Research leads to this prediction of a strong positive correlation because of the belief that when a person's rating habits are not very volatile, meaning always very similar ratings given, these ratings will most likely be on the higher end of the spectrum. As an

example, if it is found a user almost always gives 4 and 5 ratings, it would lead to a higher standard deviation of their ratings, and a high average rating. This connection supports Hypothesis 2.

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3. Research Method.

3.1 Study design and context

This study was designed to analyze TripAdvisor contributors in the hotel sector and determine the volatility of their reviews to allow for analysis of their reviewing habits. The contributors analyzed were classified into two groups: brand loyal and non-brand loyal. The sample was collected from a variety of major brands and their subsidiaries across multiple major cities.

3.1.1 City Selection

To collect the sample, four cities were chosen from the top five of TripAdvisor's "Top 25 Destinations – United States 2015." TripAdvisor chooses the winners for this list based on reviews and opinions from users to determine which destination is rated "the best of the best" for service, quality, and customer satisfaction (TripAdvisor). The cities chosen were New York, NY, Chicago, IL, Charleston, SC, and Seattle, WA; ranked first, second, third, and fifth respectfully on the list. The fourth city, Las Vegas, NV, was not chosen because of the difference in visitors to the destination. In each of these cities three hotels were picked– one in each of the major hotel brands chosen.

3.1.2 Brand Selection

Three major hotel companies were chosen for the basis of collection – Marriott International, Hilton Hotels and Resorts, and InterContinental Hotels Group. These are three of the largest and most well-known parent franchise companies. Each of these companies has at least 12 individual brands in their portfolio with millions of people in their loyalty programs. This amount of customer loyalty makes it feasible to assume brand loyal guests could be found as contributors on TripAdvisor.

3.1.3 Hotel Selection

Of the three major brands, there was one hotel of each selected in each of the four cities. Within each parent brand, all hotels chosen have different flags. These varieties of brands were selected to help ensure variety in the sample. Table 3.1 lists all properties selected for the sample.

Table 3.1

Hotels used in sample			
Cities	Marriott	Hilton	IHG
Charleston, SC	Renaissance Charleston Historic District Hotel	Embassy Suites by Hilton Charleston Historic District	Holiday Inn Charleston Historic District
New York, NY	Courtyard New York Manhattan/Herald Square	Hilton Garden Inn New York/Times Square Central	Crowne Plaza Times Square Manhattan
Chicago, IL	JW Marriott Chicago	theWit – A DoubleTree by Hilton	InterContinental Chicago Magnificent Mile
Seattle, WA	Marriott Waterfront Seattle	Hilton Seattle	Holiday Inn Express & Suites Seattle-City Center

3.1.4 Contributor Selection

To ensure trends in rating activity could be analyzed, it was important to select TripAdvisor users that have posted quite a bit. It was decided that ‘contributors’ should be analyzed, as opposed to ‘reviewers’, and would be selected if they had rated at least 30 hotels. TripAdvisor considers a contributor to be a ‘Senior Contributor’ once they have posted 21 or more reviews on the site, making it logical to analyze contributors that would be classified as Senior Contributors strictly in the hotel sector. Shown below is a chart from TripAdvisor demonstrating how users are ranked for reviews.

Chart 3.1.4



After some initial observations and analysis of the reviews posted on a hotel’s TripAdvisor page, it was found that there are a fair number of users that post well over 50 reviews in just the hotel sector. Since it was needed to also find users that exemplify possible brand loyalty, it was important to only look at users that demonstrate frequent hotel stays. The minimum number of hotel reviews was chosen to be 30 for confidence in defining a contributor as a brand loyalist.

Brand loyalty has been an important factor in hotels for a long time, and there have been findings to define brand loyalty from repeat purchases. Jacoby and Kyner (1973) recognize brand loyalty as a set of six collectively sufficient conditions. They said, “these [conditions] are that brand loyalty is (1) the biased (i.e., nonrandom), (2) behavioral response (i.e., purchase), (3) expressed over time, (4) by some decision-making unit, (5) with respect to one or more alternative brands out of a set of such brands, and (6) is a function of psychological (decision-making, evaluative) processes.” To account for these factors, and increase the chances of the user being brand loyal and not just a repeat guest, brand loyalty was designated if a contributor had reviewed 40% of

their hotels in a single brand. In this case that makes a minimum of 12 reviews in a single major brand.

Another method of rating a reviewer that TripAdvisor uses is the Contribution Level. The contribution level of a reviewer was not directly related to this study, as it is a point system related to all actions the reviewer makes on the site. With all of the other uses of the site, the contribution level does not directly determine if a reviewer has been an active hotel reviewer.

3.1.5 Overall Data Collected

To answer the questions proposed, there were a few key elements collected from each contributor's profile on TripAdvisor. First, the user was defined a contributor if they had reviewed at least 30 hotels. If not, the reviewer was not selected and the next reviewer was considered for inclusion in the study. Then, to determine whether or not a contributor was brand loyal, the number of hotels reviewed in a single brand was needed. All hotel reviews were analyzed and tallied if they fell within a single major brand. Reviews counting towards loyalty most likely fell within the same brand as the hotel the contributor's data had been sampled from, however some contributors stayed more often with another brand.

To determine the volatility of each contributor's reviews, the distribution of ratings was needed. The distribution was collected by counting the total number of each of the 1-5 ratings. This is also referred to as the variability.

It was decided to collect the sample in a stratified method. At least ten brand loyal and ten non-brand loyal contributors were collected from each hotel. This was done to ensure that the two groups had a similar number of contributors in the sample. The final sample size was 269 contributors; 133 brand loyal and 136 non-brand loyal.

3.2 Experimental Procedure

3.2.1 Hypothesis 1 Procedure

Once the ratings distribution, total hotels reviewed, and hotels reviewed within a single brand were collected, the calculations were performed. First, the contributors needed to be classified into the two segments. Brand loyalty was determined by finding the percent of reviews in one single brand out of all hotel reviews the contributor had previously posted. If the total percent in a single major brand was above 40%, the contributor was classified as a brand loyalist. Otherwise, they were classified as a non-brand loyalist.

Next the proportion of each rating was found. This was done by taking the count of each of the 1-5 ratings and determining its proportion out of the total number of hotel reviews posted by that contributor. The standard deviation of this variability measure was then calculated and used to determine volatility of each contributor. With these calculations, the standard deviations of each of the two groups were compared using an independent samples t-test.

3.2.2 Hypothesis 2 Procedure

To proceed with testing the hypothesis, the average rating of each user was needed. The proportion of each rating given was multiplied by the value of that rating, on the 1-5 scale, then the products were summed together to find the average. To test the volatility, standard deviations were used. Meaning, for the volatility to decrease, the standard deviation must increase. The averages were then tested against the volatility in a correlation two times for the separate groups of loyalty, and once for all of the contributors. The hypothesis predicts that there will be a strong positive correlation.

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4. Analysis and Results

As discussed above, this research tests two key hypotheses. These are repeated below followed by the appropriate test results.

4.1 Hypothesis 1: There are differences between habits of brand-loyal and non-brand loyal guests. This proposes that senior contributors in the hotel sector of TripAdvisor who are brand loyal users will have a higher volatility in their reviews.

4.1.1 Results

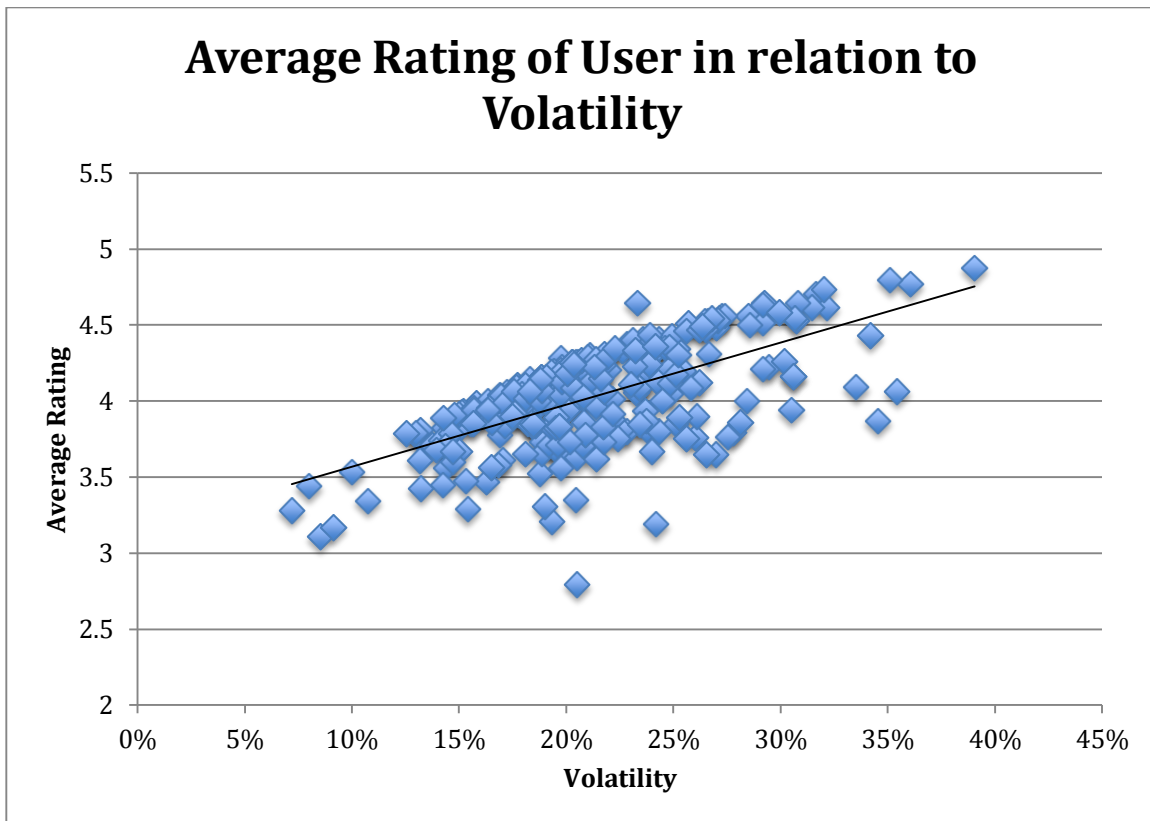
An independent samples t-test was performed to compare the volatility of the two groups. The test results determined that brand loyalists have a mean volatility of 0.21 (SD = 0.055) and non-brand loyalists had a mean of 0.21 (SD = 0.050), which means the volatility levels are not significantly different ($t = 0.241$, $p = 0.10$). Overall, brand loyalists' and non-brand loyalists' volatility was the same, rejecting the hypothesis. The full results from the test are in the Appendix.

4.2 Hypothesis 2: The calculation of average rating directly relates to the variability of ratings. This implies a connection with volatility, and is suggested that a higher average rating will lead to a lower volatility. It would be likely to see a stronger correlation between these variables for the brand loyal group.

4.2.1 Process and Results

For this, three separate correlations were considered to determine if there were differences. First, it was tested to see if all of the contributors as a whole had any correlation between the volatility and the average rating. It was found that there was a positive correlation of 0.587 ($p = 0.000$), reflecting a very strong connection between these two variables. Graph 4.2.1 shows the contributor's volatility against their average rating.

Graph 4.2.1



The next two correlation tests were to see if either of the specific groups had the stronger correlation that would have had an impact in the overall relationship. For brand loyal contributors, the sample had a correlation of 0.631 ($p = 0.000$) and the non-brand loyal contributors had a correlation of 0.544 ($p = 0.000$) in the sample. Table 4.2.1 shows all three correlations. Brand loyalists were found to have nearly a 16% stronger correlation than non-brand loyalists. If this represents the population, then it would suggest brand loyalists notably review higher when they have a low volatility. Either way, both groups strongly suggest a significant connection between average rating and volatility level. The Appendix shows the full results for all three correlation tests.

Table 4.2.1

Results of Correlation Test

Groups	Correlation
Both Groups	.587
Brand Loyalists	.631
Non-Brand Loyalist	.544

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5. Discussion

These findings suggest that senior contributors on TripAdvisor have similar reviewing habits no matter their brand loyalty status. An important take away from this is the implication that a guest returning to the same hotel brand continuously does not necessarily have a more favorable stay or give the hotel a higher rating. This study only suggests these guests have a higher average rating in the case when their reviews are less volatile.

In terms of the impact of this suggestion, readers of reviews may be affected in different ways by the review. According to Sundaram and Webster (1999), consumers are more impacted by a WOM review of an unfamiliar brand as opposed to a familiar brand. This could mean a non-brand loyalist, or anyone unfamiliar with a specific brand, would be most strongly influenced by the comments. Also, if a major brand wants to raise awareness of a smaller chain in their portfolio, it would be likely that brand loyalists to be the first major group aware of the new chain. If the brand loyalists do not necessarily rate hotels more favorably, this may not strongly encourage unfamiliar guests to come and stay.

Additionally, hotels might want to know about loyalty level to see if their loyalists are reviewing differently, specifically more volatile or higher or lower than other guests. However, it was noticed that guests could be 'loyal' to more than one brand since a

contributor only needed to stay with a brand 40% of the time. This being said, a guest that a brand would typically view as ‘loyal’ may be staying often, but not necessarily more than they are staying with another company.

Another takeaway from the findings is the additional confidence in TripAdvisor reviews. Since there is no noted bias or difference in habits of contributor ratings, a potential guest can continue reading everything equally on TripAdvisor. A future study focused on the comments in the reviews may have a different suggestion, but there was not a difference found here.

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6. Research Limitations, and Future Study

As the data were being collected, the question of how TripAdvisor and hotel brands could effectively use the concept of brand loyalist to their advantage was considered. These findings suggest that brand loyalty has no significant impact upon reviews, however additional exploration may reveal findings not discovered herein. Therefore, for the sake of future research, in case the hypothesized relationship expected herein is revealed in a study employing an alternative method, it would be useful to share some potential strategies. These are discussed below.

To further explore the concept of the brand loyalist not necessarily giving favoring reviews, it could be helpful to study the written reviews from the brand loyalists. There may be keywords in the comment that reflect on their brand loyalty, suggesting whether or not the stay was different from their expectations of the brand. In a study by Barsky and Nash (2002), they suggested that brand loyalty in guests is related to the emotions they experience during a stay, and these key emotions differ depending on the service level of the hotel. That being said, the written comments could reflect on the emotions a reviewer may have had during they stay. These comments could have different effects on

each potential guest that reads them. Since this study was quantitative and focused on the direct ratings, the best alternative approach would be to analyze the reviews qualitatively. A contributor's comment may reference their own outlook on their loyalty to the brand or discuss how it measured up to their expectations. Potential customers are influenced differently by the eWOM brought upon them by these reviews, and there may be information beyond the scaled rating.

Due to the nature of this project, there were a few limitations that could be addressed in future studies. The analysis of each user is fairly time consuming to collect all of the ratings and tally all of the single-brand properties. Additionally, certain properties had fewer reviews or few brand loyal users. Examples of this were the three newer hotels with just over 500 reviews, and also all of the IHG properties seemed to have less brand loyalists staying at the hotels chosen for the sample. To get over this hurdle, future research may want to select properties that are a bit more established and have over 800 reviews posted to date to help find more data to better test the hypothesis.

One of the main concepts investigated in this study was the potential importance of a brand loyalty badge on TripAdvisor. Nowhere is there any note of brands in a reviewer profile, not even as a preference. The overall badge could be applicable to people who have reviewed a single brand in at least 40% of their reviews. TripAdvisor already acknowledges many other trends in a contributor's reviewing history, but never a trend about brand. This research did not find a notable difference in the ratings that would impact a potential customer, but it could be beneficial to a hotel brand to become aware of the type of guests that review after their stay, in case the first hypothesis is true for their property. From there, if the 'brand loyal' badge had an impact, the brands can use this information for a type of stealth marketing or to post advertisements and promote themselves in another way on this platform.

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7. Conclusion

As this study was conducted, many interesting ideas came up about the connection between brand loyalty and reviews on TripAdvisor. It was disappointing that the research and data could not suggest a true impact the factors could have on each other, but there are still important ideas left to explore in the implications of the hypotheses. It would be nice to see the study expand to search qualitative data in addition to just the numerical ratings. It would also be interesting if TripAdvisor and the major brands have an interest in exploring the apparent brand loyalty users can show through their reviewing habits. Knowing what kind of guests post to the site could have a benefits for the brand, and TripAdvisor could benefit from the alliance with the hotels.

Additionally, the findings from Hypothesis 2 could have important implications. For a social science experiment it is very hard to find a correlation as strong as 0.587 ($p = 0.000$). The connection between average rating and volatility shows how important the volatility can have an important meaning. Besides just showing varied opinions from a contributor, it would also predict how favorable or not the contributor's review could be. Also, finding the brand loyalists to have an even stronger correlation could suggest that brand loyalists actually review in a less volatile manner, which should be explored again in future research.

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9. Appendix

9.1 Sample Data

	Hotel	Average Rating	Number of Ratings	Average Rating of Sample	Average Volatility
Marriott	Ren CHS	4	844	4.10	0.24
	Court NYC	4.5	536	3.95	0.22
	JWMar CHI	4.5	1130	4.78	0.22
	Mar SEA	4	1324	4.33	0.22
Hilton	Emb CHS	4	1260	3.80	0.21
	HGI NYC	4	782	4.03	0.21
	DTH CHI	4.5	1856	3.87	0.20
	Hil SEA	4	531	3.50	0.22
IHG	HI CHS	4.5	522	4.23	0.21
	CP NYC	4	7374	4.24	0.21
	IC CHI	4	3306	4.48	0.21
	HIEXS SEA	3.5	635	4.00	0.19

Variables in table: Hotel Name, Average Rating given on TripAdvisor; Number of Ratings given to this hotel on TripAdvisor; Average Rating given by contributors in the sample; Average Volatility of contributors in the sample

9.2 SPSS Results

9.2.1 Hypothesis 1 Results

Group Statistics					
	LoyaltyStatus	N	Mean	Std. Deviation	Std. Error Mean
Standard Deviation	Brand Loyal (>40%)	133	.21	.055	.005
	Non-Loyal (<40%)	136	.21	.050	.004

Independent Samples Test		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Standard Deviation	Equal variances assumed	.045	.833	.241	267	.810	.002	.006	-.011	.014
	Equal variances not assumed			.241	263.64	.810	.002	.006	-.011	.014

9.2.2 Hypothesis 2 Results

Both Groups

Descriptive Statistics

	Mean	Std. Deviation	N
AverageRating	3.7815	.35894	269
Standard Deviation	.212357	.0523009	269

Correlations

		AverageRating	Standard Deviation
AverageRating	Pearson Correlation	1	.587**
	Sig. (2-tailed)		.000
	N	269	269
Standard Deviation	Pearson Correlation	.587**	1
	Sig. (2-tailed)	.000	
	N	269	269

** . Correlation is significant at the 0.01 level (2-tailed).

Brand Loyalists

Descriptive Statistics

	Mean	Std. Deviation	N
AverageRating	3.7575	.36515	133
Standard Deviation	.213135	.0547406	133

Correlations

		AverageRating	Standard Deviation
AverageRating	Pearson Correlation	1	.631**
	Sig. (2-tailed)		.000
	N	133	133
Standard Deviation	Pearson Correlation	.631**	1
	Sig. (2-tailed)	.000	
	N	133	133

** . Correlation is significant at the 0.01 level (2-tailed).

Non-Brand Loyalists**Descriptive Statistics**

	Mean	Std. Deviation	N
AverageRating	3.8050	.35253	136
Standard Deviation	.211595	.0499912	136

Correlations

		AverageRating	Standard Deviation
AverageRating	Pearson Correlation	1	.544**
	Sig. (2-tailed)		.000
	N	136	136
Standard Deviation	Pearson Correlation	.544**	1
	Sig. (2-tailed)	.000	
	N	136	136

** . Correlation is significant at the 0.01 level (2-tailed).

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