

## Research Report

# How Status Shapes Objectivity in User-Generated Content

THIS PAPER PROVIDES EMPIRICAL EVIDENCE ON THE IMPACT OF REVIEWER STATUS ON THE OBJECTIVITY OF HIS CONTRIBUTIONS IN ONLINE COMMUNITIES. WHILE PREVIOUS RESEARCH INDICATES THAT USER-GENERATED ONLINE REVIEWS GUIDE CONSUMER DECISION MAKING, LITTLE IS KNOWN ABOUT DRIVERS OF THE ACTUAL REVIEW GENERATION PROCESS. UTILIZING A DATA SAMPLE COVERING 413,077 REVIEWS POSTED OVER 12 YEARS ON TRIPADVISOR.COM, WE FIND THAT WITH INCREASED USER STATUS, REVIEW OBJECTIVITY INCREASES. THUS, WE CONTRIBUTE TO THEORY BY GENERALIZING THE SO-CALLED "POPULARITY EFFECT" TO A MULTI-DIMENSIONAL "STATUS EFFECT".

Christian Janze

### Introduction

User-generated online reviews are an important asset for online retailers as they attract customers and directly influence product and service sales figures (Chevalier and Mayzlin, 2006; Forman et al., 2008). Consequently, the question of what makes reviews helpful has become central for information systems (IS) researchers in order to understand which factors lead to increased review diagnosticity (Mudambi and Schuff, 2010). Previous work found that review aspects such as review depth or a review's readability influence the perceived review helpfulness (Ghose and Ipeirotis, 2011).

Although the importance of user-generated online reviews as well as the question of what

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makes them helpful is well-recognized in IS literature (Mudambi and Schuff, 2010), the question of why a specific online review is written in a specific manner is not thoroughly addressed yet. Therefore, it is important to understand whether the writing style of users remains constant over time or whether their behavior changes with increasing experience in generating online reviews.

Goes et al. (2014) provide first evidence on behavioral changes of users contributing content in online communities and show that more popular users provide more objective online product reviews (measured by a decrease in emotionality): the so-called "Popularity Effect". However, their study is based on a platform which offers users the possibility to follow other users. They utilize

these connections between users to measure a user's popularity. In contrast, we argue that such a behavioral change is caused by an increased status on the platform – which is a multidimensional construct entailing reviewer specific, third party specific, and review specific aspects.

Thus, we state the following research questions:

- Does the proposed popularity effect hold true (i.e., is measurable) for platforms where it is not possible to follow other users?
- If the proposed popularity effect is measurable, is it caused by an increase in status due to increased experience on the platform?

To investigate these research questions, we analyze which factors drive the objectivity expressed in online service reviews by means of a sample of 413,077 reviews concerning New York City based restaurants posted from May 5<sup>th</sup>, 2003 to April 8<sup>th</sup>, 2015 on TripAdvisor.com.

### Research Methodology

Based on the Hawthorne effect (Adair, 1984), functional role theory (Biddle, 1986), signaling theory (Spence, 1973, 1974), and the findings by Goes et al. (2014), we argue that users send signals to other users in order to reduce uncertainty related to their position on the platform and thus to increase their status within the community. Consequently, we focus on different signals indicating the status of a specific user in an online community: review specific signals (review experience and information disclosure), third party specific signals (social feedback) as well as review specific signals

(review depth). We formulate four research hypotheses regarding each signal mentioned:

First, users can signal higher status within an online community with an increased number of contributions. According to functional role theory, a user acts according to his increased status and provides less emotional online reviews since this would be expected from an expert (Goes et al., 2014). Thus, we hypothesize: *H1: Increased review experience decreases review emotionality.*

Second, an increased level of information disclosure can be seen as a signal to reduce the uncertainty perceived by other users – and thus as a factor positively influencing user status (Donath, 2008). We assume that users disclosing more information about themselves contribute more objective online reviews as they want to be perceived as experts in the community. In accordance with the functional role theory and the Hawthorne effect, we thus hypothesize:

*H2: Increased information disclosure decreases review emotionality.*

Third, many online review platforms allow users to evaluate the contributions of other users by voting on the perceived helpfulness of reviews (Mudambi and Schuff, 2010). An increased level of social feedback displayed next to the online review might be associated with an increased perception of responsibility for the online community. According to functional role theory, it can be assumed that this increased level of responsibility leads to the provision of more objective

	Model A		Model B		Model C	
	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value
(Constant)	0.7938	0.000***	0.8413	0.000***	0.7981	0.000***
restRevs	-0.0002	0.000***	-	-	-	-
tripTit	-	-	-0.0191	0.000***	-	-
citRevs	-	-	-	-	-0.0009	0.000***
hasLoc	-0.0235	0.000***	-0.0099	0.006**	-0.0200	0.000***
extUsr	0.6844	0.000***	0.6435	0.000***	0.6802	0.000***
socFeed	-0.0088	0.000***	-0.0064	0.000***	-0.0073	0.000***
desWC	-0.0012	0.000***	-0.0012	0.000***	-0.0012	0.000***
daysPassed	0.0000	0.000***	0.0000	0.000***	0.0000	0.000***
F-Value	5,235	0.000***	5,333	0.000***	5,266	0.000***
Adjusted R <sup>2</sup>	0.0709	-	0.0721	-	0.0713	-

\* p < 10%, \*\* p < 5%, \*\*\* p < 1% [White-corrected standard errors]

**Table 1: Regression Analysis (n = 411,440 Complete Observations)**

online reviews as the user behaves according to his role as an expert. Transferring this to the level of review emotionality, we hypothesize:

*H3: Increased social feedback decreases review emotionality.*

Fourth, review diagnosticity theory suggests that the provision of more comprehensive online reviews has a positive effect on the perceived helpfulness of a specific review (Mudambi and Schuff, 2010). In addition, providing more comprehensive online reviews takes more time and forces the reviewer to take either more product or service characteristics into consideration and/or to think about them more extensively before posting the review. Therefore, we hypothesize:

*H4: Increased review depth decreases review emotionality.*

## Results

To evaluate our research model, we performed three OLS regressions as shown in Table 1. The dependent variable is the absolute value of the z-score of review emotionality. While the first regression model (A) is our base setup, the second (B) and third model (C) represent robustness checks.

First, research hypothesis H1 suggests that an increased review experience decreases review emotionality. Considering regression A as presented in Table 1, we can accept this hypothesis as the total number of restaurant reviews a reviewer has written (restRev) has a negative effect on review emotionality, which is statistically significant at the 1% level. Furthermore, models B and C show that the same holds true if the

review experience is measured by the TripAdvisor assigned title (tripTit) and the number of cities a reviewer has written reviews in (citRevs).

Second, research hypothesis H2 states that increased information disclosure of a reviewer decreases review emotionality. Empirical results presented in Table 1 support this hypothesis, as the presence of the reviewer's location in the profile (hasLoc) is negatively associated with review emotionality. This effect is statistically significant at the 1% level. Again, robustness models B and C yield the same and statistically significant results at the 5% and 1% level, respectively.

Third, research hypothesis H3 predicts that increased social feedback (socFeed) decreases review emotionality. According to our results presented in Table 1, we can accept this prediction for both the base model A as well as the robustness models B and C. The coefficient of the socFeed variable is always negative and statistically significant at the 1% level.

Fourth, research hypothesis H4 suggests that an increased review depth decreases review emotionality. Indeed, regression model A shows that the number of words used in a review (desWC) decreases review emotionality, whereas this relationship is statistically significant at the 1% level. This observation holds true for robustness models B and C.

Taking into account the control variables, it can be observed that reviews posted via a third-party app (such as Facebook) are more emotional (extUsr),

which is statistically significant at the 1% level in models A, B, and C. This indicates third-party app users tend to post more spontaneously. Furthermore, it appears that the number of days passed (daysPassed) since the review was written has a small but statistically significant positive effect on review emotionality.

The adjusted R<sup>2</sup> of 0.0709 for regression model A shows that 7.09% of the variance is explained by our research model. Robustness models B and C yield very comparable results with an adjusted R<sup>2</sup> of 0.0721 and 0.0713. In addition, F-Values of 5,235 (Model A), 5,333 (Model B), and 5,266 (Model C) and their corresponding P-values suggest that the null hypothesis that every coefficient is zero can be rejected at the 1% level of significance.

As our sample covers a very large amount of online service reviews which might influence the statistical significance levels observed, we also apply a multitude of different analytical techniques described by Lin et al. (2013) to account for the p-Value problems arising from large sample sizes. The distribution of the p-Values as well as the bounds of the confidence intervals show that our results remain robust with much smaller sample sizes (and also different temporal distributions).

## Discussion

We show that the status of users within an online community influences the level of emotionality and thus the level of objectivity expressed in their reviews. Consequently,

beyond an effect of general user popularity, we observe a more general “Status Effect” within our analysis. Building upon the Hawthorne effect and functional role theory, users send signals in order to be perceived as an expert in the community and act according to their desired expert role by providing less emotional and thus more objective online service reviews.

Our results show that an increased number of restaurant reviews written by a reviewer, an increased number of cities a reviewer has written reviews in, and a higher title TripAdvisor assigns to its users (used as proxies for the level of experience a user signals to increase his status) cause a decrease in review emotionality. Furthermore, we find that an increased level of information disclosure is related to the provision of more objective reviews. In addition, we reveal that an increased level of social feedback of third parties and review depth lower the level of emotionality and thus yield more objective reviews.

Taking into account the control variables leads to additional important insights: First, the usage of a third-party app is associated with a significant impact on the level of emotionality expressed in online service reviews. It can be assumed that they post the service review shortly after purchase, i.e., after visiting a restaurant and making a particularly good or bad experience. Second, the number of days passed since the review was written has a positive influence on the level of emotionality observed. This could be explained by the fact that internet users in general became more mature over the twelve years of our study.

### Conclusion

Our results (Janze and Siering, 2015) reveal that an increase of a user’s status on the platform is associated with behavioral changes. First, our findings suggest that with an increased reviewing experience as well as increased information disclosure, the contributed online service reviews become less emotional and thus more objective. Second, more positive social feedback as well as an increased review depth also lead to less emotional and thus more objective online service reviews. Consequently, we show that an effect similar to the popularity effect as observed by Goes et al. (2014) exists for online service reviews on platforms where users are not able to follow each other: if contributors have a higher status on a platform, they produce more objective content. Therefore, we extend the previous understanding of Goes et al. (2014) by introducing the more generalized “Status Effect”. Our results are primarily relevant for online retailers as they help to identify users providing the most objective online service reviews and thus generating value for their customers and, in consequence, increasing future turnover and profit generated on their platforms.

Within future research, we plan to include other cities as well as physical products instead of services. Such an analysis could also include additional socioeconomical user characteristics such as gender. Furthermore, we plan to conduct an additional study regarding the influence of using a third-party app for providing online service reviews on the level of emotionality expressed.

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