

IMPORTANCE OF CUSTOMER RATINGS AND REVIEWS: EXAMPLE OF AMAZON

Marko Milosavljevic¹, Slobodan Moraca¹, Angela Fajsi¹, Ivan Ivkovic², Dragan Ilic³

¹University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia

²University of Kragujevac, Faculty of Economics, Kragujevac, Serbia

³University Business Academy, Faculty of Economics and Engineering Management, Novi Sad, Serbia

Abstract: *In recent years, many researchers have emphasized the role and importance of online customer ratings and reviews. This form of interaction has provided many online shoppers with the necessary information which enhances decision-making processes and provides them with better insights regarding the quality of different products and services. With e-commerce marketplaces such as Amazon developing at a fast pace, this form of information exchange became even more important both from consumer and business perspective. This paper aims to show which of the elements, number of customers who rated a certain product (volume) or star review (valence) the product has gained over time has a more significant influence on Amazon sales. Data set used for this study comprised 450 listings scraped from Amazon.de since Germany stands for the most developed economy within Europe and the fifth largest e-commerce market in the world. This study will contribute to a better comprehension of the overall importance of the relationship between electronic word-of-mouth communication and its impact on product performances in terms of units sold.*

Key Words: *Ratings, Reviews, Electronic WOM, E-commerce, Amazon*

1. INTRODUCTION

As technology continues to evolve and reshape the process of communication, additional sources and ways of information exchange has gained a lot of attention in recent years. The process of trade followed in the same footsteps and also went through radical changes and is becoming more about brick-and-click, rather than traditional brick-and-mortar. These changes imposed the necessity of establishing new business models and structures which will be able to respond to newly established customer needs and demands for businesses to gain and maintain competitive advantages in highly competitive electronic markets. This has pushed organizations towards realizing the true importance of online word-of-mouth communication (eWOM), which can be seen as one of the key factors responsible for the achievement of wanted business goals. Customers are now able to compare, evaluate and choose from different

alternatives which will suit their needs the best by analyzing opinions, impressions, and ratings from other online shoppers who have experienced the same need for certain products or services. This enables them to gain a better understanding of the products' overall quality and other peoples' impressions and based on this information enhance their decision-making process.

E-commerce industry leaders such as Amazon has provided its customers with an opportunity to express and share their opinions regarding the usage of certain products with other online shoppers. In online marketplaces such as this, customer ratings and reviews are highly valued and can be seen amongst other elements as one of the most important factors responsible for achieving wanted sales results and listings' positioning on the search engine result page. Customers will positively rate and review products with better overall quality which have fulfilled their needs and met their expectations. These sellers are more likely to make more sales in the future and attract other potential customers to purchase their products, since the ad will be positively rated and reviewed, by customers who had prior experience using a certain product. On the other hand, ads that have gained more negative attention from customers over time are less likely to achieve a lot of sales since this sign can be related to the poor overall quality of the product or perhaps unprofessional seller behavior and consequently won't be as attractive to potential customers.

The purpose of this paper is to highlight a more important element of eWOM, regarding the number of customers who rated certain product and star grade the product has gained over time. The paper itself will give a brief insight of the main theoretical frameworks related to online word-of-mouth communication and will display major findings and standpoints by different authors. The second part of the paper will be focused on the methodological approach deployed within this study, data set description, and presenting key findings which were the results of 450 ads analyzed on Amazon.de. The results from this study implicate that both the number of raters and listing star reviews gained over time can affect the sales velocity. This paper will contribute to the ever-growing e-commerce literature, as well as highlighting

some of the main managerial KPI related to tailoring adequate e-commerce strategies.

2. LITERATURE REVIEW

Word-of-mouth (WOM) communication has always been seen as one of the most influential ways of information exchange [1]. Traditionally it is seen as an informal form of communication between acquaintances [2], or customers regarding the evaluation of the quality and the characteristics of certain products or services, which was identified as one of the key factors responsible for new products adoption [3,4]. While conventional WOM is limited to a small number of people and decreases over time and distance [5], technological advancements have enabled it to evolve on a global scale whilst targeting an infinite number of people disregarding the space and time boundaries. To clarify the true meaning of eWOM, researchers have introduced multiple different studies aiming towards effects that customer ratings and reviews might have on achieving wanted online sales.

Today customers are progressively relying on Internet-based sources of information regarding a variety of different subjects [6], and these searches are often replacing offline searches for information [7]. Because of this, customers are now able to easily gather wanted information and express their opinions on different topics including products and services, which results in higher overall customer awareness.

Online customer reviews can be defined as “peer-generated product evaluations posted on company or third party web-sites” [8]. While shopping online, they are encountered with other users' ratings and reviews which help them enhance their decision-making process. Making a better purchase decision stands for the most important reason, why customers rely on online reviews [9]. Since this form of communication has largely affected the success of an online business, it is no wonder that it has been a subject of investigation in multiple pieces of research in the past.

Across electronic marketplaces, three key points of customers' product ratings and reviews have been closely examined by the researches [10]:

- Volume can be described as the total amount of customers involved in eWOM regarding a certain product or service;
- Valence average star rating which is the result of positive and negative attitudes which can be related to products' overall quality and customers satisfaction;
- Dispersion measurement of eWOM velocity within and cross certain communities.

Online marketplaces such as Amazon.de, provide customers with an opportunity to review purchased products in the form of numerical star ratings by granting sellers stars ranging from 1 (extremely negative) to 5 (extremely positive) as well as the possibility to freely comment on the purchased products [8]. On the other hand, midpoint rating such as 3-star review is considered to be a result of customer's indifference [11]. With the aid of this information, customers can easily

evaluate the amount of positive and negative reviews the ad has gained over time.

Reviews and comments will depend on customers' perceived quality and their overall satisfaction. It is important to highlight the fact that each customer's review represents a bundle of their perceived values, and product quality can be described as the aggregate of all customer's perceived values which is independent of their individual heterogeneous preferences [12].

Research have shown the positive correlation between online sales and customer reviews [13,14] where sales will depend on reviews type, positively or negatively. The reason for this is the fact that people are more likely to pay more attention to the negative information, rather than on positive [15], which will be depicted on the product sales weather on favorable or in an unfavorable way. On the other hand [8] retail websites with a bigger amount of customer ratings and reviews usually offer greater potential value to its customers which can be seen as a differentiation factor.

Besides [16] the volume of customer reviews is thought to be also very influential when in correlation with online sales. The higher volume might be considered as more objective ones and therefore be more trustworthy [17].

On the other hand, valance is also associated with a higher number of units sold, when sales data are not available which is the case of Amazon marketplaces. More recent researches have dealt with votes cast on review helpfulness, which have been identified as highly important since they constitute a key point of the customer's decision-making process while purchasing products online [18].

Although the overall importance of eWOM is unquestionable existing studies show that its effect varies both upon product category [19] and the type of information customers will look for and eventually come up to their decisions [20]. It is important to highlight that their influence will have different effects on search goods such as electronics and experience goods such as books or movies.

Customers who are trying to assess a search product are more probable to adopt a systematic decision-making system by evaluating the exact attributes of the product observed, while on the other hand customers who are considering an experience product are more likely to rely on extrinsic attribute-irrelevant cues, such as the popularity of the certain product [10]. In addition to experience goods, it is shown that 50% of younger Internet users are more likely to rely on eWOM when purchasing experience goods [1]. Unlike experience goods, search good can be easily compared without the necessity of purchasing certain products while on the other hand, it is more difficult to compare experience goods because they usually require interaction with the product [21]. Another noticeable difference is depicted in relevant information search as well as time spent on page and relative importance of recommendation mechanisms [21].

2.1. Amazon ratings

The major benefits of information exchange in online communities have set up a need for the creation of

effective mechanisms that will allow customers to benchmark information reliabilities to enhance customer's trust. All of the existing online marketplaces are investing in the enhancement of rating and reviewing systems that will provide customers with an opportunity not only to analyze reviews but to also check out their usefulness (ex. Amazon.).



Fig. 1. Amazon ratings and reviews

Product's reviews on Amazon.de will consist of several key elements (Fig. 1.):

- Star rating by the reviewer, ranging from 1 to 5;
- Comment given by the reviewer, which in some cases may be followed with graphical content in the form of images captured by the user;
- The number of people who find a certain review helpful in their decision-making process.

Amazon has created a formally structured shape of social CRM system that provides individuals and groups to actively share their business interests, both for sellers and buyers by taking part in e-commerce decision making processes [22].

3. METHODOLOGY

3.1. Data Collection

The data obtained in this study were collected from the most popular electronic marketplace in Germany Amazon.de, which daily attracts hundreds of millions of Europe wide customers searching for different goods. We picked Amazon.de as a leading e-commerce platform in Europe and as it represents the most vibrant and visited retail web site. Since we wanted to make sure not to mix up search goods with experience goods, which differ a lot in terms of customer's comprehension, we have selected to explore products from the search goods category. Listings selected in this research are listed in the fitness category and are ranging in type and prices. Starting in January, we have selected 9 different product categories, within which we obtained the top 50 listings within a certain category. Our main interests laid upon measuring sales performance following the star ratings (valance) and the total amount of people who reviewed the product (volume). Since sales data are not publically available on Amazon, we have used the AMZ Scout tool to get sales estimation. In our data analysis, we have used Automated Linear Regression to map the exact importance of observer variables on the number of units sold. Like this, we were able to notice which one out of the two, played a more significant role.

3.2. Hypothesis

As multiple pieces of research have dealt with volume and valance influence on sales on consumer goods and electronics [10], our research will focus on examining whether similar patterns can be applied to examining their influence on products from other categories. Although throughout literature there are many different standpoints considering volume and valance importance in online sales, our research will try to highlight their true importance on the example of search goods on Amazon.de. The hypothesis of our research refers to the direct influence of valance and volume on sales volume.

Hypothesis 1 (Volume): The total number of people rating an ad directly affects the number of units sold.

Certain studies [23] have shown the positive influence of online customer reviews ex. on eBay, reviews are likely to influence sales, while on the other hand [14], reviews may influence book sales on Amazon. Researchers also indicate that volume is more significant than valance when it comes to sales and that it can be considered less important when predicting it [24].

Hypothesis 2 (Valance): Average star review directly affects the number of units sold.

It is shown in the previous research [22] that the valance does not have a significant role in terms of sales of the customers purchasing decision. Contrary [10] hypothesis regarding more significant valance's influence on search goods was supported, showing a positive correlation between the two.

4. RESULTS

Table 1. reports summary results of the dataset analyzed. As presented, the average star rating is 4.1 starts per listing, while the average number of reviewers per listing is 97.75. The total amount of star reviews varied from minimum zero to maximum 5 stars, while the total amount of reviewers varied for minimum zero to maximum 1894.

Table 1. *Experimental results*

Variable	Mean	StDev	Minimum	Maximum
Average Grade	4.1009	1.0624	0.0000	5.0000
Number of Reviewers	97.75	185.27	0.00	1894.00

Researcher's results [19] indicate equal meaningfulness of the factors observed regarding the number of units sold, which was proven to be correct within our paper, indicating a more significant influence of volume than valance (Fig. 2.).

The results show that volume is much more important where Predictor importance = 0.93 whereas valance's Predictor importance = 0.07. Besides, both of the variables observer volume and valance are statistically significant when evaluating the number of units sold (t Number of Reviewers = 13.888; p Number of Reviewers = .000) and (t Average Grade = 3.786; p Average Grade = .000).

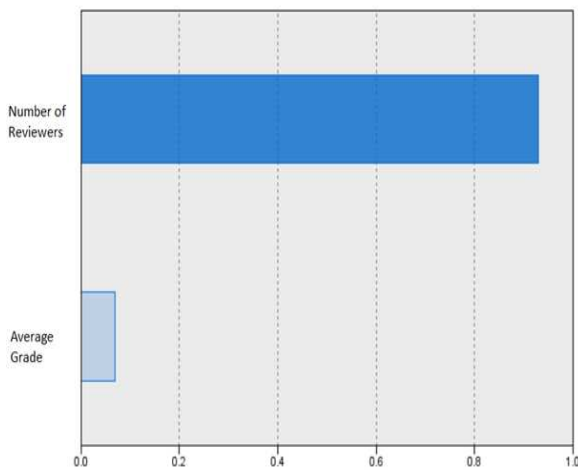


Fig. 2. *Importance predictor*

Results support both hypotheses proving that both parameters can be seen as influential regarding the number of units sold. Also, it is possible to conclude that volume plays a more significant role than the valance.

4.1. Discussion

Online customer reviews are the most valuable source of product information. In the absence of adequate information about the product, it is more difficult for the customers to evaluate the product's quality. eBay research indicates that higher volume increases the probability of a sale [23].

Our research makes a suggestion to the Amazon sellers that the customer's decision-making process relies on both volume and valance.

As shown above, it is possible to note that customers value volume more than valance. Disregarding star rating an ad, has gained over time, without many customers involved in eWOM, sales volume will not follow. Therefore, ads with more customers involved in the discussion about the product's quality can be considered more credible to the customers, since more people have used a certain product.

5. CONCLUSION

This paper summarized theoretical approaches and standpoints regarding eWOM with special emphasis on consumer's ratings and reviews. It is possible to come up to a conclusion that eWOM communication in all its shapes and forms plays a significant role when it comes to meeting and achieving wanted business goals. In that sense, it is especially important for all the companies who base their business on online marketplaces such as Amazon to fully embrace and comprehend the true importance of online ratings and reviews.

If companies fail to meet customer's expectations regarding perceived qualities or functionalities they risk endangering their business success within a highly competitive electronic market. On the other hand, by carefully planning and strategizing their business philosophy in terms of customers' satisfaction and product quality, they might differentiate themselves as more professional sellers who strive towards fulfilling their customers' needs.

Also by carefully tailoring their product portfolio, companies will have to undertake different approaches to gain more sales and attract more potential consumers since the different products will require different strategies to be deployed. Besides increase or decrease in sales, sellers can benefit from eWOM by analyzing consumer's main complaints as well as their KSP's to enhance their existing offers in terms of quality or timely update their offers to newly established consumer preferences. Only by analyzing core consumer values and needs companies will be able to attain existing and potentially attract new customers. Since listings that have gained more ratings and reviews over time can be considered more objective it is of high importance for sellers to gain more positive than negative consumer's attention, because it is shown that these ads won't perform as good in terms of sales.

Our research results could extend to examining the review's usefulness on the customer's decision making processes. This variable could give us a better understanding of eWOM true influence as well as a deeper understanding of certain customer's behavioral patterns.

6. REFERENCES

- [1] D. Godes & D. Mayzlin, "Using online conversations to study word-of-mouth communication", *Marketing science*, vol. 23 no. 4, pp. 545–560, November. 2004.
- [2] J. Arndt, "Role of product-related conversations in the diffusion of a new product", *Journal of marketing Research*, vol. 4, no.3, pp. 291–295, August. 1967.
- [3] A.V. Banerjee, "The economics of rumours", *The Review of Economic Studies*, vol. 60, no. 2, pp. 309–327, April. 1993.
- [4] J. J. Brown, and P. H. Reingen, "Social ties and word-of-mouth referral behavior", *Journal of Consumer research*, vol. 14, no. 3, pp. 350–362, December. 1987.
- [5] W. Duan, B. Gu, and A. B. Whinston, "Do online reviews matter?—An empirical investigation of panel data", *Decision support systems*, vol. 45, no. 4, pp. 1007–1016, November. 2008.
- [6] B. T. Ratchford, M. S. Lee, and D. Talukdar, D, "The impact of the Internet on information search for automobiles", *Journal of Marketing research*, vol. 40, no. 2, pp. 193–209, May. 2003.
- [7] L. R. Klein, and G. T. Ford, "Consumer search for information in the digital age: An empirical study of prepurchase search for automobiles", *Journal of interactive Marketing*, vol. 17, no.3, pp. 29–49, 2003.
- [8] S. M. Mudambi, and D. Schuff, "Research note: What makes a helpful online review? A study of customer reviews on Amazon.com", *MIS quarterly*, vol. 34, no. 1, pp. 185–200, March. 2010.
- [9] P. A. Dabholkar, "Factors influencing consumer choice of a rating Web site": An experimental investigation of an online interactive decision aid", *Journal of Marketing Theory and Practice*, vol. 14, no. 4, pp. 259–273, December. 2006.

- [10] G. Cui, H.K. Lui, and X. Guo, "The effect of online consumer reviews on new product sales", *International Journal of Electronic Commerce*, vol. 17, no.1, pp. 39-58 December. 2012.
- [11] K. J. Kaplan, "On the ambivalence-indifference problem in attitude theory and measurement: A suggested modification of the semantic differential technique", *Psychological bulletin*, vol. 77. no. 5, pp. 361-372, 1972.
- [12] N. Hu, P. A. Pavlou, and J. J. Zhang, "Why do online product reviews have a J-shaped distribution? Overcoming biases in online word-of-mouth communication", *Communications of the ACM*, vol. 52. no.10, pp. 144-147, March. 2009.
- [13] Y. Chen, S. Fay, and Q. Wang, "Marketing implications of online consumer product reviews", *Business Week*, 7150, 1-36.
- [14] J. A. Chevalier, and D. Mayzlin, "The effect of word of mouth on sales: Online book reviews", *Journal of marketing research*, vol. 43, no.3, pp. 345-354, August. 2006.
- [15] J. J. Skowronski, D. E. Carlston, L. Mae, and M. T. Crawford, "Spontaneous trait transference: Communicators take on the qualities they describe in others", *Journal of personality and social psychology*, vol. 74, no. 4, 837-848, 1998.
- [16] E. W. Anderson, and L. C. Salisbury, "The formation of market-level expectations and its covariates", *Journal of Consumer Research*, vol. 30, no. 1, pp. 115-124, June. 2003.
- [17] Y. Kwark, J. Chen, and S. Raghunathan, "Online product reviews: Implications for retailers and competing manufacturers", *Information systems research*, vol. 25, no.1, pp. 93-110, March. 2014.
- [18] N. Korfiatis, E. GarcíA-Bariocanal, and S. SáNchez-Alonso, S, "Evaluating content quality and helpfulness of online product reviews: The interplay of review helpfulness vs. review content", *Electronic Commerce Research and Applications*, vol. 11, no. 3, pp. 205-217, June. 2012.
- [19] F. Zhu, and X. Zhang, "Impact of online consumer reviews on sales: The moderating role of product and consumer characteristics", *Journal of marketing*, vol. 74, no. 2, pp. 133-148, March. 2010.
- [20] D. Weathers, S. Sharma, and S. L. Wood, "Effects of online communication practices on consumer perceptions of performance uncertainty for search and experience goods", *Journal of retailing*, vol. 83, no. 4, pp. 393-401, December. 2007.
- [21] P. Huang, N. H. Lurie, and S. Mitra, "Searching for experience on the web: an empirical examination of consumer behavior for search and experience goods", *Journal of marketing*, vol. 73, no. 2, pp. 55-69, March. 2009.
- [22] N. Amblee, and T. Bui, "Harnessing the influence of social proof in online shopping: The effect of electronic word of mouth on sales of digital microproducts", *International journal of electronic commerce*, vol. 16, no. 2, pp. 91-114, December. 2011.
- [23] P. Resnick, and R. Zeckhauser, "Trust among strangers in internet transactions: Empirical analysis of ebay's reputation system", *The Economics of the Internet and E-commerce*, vol. 11, no. 2, pp. 23-25, July. 2002.
- [24] W. Duan, B. Gu, and A. B. Whinston, "Informational cascades and software adoption on the internet: an empirical investigation", *MIS quarterly*, vol. 33, no. 1, pp. 23-48, March. 2009.
- [25] P. Y. Chen, S. Dhanasobhon, and M. D. Smith, (2008). "All reviews are not created equal: The disaggregate impact of reviews and reviewers at amazon.com" *Com* (May 2008).

CORRESPONDENCE



MSc Marko Milosavljevic,
PhD Student
University of Novi Sad
Faculty of Technical Sciences,
Trg Dositeja Obradovića 6
21000 Novi Sad, Serbia
marko.milosavljevic073@gmail.com



Dr Slobodan Moraca, Professor
University of Novi Sad
Faculty of Technical Sciences,
Trg Dositeja Obradovića 6
21000 Novi Sad, Serbia
moraca@uns.ac.rs



MSc Angela Sladic,
Teaching Assistant
University of Novi Sad
Faculty of Technical Sciences,
Trg Dositeja Obradovića 6
21000 Novi Sad, Serbia
angela.sladic@gmail.com



MSc Ivan Ivkovic, PhD Student
University of Novi Sad
Faculty of Technical Sciences,
Trg Dositeja Obradovića 6
21000 Novi Sad, Serbia
ivko.stat@gmail.com



Dr Dragan Ilic, Associate Professor
University Business Academy
Faculty of Economics and
Engineering Management,
Cvecarska 2
21000 Novi Sad, Serbia
prof.dragan.ilic@gmail.com