

# THE IMPACT OF ONLINE REVIEWS ON PRODUCT SALES: A COMPREHENSIVE ANALYSIS

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**Abstract:** Customers' reliance on eWOM (electronic word of mouth) communication has increased as the Internet has become more pervasive. reviews of products that are shared on the web Consumers rely on the internet more than any other medium when making purchasing decisions. Effective e-marketing is now a vital success factor for new product launches because of the importance of user-generated material, notably online product reviews, in helping consumers make well-informed purchasing decisions. Sales of media like books, movies, and video games can be boosted by good evaluations posted online, according to an ever-growing body of academic literature. Researchers have offered strategies for altering online product reviews to help marketers take advantage of eWOM. Methods such as targeting powerful individuals, praising advocates, and hiding product details are used. However, empirical data on how the sales of new products are impacted by internet reviews is not always trustworthy.

**Keywords:** Online product reviews, panel data analytics, word-of-mouth marketing, and sales of new products.

## 1. INTRODUCTION

Customers' reliance on eWOM (or electronic word of mouth) communication as a resource for information before making a purchase has grown in importance since the advent of the Internet. Internet product review websites are more effective than any other medium at persuading consumers to make a purchase. User-generated content, in particular online product reviews, has become a major driving factor in new product sales, making efficient e-marketing essential to the success of new product launches.[1]. Online customer reviews of products including books, films, and video games have been linked to increased sales in a growing number of studies. Researchers have suggested several tactics on how to sway online product reviews, including identifying the influentials, motivating supporters,

and withholding product details, to assist marketers in harnessing the power of eWOM. Online product reviews can have a significant impact on sales, however there is a lack of trustworthy empirical data on this topic.

Three variables of customer product reviews have been closely scrutinized in the Internet market: volume, valence, and dispersion. The justification for tracking the quantity of product reviews is clear: Online forum conversations about a product raise customer awareness of it.

Potential buyers can gain insight into the quality of a product and be given a recommendation when ratings and the ratio of positive to negative comments are considered[2]. Previous research on online WOM have used product ratings to estimate sales of "new products" like television episodes, movies, and books.

## **2. RESEARCH FRAMEWORK**

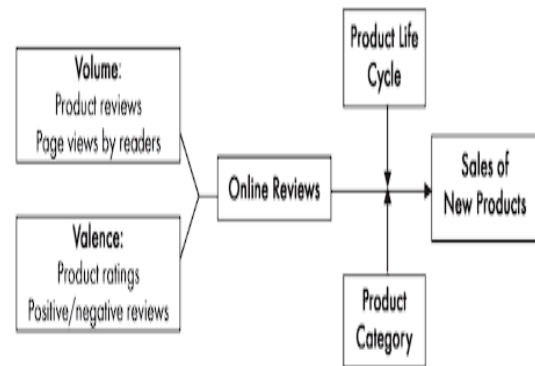
WOM serves as the foundation for interpersonal communications in the marketplace, which have a big impact on how customers evaluate products and make purchases. WOM, especially text messages designed for online distribution, has demonstrated greater effectiveness than printed information since it is regarded as more valuable and credible.[3]. Studies on the spread of innovations have

discovered a strong correlation between consumer behavior and market performance and the volume of WOM[4]. Marketers worry a lot about negative word-of-mouth (WOM) spreading faster than positive WOM, especially online. Since WOM may be both beneficial and detrimental, especially for new products, many professionals view it as a two-sided coin. Word of Mouth (WOM) has been described as "the world's most effective, yet least understood marketing instrument" due to its pervasive effects. Even before the broad availability of the Internet, there was a lot of theoretical data to support the impact of WOM on the sales of new products. Due to their propensity to follow in the footsteps of innovators and early adopters, researchers have spent a lot of time studying the efficacy of word of mouth as a communication route among the early majority and late majority.[5]. Product creators and early adopters are most influenced by the media (PLC). People's opinions on newly released products are spread through WOM networks after they've had a chance to try them out for themselves.

As a result, the link between word of mouth and sales of new products takes the form of a U-curve. The density function of time is used to determine the coefficients of word-of-mouth (WOM) influence for imitators and mass media impact for innovators in studies of innovation dissemination.

Sales data, rather than surveys or experiments, has been used to infer the effect of WOM on the market share of new items. The Bass model's demonstrated ability to predict the growth trends of a variety of new items has led to its widespread use in sales projections across industries.[6].

Online WOM is more potent than ever because of its speed, ease, reach, and lack of in-person human pressure.[7]. Additionally, WOM conversations from online forums can now be stored in databases by e-commerce companies, providing an opportunity to directly and possibly more correctly quantify their effects. In order to help businesses take advantage of the possibilities presented by eWOM, researchers have been conducting an increasing number of studies that demonstrate customer reviews have a major impact on product sales. Results about the effects of online review metrics, however, have not always been consistent due to varying assessments and study techniques. Researches should not only focus on the number and quality of reviews, but also on the impact of product category, the involvement of followers, and the unique form of WOM (i.e., positive versus negative reviews).



**Figure 1.** A Comprehensive Framework on How Online Reviews Affect Product Sale.

### 3. LITERATURE REVIEW

Numerous variables have been explored in depth to determine how internet reviews effect product sales. Overall, studies have demonstrated that reviews have a favourable effect on sales whereas negative evaluations have the opposite effect. [8] Other research investigating the effect of review sources found that independent review sites had a greater impact on sales than the company's own website. Detailed, enthusiastic reviews have been demonstrated to be more influential on sales than bare-bones factual ones.

**A.** Online reviews' effects on consumer behavior  
91% of shoppers examine internet reviews before

making a purchase choice, according to a Bright Local survey. Consumers now rely heavily on online reviews because of the information they provide about the product's quality, features, and benefits.

**B. The Impact of Ratings and Reviews on Purchase Intentions-** Online reviews have a major impact on how well a product does in the marketplace. A one-star rise in a product's rating on Yelp results in a 5-9 percent boost in revenue, according to a study conducted by Harvard Business School. The conversion rate for products with reviews was found to be 270% higher than for those without in a study conducted by the Spiegel Research Center.

**C. A consumer's faith and confidence in a business or a product may be swayed by what other customers say about it online.** According to a Reevoos study, consumers are more likely to believe reviews when both good and negative feedback is present, and they are more likely to assume censorship or phony reviews when there aren't any bad evaluations at all.

**D. A company's search engine optimization (SEO) and website traffic might be affected by customer feedback posted on review websites.** A study by Moz found that online reviews are one of the top factors that influence a business's local search ranking. [9]In addition, businesses with positive

reviews tend to receive more website traffic than those with negative reviews.

#### **4. METHODOLOGY**

We did a systematic assessment of the literature to locate pertinent studies using a variety of databases and search phrases in order to give a thorough study of the effect of online reviews on product sales. We then analyzed the studies in terms of their research design, sample size, and key findings, drawing on both qualitative and quantitative data to build a detailed picture of the impact of reviews on sales.[10] In addition, we conducted a meta-analysis of the studies, using statistical techniques to identify overall effect sizes and examine the moderating factors that may influence the relationship between reviews and sales. A general methodology for such a study could involve the following steps:

**A. Define the research question:** The research issue that the study is intended to address must be defined in detail as the first step. The inquiry might be, for instance, "What effect do online reviews have on product sales?"

**B. Select the sample:** The next step is to select the sample of products and online reviews that will be

analyzed in the study. The sample should be representative of the population of products and online reviews that the study aims to generalize to. It may be necessary to use a random sampling method to ensure that the sample is unbiased.

**C. Collect the data:** The next stage is to gather the data after the sample has been chosen. This can entail extracting information from internet review sites like Amazon, Yelp, or Google reviews. Alternatively, the data could be collected through surveys or interviews with consumers who have purchased the products in the sample.

**D. Clean and preprocess the data:** Before analysis, the acquired data must be cleaned and processed to remove any errors, missing numbers, or inconsistencies. This step may involve data cleaning, data transformation, and data normalization techniques.

**E. Analyze the data:** The data will next be analyzed using the proper statistical methods. This could involve regression analysis, correlation analysis, or machine learning techniques such as decision trees or random forests.

**F. Interpret the results:** Once the data analysis is complete, the results should be interpreted in light of the research question. The results should be presented clearly and concisely and should include

statistical significance testing and confidence intervals.

### **G. Conclude and make recommendations:**

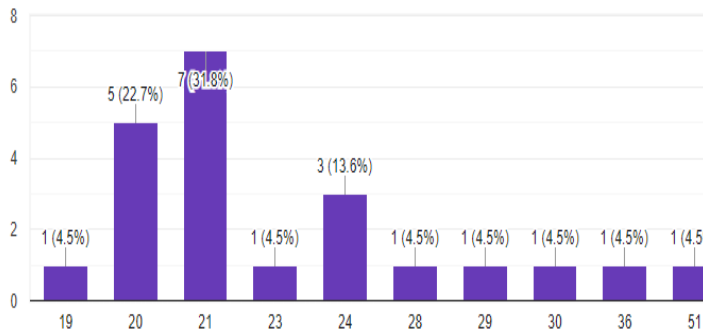
Drawing conclusions from the study's findings and offering suggestions for additional research or practical applications are the study's last steps. The conclusions should be supported by the evidence presented in the study and should be relevant to the research question.

## **5. COLLECTED DATA**

I've put together a survey asking people of varying ages their thoughts on the impact of online reviews on product sales. In order to gauge the impact that user ratings and comments have on a product's bottom line, I've included many new question types.

### **A.Age group**

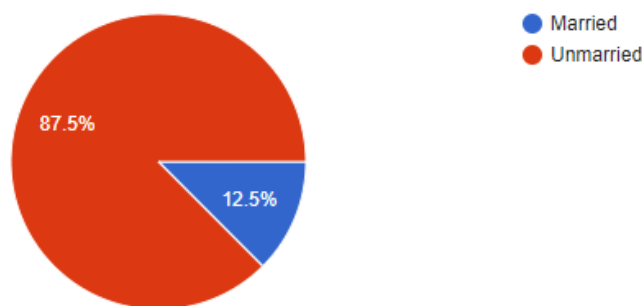
My survey includes people from different age groups. It is so because people from different age groups have different opinions on the same product.



**Figure 2.** Chart of age groups of people

We have considered people from various age groups. our main focus is people whose age is between 19 to 21.

### B. Marital status

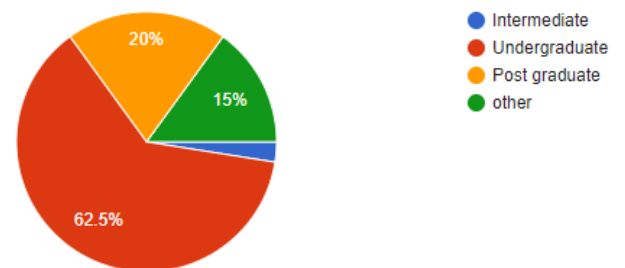


**Figure 3.** Chart of the marital status of people in our survey

About 87% of people in our survey are unmarried whereas 12.5 % of people are married.

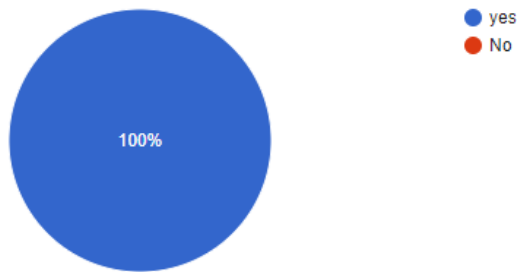
### C. Education

Our survey includes people pursuing or having different education metrics. About 62.5% of people in the survey are undergraduates. About 20 % of people are postgraduate. About 3% of people are intermediate. We have considered people having different highest degrees of education because it helps us to understand the thinking of people belonging to different educational backgrounds on the online reviews of any product.



**Figure 4.** Chart of Highest or pursuing the educational degree of people in our survey

### D.Impact of online review on purchasing decision

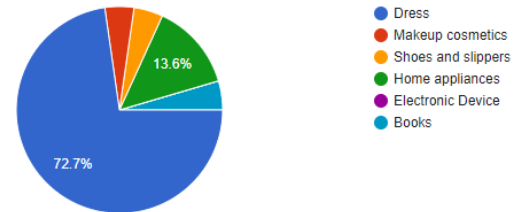


**Figure 5.** chart of the impact of online reviews on purchasing decisions.

In our survey, when we ask various people do online reviews impact their purchasing decisions. Almost 100% of people agreed that online reviews impact their purchasing decisions. They agreed that positive and negative reviews of products always impact their sales in good as well as bad ways respectively. A product with having good reviews have always high sales as compared to another product having bad reviews.

### E. Most purchased categories

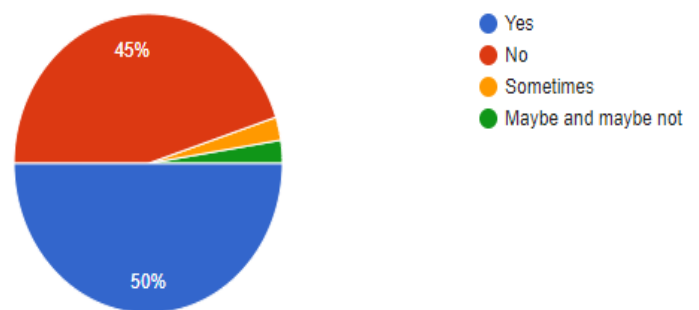
In my survey, I tried to know which category of product is most demanding on e-commerce websites. I asked many people about which category of product they buy most.



**Figure 6.** Chart of most purchased product category.

I have added various product categories to my survey. These product categories include Dresses, Makeup cosmetics, shoes and slippers, Home appliances, Electronic Devices, and Books. The majority of people agreed that they mostly purchase clothing items as compared to any other product.

### F. Preference of word of mouth over an online review of any product



About 50 % of people agreed that they can prefer word of mouth over the online review of any product whereas 45% of people agreed that they never prefer word of mouth over the online review of any product. Sometimes many people take the



word-of-mouth review of any product from its existing customer because an existing user of any product can accurately give the pros and cons of any product. so, sometimes many people prefer word of mouth over online reviews.

## 6. RESULT AND CONCLUSION

Although each of the online review measures has an independent impact on consumer purchases, when taken together, they have a significant impact on the sales of new products. Due to the sheer volume of evaluations, there is an awareness effect that can sway consumers' opinions of a product, and experience products are especially susceptible to this[11]. These findings shed light on the impact of eWOM on new product sales, which should be of interest to those working in marketing. New product sales are significantly affected by all of the major online review metrics, but the exact nature of that influence differs depending on the product category and whether or not the product in question is a search or experience product. The number of reviews matters, especially for things that are meant to be experienced. For search items, though, customer reviews matter more. As a result, given the rapid spread and extensive reach of online WOM, the advantages of happy consumers serving as the best advertisement can be multiplied many times. Any product that receives favorable and favorable

reviews draws more customers than one that receives unfavorable and unfavorable reviews[12]. According to our research, every online review that is available for a certain product has an equal chance of being viewed by consumers when they are deciding whether or not to make a purchase. Whereas, in the e-commerce industry, customer reviews help them purchase online, and as a result, customers are more and more reliant on review data to assess the quality of products and make a purchasing decision[13]. The vast majority of customers always read online reviews before making a purchase. We can therefore conclude that online reviews are critical to the sales of any goods. A positive review of a product has the potential to boost sales, whereas a negative review has the opposite effect.

## 7. REFERENCES

- [1] R. AHLUWALIA, "The effect of Extensions on the family brand Name: An Accessibility-diagnostics Perspective".
- [2] B. Thuraisingham, "The role of artificial intelligence and cyber security for social media," in *Proceedings - 2020 IEEE 34th International Parallel and Distributed Processing Symposium Workshops, IPDPSW 2020*, Institute of Electrical and Electronics



- Engineers Inc., May 2020, pp. 1116–1118.  
doi: 10.1109/IPDPSW50202.2020.00184.
- [3] C. Benzaïd and T. Taleb, “AI for beyond 5G Networks: A Cyber-Security Defense or Offense Enabler?,” *IEEE Netw*, vol. 34, no. 6, pp. 140–147, Nov. 2020, doi: 10.1109/MNET.011.2000088.
- [4] A. M. Shamiulla, “Role of artificial intelligence in cyber security,” *International Journal of Innovative Technology and Exploring Engineering*, vol. 9, no. 1, pp. 4628–4630, Nov. 2019, doi: 10.35940/ijitee.A6115.119119.
- [5] Surya Engineering College and Institute of Electrical and Electronics Engineers, *Proceedings of the 3rd International Conference on Computing Methodologies and Communication (ICCMC 2019) : 27-29, March 2019*.
- [6] J. hua Li, “Cyber security meets artificial intelligence: a survey,” *Frontiers of Information Technology and Electronic Engineering*, vol. 19, no. 12. Zhejiang University, pp. 1462–1474, Dec. 01, 2018. doi: 10.1631/FITEE.1800573.
- [7] J. A. Chevalier and D. Mayzlin, “THE EFFECT OF WORD OF MOUTH ON SALES: ONLINE BOOK REVIEWS,” 2003. [Online]. Available: <http://www.nber.org/papers/w10148>
- [8] N. N. Abbas, T. Ahmed, S. H. U. Shah, M. Omar, and H. W. Park, “Investigating the applications of artificial intelligence in cyber security,” *Scientometrics*, vol. 121, no. 2, pp. 1189–1211, Nov. 2019, doi: 10.1007/s11192-019-03222-9.
- [9] C. Dellarocas, “MIT Sloan School of Management THE DIGITIZATION OF WORD-OF-MOUTH: PROMISE AND CHALLENGES OF ONLINE FEEDBACK MECHANISMS THE DIGITIZATION OF WORD-OF-MOUTH: PROMISE AND CHALLENGES OF ONLINE FEEDBACK MECHANISMS,” 2003. [Online]. Available: <http://ssrn.com/abstract=393042>
- [10] C. Dellarocas, “Strategic manipulation of internet opinion forums: Implications for consumers and firms,” *Manage Sci*, vol. 52, no. 10, pp. 1577–1593, 2006, doi: 10.1287/mnsc.1060.0567.
- [11] C. Dellarocas, X. Zhang, and N. F. Awad, “Exploring the value of online product reviews in forecasting sales: The case of motion pictures,” *Journal of Interactive Marketing*, vol. 21, no. 4, pp. 23–45, 2007, doi: 10.1002/dir.20087.

- [12] W. Duan, B. Gu, and A. B. Whinston, “Do online reviews matter? - An empirical investigation of panel data,” *Decis Support Syst*, vol. 45, no. 4, pp. 1007–1016, Nov. 2008, doi: 10.1016/j.dss.2008.04.001.
- [13] W. Duan, B. Gu, and A. B. Whinston, “INFORMATIONAL CASCADES AND SOFTWARE ADOPTION ON THE INTERNET: AN EMPIRICAL INVESTIGATION 1.”