

Fake Reviews and Ratings Undermining Consumer Trust

Haydar Özaydın¹

Abstract

With Internet technologies and e-commerce systems, consumers can access information about products, services and brands. One of the most effective tools they can access is the ability to access and write reviews about the products and services they have purchased. These reviews and ratings in various online channels such as social media, e-commerce websites or online evaluation platforms have become important in directing consumers' purchasing processes and feelings of trust and can significantly affect consumer decisions. However, with the development of artificial intelligence technologies, the creation of fake reviews has become easier and widespread. Therefore, the prevalence of reviews manipulated to influence consumers may cause scepticism and distrust towards online platforms. This situation negatively affects consumer trust and creates information asymmetry between e-commerce platforms, businesses and consumers. Fake reviews and ratings create doubts about the accuracy and reliability of the information provided about the product/service. Online reviews and ratings cease to be a real source of business feedback. In addition, the research also discusses the contribution of artificial intelligence tools to avoid and detect the adverse effects of fake reviews and ratings. This research aims to examine the effects of fake reviews and ratings on consumer trust and evaluate how fake reviews and ratings are produced, their characteristics, and the research on detecting fake reviews.

1 Assistant Professor, Bolu Abant İzzet Baysal Üniversitesi, haydar.ozaydin@ibu.edu.tr,
0000-0003-0274-7143

Introduction

With digital processes, consumer comments and feedback have become an important reference tool in consumers' purchasing decisions today. Although there are genuine consumer reviews and feedback in digital media, consumers' purchasing decisions can be manipulated by making fake reviews or ratings with artificial intelligence. As technology continues to develop, the ability of artificial intelligence to manipulate digital media is also improving. It is becoming increasingly difficult to distinguish what is real and what is artificially produced or manipulated, and it can pose significant challenges for consumers to make informed decisions based on accurate information. With the help of artificial intelligence, it is possible to produce fake reviews and ratings that appear to come from real users and to lead others to mislead and trust false information. Unfortunately, with the rise of technology comes the possibility of manipulation, and AI tools enable sophisticated algorithms that can generate fake reviews and ratings, convincing consumers that a product or service is better than it is.

These situations weaken consumers' trust and thus negatively affect their online shopping experience. When a shopping experience based on fake reviews or ratings results in a negative shopping experience, it creates dissatisfied consumers. Such manipulations can lead to processes that can threaten not only individual consumers' experiences but also businesses' reputation. Therefore, fake reviews and ratings prevent consumers from accessing accurate information about products and services, increasing information asymmetry and disrupting market order (Malbon, 2013).

The reliability of these reviews, which affect consumers' online shopping decisions, is important for both businesses and consumers. As Mathews Hunt, (2015) states in his study, online reviews play an important role in consumers' evaluations of products and services. However, the increase in fake reviews and the involvement of artificial intelligence in this process question the reliability of these reviews and weaken consumers' trust in online platforms. In this context, detecting and preventing fake reviews is critical for consumer protection and market order (Mohawesh et al., 2021).

The effects of fake reviews on consumer trust have become an important research topic in digital marketing and e-commerce. Online consumer reviews are among the critical elements influencing consumers' purchasing decisions. However, the increase in fake reviews can damage consumer trust, which needs to be measured and analysed. In order to rebuild consumer trust, it is considered important to understand the effects of fake reviews and to take adequate measures. In this study, online consumer reviews and

fake reviews are defined first. The concepts of fake reviews and consumer trust are expressed, and finally the studies in the literature on detecting fake reviews are discussed.

1. Online Consumer Reviews and Fake Reviews

Online consumer reviews can be expressed as user-generated opinions posted online by purchasers of products or services (Ma & Lee, 2014). The components of online consumer reviews include an overall star rating, clearly stated pros and cons, and free text comments. The consistency of these components provides an important data source for product assessments (Schindler & Decker, 2013). With the development of web technology and e-commerce, consumers increasingly rely on online reviews before making purchasing decisions (Song, Wang, Zhang, & Hikkerova, 2023). The first indicator in the consumer decision-making process is usually ratings, which indicate the user evaluation of a product and are expressed as asterisks. Ratings are applications that can deal with large amounts of information, are easy to process, and help identify selection criteria. Stars or scores, indicators of ratings, are effective because they are easily accessible information when selecting a product (Karaca & Gümüş, 2020). Therefore, online consumer reviews can be defined as any positive, negative or neutral comment, rating, ranking, assumed to be made by a former customer about a product, service, brand or person and shared with other consumers in an unstructured format such as a blog post or on an independent consumer review website (Filiari, 2016).

Today's consumers essentially see online consumer comments as a form of eWOM (electronic word-of-mouth) in the online and offline product purchase decision process. Electronic word-of-mouth can be defined as all positive or negative comments about the business, product or service on online platforms and all kinds of communication based on them. Compared to traditional word-of-mouth communication, online reviews and ratings have the potential to reach more people through the internet (Fong, 2010). Positive reviews can lead the consumer to purchase the product, while negative reviews can cause them to change their purchase decision. Thus, positive reviews result in significant product sales, financial gains or reputation for businesses and individuals. Online consumer reviews enable people to obtain detailed information with high credibility and reputation compared to information marketers provide (Akdeniz & Özbölük, 2019; Park & Nicolau, 2015). These advantages of consumer reviews can be an opportunity for many malicious practices (Algur, Patil, Hiremath, & Shivashankar, 2010).

Spam, fake, misleading and even fraudulent online reviews are rapidly growing and becoming widespread on the internet (Zhang, Du, Yoshida, & Wang, 2018). Fake reviews are manipulative attempts to manipulate consumers into thinking more favourably about a product or service than they do and to influence their purchasing decisions (Costa Filho, Nogueira Rafael, Salmonson Guimarães Barros, & Mesquita, 2023). From a business perspective, the purpose of online review manipulation is to strengthen the business's online reputation, attract consumers' attention and increase their tendency to purchase from the business (Sop, Atasoy, & Günaydin, 2024). Fake reviews are inconsistent with authentic reviews of products or services, so fake reviews are false and deceptive. They are deceptive reviews, often provided by reviewers with little or no experience of the products or services being reviewed, with the aim of misleading consumers in their purchasing decisions. The defining characteristic of fake reviews is whether they mislead consumers (Wu, Ngai, Wu, & Wu, 2020; Zhang, Zhou, Kehoe, & Kilic, 2016). The aim of fake reviewers, or deceivers in general, is to deceive others while trying to avoid detection. Motivated by financial gains or other benefits, fake reviewers can continuously improve themselves through previous experience to increase their chances of success (Zhang et al., 2016). Fake reviews reduce informativeness, information quality and the effective use of online product reviews. They can also damage the credibility of reviews, negatively impacting the benefits that reviews can provide. However, since consumers have little knowledge of who the reviewers are, it is normal for them to distrust both online platforms and reviews. The trustworthiness of the reviewer is important in consumers' perceptions of trust in online reviews and ratings (Evans, Stavrova, & Rosenbusch, 2021). In addition, fake reviews seriously negatively impact the development of online product reviews and create information asymmetry between merchants and customers. Online sellers may create positive fake reviews for their products or negative fake reviews for their competitors' products for financial gain (Sahut, Laroche, & Braune, 2024). The right marketplace for reviews also benefits companies, as they can get real customer feedback that can be analysed to improve products and services (Salminen, Kandpal, Kamel, Jung, & Jansen, 2022).

There are two types of fake comments. The first is fake reviews created by humans, and the second is computer-based fake reviews. Various methods of creating fake reviews can be expressed as follows (Ross, 2020; Salminen et al., 2022). Firms can use paid review services to share fake reviews for their products and services. These paid reviews are mostly seen on digital platforms like Google, Yelp or Amazon. Creating fake reviews through tools

such as artificial intelligence and bots is also possible. Fake reviews can be made cheaper than paid reviews, especially with tools such as text natural language processing and machine learning. Finally, fake accounts can create negative comments on competitors' products and services and positive comments on their products and services. Other more complex forms of online review manipulation also exist, including ranking information provided to consumers by search engines. A wide range of manipulations of the loading time of web pages, their design and the way they present information are also among the conscious activities to which consumers are unwittingly exposed (Malbon, 2013).

2. Consumer Trust and Fake Reviews

Consumer trust underpins the long-term commercial relationship between seller and buyer. At its core, trust is about believing, trusting or having faith in an organisation, its staff and its services. It helps reduce perceived risk and is a valuable component of a business strategy as it positively influences buyers' purchasing decision by generating word-of-mouth communication (Bauman & Bachmann, 2017; Flanagan, Johnston, & Talbot, 2005). Trust is an important factor in the influence of online reviews and ratings (Fong, 2010). Online reviews and ratings have become an important and trusted source of information for consumers' decision-making processes (Evans et al., 2021).

Zhang, Chen, & Sun, (2010) found that sellers' reputation, information openness, and online consumer reviews positively affect consumer trust. This study emphasises that high-quality online reviews increase the seller's reputation and thus reinforce consumer trust. Utz, Kerkhof, & Van Den Bos, (2012) examined the effect of online store reviews on consumer trust. The study results show that consumer reviews are an important element in evaluating the trustworthiness of online stores. The authors state that consumer reviews are a more effective determinant of trust than store reputation. Lee, Park, & Han, (2011) found that the effect of online consumer reviews increases with higher trust in online shopping sites. In addition, the authors stated that online consumer reviews made by independent users affect consumers' purchase intention more than consumer reviews directly integrated into sellers' advertisements. The quality and number of online reviews are important factors affecting consumer trust. A study by Zeng, Cao, Lin, & Xiao (2020) examined the relationship between the quality of online reviews and consumer behaviour. The research shows that the quality of online reviews directly impacts consumer intentions.

However, fake reviews and ratings have a negative impact on consumers' purchase decision processes and their sense of trust (Costa Filho et al., 2023). Wu & Qiu, (2016) state that low-quality sellers tend to write more fake reviews than high-quality sellers. This situation makes it difficult for consumers to evaluate the quality of the genuine product, thus weakening the sense of trust. However, Song et al., (2023) also stated that fake reviews for products with high brand awareness do not affect consumers' purchase intention. However, as the fake review rates of products with low brand awareness increase, consumers' purchase intention decreases.

He, Hollenbeck, & Proserpio, (2022) found in their research on the Amazon that fake reviews are purchased for products with low reviews, low ratings or new products that have just been released to the market. They stated that Amazon detects and deletes the reviews with the measures they take against fake reviews and ratings, but short-term unfair advantages are obtained due to the long duration of this process. The authors stated that fake reviews and ratings should not be perceived as an advertising activity but as a manipulation tool that damages consumers' trust.

Sop et al. (2024) reported that hotel managers manipulate negative reviews about their businesses by intervening with various methods. The authors stated that managers resort to various unethical service compensation methods, including having staff make comments as if they were customers, to prevent consumers from making negative reviews about the hotel and its services.

Fake reviews threaten the credibility of marketing and e-commerce. Fake reviews negatively affect consumer trust in online reviews, which can negatively affect the market order. Fake reviews can positively or negatively affect the ranking of products. The impact of fake reviews is not only limited to loss of reputation, but also has the potential to bring financial losses (Salminen et al., 2022). Measuring and analysing the effects of fake reviews on consumer trust requires a multidimensional approach. The research studies above provide different perspectives necessary to understand the adverse effects of fake reviews on consumer trust. The following section presents studies on detecting fake reviews and evaluations.

3. Fake Reviews Detection

Fake reviews are also known as deceptive opinions, spam reviews, while their authors are called spammers. They can cause financial loss for product manufacturers and service providers, as negative fake reviews can damage their brand reputation (Cardoso, Silva, & Almeida, 2018).

Some important features of fake reviews are the following (Alsubari et al., 2021; Hussain, Turab Mirza, Hussain, Iqbal, & Memon, 2020):

- **Insufficient information about the reviewer:** People who interact little in the relevant channel or comment without profile information are defined as fake reviewers.
- **Similar review content:** Fake reviewers often share similar reviews on the relevant channels.
- **Short Reviews:** Since fake reviewers are interested in fast returns, they share short reviews with spelling and grammar mistakes.
- **Sharing reviews at similar times:** To identify fake reviews, look at the time when they were shared. Fake reviews can sometimes be posted collectively at the same time.
- **Exaggerated reviews:** Fake reviewers often use overly positive and negative statements.

Hassan & Islam, (2021) researched using a sentiment analysis-based model to detect fake reviews online. According to the results obtained, they observed that online fake reviews are either positive or negative at extremes. In order to attract the attention of consumers, words that represent extreme emotions, such as exclamation marks, great, excellent, or terrible, awful, are often used (Banerjee & Chua, 2023).

In Moon, Kim, & Iacobucci, (2021) study, linguistic factors were identified by using word patterns to distinguish between fake and real reviews for hotel services. Their research stated that fake reviews have features such as lack of detail, use of present and future tense-oriented language, and emotional exaggeration.

Plotkina, Munzel, & Pallud, (2020) created two separate data pools consisting of fake and real reviews in their research with 1041 people and found that the micro-linguistic automatic detection tool detected fake reviews with 81% accuracy, while the detection rate of humans was only 57%. They noted that this rate remained the same even when fake reviews were given clues to be recognised. The authors emphasised the need for more advanced filtering methods for online consumer review.

Salminen et al. (2022) stated in their research that fake reviews generated by artificial intelligence tools can be detected with very high accuracy using artificial intelligence tools in the same way. They also stated that artificial intelligence can effectively detect not only reviews generated by artificial intelligence tools, but also fake reviews written by humans.

Conclusions

The effects of fake reviews and evaluations on consumer trust in online channels have become an important research topic. This effect is not only limited to individual consumers but also damages the reputation of businesses. Since fake reviews and evaluations do not reflect consumer experiences, they negatively affect consumers' perception of reliability towards businesses and reviews. One of the main reasons why fake reviews significantly affect consumer trust is that they mislead potential buyers by providing false information about a product or service. These reviews do not reflect real experiences and may exaggerate certain features to manipulate consumer perception. Fake reviews also negatively affect the trust in the review system itself. Consumers begin to question the accuracy and reliability of all reviews and ratings, whether real or fake, making it difficult to make informed decisions. This lack of trust can have a negative impact on businesses as they may see a decline in sales and revenue due to sceptical consumers.

These artificially generated reviews and ratings are designed to mimic real consumer sentiments, making it difficult for consumers to detect fake reviews. Indeed, Costa Filho et al., (2023) found that fake reviews are much more likely to go unnoticed by consumers if they are not equipped with the tools to detect them. This manipulation can have serious consequences for consumers, who may purchase low-quality products or services, and businesses, which may experience a loss of trust and reputation.

In addition to AI-generated reviews, there are also cases where businesses hire people or agencies to write fake reviews to boost their ratings and attract more customers (Malbon, 2013). These unethical practices deceive consumers and go against fair competition between businesses. Although policymakers and regulators have started to actively address the issue of fake reviews, legal actions against deceivers are complex and challenging due to the inability to identify and identify perpetrators. Therefore, consumers and review platforms should consider taking active steps to filter out deceptive online reviews. For this, both review platforms and individuals should be able to detect opinion spam (Plotkina et al., 2020). Negative fake reviews can damage a company's image and tarnish their brand image, making it difficult for them to attract or retain new customers. Therefore, companies must actively monitor and address fake reviews to protect consumer trust and reputation (Fong, 2010). Negative comments are critical for businesses to identify their weak points and see them as opportunities for improvement. They can continuously improve their business processes by recognising this feedback as a valuable learning opportunity (Öztürk, 2024). On the

other hand, consumers should be cautious when relying on online reviews and only make informed decisions after thorough research and evaluation. In this digital age where information is easily accessible, businesses and consumers need to be vigilant and act responsibly to combat the problem of fake reviews. In conclusion, while digital channels offer new opportunities for consumers to make informed purchasing decisions, they also pose challenges with the increasing presence of manipulated reviews. Businesses should prioritise ethical practices and transparency in online marketing to maintain consumer trust and the integrity of digital platforms.

References

- Akdeniz, P. C., & Özbölük, T. (2019). Online Yorumların Tüketici Satın Alma Kararına Etkisi: Kullanıcı Özellikleri Açısından Bir Değerlendirme. *İşletme Araştırmaları Dergisi*, 11(4), 3104–3119.
- Algur, S. P., Patil, A. P., Hiremath, P. S., & Shivashankar, S. (2010). Conceptual level similarity measure based review spam detection. *2010 International Conference on Signal and Image Processing*, 416–423. <https://doi.org/10.1109/ICSIP.2010.5697509>
- Alsubari, S., Deshmukh, S., Alqarni, A., Alsharif, N., H, T., Alsaade, F., & Khalaf, O. (2021). Data Analytics for the Identification of Fake Reviews Using Supervised Learning. *Computers, Materials & Continua*, 70(2), 3189–3204. <https://doi.org/10.32604/cmc.2022.019625>
- Banerjee, S., & Chua, A. Y. K. (2023). Understanding online fake review production strategies. *Journal of Business Research*, 156, 113534. <https://doi.org/10.1016/j.jbusres.2022.113534>
- Bauman, A., & Bachmann, R. (2017). Online Consumer Trust: Trends in Research. *Journal of Technology Management & Innovation*, 12(2), 68–79. <https://doi.org/10.4067/S0718-27242017000200008>
- Cardoso, E. F., Silva, R. M., & Almeida, T. A. (2018). Towards automatic filtering of fake reviews. *Neurocomputing*, 309, 106–116. <https://doi.org/10.1016/j.neucom.2018.04.074>
- Costa Filho, M., Nogueira Rafael, D., Salmonson Guimarães Barros, L., & Mesquita, E. (2023). Mind the fake reviews! Protecting consumers from deception through persuasion knowledge acquisition. *Journal of Business Research*, 156, 113538. <https://doi.org/10.1016/j.jbusres.2022.113538>
- Evans, A. M., Stavrova, O., & Rosenbusch, H. (2021). Expressions of doubt and trust in online user reviews. *Computers in Human Behavior*, 114, 106556. <https://doi.org/10.1016/j.chb.2020.106556>
- Filieri, R. (2016). What makes an online consumer review trustworthy? *Annals of Tourism Research*, 58, 46–64. <https://doi.org/10.1016/j.annals.2015.12.019>
- Flanagan, P., Johnston, R., & Talbot, D. (2005). Customer confidence: The development of a “pre-experience” concept. *International Journal of Service Industry Management*, 16(4), 373–384. <https://doi.org/10.1108/09564230510614013>
- Fong, A. (2010). The influence of online reviews: Case study of TripAdvisor and the effect of fake reviews. *Journal of Digital Research and Publishing*, 6, 106–113.
- Hassan, R., & Islam, Md. R. (2021). Impact of Sentiment Analysis in Fake Online Review Detection. *2021 International Conference on Information*

- and Communication Technology for Sustainable Development (ICICT4SD), 21–24. <https://doi.org/10.1109/ICICT4SD50815.2021.9396899>
- He, S., Hollenbeck, B., & Proserpio, D. (2022). The Market for Fake Reviews. *Marketing Science*. (world). <https://doi.org/10.1287/mksc.2022.1353>
- Hussain, N., Turab Mirza, H., Hussain, I., Iqbal, F., & Memon, I. (2020). Spam Review Detection Using the Linguistic and Spammer Behavioral Methods. *IEEE Access*, 8, 53801–53816. <https://doi.org/10.1109/ACCESS.2020.2979226>
- Karaca, Ş., & Gümüş, N. (2020). Tüketicilerin Online Yorum Ve Değerlendirme Puanlarına Yönelik Tutumlarının Online Satın Alma Davranışlarına Etkisi. *Sakarya İktisat Dergisi*, 9(1), 52–69.
- Lee, J., Park, D., & Han, I. (2011). The different effects of online consumer reviews on consumers' purchase intentions depending on trust in online shopping malls. *Internet Research*, 21(2), 187–206. <https://doi.org/10.1108/10662241111123766>
- Ma, Y. J., & Lee, H.-H. (2014). Consumer responses toward online review manipulation. *Journal of Research in Interactive Marketing*, 8(3), 224–244. (world). <https://doi.org/10.1108/JRIM-04-2013-0022>
- Malbon, J. (2013). Taking Fake Online Consumer Reviews Seriously. *Journal of Consumer Policy*, 36(2), 139–157. <https://doi.org/10.1007/s10603-012-9216-7>
- Mathews Hunt, K. (2015). Gaming the system: Fake online reviews v. consumer law. *Computer Law & Security Review*, 31(1), 3–25. <https://doi.org/10.1016/j.clsr.2014.11.003>
- Mohawesh, R., Xu, S., Tran, S. N., Ollington, R., Springer, M., Jararweh, Y., & Maqsood, S. (2021). Fake Reviews Detection: A Survey. *IEEE Access*, 9, 65771–65802. <https://doi.org/10.1109/ACCESS.2021.3075573>
- Moon, S., Kim, M.-Y., & Iacobucci, D. (2021). Content analysis of fake consumer reviews by survey-based text categorization. *International Journal of Research in Marketing*, 38(2), 343–364. <https://doi.org/10.1016/j.ijresmar.2020.08.001>
- Öztürk, İ. (2024). Bodrum Da Faaliyet Gösteren 5 Yıldızlı Konaklama İşletmelerinde Çevrimiçi Tüketici Yorumlarının Duygu Analizi. *Journal of Gastronomy Hospitality and Travel (JOGHAT)*, 7(2), 397–405. <https://doi.org/10.33083/joghat.2024.409>
- Park, S., & Nicolau, J. L. (2015). Asymmetric effects of online consumer reviews. *Annals of Tourism Research*, 50, 67–83. <https://doi.org/10.1016/j.annals.2014.10.007>
- Plotkina, D., Munzel, A., & Pallud, J. (2020). Illusions of truth—Experimental insights into human and algorithmic detections of fake online reviews.

- Journal of Business Research*, 109, 511–523. <https://doi.org/10.1016/j.jbusres.2018.12.009>
- Ross, L. (2020, May 31). Sahte İncelemelerin Durumu – İstatistikler ve Trendler [2025]—Invesp. Retrieved 1 March 2025, from <https://www.invesp.com/blog/fake-reviews-statistics/>
- Sahut, J. M., Laroche, M., & Braune, E. (2024). Antecedents and consequences of fake reviews in a marketing approach: An overview and synthesis. *Journal of Business Research*, 175, 114572. <https://doi.org/10.1016/j.jbusres.2024.114572>
- Salminen, J., Kandpal, C., Kamel, A. M., Jung, S., & Jansen, B. J. (2022). Creating and detecting fake reviews of online products. *Journal of Retailing and Consumer Services*, 64, 102771. <https://doi.org/10.1016/j.jretconser.2021.102771>
- Schindler, D., & Decker, R. (2013). Some Remarks on the Internal Consistency of Online Consumer Reviews. *Australasian Marketing Journal*, 21(4), 221–227. <https://doi.org/10.1016/j.ausmj.2013.08.001>
- Song, Y., Wang, L., Zhang, Z., & Hikkerova, L. (2023). Do fake reviews promote consumers' purchase intention? *Journal of Business Research*, 164, 113971. <https://doi.org/10.1016/j.jbusres.2023.113971>
- Sop, S. A., Atasoy, F., & Günaydin, Y. (2024). Resort Otellerde Çevrim İçi Yorum Manipülasyonu. *GSI Journals Serie A: Advancements in Tourism Recreation and Sports Sciences*, 7(1), 16–31. <https://doi.org/10.53353/atrss.1302316>
- Utz, S., Kerkhof, P., & van den Bos, J. (2012). Consumers rule: How consumer reviews influence perceived trustworthiness of online stores. *Electronic Commerce Research and Applications*, 11(1), 49–58. <https://doi.org/10.1016/j.clerap.2011.07.010>
- Wu, Y., Ngai, E. W. T., Wu, P., & Wu, C. (2020). Fake online reviews: Literature review, synthesis, and directions for future research. *Decision Support Systems*, 132, 113280. <https://doi.org/10.1016/j.dss.2020.113280>
- Zeng, G., Cao, X., Lin, Z., & Xiao, S. H. (2020). When online reviews meet virtual reality: Effects on consumer hotel booking. *Annals of Tourism Research*, 81, 102860. <https://doi.org/10.1016/j.annals.2020.102860>
- Zhang, D., Zhou, L., Kehoe, J. L., & Kilic, I. Y. (2016). What Online Reviewer Behaviors Really Matter? Effects of Verbal and Nonverbal Behaviors on Detection of Fake Online Reviews. *Journal of Management Information Systems*, 33(2), 456–481. <https://doi.org/10.1080/07421222.2016.1205907>
- Zhang, H., Chen, D., & Sun, R. (2010). The Study of Consumer Trust in C2C e-Commerce Based on Reputation Score, Information Disclosu-

re, Online Consumer Review Quality. *2010 International Conference on Management of E-Commerce and e-Government*, 184–187. <https://doi.org/10.1109/ICMeCG.2010.46>

Zhang, W., Du, Y., Yoshida, T., & Wang, Q. (2018). DRI-RCNN: An approach to deceptive review identification using recurrent convolutional neural network. *Information Processing & Management*, *54*(4), 576–592. <https://doi.org/10.1016/j.ipm.2018.03.007>

