

Analysing Online Reviews Using NVivo: A Study of e-Tailing

IMB Journal of Innovation and Management
1–24

© The Author(s) 2023

DOI: 10.1177/ijim.231197882

jim.imibh.edu.in



Kanika Juneja¹  and Farah S. Choudhary¹ 

Abstract

Today, online consumers play an important role in the field of marketing. The word of mouth spread by them through online mode helps the marketers in understanding the consumer behaviour. Marketers rely on the information provided by the consumers in the form of online reviews or comments. The purpose of this article is to analyse the online reviews using Nvivo and to validate the scale used for measuring electronic word of mouth. The data were collected from 420 online consumers from Jammu city, who consider online reviews before purchasing. Both qualitative and quantitative techniques, such as NVivo and Exploratory Factor Analysis (EFA), were used. The research showed that the secondary data collected from Amazon India website in the form of online reviews matched the scale that was considered by the researchers from extant literature. The study thus helped in validating the scale for measuring electronic word of mouth communication. This research is of its kind that has been done in India. The present study may be used by the marketers for measuring the electronic word of mouth communication that would further help them in understanding consumer behaviour and, ultimately, knowing about the present and future needs of online consumers.

Keywords

Content, e-Tailing, intensity, online reviews, positive and negative valence

¹The Business School, University of Jammu, Baba Saheb Ambedkar Road, Jammu Tawi, Jammu & Kashmir, India

Corresponding author:

Kanika Juneja, The Business School, University of Jammu, Baba Saheb Ambedkar Road, Jammu Tawi, Jammu & Kashmir 180006, India.

E-mail: kanika.ju@gmail.com



Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 License (<http://www.creativecommons.org/licenses/by-nc/4.0/>) which permits non-Commercial use, reproduction and distribution of the work without further permission provided the original work is attributed.

Introduction

According to the *United Nations Data*, the total population of India accounts for 1.41 billion (as on 19 December 2022) that amounts to 17.7% of total world population. In the beginning of year 2022, the rate of internet penetration in India stood at 47%, that is, almost 658 million of Indian population uses internet, as per *Digital India Report 2022*. Therefore, with the passage of time, use of internet has increased manifold.

In the last few decades, a great percentage of population of India has started using internet for almost every use. This population includes urban as well as rural areas. According to a report published in *Business Standard* in the year 2022, the internet usage in rural sector is increasing day-by-day in comparison to urban areas in the last two years. The report clearly shows that due to the outbreak of COVID, the rural population started using internet for several uses. Even during the period of COVID, the use of eWOM can be seen in every sector. Nilashi et al. (2022) studied the impact of COVID-19 on travelling decisions using eWOM. The researchers proposed that with the use of internet, travellers have started sharing their travel experiences via eWOM communication on various social media sites, which has reduced the ambiguousness to a great extent. Even during the period of COVID outbreak, eWOM communication has played an important role by influencing traveller's travel decisions.

It can, thus, be clearly mentioned that internet has become an important and integral part of everyone's life. Today, most of the population uses internet for online shopping. The history of online shopping dates back to 1995, when Amazon started the first online shopping site in United States for selling the products online. With the due course of time, almost all the business houses have started using this platform for selling their goods. It is fair to mention that internet has integrated the entire world into a marketplace, where all the buyers and sellers unite to please their demands. This selling of goods by the retailers online is termed as online retailing.

Online Retailing is basically a form of electronic commerce in which sellers sell their products and services with the help of internet. It is also known as e-Retailing or e-Tailing. e-Tailing also includes the business to business (B2B) and business to consumer (B2C) sales of goods and services. In India, the concept of online retailing started in the year 1995 with the introduction of internet, but it established when Amazon started its first website in India in 2012. From then, an implausible growth has been observed in the online retailing sector in India. According to *India Brand Equity Foundation (IBEF)*, online retail is expected to reach 10.7% by 2024, in comparison with 4.7% in 2019. Also, the rate of online shoppers is likely to reach 220 million by 2025. As per *United Nations Conference on Trade and Development Business-to-Consumer(B2C) E-commerce Index 2020*, India has been ranked 73rd out of 152 countries. This growth is due to the rapid technology adoption led by the increasing use of electronic devices and access to fast internet connection through broadband and 4G, which in turn has increased the online consumer base in India. This change can be seen in marketing communication as well.

In the field of marketing, consumer has always been considered as the king and his reviews and feedback are of prime importance. Since time immemorial, the consumers have been sharing their views and opinions regarding the products and services with each other, which is valuable for the marketers. Such reviews which are shared by the consumers with one another can be termed as Word of Mouth in Marketing. Thus, Word of Mouth (WOM) is the face-to-face communication that takes place between the consumers, through which they express their opinions about the company and its products. Various researchers have explained word of mouth in their own ways. According to Haywood (1989), word of mouth is a continuous communication between the groups of individuals. Also, it is an important form of communication that has an interpersonal impact on consumers. Word of mouth can either be positive or negative. Wee et al. (1995) investigated that negative WOM has a greater impact on consumers, which ultimately leads to negative intentions in them and proposed that marketers should try to boost positive WOM, by providing customer satisfaction.

Now-a-days, the source of communication has changed from traditional advertising of print media to electronic media. In today's scenario, marketing communication not only involves retailers but includes customers as well in order to position a brand (Hoffman & Novak, 1996). Such non-marketer information provided by the consumers is increasingly gaining importance, as this information is considered more reliable than the information provided by marketers. All the information which is shared by the consumers by the way of digital platform can be termed as Electronic Word of mouth (eWOM).

eWOM can be explained as the word of mouth, which is shared through internet to different number of consumers, by the way of online reviews or comments and such reviews can be positive or negative. It targets a large set of consumer base, thereby influencing their opinions. According to Litvin et al. (2008), eWOM includes all the informal communication that takes place between the consumers through internet. Such word of mouth can be shared between the producers and consumers and within the consumers as well.

Sardar et al. (2021) studied the impact of information provided by eWOM in online shopping sites on consumer purchase intention. The researchers found that the information provided by the customers in the form of online comments impacts the customers' purchase intention, which is influenced by various factors. The factors are consumer attitude, the quality of eWOM, usefulness and so on. Also, Mahmud et al. (2020) in a study found that online reviews may be positive or negative, depending on one's experience. Negative comments demotivate a consumer from making online purchase of the particular product, affecting the sales of the same. Thus, it can be said that eWOM has a deep effect on the purchase intention of consumers, as positive word of mouth may motivate them to purchase a product and negative ones may discourage them from doing so. To sum up, eWOM can be regarded as an important and upgrowing concept in the field of marketing, which is rapidly gaining the attention of marketers. In this context, the present study aims at studying the impact of eWOM on the consumers and their buying behaviour.

In order to test the research question, the data were collected from the consumers of Jammu city, who consider online reviews before making a purchase.

Review of Literature

Word of Mouth (WOM)

The reviews which are shared by consumers with one another can be termed as Word of Mouth in Marketing. WOM is an oral communication between the consumers, expressing their interest and opinions about company's products and services. WOM is actually the face-to-face communication between the consumers regarding their experiences, post purchase or after availing a service. Consumers usually share their experiences with each other, may be their family, friends, relatives or social groups. They communicate their peer groups regarding the products they use or the services they acquire. Such experiences can be positive or negative, depending on one's perception and personal thinking. According to Gauri et al. (2008), WOM is the information that a person obtains after having face-to-face communication between the friends and family. It does not involve the information which is shared in an online environment. It is actually the informal and interpersonal communication that takes place between the groups of individuals.

Previous researches have proved WOM to be one of the most effective and more commonly accepted ways of communication than TV and radio. Individuals prefer to rely on the information, which they get from their family or friends. Mostly people believe that the views shared by the consumers through television or radio are not reliable and consider them as fake. According to Engel et al. (1969), WOM communication has been receiving a great amount of attention from academics and practitioners and studied that WOM has greater influence than print advertisements, personal selling and radio advertisements. In an early research, Day (1971) proposed that WOM is almost three times more useful than free-sample promotion technique and nine times than any other advertisement for appealing and attracting customer's attention. The WOM shared by the consumers through face-to-face communication is considered more dependable and trustworthy by the peer consumers. Thus, a marketer prefers to give more importance to WOM communication for promoting their products rather than making use of any advertisement technique for attracting the consumers' attention towards the products they offer.

Different researchers have studied the importance of WOM. Haywood (1989) defined word of mouth as a way of continuous communication between the groups of individuals. Consumers tend to spread their views and ideas through WOM. It can be said that WOM is a constant communication between the individuals and can happen at any point of time. Every time an individual purchases a product or avails any service, he prefers to share about it with his/her social groups. The consumers tend to aware the people known to them about the experience they

gained after purchasing a product from a particular seller. Further, Buttle (1998) identified that WOM may be shared by the consumers before or after a purchase, which may act as an important source of pre-purchase information or consumption experience, respectively. In simple words, one can say that the opinions of the consumers are of vital importance for influencing the purchase behaviour of other peer consumers.

Word of mouth may be positive or negative, depending on the choice, experience and perception of consumers. Satisfied consumers spread positive reviews and unhappy ones talk about the negative aspects of products or services. Anderson (1998) studied that unhappy consumers spread more WOM in comparison to those consumers who are happy and satisfied. Thus, efforts should be made to reduce such WOM. In this regard, Wee et al. (1995) suggested that marketers should continuously assess consumer opinions and try to eradicate negative WOM, as it has an important effect on consumers' choices.

According to Ajina (2019), WOM is the most common form of marketing that has been used since the time immemorial by the marketers. With the change in time and technology, the WOM has transformed into online WOM in the global era. Now, WOM has gained attention of various marketers as well as consumers (Kimmel & Kitchen, 2013). Today, WOM has entered the online environment, where consumers can gather information about different products and services from various other online consumers. With the onset of digital era, the way of sharing views and opinions has changed. Now, consumers share their experiences after purchasing that may be good or bad, and for this purpose, they use online stage to share their views, that is, eWOM, which is more efficacious, according to Aydogan and Aktan (2019).

Electronic Word of Mouth (eWOM)

With the rise in social media and technology, the scope of traditional WOM has broadened to eWOM. Today, online reviews have emerged as a new field in marketing, thereby eliminating the drawbacks of traditional WOM. The name given to the reviews which are shared via online means are termed as eWOM. eWOM is basically an electronic form of feedback that is shared by the customers to a large extent. In eWOM, online consumers use the technology for sharing their opinions regarding the products they use or the services they acquire. Now-a-days, online shopping is done by all the age groups of the Indian society and most of them constitutes the young generation. Bhattacharya and Anand (2021) studied the attraction of Indian youth towards the online brands. The researchers found that online shopping has brought a huge shift in the choices and preferences of the youth, and thus, marketers should integrate different linkages as social, emotional and economic value in order to boost up the online retail sales.

According to Mishra and Satish (2016), with the wide use of internet, consumers have directly or indirectly started using eWOM for the purchase purpose. The immense usage of internet has transformed the traditional WOM into eWOM. According to Litvin et al. (2008), eWOM is an informal communication, which is shared by the consumers by using the digital platform for sharing their views

regarding the products used; service acquired or may be about the seller. Such communication may take place between the online consumers or between the consumers and the producers.

Online product reviews of the customers affect the psychology and mindset of other peer consumers and sellers as well. In this context, Cheung and Lee (2012) suggested that consumers share their experiences, namely eWOM in the form of online reviews in order to modify company's prestige. The reviews shared by the consumers deeply affect the reputation of a company, as positive reviews prompt the other customers to purchase more, thereby increasing the sales and ultimately resulting in up gradation of goodwill of the company and vice-versa. Furthermore, Farzin and Fattahi (2018) proposed that electronic word affects the brand image of a company in the eyes of consumers. eWOM has a great impact on the consumers who consider the reviews before making a purchase. Most of the online consumers prefer to consider online reviews before making any purchase, because they believe that consulting reviews before making a purchase would protect them from any financial loss.

With the advancement of technology, the pace of online shopping has increased manifold. In order to overcome or avoid any loss or fraud, consumers prefer to consider online reviews before making a purchase, which may or may not affect the reputation of the company in one way or other. In this regard, Amblee and Bui (2014) studied the effect of eWOM or online reviews on a set of e-book readers. The researchers found that the eWOM is a mark of reputation and ultimately acts a driver that boosts up the demand in the consumers, leaving behind the criteria of price consideration. Under the influence of online reviews, consumers do not even consider the prices of online products, thereby increasing the sales. Thus, eWOM acts as a source for building the reputation of the product, the brand and also the complementary products.

Online reviews can be either positive or negative. Some consumers prefer to consider favourable comments, while others prefer the negative ones, which affect the sale of the company also. Recently, Ngarmwongnoi et al. (2020) studied that consumer attitude is affected by eWOM in the entire purchasing process, which may or may not prompt them to purchase or repurchase a product. Favourable WOM may attract a customer to purchase a product or avail a service, which in turn leads to the repurchase of the same. Whereas the negative reviews may discourage a customer on the very beginning of purchasing process, which leads them to make a purchase from other company. Zhang et al. (2009) researched about the convincing power of the online reviews on the consumers. The researchers studied that the consumers do not give same importance to both types of reviews. The consumers have positive valence towards a product, which is associated with promotion consumption goals, whereas they show a negative attitude towards the products which has prevention consumption goals.

Now-a-days, consumers prefer to consider the experience of others before availing any service, as it is associated with a great amount of risk and uncertainty. In a very recent study, Verma and Yadav (2021) identified that consumers also prefer to read online reviews before availing any service, as may be in the case of hotels or aviation, etc. As service has intangible attributes, so the consumers

prefer to rely on eWOM, in order to reduce the risk associated with it. Thus, consumers are risk averse and always prefer to look into all the pros and cons associated with the products or services they wish to acquire. Alhidari et al. (2015) studied the concept of social networking sites in context with eWOM and purchase intentions. The researchers found that social networking sites is the most important tool for the spread of eWOM and increases the purchase intentions of consumers in near future. This study also established that the consumers' characteristics have a great influence on eWOM and its effectiveness. Thus, considering the need to study eWOM, following objectives have been framed to study the effect of dimensions of eWOM on consumer behaviour and to analyse the online reviews using NVivo in e-Tailing sector.

Dimensions of eWOM

eWOM has been studied by various researchers, but only a few has focused on its constructs. Main research work in this area has been done by Harrison-Walker (2001), who gave two scales of measurement, that is, word of mouth (praise) and word of mouth activity. Godes and Mazylin (2004) also considered two constructs, WOM dispersion and volume. The most important eWOM scale is given by Goyette et al. (2010). The researchers introduced a new concept of online WOM by putting forth its various dimensions, WOM intensity, WOM content, positive valence and negative valence. Many researchers have used the dimensions given by Goyette et al. (2010) in their research work in one way or another. Gradually, these dimensions have become popular and are the most used ones for performing research work in the said field of online reviews. These four dimensions study the entire concept of WOM, by including its positive and negative dimensions as well.

WOM Intensity

According to Goyette et al. (2010), WOM intensity is the scope of what is being said about the organisation. The researchers suggested three items to be included in WOM intensity, that is, activity, volume and dispersion.

Research work has been done in this field to understand the concept of WOM intensity. According to Anastasiei and Dospinescu (2019), volume means the rate of spreading WOM by consumers. The researchers used two dimensions, that is, volume and valence to study the impact of affective commitment, high-sacrifice commitment and satisfaction on the customers' WOM.

Andreawan (2015) studied effect of dimensions of eWOM, namely intensity, valence and content in social media Kaskus on purchasing intention and proposed that intensity negatively affects the purchase intention.

Word of mouth depends on the experience of customers that may be good or bad. As per the experience, consumers spread their reviews. Anderson (1998) studied that dissatisfied consumers spread larger amount of WOM. However, WOM intensity of satisfied consumers may also be high. Therefore, customers with bad experience usually spread greater amount of WOM. Harris et al. (2016) studied the scope of exaggerated and non-exaggerated word of mouth. For this

purpose, the researchers collected the sample from almost 1,000 hospitality consumers. The researchers included WOM activity to measure the WOM intensity.

WOM Content

WOM content means what people say about the organisation. It reflects the views and opinions of customers towards a company, according to Goyette et al. (2010). Any content about an organisation is important, in order to shape its image in the eyes of customers. Marketers should always focus on creating a favourable content type, which would add to company's goodwill.

For studying the impact of dimensions of eWOM in social media Kaskus on purchasing intention, Andreawan (2015) considered content as a construct and proposed that content positively affects the purchase intention. According to Chun and Lee (2016), content is an important element for social networking sites companies, as content type helps people to identify something worth about a social networking site and, thus, subscribe it. Thus, an attempt should be made to create a positive WOM content.

Roy et al. (2018) studied the impact of eWOM content on online purchase intention. The researchers also used content analysis to study the relevance of various factors that affects the online behaviour. The outcome of the research established that content positively affects the online purchase of consumers.

In order to improve the quality of WOM content, Bu et al. (2020) in a recent study suggested that marketers should focus on quality of content produced about the food tourism products or destination with the help of eWOM, as it would attract the tourists to try such products or visit target places.

Positive Valence

Positive valence highlights the positive attitude of online consumers towards the organisation, according to Goyette et al. (2010). Positive valence includes the praise items and is always beneficial for the company.

Hartman et al. (2019) investigated the impact of eWOM valence using framework of professor and course evaluations that are available online. The findings indicated that positive valence/WOM has a positive effect on the attitude and intentions of consumers towards online course and vice-versa.

Talwar et al. (2020) studied that if consumers believe that m-wallets provide them adequate information (as per their needs), then they consider it as high-quality information. This will create positive feelings among them, and they will be stimulated to spread positive valence or WOM.

Positive valence also affects the brand purchase by the customers. More the positive reviews, more the brand purchase. Positive WOM builds the goodwill of the company that ultimately adds to its reputation. In this context, Casielles et al. (2013) studied that positive WOM positively affects the brand purchase probability and has a stronger effect on the latter, in comparison to negative WOM.

Negative Valence

According to Goyette et al. (2010), negative valence reflects the negative attitude of online consumers towards the organisation that is negative WOM. Anastasiei and Dospinescu (2019) studied the impact of eWOM valence on satisfaction,

affective commitment, and high sacrifice commitment and proposed that all the factors affect the valence. The research indicated that unsatisfied customers share more views and opinions, which generally highlights the negative comments and are considered unfavourable. Andreawan (2015) studied the impact of eWOM dimensions on purchase intentions of customers. The research established the valence has a positive effect on purchase intention.

Negative valence can tarnish the image of the company. In case of m-wallets, Talwar et al. (2020) studied that some users condemn m-wallets and advise their friends and peers not to use said services, thereby spreading negative valence or WOM. In such case, service provider should try to demotivate negative WOM, by maintaining a control over m-wallet cost.

Therefore, steps should be taken to reduce negative WOM. In this regard, Cheng et al. (2006) suggested that in order to reduce the negative WOM communication in restaurants, the owners and trade associations should update people about their culture, so that outlook of restaurant gets updated in the eyes of Chinese diners' and this would ultimately discourage negative WOM.

Hence, the hypothesis is proposed as under:

H_1 : There is no significant difference between the factors of eWOM.

For the purpose of study, various articles have been studied by the researchers. A summary Table 1 shows the best articles reviewed by the researchers.

Research Methodology

Further, this research has considered both the quantitative and qualitative methods, in order to determine the reasons as to why the consumers consider the online reviews before purchasing a product.

Analysis

NVIVO Software was used for qualitative-based research. The data collected through questionnaire were analysed using the Statistical Package for Social Sciences (SPSS). In order to check the reliability of the data, Cronbach's Alpha

Table 1. Summary Table.

No.	Variables of the Study	Articles Referred
1.	Electronic Word of Mouth (eWOM)	Day (1971); Haywood (1989); Litvin (2008); Amblee & Bui (2014); Hoffman & Novak (1996); Mahmud et al. (2020); Gauri et al. (2008); Engel et al. (1969); Bhattacharya & Anand (2021); Cheung & Lee (2012); Farzin & Fattahi (2018).
2.	Intensity Content Positive valence Negative valence	Harrison-Walker (2001); Godes and Mazylin (2004); Goyette et al. (2010); Anastasiei & Dospinescu (2019); Andreawan (2015); Hartman et al (2019); Cheng et al. (2006); Harris et al. (2016) Andreawan (2015); Chun & lee (2016); Roy et al. (2018); Casielles et al. (2013).

coefficient technique was used. Further, Exploratory Factor Analysis (EFA) was applied to authenticate the results.

Sampling Method

A customer-based study was designed to answer the research questions. The data were collected using judgmental sampling techniques from the customers who make purchases after considering online reviews from India's two biggest online shopping sites, that is, Amazon and Flipkart India. A total of 425 questionnaires were given to the respondents in Jammu city. After removing the outliers, 420 questionnaires were considered for the purpose of study. Table 2 shows the individual/demographic characteristics of respondents.

The demographic presentation of the respondents is shown in Table 2.

Further, SPSS software was used to compute the mean values of different factors of eWOM. Initially, the mean value of intensity was computed by applying the desired formula. Likewise, the mean values were calculated for the other three factors, that is, content, positive and negative WOM. Finally, by using the compare means option under Analyse option, the mean comparable means values were obtained.

Table 3 clearly shows the average values of the different factors of eWOM. It depicts that the mean value of intensity factor is the highest, that is 3.6000, followed by content, then by negative valence and finally by positive WOM.

Table 2. Individual Characteristics.

Characteristics	Category	Frequency	%
Gender	Male	195	46.40
	Female	225	53.60
Age	Up to 20 years	71	16.90
	20–40 years	314	74.80
	40–60 years	33	7.90
	Above 60 years	2	0.50
Occupation	Student	300	71.40
	Retired	2	0.50
	Businessman	10	2.40
	Housewife	21	5.00
	Government employee	46	11.00
	Self-employed	27	6.40
	Private employee	14	3.30
Personal annual income	Nil	272	64.80
	Up to 2,00,000	88	21.00
	2,00,000–5,00,000	37	8.80
	5,00,000–10,00,000	20	4.80
	10,00,000 and above	3	0.70

Table 3. Mean Values of Dimensions of eWOM.

	Avg_Intensity	Avg_content	Avg_pwom	Avg_nwom
Mean	3.6000	3.5864	3.3148	3.4489
N	420	420	420	420
Std deviation	0.69276	0.60289	0.75359	0.82621

Source: SPSS Software.

Thus, the marketers should focus on all the items that fall under intensity factor, as, whether the reviews are reliable, honest, genuine or exceptional, etc. This would ultimately help the marketing managers in understanding the consumer behaviour and can learn about their likes or dislikes.

NVivo

NVivo11 was used for used analysing all the extracted data. It is a computer-based qualitative software that helps in both qualitative and mixed methods research. This software is designed by QSR International. For the purpose of analysis, the secondary data were collected by considering the online reviews of the customers who makes online purchase from the world's biggest online shopping site, Amazon. This website is famous for two largest product lines, Electronics and Home and Kitchen. According to *The State of the Amazon Seller Survey (2023)*, there are top 10 category products of Amazon of which Home and Kitchen section constitutes 35% of sales and Electronics constitutes 16%. Thus, the best seller products were chosen from these two product lines, namely, Smart watches with Bluetooth calling feature and water bottles, which included the positive as well as negative reviews. A total of 400 reviews each were considered for the purpose of the study of which only 300 comments each were taken into consideration. Thus, a total of 600 online comments were used for the research purpose.

Word Cloud.

A word cloud is used for better visualisation of results. It makes our data looks sizzle and provides significant information at a glance. It shows the important keywords according to their frequencies (Sinclair & Cardew Hall, 2008).

Word cloud or tag clouds are basically the cluster of words shown in different sizes. The bigger and bolder the word, the more frequency it has. Sinclair and Cardew Hall (2008) identified in their research that tag clouds are valuable, as it has some keywords pertaining to the research question. Figure 1 reflects the key pointers from 300 online comments that customers gave after purchasing the smart watches with Bluetooth calling feature of various brands such as boat, Fire-Boltt, Noise Pulse, Zebronics and Fastrack. Figure 2 represents the word cloud from 300 online comments that consumers gave after purchasing the water bottles of different brands as Milton, Cello, Boldfit, Speedex, Prestige, Pigeon, Tupperware, Treo, Oliveware, Borosil and Amazon Solimo from Amazon.

Figure 1 indicates all the important keywords related to eWOM. In Figure 1, the boldest and highlighted word is 'watch', which is related to the content

is surrounded by all the other words related to it. Second term with the greatest frequency is ‘product’, which comes under the intensity or content dimension of eWOM. Similarly, all the surrounding words are related to the four dimensions of eWOM, that is, intensity, content, positive and negative valence.

Tree Map

A tree map is a diagram that shows the graphical representation of data in form of rectangles of different sizes. It shows the various nodes that help in comparison of different attributes. For the purpose of study, the researchers attempt to use tree map for showing the visual representation of data. Figure 3 represents the tree map of different online comments given by the online consumers on smartwatches with bluetooth calling feature.

And, Figure 4 shows the visualised data in form of tree map depicting the key words from online reviews given on water bottles purchased from Amazon.

The above figure clearly depicts that the most used word by online consumers in their comments is ‘watch’, followed by the word ‘good’, as shown earlier in the word cloud (Figure 1).

The tree map shown in Figure 4 shows the word frequency of the online comments given by the online consumers on water bottles purchased by them. Here, the most frequent used word is ‘good’, followed by ‘product’. It is similar to as shown in Figure 2. It is thus clear from the word clouds and the tree maps shown above that all the dimensions identified in the study are also reflecting in the reviews collected from the Amazon website that further validates the scale used by the researchers.

Bar Chart

The chart wizard option of NVivo11 helps in graphical representation of data. With the help of chart option, one can automatically chart the selected sources or nodes by coding or attributes values.

Figure 5 clearly shows the percentage of different dimensions of eWOM (intensity, content, positive and negative valence). The reviews collected from the Amazon website of smart watches with Bluetooth calling feature are distributed under four different heads. The chart is obtained by applying the method of coding by nodes.

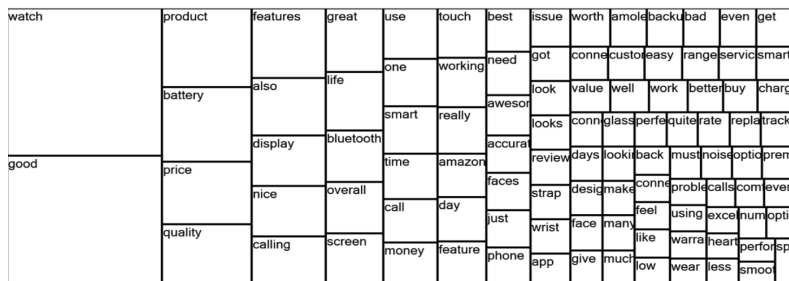


Figure 3. Tree Map (Smart Watches With Bluetooth Calling Feature).

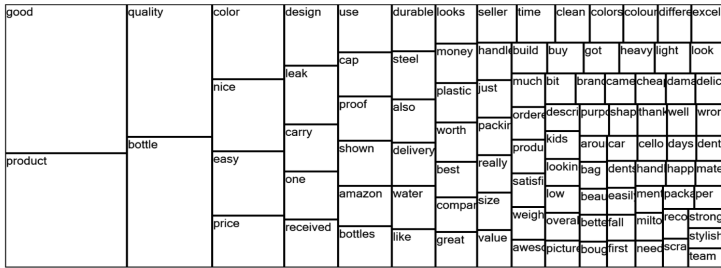


Figure 4. Tree Map (Water Bottles).

The percentage of different nodes are clearly visible in Figure 6, which shows that the comments or reviews are largely distributed over the positive WOM, dimension of eWOM (40.49%), then in negative word of mouth and likewise in content and intensity factor.

Figure 7 shows that the bar chart represents different online reviews collected from the water bootles purchased by the consumers from Amazon. The reviews are distributed unedr different heads. Also, the percentage of the reviews falling under different heads is shown in Figure 8, which represents that maximum number of reviews fall under positive WOM, followed by content, negative WOM and then by intensity. It is thus clear from the diagrams shown above that all the dimensions identified in the study are also reflecting in the reviews collected from the Amazon website that further validates the scale used by the researchers.

Questionnaire Design and Development

On the basis of the keywords and factors identified, a questionnaire was framed. Extant literature was reviewed for the purpose of developing an appropriate scale for the study.

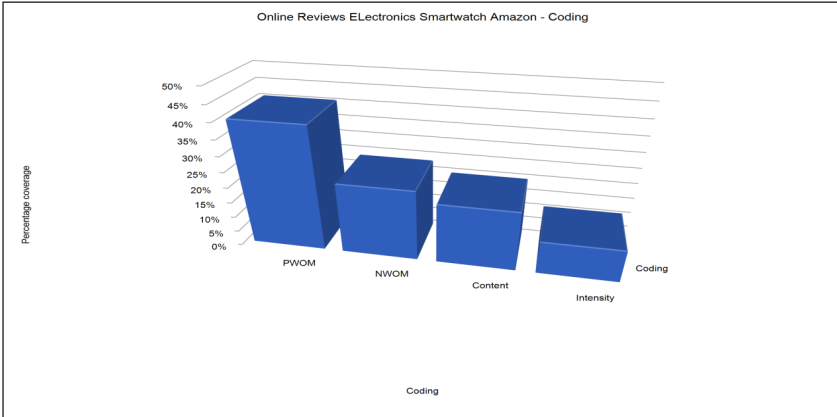


Figure 5. Bar Chart Diagram Showing the Percentage of Dimensions (Smart Watches with Bluetooth Calling Feature).

Coding	Percentage Coverage
Nodes\\Content	19.82
Nodes\\Intensity	10.92
Nodes\\NWOM	23.34
Nodes\\PWOM	40.49

Figure 6. Percentage of Different Nodes (Smart Watches With Bluetooth Calling Feature).

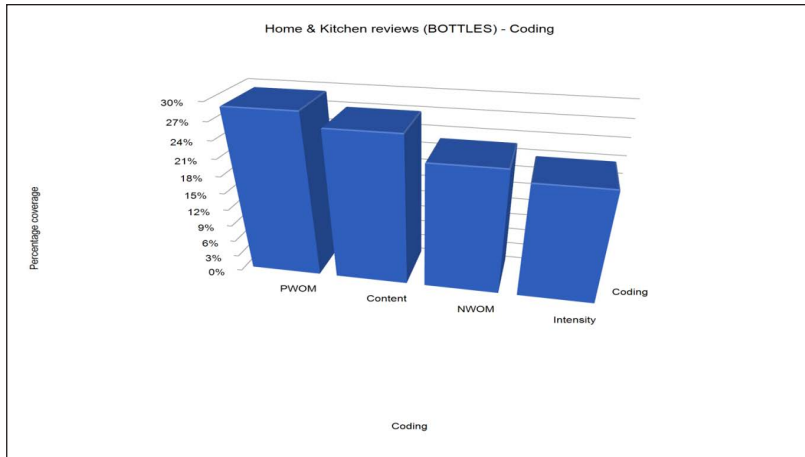


Figure 7. Bar Chart Diagram Showing the Percentage of Dimensions (Water Bottles).

Coding	Percentage Coverage
Nodes\\Content	26.69
Nodes\\Intensity	20.49
Nodes\\NWOM	22.44
Nodes\\PWOM	29.07

Figure 8. Percentage of Different Nodes (Water Bottles).

Five-point Likert scale has been used in the questionnaire, in order to fit into the context. Initially, the questionnaire contained 30 items to measure the variables.

Exploratory Factor Analysis (EFA)

All the primary data numbering to 103 were collected by the way of survey, which was further analysed, using the quantitative technique EFA. EFA method was used to simplify and lessen the data. This method was used along with the varimax rotation procedure for simplifying the original data. The statements with factor

loading less than 0.4 and Eigen value less than 1.0 were ignored for the data analysis purpose. Cronbach's alpha test was also applied to test the reliability of the scale.

Kaiser–Meyer–Olkin (KMO) and Barlett's test of sphericity were performed. Barlett's test of sphericity showed a Chi-square value of 1,702.491 with 435 degrees of freedom at a significance level of 0.000, which confirms that the population correlation matrix is not an identity matrix (see Table 4). Furthermore, KMO is 0.785, whereas the acceptable value for the same is 0.7. Thus, the value is acceptable for the study. The Barlett's test was also conducted further, which shows the value of 0.000, which is also acceptable to perform the analysis. Table 4 shows the detailed results of KMO and Barlett's tests.

After performing the analysis, it was found that a total of 30 items were grouped into 08 factors. Of these 30 items, 1 factor has loading in more than two items and both had value less than 0.5 and in one factor only one item is there. Thus, the said item was deleted, and remaining items are 28, under 6 factors. The detailed rotated component matrix is shown in Table 5.

Furthermore, in order to validate our scale, different conditions were applied under EFA, namely, Correlation Matrix, Convergent Validity and Discriminant Validity, which are shown in Tables 6–8, respectively.

Results and Discussion

The present study attempts to add to the research knowledge of eWOM by taking into consideration the different factors of it. On the basis of the extant literature,

Table 4. Kaiser–Meyer–Olkin Measure of Sampling Adequacy.

KMO and Bartlett's Test		
Kaiser–Meyer–Olkin measure of sampling adequacy		0.785
	Approx. Chi-square	1,702.491
Bartlett's test of sphericity	<i>df</i>	435
	Sig.	0.000

Table 5. Rotated Component Matrix.^a

	Component							
	1	2	3	4	5	6	7	8
Intensity 6	0.817							
Intensity 4	0.815							
Intensity 8	0.799							
Intensity 5	0.793							
Intensity 3	0.706							

(Table 5 Continued)

(Table 5 Continued)

	Component							
	1	2	3	4	5	6	7	8
Intensity 2	0.661							
Intensity 1	0.648							
Negative WOM 3		0.838						
Negative WOM 5		0.779						
Negative WOM 4		0.769						
Negative WOM 1		0.768						
Negative WOM 2		0.611		0.494				
Content 8			0.787					
Content 9			0.775					
Content 7			0.688					
Content 6			0.631					
Content 2			0.624					
Content 10			0.584					
Content 12				0.721				
Positive WOM 5				0.658				
Positive WOM 3				0.628	0.545			
Content 11				0.614			0.560	
Positive WOM 1					0.799			
Positive WOM 2					0.748			
Positive WOM 4					0.721			
Content 5						0.823		
Content 3						0.700		
Content 1						0.588		
Intensity 7	0.420						0.476	
Content 4								0.839

Notes: Extraction method: Principal component analysis.

Rotation method: Varimax with Kaiser normalisation.

^aRotation converged in 16 iterations.

it was found that eWOM can be measured by four different factors. The various factors identified through this are intensity, content, positive and negative valence. The following studies were considered for framing a suitable scale for different constructs: WOM Intensity: Goyette et al. (2010), Anastasiei and Dospinescu (2019), Andreawan (2015), Anderson (1998), Harris et al. (2016); WOM Content: Goyette et al. (2010), Andreawan (2015), Chun and Lee (2016), Roy et al. (2018), Bu et al. (2020); Positive valence: Goyette et al. (2010), Hartman et al. (2019), Talwar et al. (2020), Casielles et al. (2013); Negative valence: Goyette et al.

Table 6. Correlation Matrix.

		Avg_Intensity	Avg_Content	Avg_PWOM	Avg_NWOM
Avg_Intensity	Pearson correlation	1	0.389**	0.530**	0.367**
	Sig. (two-tailed)		0.000	0.000	0.000
	N	103	103	103	103
Avg_Content	Pearson correlation	0.389**	1	0.442**	0.368**
	Sig. (two-tailed)	0.000		0.000	0.000
	N	103	103	103	103
Avg_PWOM	Pearson correlation	0.530**	0.442**	1	0.370**
	Sig. (two-tailed)	0.000	0.000		0.000
	N	103	103	103	103
Avg_NWOM	Pearson correlation	0.367**	0.368**	0.370**	1
	Sig. (two-tailed)	0.000	0.000	0.000	
	N	103	103	103	103

Source: SPSS Software.

Notes: NWOM: Negative Word of Mouth; PWOM: Positive Word of Mouth.

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

Table 7. Convergent Validity of Different Factors.

Items	Factor Loadings	Square of Factor Loadings	Sum of Square of Factor Loadings	Convergent Validity or AVE
Intensity	0.817	0.667	3.95	0.564
	0.815	0.664		
	0.799	0.638		
	0.793	0.628		
	0.706	0.498		
NWOM	0.838	0.702	2.893	0.579
	0.799	0.638		
	0.769	0.591		
	0.768	0.589		
	0.611	0.373		
Content I	0.787	0.619	2.822	0.470
	0.775	0.601		
	0.688	0.473		
	0.631	0.398		
	0.624	0.389		

(Table 7 Continued)

(Table 7 Continued)

Items	Factor Loadings	Square of Factor Loadings	Sum of Square of Factor Loadings	Convergent Validity or AVE
	0.584	0.341		
User experience	0.721	0.520		
	0.658	0.433	1.724	0.431
	0.628	0.394		
	0.614	0.377		
PWOM	0.799	0.638		
	0.748	0.560	1.718	0.573
	0.721	0.520		
Content 2	0.823	0.677		
	0.700	0.490	1.513	0.504
	0.588	0.346		

Note: AVE: Average value extracted.

Table 8. Discriminant Validity.

Correlation Factors	AVE(Average Value Extracted)	Square Root of AVE or Discriminant Validity
Intensity	0.564	0.751
NWOM	0.579	0.761
Content 1	0.470	0.686
User experience	0.431	0.657
PWOM	0.573	0.757
Content 2	0.504	0.701

(2010), Anastasiei and Dospinescu (2019), Andreawan (2015), Talwar et al. (2020), Cheng et al. (2006).

Further, NVivo11 software was used for identifying whether the scale identified in the extant literature stands true for our study or not. For this purpose, a total of 600 online reviews were considered from Amazon website. After the application of NVivo11 software, it was found that the reviews given by the online consumers too fall under the four different dimensions of eWOM, that is, intensity, content, positive and negative valence.

Thus, it was clear from the application of this qualitative method that the factors identified earlier in the study stand true and the same are corroborated.

Conclusion and Implications

Conclusion

The present research has contributed by validation of the scale required for the purpose of study. It has thus helped in validating the scale identified in the previous research work. In addition, the research work contributes the existing field of e-Tailing sector by providing the marketers with the strategies for understanding the consumer behaviour and their purchase intentions.

Theoretical Contributions

This study attempts to find out the relationship between the hypothesised dimensions of eWOM that affect our e-Tailing sector. The study has focused on analysing the impact of four main factors of eWOM (intensity, content, positive and negative word of mouth) on consumer behaviour. All the dimensions were studied in Indian context.

A scale was identified on the basis of the previous studies. It was further validated by collecting the secondary data from Amazon website in the form of online reviews of the customers who have purchased smart watch online and water bottles from Amazon. All the reviews were analysed with the help of Nvivo software. This helped in validating the scale by clarifying that the data collected from Amazon also fall under the four dimensions of eWOM, as identified by the researchers. The results suggest that the online consumers are mostly affected by the quality of products that are offered by the sellers, which means that the online consumers are deeply affected by the content factor of eWOM. Similarly, the factor that affects the consumers is the number of online reviews about the products, as it would help them to categorise the respective reviews into positive or negative ones.

After the application of EFA, it was clear that the factors affect the purchase intention of consumers, but at varying degrees. Different pre-conditions of EFA were applied that further helped in quantitative validation of scale. Thus, it can be said that the results derived also support the extant literature quoted in the present study quantitatively as well as qualitatively.

Practical Implications

This article provides an insight for the marketers by providing a scale on the basis of which they can measure the eWOM communication. The use of mixed methods approach that is qualitative and quantitative methods has helped in enhancing the importance of eWOM. On the one hand, NVivo software validated the scale used by the researchers that helped in analysing the online reviews in e-Tailing sector, while on the other hand, EFA method helped in simplifying the primary data. With the use of Nvivo, the researchers were also able to identify the keywords for the study-intensity, content, positive and negative valence. By EFA method, certain items were deleted and finally the same from the questionnaire.

The marketers can use this scale to study consumer behaviour and understand the present and future needs of consumers. Our study, thus, validates the findings from the previous research done by the authors. It can be, therefore, said that the current research helped in systematically validating the scale to measure eWOM communication.

Limitations and Future Research

Although the present study adds to the knowledge of study of literature, still it is not free from limitations. First, the focus is on the consumers from Jammu city only. First, the study is confined to the online consumers of Jammu city only. However, there are numerous online consumers situated outside Jammu city, as well. Thus, the future study should be based on the larger consumer base, thereby including the consumers from different parts of our country. Also, a sample size of 420 is used, due to the reason the research is still at its infant stage and the researchers are still in the process of collecting data. The future research should include a larger sample size. Future researches shall therefore help in improving the quality of results derived and in testing the relationship between different items of questionnaire.

Acknowledgement

We would like to thank our department, The Business School, University of Jammu; our family and friends who supported us in the entire journey. We thank our colleagues and co-scholars who provided insight and expertise that greatly assisted the research. We are grateful to the anonymous referees of the journal for their extremely useful suggestions to improve the quality of the article. Usual disclaimers apply.

Declaration of Conflicting Interests


The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

ORCID iDs

Kanika Juneja  <https://orcid.org/0000-0003-3063-3928>

Farah S. Choudhary  <https://orcid.org/0000-0001-5801-0357>

References

- Ajina., A. S. (2019). Predicting customers' online word of mouth intention: The theory of planned behavior applied to understand youth Saudi social media behaviors. *Management Science Letters*, 9(2019), 1553–1566. <http://dx.doi.org/10.5267/j.msl.2019.5.030>

- Alhidari, A., Iyer, P., & Paswan, A. (2015). Personal level antecedents of eWOM and purchase intention, on social networking sites. *Journal of Customer Behaviour*, 14(2), 107–125.
- Amblee, N., & Bui, T. (2014). 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*, 16(2), 91–114.
- Anastasei, B., & Dospinescu, N. (2019). Electronic word-of-mouth for online retailers: Predictors of volume and valence. *Journal of Sustainability*, 11(1), 814. <https://doi.org/10.3390/su11030814>
- Anderson, E. W. (1998). Customer satisfaction and word of mouth. *Journal of Service Research*, 1(1), 5–17.
- Andreawan, R. A. (2015). Analysis of electronic word of mouth (E-WOM) in social media Kaskus on purchasing intention premium player items (study on the Game Line Let's Get Rich). *E-Proceeding of Management*, 2(3), 3517–3524.
- Aydogan, S., & Aktan, M. (2019). Who is engaged in E-Wom? Role of e-Loyalty, demographics, visit frequency and product category (Araştırma). *Journal of Marketing and Marketing Research*, 24(2019), 207–233.
- Bhattacharya, S., & Anand, V. (2021). What makes the Indian youths to engage with online retail brands: An empirical study. *Global Business Review*, 22(6), 1507–1529. <https://doi.org/10.1177/0972150918822106>
- Bu, Y., Parkinson, J., & Thaichon, P. (2020). Digital content marketing as a catalyst for e-WOM in food tourism. *Australian Marketing Journal*, 29(2), 142–154. <https://doi.org/10.1016/j.ausmj.2020.01.001>
- Business Standard. (2022). *Internet usage grows faster in rural India; knowhow still a deterrent*. https://www.business-standard.com/article/current-affairs/internet-usage-grows-faster-in-rural-india-knowhow-still-a-deterrent-122072801008_1.html
- Buttle, F. A. (1998). Word of mouth: Understanding and managing referral marketing. *Journal of Strategic Marketing*, 6(3), 241–254. <https://doi.org/10.1080/096525498346658>
- Casielles, R. V., Alvarez, L. S., & del Río-Lanza, A. B. (2013). The word of mouth dynamic: How positive (and negative) WOM drives purchase probability: An analysis of interpersonal and non-interpersonal factors. *Journal of Advertising Research*, 43–60. <https://doi.org/10.2501/JAR-53-1-043-060>
- Cheng, S., Lam, T., & Tsu, C. H. (2006). Negative word of mouth communication intention: An application of theory of planned behavior. *Journal of Hospitality & Tourism Research*, 30(1), 95–116. <https://doi.org/10.1177/1096348005284269>
- Cheung, C. M., & Lee, M. K. (2012). What drives consumers to spread electronic word of mouth in online consumer-opinion platforms? *Journal of Decision Support System*, 53(2012), 218–225. <https://doi.org/10.1016/j.dss.2012.01.015>
- Chun, J. W., & Lee, M. J. (2016). Increasing individuals' involvement and WOM intention on social networking sites: Content matters! *Computers in Human Behavior*, 60(2016), 223–232. <https://doi.org/10.1016/j.chb.2016.02.069>
- Day, G. S. (1971). Attitude change, media and word of mouth. *Journal of Advertising Research*, 11, 31–40.
- Digital India Report (2022). <https://datareportal.com/reports/digital-2022-india>
- Engel, J. F., Kegerreis, R. J., & Blackwell, R. D. (1969). Word-of-mouth communication by the innovator. *Journal of Marketing*, 33(1969), 15–19.
- Farzin, M., & Fattahi, M. (2018). eWOM through social networking sites and impact on purchase intention and brand image in Iran. *Journal of Advances in Management Research*, 15(2), 161–183. <https://doi.org/10.1108/JAMR-05-2017-0062>
- Gauri, D. K., Bhatnagar, A., & Rao, R. (2008). Role of word of mouth in online store loyalty. *Communications of the ACM*, 51(3), 89–91.

- Godes, D., & Mayzlin, D. (2004). Using online conversations to study word-of-mouth communication. *Journal of Marketing Science*, 23(4), 545–560. <http://dx.doi.org/10.1287/mksc.1040.0071>
- Goyette, I., Ricard, L., Bergeron, J., & Marticotte, F. (2010). e-WOM scale: Word-of-mouth measurement scale for e-Services context. *Canadian Journal of Administrative Sciences*, 27(1), 5–23. <https://doi.org/10.1002/CJAS.129>
- Harris, L. C., Fisk, R. P., & Sysalova, H. (2016). Exposing Pinocchio customers: Investigating exaggerated service stories. *Journal of Service Management*, 27(2), 63–90. <http://dx.doi.org/10.1108/JOSM-06-2015-0193>
- Harrison-Walker, L. J. (2001). The measurement of word-of-mouth communication and an investigation of service quality and customer commitment as potential antecedents. *Journal of Service Research*, 4(1), 60–75.
- Hartman, K. B., Hunt, J. B., & Childers, C. Y. (2019). Effects of eWOM valence: Examining consumer choice using evaluations of teaching. *Journal of Behavioral Studies in Business*.
- Haywood, K. M. (1989). Managing word of mouth communications. *The Journal of Services Marketing*, 3(2), 55–67.
- Hoffman, D. L., & Novak, T. P. (1996). Marketing in hypermedia computer-mediated environments: Conceptual foundations. *Journal of Marketing*, 60(1996), 50–68.
- India Brand Equity Foundation Report. (2021). <https://www.ibef.org/industry/ecommerce-representation>
- Kimmel, A. J., & Kitchen, P. J. (2013). WOM and social media: Presaging future directions for research and practice. *Journal of Marketing Communications*, 2013, 5–20. <https://doi.org/10.1080/13527266.2013.797730>
- Litvin, S. W., Goldsmith, R. E., & Pan, B. (2008). Electronic word-of-mouth in hospitality and tourism management. *Tourism Management*, 29(2008), 458–468.
- Mahmud, Md. S., Islam, Md. N., Ali, Md. R., & Mehjabin, N. (2020). Impact of electronic word of mouth on customers' buying intention considering trust as a mediator: A SEM approach. *Global Business Review* <https://doi.org/10.1177/0972150920976345>
- Mishra, A., & Satish, S. M. (2016). eWOM: Extant research review and future research avenues. *Vikalpa*, 41(3), 222–233. <https://doi.org/10.1177/0256090916650952>
- Ngarmwongnoi, C., Oliveira, J. S., AbedRabbo, M., & Mousavi, S. (2020). The implications of eWOM adoption on the customer journey. *Journal of Consumer Marketing*, 37(7), 749–759. <https://doi.org/10.1108/JCM-10-2019-3450>
- Nilashi, M., Abumalloh, R. A., Alrizq, M., Alghamdi, A., Samad, S., Almulihi, A., Althobaiti, M. M., Ismail, M. Y., & Mohd Saidatulakmal, S. (2022). What is the impact of eWOM in social network sites on travel decision-making during the COVID-19 outbreak? A two-stage methodology. *Telematics and Informatics*, 69(2022), 101795. <https://doi.org/10.1016/j.tele.2022.101795>.
- Roy, G., Datta, B., & Mukherjee, S. (2018). Role of electronic word-of-mouth content and valence in influencing online purchase behavior. *Journal of Marketing Communication*, 661–684. <https://doi.org/10.1080/13527266.2018.1497681>
- Sardar, A., Manzoor, A., Shaikh, K. A., & Ali, L. (2021). An empirical examination of the impact of eWom information on young consumers' online purchase intention: Mediating role of eWom information adoption. *Sage Open*, 11(4), 215824402110525. <https://doi.org/10.1177/21582440211052547>
- Sinclair, J., & Cardew-Hall, M. (2008). The folksonomy tag cloud: When is it useful? *Journal of Information Science*, 34(1), 15–29.
- Talwar, M., Talwar, S., Kaur, P., Najmul Islam, A. K. M., & Dhir, A. (2020). Positive and negative word of mouth (WOM) are not necessarily opposites: A reappraisal using the dual factor theory. *Journal of Retailing and Consumer Services*, 63, 102396. <https://doi.org/10.1016/j.jretconser.2020.102396>

- The State of the Amazon Seller Survey. (2023). <https://www.junglescout.com/wp-content/uploads/2023/02/The-State-of-the-Amazon-Seller-2023-Jungle-Scout.pdf>
- United Nations Data 2022 Report. <https://www.worldometers.info/world-population/india-population/>
- UNCTAD B2C E-Commerce Index 2020 Report. https://unctad.org/system/files/official-document/tn_unctad_ict4d17_en.pdf
- Verma, S., & Yadav, N. (2021). Past, present, and future of electronic word of mouth (EWOM). *Journal of Interactive Marketing*, 53(2021), 111–128. <https://doi.org/10.1016/j.intmar.2020.07.001>
- Wee, C.H., Lim, S. L., & Lwin, M. (1995). Word-of-mouth communication in Singapore: With focus on effects of message-sidedness, source and user-type. *Asia Pacific Journal of Marketing and Logistics*, 7(1/2), 5–36. <http://dx.doi.org/10.1108/eb010260>
- Zhang, J. Q., Craciun, G., & Shin, D. (2009). When does electronic word-of-mouth matter? A study of consumer product reviews. *Journal of Business Research*, 63(2010), 1336–1341.