

# How Does Electronic Word-of-Mouth Affect Consumer Behavior in Social Media?



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## Abstract

Social media is an important part of many modern people's lives. Many people around the world use social media to share their photos and experiences. However, they use such platforms to express their opinions about the services and products they purchase. As a result, today's consumer behavior is closely tied to social media and how individuals use it. Therefore, it is important to study the impact of online sources on purchasing intentions and decisions.

social media has a certain degree of influence on consumer behavior; that is, a change in attitude (positive or negative) can be made before a purchase. Likewise, companies can utilize the platforms on social media to interact with consumers to strive for building up a better and stronger relationship.

Using electronic word-of-mouth (eWOM) in social media permits a constant connection to a vast audience.

Social media, including the content, visuals, promotions, and influencers, can have a big impact on how people buy things. It's important for businesses to be aware of this so they can make smart decisions about how to use social media.

The decision-making process is affected by the number of comments posted and whether the individual writing the comment has good knowledge about the product. Consumers who are searching for attention tend to post comments online more than the ones who have different intentions, thus playing an influential role and these are some reasons that show the importance of this topic.

1-Nowadays consumers buy directly from social media networks.

2-Consumers are heavily influenced by social media reviews.

3-social media has given consumers a way to interact with businesses in a variety of ways, from liking posts and following their accounts to sharing brand-related content.

4-Consumers turn to social media for customer service.

## 1.Introduction

The Internet has turned our existence upside down. It has revolutionized communications, to the extent that it is now our preferred medium of everyday communication. And social media on the internet might facilitate open and critical debates that enhance the expression of the public. Hence, the (mobile) internet becomes the main platform for individual expressions and opinion formations. Taking collective actions as the typical form, online public opinions are commonly stimulated or generated by specific events online. Public opinion is the collection or aggregation of individual feelings, cognitions, attitudes, emotions, and tendencies for online collective actions and information (or rumor) spreading [1].

Information technology has led to fundamental changes throughout society, transforming it from the industrial age to the cyber age. In our world, the global information network is a vital infrastructure, but how has this changed human relationships? The internet has changed business, education, government, healthcare, and even the way we interact with our loved ones. It has become one of the main engines of social evolution.

More and more research has found that online public opinion brings positive influences on the state-society relationship, especially in promoting political participation, forming public spheres, and reinforcing government accountability [2].

The internet is used for browsing the latest news, current events, and stories, and more audience opinions can be formed. Below the era of social networks, therefore the Internet is becoming a main platform for disseminating information online and forming opinions. Social media influences consumer behavior by building product awareness, social proof as a greater force of buying decisions, promotions, discounts, and deals on social media, social media influencers.

More researchers are using computers to do scientific experiments and simulations. They transform real society into an evolutionary system with intelligent agents. This evolutionary system replaces “people” with “artificial individuals”, which can reveal dynamic mechanisms between individual behaviors and macro-level social behaviors [3].

Companies increasingly rely on social media sites to engage with consumers [4]. The global rise of social media, such as Instagram, Twitter, Facebook, and Tik Tok leads to the invention of so many new businesses and exploring and collecting data from relationships between creators and consumers becoming essential nowadays.

The number of worldwide social media users is expected to reach a third of the world's population (i.e., more than three billion monthly active social media users) by 2021; this increasing number of user accounts is accompanied by a growth in user engagement, as Internet users spend on average 135 minutes per day on social networks [5].

Recently, advanced machine learning algorithms such as deep learning, and reinforcement learning are also introduced into public opinion models; agent-based models. Due to ethical or practical reasons, many experiments cannot be carried out in the real world. Then, “synthetic environments” need to be created to simulate the complex system's behavior in the real world. ABM is a useful method to help us to understand the work of social mechanisms. And it provides a new method for our research to reduce the complexity of the social system or the natural system to an extent that allows us to guide our thinking, and at the same time, we can get an intuition of how certain changes in the system would affect its dynamics and outcome [6].

Various scenarios for interactions between creators(brands) and consumers(users) in social media platforms recommend users to follow based on their interests and how those personal preferences change due to the influence of the people in this paper I going to talk about some of these scenarios.

## **Research questions**

How does Word of Mouth affect Consumer Behavior in social media (interactions between consumers and creators)?

## **2. LITERATURE REVIEW**

Social media is a “group of internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content”. Although social media is often defined as a combination of Web 2.0 and user-generated content, Web 2.0 refers to a platform in which content is continuously collaboratively developed by users, and user-generated content refers to all the different ways people produce content and use social media [7]. Users are now relying more than ever before on online reviewers and following content or people who have better reviews.

Social media distribution has a big role in developing audience interaction and engagement for publishers. According to 2018 research from the Pew Center, 47% of the US population gets their news on social media at least sometimes, up from 44% in 2016. And for most people, social platforms are becoming the internet. According to a survey from GlobalWebIndex, 86% of internet users aged 18-64 use at least one of the Facebook-owned platforms (Facebook, Instagram, Messenger, and WhatsApp). This means that a social media strategy is increasingly becoming a digital strategy [8].

There are differences between Electronic Word-of-Mouth (eWOM) and Traditional Word-of-Mouth (WOM) Marketing:

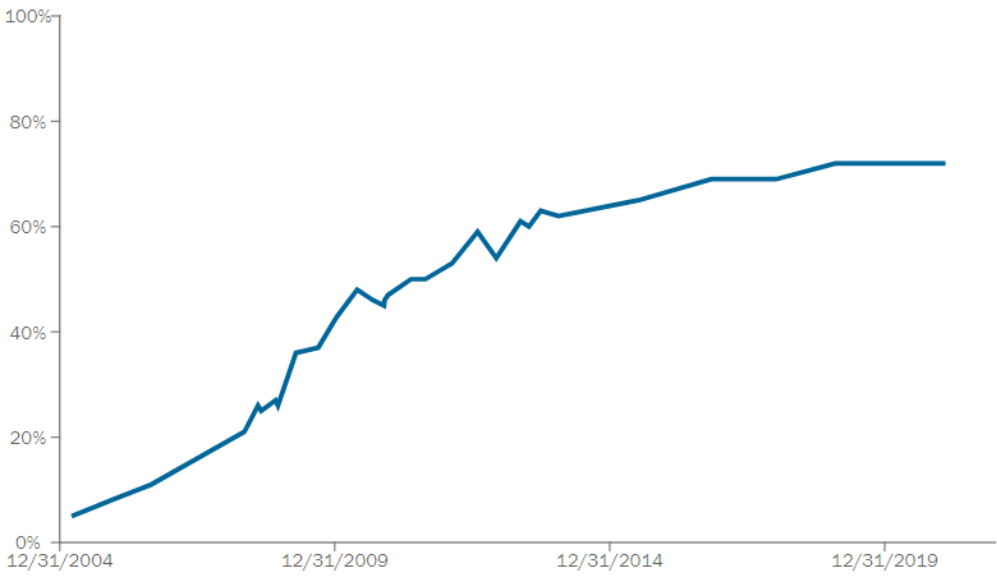
The sole difference between electronic word-of-mouth (eWOM) and traditional word-of-mouth (WOM) is identified as the platform of communication is the Internet [9]. Certain complementary factors support differentiation. Electronic word-of-mouth has a vast amount of capacity to connect with customers in a two-way communication when compared to traditional word-of-mouth [10].

Even though eWOM might have an additional impact over traditional WOM because of its viral way and due to the ability to connect any time the user searches to gain knowledge on a certain topic, the communication is notably more public than traditional WOM [11].

The decision-making process is affected by the number of comments posted and whether the individual writing the comment has good knowledge about the product. In addition, quality is another factor affecting the buyer. Customers are more likely to purchase when the comments are based on facts and when they are easy to understand. Consumers who are searching for attention tend to do more frequently post comments online than the ones who have different intentions, thus playing an influential role [12].

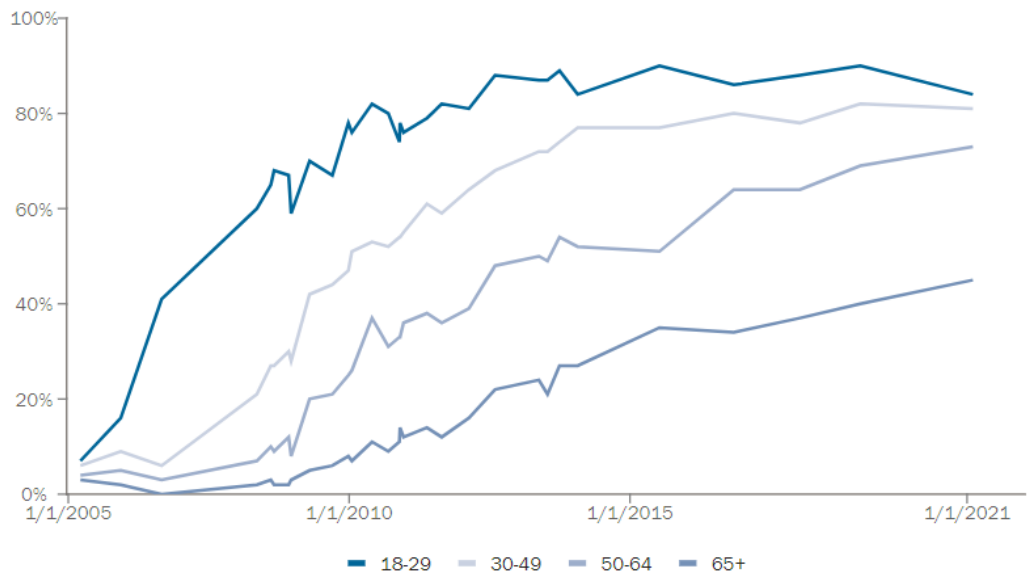
**Social media use**

*% of U.S. adults who say they use at least one social media site*



**Social media use by age**

*% of U.S. adults who say they use at least one social media site, by age*



Charts from the [www.pewresearch.org](http://www.pewresearch.org)

## **Agent-based modelling**

Agent-based Modeling and Simulation (ABMS) is a new modeling paradigm and is one of the most exciting practical developments in modeling since the invention of relational databases. ABMS promises to have far-reaching effects on the way that businesses use computers to support decision-making and researchers use electronic laboratories to support their research.

In agent-based modeling (ABM), a system is modeled as a collection of autonomous decision-making entities called agents. Each agent individually assesses their situation and makes decisions based on a set of rules. Agents may execute various behaviors appropriate for the system they represent—for example, producing, consuming, or selling [13]. Very broadly, agent-based models simulate phenomena by specifying agents and their behavior in the system. The results emerge from the simulation due to the actions and interactions of the actors.

The work reported here actually uses a simple model in Net Logo for discovery scenarios and possible future developments, and these simulation tools use agent-based modeling (ABM).

### 3. A Model of the social media

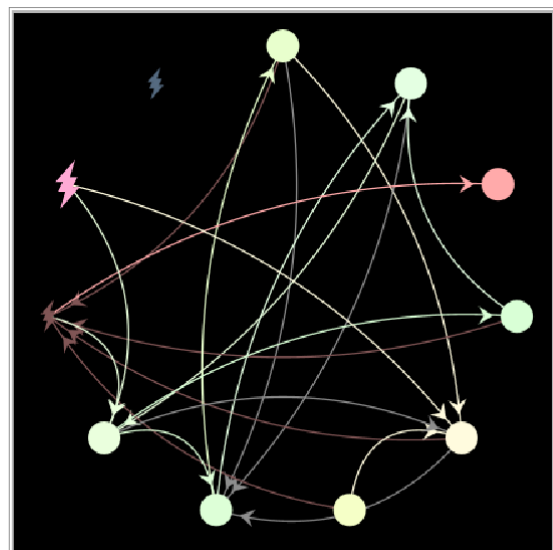
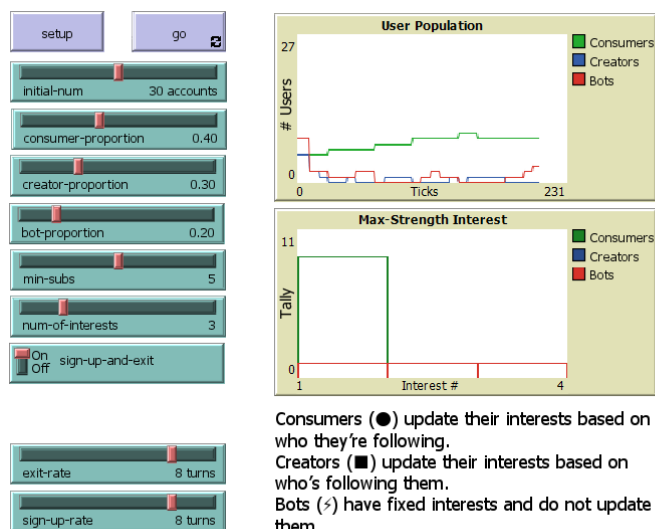
This project attempts to model how social media platforms recommend users to follow based on their interests and how those personal preferences change due to the influence of the people they follow/ followed. Three types of users have been created on the platform:

- Consumers, who update their interests based on who they're following.
- Creators, who update their interests based on who's following them.
- Bots, who have fixed interests.

All users follow and unfollow another user on the platform every tick. To visually represent each user's interests, they are assigned a color representing the strongest interest they hold. With this model, we can learn people's interests, which is essential for social media companies, where creators and producers offer a wide range of goods or services and it's important for them to find new clients with the same preferences. There are two monitors in the model which represent users' population and Max-strength interest.

With this model, It is possible to analyze many online businesses related to social media. It can analyze data for jobs like YouTube content creators who usually promote and sell products or services to their followers.

Consumer engagement through social media has received increasing attention in the last several years from both practitioners and academics, among other reasons, because of its potential influence on consumer behavior [14]. So, with these synthetic environments, we can perceive that each little parameter has its importance.



## 4. Model implementation

Each user has a set of interests, which is a randomly generated list of floats from 0.0 to 1.0 representing the strength of that particular interest. Users also have an internal TIRED Boolean, which indicates whether an account would like to leave the platform or not. This is only used if SIGN-UP-AND-EXIT is enabled.

Every tick, users follow/unfollow other users on the platform, then update their interests depending on their ruleset. Creators update their interests based on who's following them, consumers update their interests based on who they're following, and bots do not change their interests at all.

To follow another user, a user selects one of the interests from their list randomly, then searches for other users on the platform who have a greater intensity in that interest. The user then follows one of the people they've found who have greater intensity in that interest.

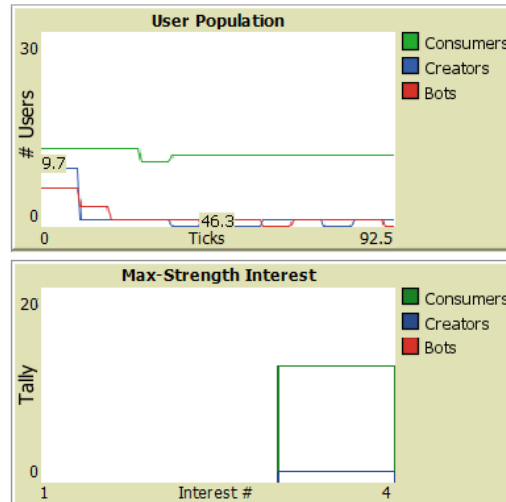
To unfollow another user, similar logic applies: a user selects one of their interests at random and investigates the accounts they're currently following. If the interest of one of those accounts is  $\leq$  the user's interest intensity, the user unfollows that account.

To update the user's interests based on who they're followed by (Creators) or are following (Consumers), we average out the collective interests of the accounts a user is influenced by. The user's interests are then set to this average intensity list.

If SIGN-UP-AND-EXIT is enabled, a few more factors are at play. Every tick, we also ask the user if they're tired, and update their size based on if they're tired to visually represent that a particular user is likely to leave the platform. For every SIGN-UP-RATE number of ticks, we add a user to the platform, and for every EXIT-RATE number of ticks, users who are tired of the platform leave.

There are several scenarios in which of them we change conditions to get an intuition of how certain changes in the system would affect its dynamics and outcome. MIN-SUBS is the minimum number of links a user can have before they become tired of the platform, and potentially leave, given that SIGN-UP-AND-EXIT is on. When we increase Min-sub links between people grow and after a few ticks most of the users have the same interest in fact, they start to follow a person or consume the product that most of their connection use. The way individuals see data sources influence their process of acknowledging the information being provided, people [15]. It leads to the interests of the group becoming fully homogenized (one color) because users who become tired leave the platform. This is so realistic scenario for many social media platforms, and it can define when an influencer or content creator cannot grow the size of their followers.

Bots usually do not have as much staying power on the platform as Consumers and Creators, because they fixed their interests and usually do not connect to others as much as consumers and creators. When SIGN-UP-AND-EXIT is on, the number of dots decreases slightly.



The Max-Strength Interest histogram is a frequency histogram of the strongest interest among all users. In social media times a product or content becomes popular and when people explore platforms usually these contents from other people link to them. When particular content or product becomes a trend and users with consistent choices (dots) leave the platform when they become tired The Max-Strength Interest histogram is a frequency histogram of the strongest interest.

## 5. conclusion

People have a lot of 'connections' on social media, therefore information is consumed by many people. This information becomes a source of influence on consumers and their buying behavior. We know that many people rely on the information and reviews on social media as a guide for planning their future purchases.

Social media has made it easier for everyone to learn about and interact with brands. This means that both brands and consumers can get the information and support they need much more quickly. This also means that brands can listen to what matters to their audience on an individual level and help solve problems faster.

This paper illustrate the importance of electronic word-of-mouth (eWOM) and interactions between brands and consumers, the phenomenon that how social media platforms recommend users to follow based on their interests, and how those personal preferences change due to the influence of the people which leads to changes in consumer behavior in social media.

We understand the power of social media to change businesses of all sizes. This opportunity comes from the dramatic change social media has had in consumer behavior. Social media and consumer behavior an ongoing transformation.



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