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Segmenting consumers on social networks based on individual motivations for engagement in eWOM communication with self-organising maps

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Abstract: Social networks allow consumers to share marketing content and advertise products for free through electronic word-of-mouth (eWOM) communication. Consumers regularly share eWOM regarding their motivations. Some of these motivations have been identified in previous studies. This study aimed to understand how consumers can be segmented on social networks according to the individual motivations for engagement in eWOM. A self-organising map was used for segmentation. Data were collected by sending questionnaire links to 385 Iranian users of Telegram, Facebook, and Instagram using a convenience sampling method. A total of three segments were identified: active users with low individual motivation, who spent a relatively long time on social networks, but had low individual motivations to participate in eWOM activities. Active users with high individual motivations were young users who devoted the most time to social networks and were highly motivated. Finally, inactive users with individual motivations who despite having sufficient individual motivations, spent very little time on social networks. This study, by applying a self-organising map for segmenting consumers on social networks, provides insights into how companies should make strategies to engage consumers in eWOM communication, taking into account individual motivations.

Keywords: electronic word-of-mouth communication; eWOM; individual motivations; segmentation; self-organising maps; SOMs; social networks.

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1 Introduction

Marketers have accepted social media as a new paradigm in marketing and as a marketing tool for achieving business goals. In the same way, consumers have quickly embraced social media as a tool in their communication with organisations and brands (Melancon and Dalakas, 2017). Social media applications include very interactive online communication platforms such as chat rooms, blogs, discussion boards, product and/or service review sites, virtual worlds, social networking sites, and content communities (Campbell et al., 2014). However, social media have created relatively new eWOM platforms by enabling users to share product- and brand-related experiences with their friends (Chu and Kim, 2011; Kozinets et al., 2010).

Social network websites enable consumers to create and share content and become active generators and distributors of brand information, behaving as brand evangelists (Wang, 2021). In this paper, we focus on social networks. These networks are available through laptops, desktops, tablets, smartphones, and even smart watches, which are used by people to chat with their friends or families around the world, find new friends, start a social movement, buy tickets, watch videos, create business relationships, and participate in activities related to the use of goods or services (Chu and Choi, 2011). Consumers' tendency to benefit from social networks in making purchase decisions has increased (Pookulangara and Koesler, 2011; Xhema, 2019; Appel et al., 2020). Therefore, social networks are specifically recognised as a powerful and effective tool for eWOM communication. WOM communication has been considered for several years as a powerful marketing communication tool in an offline environment (Moran and Muzellec, 2017).

Along with the advent of the Internet and new media technologies, the nature and effect of word-of-mouth communication have changed into what is now known as electronic word-of-mouth (eWOM) communication (Chu and Choi, 2011). Users are increasingly participating in activities on social networks in several different ways: they comment on their friends' posts, play online social games in online communities, update their messages, follow artists', athletes' and celebrities' pages, keep track of the most important domestic and international news and events, and share topics. Similarly, brands

use social spaces and networks to share positive stories and product information and find where their traditional market segments are 'hanging out' online and engage with them (Tuten and Solomon, 2018). Given such arguments, it is not surprising that marketers are engaging in social network marketing to interact with consumers and particularly develop effective marketing strategies in a more appropriate and personalised approach that allows customers to deeply enjoy the interactive process (Wang, 2021). However, success in social media marketing requires an interactive approach to shaping consumers' engagement on social media in a multi-sided relationship. Therefore, to engage consumers on social networks, it is very important to determine the motives which encourage users to engage since not all consumers have the same or adequate motivation for this kind of participation (Izadi et al., 2019). Considering the importance of this issue, marketers should consider the various motivations of their consumers to engage in eWOM on social networks.

According to Busalim et al. (2019), who reviewed studies of customer engagement in the context of social websites from 2010 to 2017, the factors that influence customer engagement include social, technical, and motivational cases. However, a great deal of the existing literature on social network engagement is focused on what stimulates consumers to socially engage online (Taylor et al., 2011; Bataineh and Al-Smadi, 2015; Busalim et al. (2019), rather than on how consumers differ in terms of their motivations of engagement on social networks and how they are segmented in terms of such motivations. A few studies have focused on the issue of segmentation and social networks (e.g., Constantinides and Stagno, 2011; Lorenzo-Romeo and Alarcon-Del-Amo Social, 2012; Campbell et al., 2014; Khobzi and Teimourpour, 2015; Trivedi et al., 2018; Moliner-Velázquez et al., 2021; Nasir et al., 2021). None of these studies, however, has been conducted with a self-organising map (SOM) or considered individual motivations of engagement in eWOM as a market segmentation variable. Thus, there is both an academic and a managerial need for studies that address this gap. Marketers need to determine whether new market segments emerge and how market segmentation works on online social networks.

In this paper, we seek to fill this knowledge gap by investigating the segmentation of consumers based on the individual motivations, demographic variables and behavioural variables of the time spent on social networks. More specifically, the aims of this study are:

1 to investigate the segments of consumers on social networks based on individual motivations for engagement in eWOM communication

2 to provide insights into the profile of each segment of social network users for the appropriate marketing strategies through social networks that have received little attention in studies to date.

In the next section, we begin by reviewing the theoretical background to identify the most important individual motivations of engagement in eWOM followed by a review of related consumer segmentation studies before moving on to describe the methodology. We then use the identified motivations and several variables including demographic and behavioural features as the bases for market segmentation. Finally, we detail our contribution to the literature, which includes some practical managerial suggestions and an attempt to integrate research on segmentation with the study of social networks and their relevant strategies.

2 Theoretical framework

2.1 eWOM communication

eWOM is a widespread consumer behaviour that undeniably affects the company's bottom line, still, it remains an under-theorised concept. The literature provides a superfluity of definitions of eWOM that vary in scope and the eWOM elements and process. Many researchers have used the WOM theory to define eWOM (Babić Rosario et al., 2020). The study of word-of-mouth communication began in the 1950s when this term was invented by William Whyte in his article in the *Fortune* magazine in 1954 and research on WOM increased in the following several years due to its effect on people's behaviour. Over the years, there were three main paths for research on the WOM communication literature: consumers' actions to disseminate information about their experiences, the type of information search for decision-making, and the kind of information source that is used by consumers, which is the most important of these three research areas (Dalzotto et al., 2016). Anderson (1998) defines word-of-mouth communication as the unofficial communication between groups about the evaluation of goods and services (Ring et al., 2016). Buttle (1998) and Harrison-Walker (2001) also consider word-of-mouth communication as the unofficial interpersonal connections that convey the consumers' evaluation of products, brands, and services to other consumers (Ketelaar et al., 2016). When consumers engage in conversations about products, services, or brands, they are involved in word-of-mouth communication. This kind of communication is more valuable than other types of marketing activities due to its unbiased and reliable nature (Nguyen and Romaniuk, 2013).

Word-of-mouth communication involves the consumer's formal communications with the company (in the form of complaints or suggestions) as well as the company's communications with its customers (in the form of promotional activities). Interpersonal communication is considered both an effective factor and a consequence of the consumer assessment of their purchasing experience. In the pre-purchase phase, people seek others' information as a risk reduction strategy. In fact, consumers resort to WOM information and trust it more when they face a high-risk situation in their purchasing process. In the post-purchase phase, consumer engagement in WOM communication is accompanied by various goals and motives, mainly to help other users, prevent potential mistakes, unleash their anger, or reduce their cognitive impairment (Mehrad and Mohammadi, 2017). Therefore, WOM communication is essential for the interaction between consumers since it can affect consumer attitudes and increase purchasing likelihood (Su et al., 2015).

Significant development of mobile devices and advances in wireless network areas have created an 'ever-online community', or 'ever-present community', where mobile phones penetrate into all aspects of humans' everyday life (Shen and Eder, 2013). Therefore, the expansion of Web 2.0 and new media channels, has changed WOM into eWOM (Verma and Yadav, 2021). eWOM communication refers to the dynamic and continuous process of exchanging information about a product, service, brand, or company among potential, actual, or former consumers, which makes the information available to a large group of individuals and organisations via the Internet (Ismagilova et al., 2017). The eWOM communications are in the form of comments, likes, ratings, video testimonials, reviews, tweets, images, and blog posts (Donthu et al., 2021; Nam et al., 2020). Past studies showed the vital role of eWOM in influencing consumer responses (Verma and Yadav, 2021) and prepurchase behaviour (Lim et al., 2022). The

positive eWOM enhanced mobile banking adoption. Businesses need to focus on eWOM dimensions for business growth and should have the capability to manage positive and negative eWOM during the exposure phase (Pandey et al., 2020). Since eWOM communication is created and disseminated without company support, information release can be quick. It is found that this kind of communication is more commonly used for purchasing decisions and is more effective than traditional communication tools, including advertising, newspapers, or sales force (Lis and Neßler, 2013). Consumers communicate with their counterparts to confirm or condemn their experienced products or services; in addition, eWOM communication usually provides balanced and honest evaluations of brands from users' points of view (Moran and Muzellec, 2017). Users' search for reliable and acceptable information can begin by searching for a product or service recommendation and end with a negative or positive experience about it. This can be reflected as a post or comment on the corporate website or its virtual networks, which illustrates the success of eWOM communication as a powerful marketing tool. Human beings have been turned into an instrument for producing content and various types of communication more than ever before (Bataineh and Al-Smadi, 2015). Furthermore, according to Babić Rosario et al. (2020), eWOM is a distinct concept from other related online constructs, consequently, they have offered this revised definition: "eWOM is consumer-generated, consumption-related communication that employs digital tools and is directed primarily to other consumers".

2.2 Engagement in eWOM communication on social networks

Engaging customers on social networks has been argued extensively in the marketing communication literature from different perspectives. Engagement in eWOM communications is one of the general topics in eWOM study (Rani et al., 2021; Ismagilova et al., 2020; Naumann et al., 2020; Chen et al., 2021; Gvili and Levy, 2018). eWOM engagement is defined as customers' behavioural expression to find and share eWOM with other people (Yusuf Sahabi et al., 2019). Word-of-mouth information can be created on social networks in multiple ways. Users can purposely express their preferences about products, services, and brands. Additionally, users can unwittingly show their priority over their network, such as becoming a brand fan or interacting with posts about brands by tagging, commenting, or posting brand content without any advertising aim (Erkan andEvans, 2016). eWOM-providing behaviours take place on two levels shallow and deep. At the shallow level, the consumers performing actions include 'liking' and sharing existing content within a short duration without any cognitive effort. On the other hand, consumers provide behaviours at a deep level that require higher cognitive effort in a longer duration (Alwash et al., 2019). Ismagilova et al. (2017) have divided eWOM interaction behaviours into eWOM search and eWOM providing.

The Internet has enabled consumers to access a wide range of product and brand information; therefore, they can compare prices and qualities and interact with companies and other consumers. Additionally, continued e-commerce growth encourages consumers to generate vast amounts of information that affect other consumers (Arenas-Márquez et al., 2014). According to Kaplan and Heinlin (2010), social networks are a group of Internet-based applications built on the ideological and technological Web 2 cornerstone, which has provided people with a chance to create and exchange user-generated content (Baek et al., 2017). Brands acquire values on social networks when they deal with consumers (relationship-based marketing) and encourage them to engage with the brands

and share them with others. Brands benefit from increased brand loyalty, consumer engagement, and access to brand messages. This access (the breadth and quality of contact with users) occurs when people share positive opinions about the brand and branded content with others because the content attributed to one person will reveal the individual's personality (Tuten and Solomon, 2018). Patterson et al. (2006) acknowledge that customer engagement occurs on the psychological, cognitive, and emotional levels when customers interact with an organisation or brand. Pansari and Kumar (2017) developed a conceptual framework for customer engagement. They provided a model which included both direct and indirect components of customer engagement.

Engagement on social networks can promote the perceived benefits and values of each consumer. From the consumers' perspective, the engagement may be justified by the fact that their needs are met during the engagement process, or because they seek benefits by establishing relationships with others (Zhang et al., 2017). Conceptually, users' engagement in eWOM communication on social networks can be examined from three perspectives: opinion seeking, opinion giving, and opinion passing (Chu and Kim, 2011). Consumers with very little information about a product are more likely to get information from their friends, especially in the early stages of the decision-making process. Opinion seekers are an important part of eWOM communication occurring on social networks (Hochanadel, 2014). On the other hand, those with a high level of opinion-giving behaviour, known as opinion-leaders, may have a profound effect on others' attitudes and behaviour (Chu and Kim, 2011). Finally, submitting feedback involves sending information and experiences related to a product or service on social networks. Sending a message or the pass-along behaviour is an important activity for eWOM communication since the success of an advertising campaign depends on the widespread dissemination of viral advertising messages (Ketelaar et al., 2016).

It is highly probable that social network users will like a particular brand and support it through positive eWOM communication. Also, when users of social networks become aware of a particular product in their friends' profiles, the desire to buy the item is pretty high, especially if they need the product immediately. Through engagement in eWOM communication, consumers are able to collect unbiased information about a particular product offered by other consumers' experiences of it (Bataineh and Al-Smadi, 2015). Since companies are heavily investing in social media campaigns, they need to better understand the specific preconditions for engaging users in eWOM communication, especially when a group of recipients publishes, like, or share their initial message, or when they participate through the content generated by a user (Rossmann et al., 2016). Hence, eWOM has become an important tool for advertisement, so companies must study the factors engaging eWOM via SNSs (Siddiqui et al., 2021). According to Yusuf Sahabi et al. (2019), information credibility, information quality, social support, innovativeness, altruism, self-enhancement, and a sense of belonging are possible reasons for eWOM engagement.

2.3 Individual motivations affecting engagement in word-of-mouth communication on social networks

Newman et al. (2010) define motivation as a force that stimulates individuals to act or behave in a certain way. Thus, identifying motives is necessary to understand individual behaviour. Motives result from the tension system that creates a state of imbalance. As individuals usually have a fundamental desire to maintain equilibrium, when this state

becomes unbalanced, they will try to choose a goal to return to equilibrium, and this goal slowly relieves them of that tension (Ismagilova et al., 2017). Engagement is the basis of social networks' existence. In other words, if social networks fail to encourage users to engage, they will have no utility. It is very useful for marketers to understand the motivations for engagement and sharing information on social networks and use them in strategic marketing decisions (Tuten and Solomon, 2018). Although few studies have looked at what encourages consumers to engage in producing brand content on social networks, this subject has been discussed in the field of eWOM communication and has attracted scholars' attention in recent years. The literature demonstrates that various motivations affect consumers' eWOM behaviour in various ways and are in different ways into relationship-oriented, content-oriented and self-oriented (Zhang et al., 2022). Hennig-Thurau et al. (2004) identify eight motivations for positive eWOM. Social benefits, economic incentives, concern for others, and extraversion/self-enhancement are primary motivations. Cheung and Lee (2012) highlighted six factors that motivate consumers to spread positive eWOM including reciprocity, moral obligation, knowledge self-efficacy, reputation, sense of belonging, and enjoyment. Yen and Tang (2015) summarise seven eWOM motivations (social benefits, altruism, self-enhancement, extraversion, etc.). Previous eWOM studies (Cheung et al., 2015; Luarn et al., 2015) distinguish consumer motivations based on the framework proposed by Palka et al. (2009), which classified individuals' motivations as social, attitudinal, resource-based, customer-based, and personal. Some of these motivations are social-oriented and some are person-oriented. In this study, we were inspired by the framework of Palka et al. (2009) and Ismagilova et al. (2020), and by not considering socially motivated motivations, we studied other motivations in the form of individual motivations. We will describe all the individual motivations for engagement on social networks derived from the research literature as below.

2.3.1 Mental involvement

Mental involvement refers to "the perceived relationship of an individual with a subject based on inner needs, values, and interests" (Zhang et al., 2013). In previous studies, various types of involvement have been considered, including involvement in advertisement, products, purchases, and brands. Due to different uses of the word 'involvement', there are several definitions for it. Dichter (1996) identifies four main motivations for word-of-mouth communication, all of which are centred on the concept of mental involvement. These include product involvement, self-involvement (self-enhancement), others' involvement (concern for others), and message involvement (Ketelaar et al., 2016). Mental involvement has a positive impact on users' engagement, or their intention to buy and use goods. The difference in the level of engagement significantly affects the person's behaviour. The more deeply individuals engage on social networks, the more interested they will be in sharing information on these networks (Zhang et al., 2013). Fan and Miao (2012) admit that consumers whose mental involvement level is strong are highly prepared to accept other consumers' opinions (Batineh and Al-Smadi, 2015). Although mental involvement in social networking is a key element in decision-making, users with high mental involvement often spend more energy and effort on social networks (Chi, 2011). These users are more likely to share information and ideas about their favourite brands and what they like or dislike, and they trust similar messages from others (Alhidari et al., 2015).

2.3.2 Self-reliance

Self-reliance means to believe in one's abilities and talents and to feel proud of oneself. This element affects life quality, how a person feels about himself/herself, his/her lifestyle, and the extent of engagement in social activities (Akbari-Alashti, 2015). People with strong self-reliance trust their abilities and are not afraid of probable changes in the trend of events. Also, it makes them feel comfortable about themselves and encourages them to hold on to their beliefs. Social networks provide immediate benefits and an ideal platform for the engagement of self-confident people in eWOM communication. These individuals are risk-taking in both online and offline environments and are more likely to use social networks to search for interesting ideas, products, etc. (Alhidari et al., 2015).

2.3.3 Risk-taking

Risk-taking points to the consumer assessment and acceptance of potential negative outcomes associated with their decisions (Buttner and Goritz, 2008). This concept relates to the acceptance of probabilities and the willingness to test new products (Pires et al., 2004). Risk-takers are different from other influential customers, including innovators, opinion leaders, and market spokespersons. Innovators are those who tend to try new products earlier than the vast majority of consumers. Opinion leaders are considered those who influence other consumers. Spokespersons are people who are aware of the products, stores, market information, and other fine points about brand consumption. Risk-taking, however, has a different meaning in various influential customers. Innovators may have high-risk behaviour, but they may also have limitations in accepting new products (Clark and Goldsmith, 2005). Given that risk-takers are open-minded, they are likely to respond to messages received from anonymous sources on social networks (Sindhav, 2011). In addition, the risk-takers of social networks include users who easily make friends with people they do not know, are actively involved in commenting on different topics and posts, and want to question the norms by expressing their opinions. Social networks provide different types of information some of which are risky and can be attractive for risk-takers. Therefore, there is a significant relationship between consumers' risk-taking and their engagement in word-of-mouth communication on social networks (Alhidari et al., 2015).

2.3.4 Altruism

Altruism (enjoyment in helping others) has greatly attracted scholars' attention. This concept has been confirmed in various studies as one of the main motivations that affect engagement in eWOM communication (Hennig-Thurau et al., 2004; Ho and Dempsey, 2010; Luarn et al., 2015; Yen andTang, 2015). Altruism is defined as helping others to solve their problems without any expectation of compensation (Shirkhodaie and Rezaee, 2014). Some social network users would like to do acts of charity, and the emergence of social networks has facilitated the fulfilment of altruistic motivations. Altruism is seen in immediate responses among social network users to calls for help in accidents such as earthquakes, firefighting, warfare, and violence. People would like to be kind to others and do generous activities fast. Social networks have made this engagement easier, whether it is donating cash or offering services to the community. Altruistic motivations provide a form of value-expressive function that permits individuals to utter their moral beliefs via their behaviour on social networks [Tuten and Solomon, (2018), p.127].

Another identified motivation related to altruism is the desire to help companies and brands. The desire to succor a company is the result of individual satisfaction with a company's product or service and a willingness to boost the company. Hennig-Thurau et al. (2004) argue that this motivation is supported by the equity theory (Oliver and Swan, 1989), which states that individuals follow fair and just exchanges. In other words, if a person feels that he/she has achieved an output/input ratio higher than the company, then helping the company by engaging in eWOM communication is a way to equalise this ratio. Therefore, altruistic motivations are associated with the pleasure of supporting others (Ismagilova et al., 2017).

2.3.5 Self-enhancement

According to self-enhancement theory, people need to have a good feeling about themselves and seek others' positive evaluations. They want to achieve others' approval and maintain personal satisfaction, a sense of value, and effectiveness (Alexandrov et al., 2013). Self-enhancement is one of the fundamental motivations of human beings. People like to express themselves positively [Ismagilova et al., (2017), p.34]. Affecting others' image of oneself is an encouraging reason for engagement in communication. Self-enhancement is achieved when we share positive experiences with others to improve their attitudes about us so that they take us as smart buyers. Attracting others' attention, feeling like a pioneer, being treated as a source of information, achieving others' positive opinions about us, and becoming known as an expert is among various forms of self-enhancement (Shirkhodai and Rezaee, 2014). Our words will influence others' attitudes toward us. If the consumer believes that the product bought is publicly known and classified in a self-supporting and consistent manner, self-enhancement takes place. Even without consuming a product or brand, consumers may convey a certain message regarding their self-concept only by talking about a product (Çadırcı and Güngör, 2016). People may engage in eWOM communication to be recognised and qualified as specialists (Hennig-Thurau et al., 2004). Thus, promoting one's status among social network members is a key incentive to participate in word-of-mouth communication in these spaces.

2.3.6 Economic Incentives

In the literature related to motivation, material rewards or incentives have been identified as one of the factors influencing individual behaviour. Also, according to the tenth economic principle, people show a positive response to material incentives (Shirkhodai and Rezaee, 2014). Consumers participate in eWOM communication to achieve material rewards, which makes one of the most important motivations for eWOM communication. Unlike traditional WOM communication, eWOM communication is carried out with the help of a third person [Ismagilova et al., (2017), p.36]. Material incentives include monetary and non-monetary rewards such as bonus points, discounts, or free promotions [Yen and Tang, (2015), p.80]. Hennig-Thurau et al. (2004) confirm material incentives as one of the most vigorous motivations for engagement in eWOM communication.

2.3.7 Egoism/narcissism

According to Mehdizadeh (2010), egoism is positively related to having a good attitude toward oneself, such as being intelligent and appealing, and involves the need for others' admiration and exaggeration of one's importance (Luarn et al., 2015). When individuals care very much about achieving tangible or intangible feedback from others after sharing information, they are considered egoists. The role of egoism has been accepted in the eWOM communication literature. Achieving a reputation is another motivation associated with egoism. People share their knowledge with others due to their desire for achieving unofficial recognition and acceptance in the community and for representing themselves as experts. Similarly, it is believed that if consumers want to gain a reputation on a social platform, they will be greatly interested in spreading WOM messages (Cheung and Lee, 2012). The development of information and communication technologies has encouraged many users to attract others' attention and to further introduce themselves by sharing information through word-of-mouth communication. Therefore, the higher the egoism in communicating with parties, the more likely they will be to engage in WOM communication on social networks [Luarn et al., (2015), p.4]. Other individual motivations affecting engagement in eWOM communication on social networks are curiosity (Ho and Dempsey, 2010), personal growth and individuation (Ho and Dempsey 2010; Hochanadel, 2014), image building and achievement (Luarn et al., 2015), venting negative feelings (Hennig-Thurau et al., 2004; Yap et al., 2013; Yen and Tang, 2015) and innovativeness (Wang et al., 2016).

2.3.8 Curiosity

Curiosity is defined as the desire to know and learn (Ho and Dempsey, 2010). People may feel curious about others and want to know about them. On the Internet, we can satisfy this desire, for example, by tracking people on social networks and seeing their profiles [Tuten and Solomon, (2016), p.127].

2.3.9 Personal growth

Personal growth is creating and maintaining a satisfying relationship in terms of control and power (Ho and Dempsey, 2010). Consumers may decide to provide information about products on social networks to tell others about their interests and rewards and how these have helped to form their lives (Hochanadel, 2014).

2.3.10 Individuation

Individuation is the tendency to be prominent and different from others (Ho and Dempsey, 2010). When people share information about themselves and what they like or dislike, they seek to distinguish themselves from others. On a social network, users reach this goal by regularly commenting on stories, advertisements, and product promotions. Therefore, the strong need for individuation positively affects the word-of-mouth behaviour of electronic opinion-giving and opinion-passing [Hochanadel, (2014), p.26].

2.3.11 Image building

According to Kaplan and Haenlein (2010), an image is a vital asset that a person can use to achieve and maintain a state on a social network. Social network users publish posts among the network members without the risk of harming their images and try to manage their images by distributing positive and specific content. Therefore, a higher tendency to image-building leads to more engagement in word-of-mouth communication on social networks (Luarn et al., 2015).

2.3.12 Achievement

Achievement is human beings' fundamental motivation (Deci and Ryan, 2012). Success-related situations are characterised by approaches and components that create hope for success and fear of failure. People who look for achievement are highly motivated to participate in collective activities by providing information and trying to identify solutions for other individuals and groups. Sharing information helps these individuals to be recognised as opinion leaders, which reinforces their sense of achievement. Hence, people engage in word-of-mouth communication on social networks to meet their achievement needs (Luarn et al., 2015).

2.3.13 Venting negative feeling

The need for expressing positive or negative feelings stimulates individuals to engage in word-of-mouth communication positively or negatively [Ismagilova et al., (2017), p.38]. Zajonc (1971) believes that people experience mental stress when they go through strongly positive and negative consuming experiences.

People seek to balance this state and may reduce their tension by writing comments on online review websites. Therefore, expressing positive, or venting negative, feelings are two motives for engaging in word-of-mouth communication (Yen and Tang, 2015).

2.3.14 Innovativeness

According to Okazaki (2009), innovativeness refers to an inherent characteristic that reflects the individual's personality and desire for innovation (Wang et al., 2016). Individuals with strong motivation for innovation are more likely to seek information about new products and share their findings with others. Innovativeness is positively related to opinion leadership and tracking others' ideas on social networks. Thus, innovative individuals participate more in word-of-mouth behaviour on social networks (Teng et al., 2017).

2.4 Market segmentation by SOMs

Market segmentation was introduced by Wendell Smith (1956) as one of the fundamental concepts of marketing and an alternative marketing strategy in dealing with heterogeneous markets (Kuo et al., 2002). Although market segmentation was introduced into the academic marketing literature in the 1950s, it continues to be an important avenue of research and marketing practices (Kiang et al., 2006). The need for market segmentation essentially implies market largeness and the impossibility of concentrating on market elements simultaneously. To put it differently, markets include current and

potential customers with a variety of features; therefore, the target dataset of a market segmenting approach in a real-world scenario is usually very difficult to handle (Hung and Tsai, 2008). From a public policy standpoint, the critical role of segmentation is choosing the right marketing strategies that enable marketers to identify the needs and preferences of consumers, find new opportunities in existing markets, and gain competitive advantage through product differentiation (Chaturvedi et al., 1997).

Marketers quickly adapt themselves to social network techniques and strategies, but marketing on social networks will only work to the extent that it makes the company's customers communicate in a digital space. Marketers use several variables including demographic, geographic, psychological, and behavioural features as the bases for market segmentation when marketers divide the population into manageable groups (Tuten and Solomon, 2018).

Usually, market segmentation is performed with a clustering method. The purpose of data clustering is to put the data into groups in which members are similar in terms of a certain feature but different from those of other groups. From a methodological point of view, clustering is often used for the segmentation of consumers with similar preferences. It is a data-driven task that is employed as an unsupervised learning approach.

Visualised market segmentation approaches are divided into two main groups:

1 traditional statistical methods such as K-means clustering, two-step clustering, hierarchical cluster analysis, and discriminant analysis

2 neural network approaches such as SOMs which cluster high-dimensional input vectors on a low-dimensional visualised map.

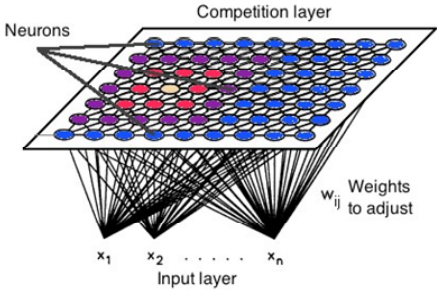
The neural network approaches are more useful because they have higher visualising ability and can reduce several dimensions into two ones on maps. SOM and k-means are the two most commonly used clustering algorithms for market segmentation, although SOM-based segments provide a more viable option than K-means segments for target marketing (Hung and Tsai, 2008). SOM can be viewed as a clustering technique without the rigid assumptions of linearity or normality and based on an unsupervised competitive training algorithm where each cluster has a fixed coordinate in a topological map and the network evolves until convergence (Mostafa, 2009). Raee (2001) considers SOMs as one of the most widely used and known methods for visualising the results of cluster analysis that uncovers the fundamental structure and correlation among data patterns and organises them into inappropriate and optimal classes. However, in a supervised learning algorithm, the correct answer for each input is given to the grid, and then it creates answers close to the well-known correct answers (Bahrainizadeh et al., 2016).

Neural networks consist of a set of nonlinear nodes related to each other in a parallel manner. Typically, nodes in a column are called a layer. Therefore, each neural network has at least two layers, one input and one output, but most of these networks use hidden input and output layers to increase the accuracy of the system (Hassanzadeh et al., 2012). This network is known as one of the hardest single-line networks. Cohen and Grossberg (1983) constructed a network whose only known parameter is the input neurons while the weights and output neurons are the unknown parameters that should be found. The most prominent feature of this network is that it is self-organised. Cohen and Grossberg (1983) selected a number for output neurons and derived the geometric distance of the pattern from simple logic input and output neurons which were set to binary values (Kohonen,

1984). A schematic representation of SOMs based on Kohonen's feature maps is shown in Figure 1.

The basis of the network function is reducing the distance between the input patterns. Weight amounts are obtained by repeating, and the network operates nonlinearly. In this model, a number of nerve cells, usually arranged together in a flat topology, act as a self-organising network by showing reciprocal behaviour (Abbasi, 2015). SOMs provide a powerful tool for displaying multi-dimensional data in spaces with limited (usually, one or two) dimensions. It is also a method for clustering large datasets and maintains the spatial relationship between them.

Figure 1 Schematic representation of Kohonen's feature map (see online version for colours)



3 Methodology

In order to carry out social network segmentation based on the individual motivations, demographic variables and behavioural variables of the time spent on social networks, an online survey was conducted. We used the SOM approach which is a kind of artificial neural network. A total of 384 users of Telegram, Facebook, and Instagram were chosen for this study, using a convenience sampling method. The sample size of 384 is considered adequate when the population includes millions. We selected adults aged 18-50 who consisted of 224 women (58.2%) and 161 men (41.8%). 25.2% of the participants were under 20 years old, 59.5% were between 20 and 29, 11.4% were between 30 and 39, and 3.9% were aged 40 to 50 years old. We sent e-mail invitations to respondents with a little incentive as compensation for participation in the study. Adults between 18 and 29 were the largest sample group in this study due to the latest statistics which show the adults of this age range as making the majority of social media users (Erkan and Evans, 2016). Data were collected by distributing the questionnaire link among Iranian network users who were members of at least one social network and engaged in diverse activities there. Before starting the empirical study, a systematic review of the literature was conducted to explore individual motivations for eWOM engagement. As a result, a total of 14 drivers were identified. Accordingly, a multi-item questionnaire containing a set of closed-ended questions was designed to measure the main variables of the market segmentation (Table 1). All variables were measured on a five-point Likert scale, anchored by strongly disagree = 1 to strongly agree = 5. After having the questionnaire content validity confirmed by several marketing professors, the final version was prepared in three sections (demographic, behavioural, and individual motivation).

Table 1 Factor loadings, CR, Cronbach's alpha, and AVE values

Variable	*Reference*	*Item*	*Factor loading*	*CR*	*Cronbach's alpha*	*AVE*
Mental involvement	Alhidari et al. (2015)		*0.729*	*0.765*	*0.725*	*0.547*
		I constantly update my profile on social networks.	0.725			
		I post my daily activities on social networks.	0.817			
		I comment on friends' posts on social networks.	0.748			
		Social networks have become part of my everyday life.	0.764			
Risk-taking	Alhidari et al. (2015)		*0.788*	*0.810*	*0.707*	*0.634*
		I communicate with people I do not know on social networks.	0.906			
		I comment on posts from friends who are not even close to me.	0.916			
		Commenting on social networks is not a problem to me, even if it is contrary to public opinion and consensus.	0.7487			
Self-reliance	Alhidari et al. (2015)		*0.797*	*0.720*	*0.715*	*0.636*
		Only those who rely on themselves are ahead of others in life.	0.768			
		To be superior, a person should be alone.	0.913			
		If you want to make sure something is done right, you should do it yourself.	0.761			
Altruism	Hennig-Thurau et al. (2004), Luarn et al. (2015), Yen and Tang (2015)		*0.727*	*0.717*	*0.725*	*0.531*
		I want to inform others on social networks of bad products.	0.756			
		I want to save others from having negative experiences like mine.	0.793			
		Sharing messages and useful information on social networks gives my friends some benefits.	0.777			
		In my opinion, companies that provide good services and products should be helped to succeed in their work.	0.759			
Self-enhancement	Hennig-Thurau et al. (2004), Luarn et al. (2015), Yen and Tang (2015)		*0.757*	*0.804*	*0.752*	*0.535*
		Through my social networks, I can express my happiness with a good purchase	0.779			
		I report my very good experience to others on social networks.	0.704			
		I feel good when I can share my successful shopping experience with others.	0.793			
		My sharing of shopping experiences with others shows that I am a smart customer.	0.748			

Table 1 Factor loadings, CR, Cronbach's alpha, and AVE values (continued)

Variable	*Reference*	*Item*	*Factor loading*	*CR*	*Cronbach's alpha*	*AVE*
Individuation	Ho and Dempsey (2010), Hochanadel (2014)		*0.716*	*0.790*	*0.763*	*0.520*
		I would like to speak to a large audience.	0.630			
		When there is a conversation on a social network, I would like to participate in it.	0.815			
		I would like to openly discuss a topic on social networks.	0.780			
		I can be an admin of a group on social networks.	0.712			
		I would like to present my views on a controversial issue.	0.742			
Personal growth	Ho and Dempsey (2010), Hochanadel (2014)		*0.795*	*0.745*	*0.708*	*0.633*
		I know how to change things in my life.	0.803			
		I feel good about being ahead of others in my life.	0.767			
		I can choose my role in a social group.	0.815			
Curiosity	Ho and Dempsey (2010), Hochanadel (2014)		*0.798*	*0.83*	*0.716*	*0.640*
		I would like to monitor important issues and new opportunities on social networks.	0.727			
		I often look for new growth opportunities.	0.750			
		My friends describe me as someone passionate about my work.	0.884			
Economic incentives	Doma et al. (2015), Hennig-Thurau et al. (2004)		*0.874*	*0.854*	*0.847*	*0.766*
		I get a reward from social networking sites by tagging and commenting on the posts of others.	0.843			
		I engage in social networking to receive monetary and non-monetary rewards.	0.910			
		I often deal with various activities on social networks to generate revenue.	0.870			
Egoism/narcissism	Cheung and Lee (2012), Luarn et al. (2015)		*0.822*	*0.876*	*0.841*	*0.678*
		My friends see me as an energetic and persistent person in seeking information.	0.766			
		I share information on social networks to promote my activities.	0.819			
		I feel that my participation on social networks improves my professional status.	0.856			
		I participate in social network activities to improve my reputation in my profession.	0.850			

Table 1 Factor loadings, CR, Cronbach's alpha, and AVE values (continued)

Variable	*Reference*	*Item*	*Factor loading*	*CR*	*Cronbach's alpha*	*AVE*
Image-building	Luarn et al. (2015)		*0.812*	*0.731*	*0.742*	*0.662*
		I can shape my imagination through social networking.	0.806			
		I can build my image in the minds of others through social networking.	0.877			
		Activities on social networks represent the individual's personality.	0.753			
Achievement	Luarn et al. (2015)		*0.903*	*0.768*	*0.775*	*0.816*
		Sharing information on social networks gives me the feeling of completing an important task.	0.898			
		Sharing information on social networks gives me a sense of achievement.	0.909			
Venting negative feelings	Hennig-Thurau et al. (2004), Yap et al. (2013)		*0.773*	*0.79*	*0.781*	*0.610*
		Activity on social networks relieves me of my negative feelings about bad experiences.	0.702			
		I would like to express my anger at bad products and companies.	0.787			
		I take revenge on companies that offer poor products and services.	0.798			
		I work on social networks against companies and products that have created a bad experience for me.	0.811			
Innovativeness	Wang et al. (2016)		*0.828*	*0.850*	*0.847*	*0.686*
		I am one of the first people to buy a new product on social networks.	0.821			
		I am one of the first people to know about new products.	0.852			
		I would like to buy a new product online through social networks, even if I have not tried it.	0.800			
		I like to buy new products online before others.	0.839			

Table 2 Discriminant validity results by Fornell-Larcker criterion and Heterotrait-monotrait (HTMT0.85) criterion

Construct	*(MI)*	*(RT)*	*(SR)*	*(A)*	*(SE)*	*(I)*	*(PG)*	*(C)*	*(EI)*	*(N)*	*(IB)*	*(ACH)*	*(VNF)*	*(IN)*
Mental involvement (MI)	*0.739*	0.69												
Risk-taking (RT)	0.521	*0.796*	0.71											
Self-reliance (SR)	0.465	0.677	*0.8*	0.59										
Altruism (A)	0.632	0.623	0.587	*0.728*	0.54									
Self-enhancement (SE)	0.581	0.614	0.481	0.680	*0.731*	0.60								
Individuation (I)	0.521	0.517	0.467	0.627	0.653	*0.721*	0.58							
Personal growth (PG)	0.572	0.582	0.491	0.621	0.643	0.651	*0.795*	0.63						
Curiosity (C)	0.231	0.575	0.468	0.643	0.601	0.542	0.535	*0.8*	0.73					
Economic incentives (EI)	0.445	0.491	0.365	0.589	0.592	0.511	0.576	0.730	*0.875*	0.8				
Egoism/narcissism (N)	0.615	0.475	0.670	0.576	0.543	0.490	0.643	0.791	0.732	*0.823*	0.78			
Image-building (IB)	0.587	0.486	0.503	0.512	0.540	0.465	0.576	0.647	0.606	0.701	*0.813*	0.75		
Achievement (ACH)	0.432	0.398	0.490	0.478	0.464	0.417	0.516	0.470	0.562	0.674	0.710	*0.900*	0.81	
Venting negative feelings (VNF)	0.462	0.451	0.396	0.465	0.496	0.321	0.475	0.486	0.539	0.456	0.632	0.764	*0.781*	0.83
Innovativeness (IN)	0.324	0.512	0.545	0.450	0.512	0.433	0.430	0.411	0.507	0.502	0.575	0.615	0.710	*0.828*

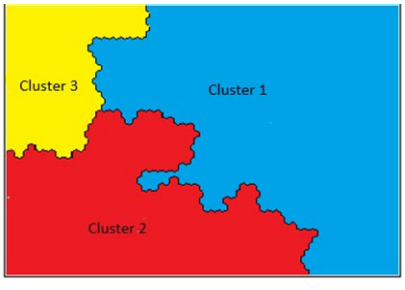
Note: The values in the diagonal of the matrix represent the square root of AVE and the values above the diagonal represent the HTMT values.

Before performing segmentation, we analysed the reliability and validity of the scales. The reliability and consistency of the constructs were measured with Cronbach's alpha, composite reliability (CR), and the average variance extracted (AVE). The lowest acceptable value for Cronbach's alpha and CR is 0.70 while this value for AVE is 0.50 (Fornell and Larcker, 1981). Table 1 shows that, in our study, the Cronbach's alpha and CR of each variable were more than the 0.7 benchmark (Nunnally, 1978), and the AVE values of all variables were more than 0.50 (0.520–0.816), which indicates that the convergent validity of the instrument was acceptable. To test the construct validity, we conducted a confirmatory factor analysis. The lowest acceptable value for the factor loadings is 0.70 (Fornell and Larcker, 1981). As shown in Table 1, all the factor loadings of this study were greater than 0.70. The discriminant validity was assessed by Fornell-Larcker and HTMT0.85 criterion. As shown in Table 2, discriminant validity has been established according to Fornell and Larcker (1981), because the square root of AVE (in italics) is higher than its respective inter-construct correlations. From the HTMT results, the values in Table 2 (values above the diagonal values) indicated no problems with discriminant validity according to the HTMT0.85 criteria, because no HTMT values do not violate the 0.85 thresholds (Henseler et al., 2015).

4 Results: SOM-based segmentation

In order to carry out social network segmentation, we used the SOM approach of artificial neural networks. There are many software packages available for analysing SOM models. We chose Viscovery SOMine, version 5.2.2. 5. To determine the network dimension, we carried out several experiments with different combinations of parameters to obtain the most accurate output mode for the final network based on the average quantisation error and the SOM-Ward cluster indicator. The best segmentation was obtained among 2,000 neurons in the output layer (41 × 49) after 43 replications. SOMine software automatically selects the best dimensions for the network map based on the selected number of neurons in the output layer. The other parameter of network training is its stretch force, which allows the structure of the output maps to be displayed in greater detail. In this research, based on the opinion of experts in the field of neural networks, the value of this parameter was considered to be 0.5. To evaluate the accuracy and validity of the SOMs, the quantisation error was used, which is a value between 0 and 1, and the value closer to 0 shows more accuracy of the network (Wendel and Buttenfield, 2010). In this research, the value of the quantisation error was 0.1208. Figure 2 shows a clear division of the input pattern into three clusters.

Figure 2 SOM-Ward clusters (see online version for colours)



Each group indicates a market segment. The mean of the motivational characteristics of each cluster is presented in Table 3. Also, the demographic profile and time spent on social networks in each section are described in Table 4. The largest segment is the blue one with a frequency of 53%. Respondents in segment 1 were named active-less-motivated users because respondents in this segment had lower individual motivations, compared to those of other segments, although a large proportion of users in this segment (73%) spent 1–5 hours on social networks, which is relatively high. In this segment, the number of women was relatively higher than men (67%), most of the users were young (20 to 29 years old), with a relatively low income, single (77%), students (80%), and with master's degrees (63%). Table 3 shows that the motivations of personal growth, curiosity, and altruism acquired the highest scores among the first cluster users. The material incentives, egoism, self-image, and risk-taking achieved the lowest scores. Users in segment 2 were named very active and highly motivated users because 40% of them spent more than 5 hours a day on social networks and gained high scores in some aspects of individual motivations. The highest scores pertained to curiosity (3.86), altruism (3.74), personal growth (3.66), self-enhancement (3.63), and individuation (3.50). In contrast, the weakest motivations in this group were material incentives, innovativeness, and risk-taking. Finally, the smallest segment was the yellow one, which was formed by 15% of the social network users who were mostly male (86%). People in this segment were called inactive-but-motivated users since 72% of them spent only 1 to 3 hours a day on social networks and gained high scores in some aspects of individual motivations. The most active users of this segment were people aged between 30 and 39 (64%). Also, most of these members were married (83%), working in public (55%), or private sectors (40%), with relatively higher income (72%), and postgraduate degrees (72%). The individual motivations affecting the third segment of users were curiosity (3.80), personal growth (3.70), altruism (3.63), self-enhancement (3.56), and individuation (3.54). It should be noted that achievement as a motivation had a greater effect (3.26) on the third segment of respondents than on the other two. The feature map depicted in Figure 3 shows the distribution of values of the respective input components over the maps for every cluster and for all input attributes. The feature maps allow us to see each variable's variance in relation to other clusters and variables and help to compare the characteristics of each cluster exactly. The name of each variable is shown at the top of each map, and the colour spectrum at the bottom of the component window shows that the blue, green, and red colours are used to manifest small, middle and large amounts, respectively. Given the feature maps, we note, for example, that the lowest scores belonged to material incentives, innovativeness, achievement, egoism, and venting negative feelings (dark blue dots), which were more common among the users of the first cluster. In contrast, the strongest individual motivations (red dots) were curiosity, personal growth, and altruism, which were more prevalent among the second and third clusters' users. When the SOM produces visual images of each cluster, not only the mean of each cluster but also other aspects, such as the variables which make the cluster different from others, are calculated. Figure 4 presents a variable-wise importance analysis of each feature within each cluster. This ranking of individual motivations within and between the clusters is more valuable to the policy-makers of social networks. In summary, in contrast to material incentives and innovativeness, which were the faintest individual motivations in all of the segments, curiosity and personal growth were the most powerful forces in using social networks.

Table 3 SOM cluster results

	Cluster 1	*Cluster 2*	*Cluster 3*
Freq. (%)	*0.53*	*0.32*	*0.15*
Personal growth	3.84	3.66	3.70
Individuation	2.83	3.5	3.54
Self-enhancement	2.80	3.63	3.56
Altruism	3.15	3.74	3.63
Self-reliance	2.98	3.15	3.02
Risk-taking	2.57	2.94	2.77
Mental involvement	2.63	3.42	3.17
Innovativeness	1.94	2.60	2.65
Venting negative feelings	2.41	3.09	3.15
Achievement	2.35	3.17	3.26
Image-building	2.57	3.44	3.31
Egoism/narcissism	2.27	3.19	3.17
Economic incentives	1.90	2.56	2.56
Curiosity	3.45	3.86	3.80
Mean values	*2.69*	*3.28*	*3.23*

Figure 3 Feature maps of individual motivations (see online version for colours)

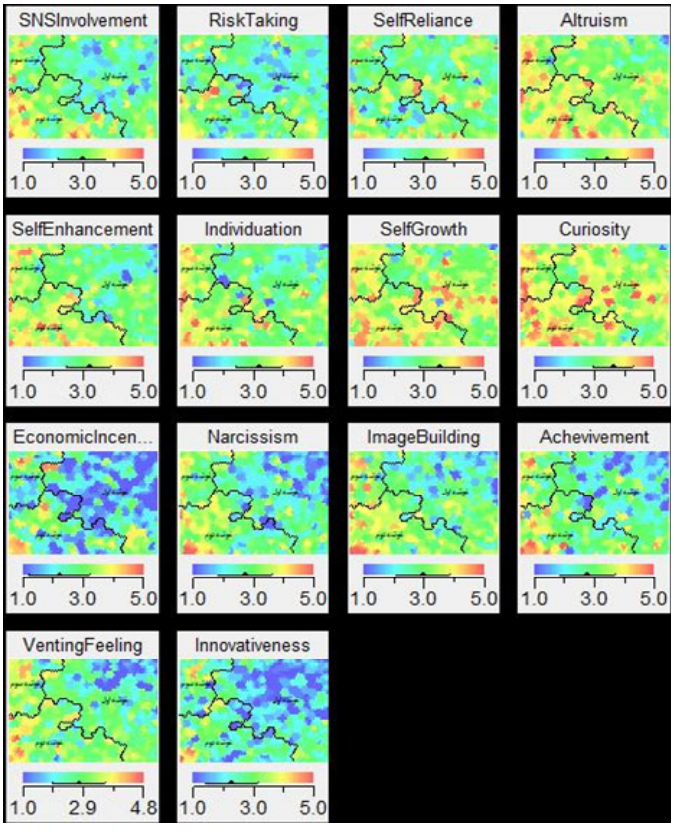
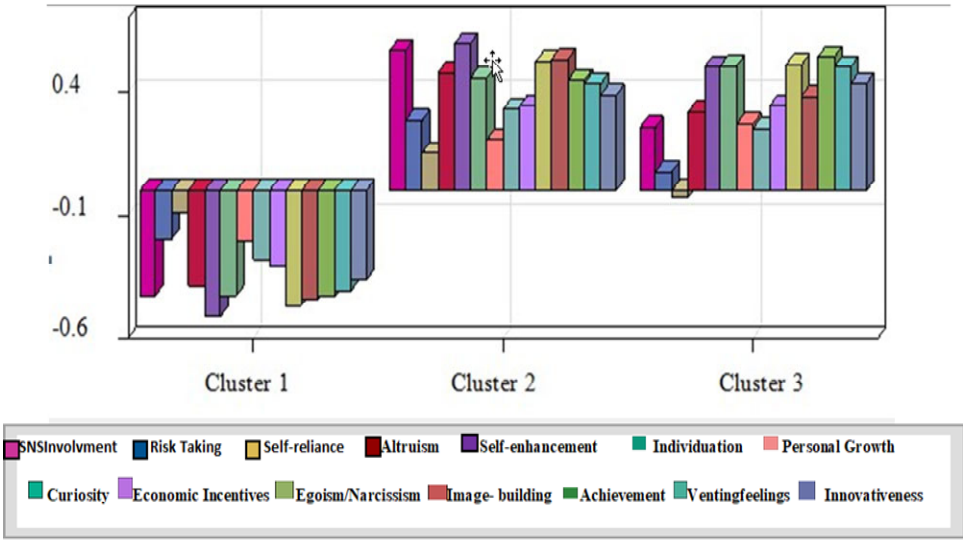


Table 4 Demographic information statistics

Variable	*Type*	*Cluster 1*	*Cluster 2*	*Cluster 3*
Gender	Women	67%	65%	14%
	Men	33%	35%	86%
Age	Under 20	32%	26%	0
	Between 20 and 29	63%	74%	17%
	Between 30 and 39	3%	0%	64%
	Between 40 and 49	1%	0%	12%
	Over 50 years	1%	0%	7%
Income (10 million Rials)	Less than 5	76%	85%	2%
	Between 5 and 7	10%	10%	0
	7 to 10	10%	4%	26%
	More than 10	4%	2%	72%
Marital status	Single	77%	90%	17%
	Married	23%	10%	83%
Education	Diploma and lower	12%	13%	0
	Associate Degree	9%	12%	2%
	Bachelor	63%	61%	26%
	Master's degree and higher	16%	15%	72%
Time spent	Less than 1 hour	12%	2%	31%
	From 1 to 3 hours	36%	31%	41%
	From 3 to 5 hours	37%	27%	21%
	More than 5 hours	15%	40%	7%

Figure 4 Individual motivations in each segment (see online version for colours)



5 Discussion and managerial implications

In this paper, we try to improve the current understanding of how consumers are segmented on social networks based on individual motivations for engagement in eWOM. Therefore, first, these motivations were identified by reviewing previous research, and then, various consumer segments were distinguished using SOMs. The research findings uncovered three segments of consumers who were reasonably distinct and different in terms of individual motivations as well as demographic and behavioural characteristics. We found that people in the two segments were highly motivated to engage in eWOM communication, but they are not the same in terms of how much time they spend on social networks. In this section, we suggest specific strategies for targeting particular social network segments and practical methods to the owners of online businesses and eWOM communication advertising activists of social networks in accordance with each identified segment. This finding is in line with the study of Nasir et al. (2021), which suggest that social network users are segmented into three clusters namely: 'susceptible', 'dispassionate', and 'impervious', based on Perceptions about social media advertising, perceived relevance, performance expectancy, hedonic motivation, informativeness, and interactiveness. Also, this result supports Moliner-Velázquez et al. (2021), which demonstrated that hotel customer according to online word-of-mouth segmented into three groups. It should be noted that due to the lack of similar studies in this field, the findings of the closest previous research have been compared.

5.1 Strategies for targeting the first segment

This segment can attract marketers' attention due to its large size. Also, these users spend a relatively large amount of time on social networks but are less affected by individual motivations. In other words, individual motivations are relatively low in this segment. The profile of this segment is somewhat similar to the passive segment in the study conducted by Campbell et al. (2014), and the 'dispassionate' segment with a moderate level of perception which has been identified by Nasir et al. (2021). Due to its relatively larger size, it is recommended that marketers should try to influence them and strengthen their incentives to engage in eWOM on social networks. Several suggestions regarding its most important motivations are offered below.

5.2 Personal growth

Personal growth is a strong individual motivation in this segment, which can be attributed to the young students of its members. Students, compared to other groups, are expected to have more incentives to develop and change their personal lives. Also, being young may elevate their energy to realise this motive. Jones (2002) reported that young students had higher average scores of personal growth compared to midlife adults because this group is at a time of inherent consciousness. Therefore they may engage in electronic content forwarding due to their career growth.

Schutz (1996) links the motivation of personal growth to the control concept. Personal growth, a dimension of the control concept, refers to the need to control where life flows. Ho and Dempsey (2010) also state that the desire to develop knowledge and expertise stimulates these individuals to share information both to affect others' attitudes

and behaviour and to achieve personal growth. Thus, the desire for personal growth makes those who are specialists in one field (known as opinion-leaders) share their information about a particular product. These people may seek out the most up-to-date product information in order to influence others' attitudes and behaviour. Therefore, marketers are advised to target this segment of users, which can be called opinion-leaders and which community members consider as the reference for information about products, and to submit the complete product information to them. Second, they can select these individuals as brand representatives or micro marketers in order to attract others' attention to buy the products through a one-to-one marketing strategy on social networks and to encourage them to share this information with their friends and acquaintances.

5.3 Strategies for targeting the second segment

There are perceptible differences between the first and second segments, including the high effect of individual motivations on the users of the latter one. Of the three identified segments, the users of the second one had the highest individual motivations to participate in eWOM communication. The first and second segments were almost similar in terms of the effect of individual motivations; for example, personal growth was dominant in both segments. However, the important difference between these two segments was the greater effect of individual motivations on the second segment and the fact that the users of this segment were more likely to be affected by individual motivations. This segment was relatively similar to the talker and active segments in the study conducted by Campbell et al. (2014) and the 'susceptible' segment of Nasir et al. (2021) study. Therefore, marketers should consider this segment as a motivating force in establishing connections and encourage them to establish eWOM communication. Several suggestions regarding its prominent motivations are presented below.

5.4 Curiosity

Curiosity is defined as the desire to know and learn. Those with relatively solid curiosity are highly inclined to use online content. Studies have shown that these individuals may greatly attend to new and challenging stimuli. The use of online content will positively contribute to information sharing on social networks (Ho and Dempsey, 2010). Therefore, the users of this segment may have a greater desire to know about the activities of other social network members. To meet this need, they visit their network profiles and read their uploaded content and opinions. Even some social networks (such as Instagram) allow all their users to track other members. These facts reflect the need and motivation of social network users for fulfilling their sense of curiosity and learning from others' experiences and behaviour. Hence, by creating very attractive content about products, marketers can encourage users' engagement in eWOM communication. In order to attract users' attention and target their curiosity, various tools and mechanisms can be used. First, specific interests and behaviour of the users of this segment should be known, which is possible through accessing their profiles and observing their major activities on social networks. If the brand is equipped with an online social platform, this will allow the marketers to more easily obtain information about their own consumers. Second, after recognising their interests, the marketers can design interesting links and send them in different ways, each with its own specific effect. Sending a text message containing the link is a useful way. Alternatively, this link can be sent along with an

attractive title through notifications of various social applications such as online news agencies, or social channels such as Telegram and WhatsApp. Third, creating short and attractive hashtags associated with the brand or products, tying them to various topics, and publishing them immediately and extensively on social networks may be good strategies. Fourth, highlighting the brand name in multimedia messages on social networks helps attract the users' attention (Instagram has this capability: in the search part of this application, it is possible to see all images and videos with the most users' likes and views). Fifth, using data mining mechanisms to identify photos and films with the most likes, individuals with the most contacts, the most used hashtags and producing content according to their favorite activities may aid the marketers.

5.5 Altruism

Altruism is one of the dominant individual motivations that stimulate engagement in eWOM communication and has been confirmed in many studies. The ultimate goal of this motivation is to improve personal or group welfare (Cheung and Lee, 2012). Those with this motivation tend to share their knowledge with online consumers voluntarily and without any direct/indirect rewards. For example, they may do this only because some consumers need this information. Therefore, it is suggested that marketers and online business owners create a mechanism through which consumers who purchase products online enter their opinions and share them with others to let them use their opinions in their purchasing decisions. One of these mechanisms is consumer online review systems that enable customers to post their comments and experiences after buying and using products. In addition, marketers can share the product information on social networks and ask users to express their opinions about them. An online rating system is another mechanism that will be effective if combined with a consumer online review system. In this system, consumers give a score to a product after using it, and the product will be starred according to its consumers' evaluation. These mechanisms give valuable information and insights to other consumers who intend to buy the products. In fact, the consumer online review and online rating systems help consumers to have a better and more satisfying purchases. These important functions are the main purpose of altruism. Another suggestion for brands to target these users' motives is to design and create their own social networks and perform special various humanitarian, eco-friendly, or other activities related to social marketing topics that aim to improve the community welfare. They can also encourage other users to do the same activities and to share the results with other users. For example, Asan Pardakht Company, an active e-commerce company in Iran, has devoted an important part of its application (designed as a social network) to promoting community engagement in charity and financial assistance for needy people, such as special patients, prisoners, and the poor. Launching social campaigns for charity work at times of crisis enables companies to show responsibility towards the community. Surely, if consumers trust companies, they will also feel sympathy for the community and will not hesitate to share information about such activities of the company.

5.6 Self-enhancement

Self-enhancement is one of the motivations that result in word-of-mouth messages (Alexandrov et al., 2013). As noted above, self-enhancement involves sharing positive experiences with others to show oneself as a smart buyer. Those with this motivation

desire to portray themselves as a specialists and authoritative sources of information and like to achieve others' approval.

Thus, if a purchased product fulfils consumers' expectations and supports their self-image, self-enhancement will be activated. Therefore, they tend to show themselves as specialists and sources of information and expect others to consult with them since they consider themselves as opinion-leaders. Hence, they are excited to provide others with product information. Accordingly, marketers are advised to perform campaigns to address these users' motivations. These campaigns may have a message like this: talk to others about your choice; your positive experience shows your expertise and power of recognition.

5.7 Individuation

This motivation was strong in the second segment users, compared to those of the first one. Sharing information about oneself and things one likes or dislikes is a sign of distinction. On social networks, users regularly comment on others' posts, product advertisements, and so on. Therefore, a strong need for individuation or differentiation may positively affect word-of-mouth behaviour, including commenting and sharing opinions on social networks. Those who seek others' opinions strongly desire distinction. Consumers' tendency to make individuation occurs when they feel different from others. Therefore, marketers should provide these users with opportunities on social networks to encourage them to meet their individuation by commenting on products and sharing product information such as advertisements, promotions, purchases, and their unique moments and events. Launching campaigns that allow such consumers to make content about the moment of using the product or brand, or to produce content and share it on the brand page to get rewards for the best-selected photos and videos by other users is a reasonable way to benefit from the users with a high individuation motivation.

5.8 Strategies for targeting the third segment

The most important feature of this segment was that they spent less time on social networks due to being employed and older. Although members of this segment had various individual incentives for participating in eWOM communication, their activity on social networks were limited. This segment was relatively similar to the hesitant segment in the study conducted by Campbell et al. (2014) and the 'impervious' segment in the study conducted by Nasir et al. (2021). Thus, marketers should pay attention and encourage these limited activities and encourage the users of this segment to visit the social network pages of their brands or products. Providing the website address or social network channel at the time of purchasing a brand or company product and talking about the benefits of joining them are useful ways of encouraging the members of this segment. In addition, marketers can identify these people's interests and produce appropriate content for them. Since achievement and venting negative feelings acquired the highest scores in this segment, the following strategies are suggested.

5.9 Achievement

These users search for information on social networks to find solutions for shared problems with the aim of becoming opinion leaders. For this reason, they engage in

commenting and sharing information. Therefore, in order to stimulate their achievement motivation, it is advisable to provide them with solutions related to products or services to allow them to share the solutions and solve others' problems.

5.10 Venting negative feelings

If users with this motivation face an undesirable experience, they are more likely to engage in spreading unpleasant word-of-mouth messages against brands and companies to vent their negative feelings. Therefore, marketers should be careful to make a positive experience for these users, especially on the first purchase. Otherwise, they have the highest potential to harm brands and products.

6 Limitations, future research and contribution

This research faced a few limitations. First, this study focused on the segmentation of social network users regardless of the type of customer engagement behaviour in e-WOM communication, such as liking, tagging, commenting, receiving comments, and sharing comments. Future research may extend this study by segmenting users of social media by considering their different engagement behaviour in eWOM communication. Second, in this study, the three social network websites and platforms were considered together, and the difference between the platforms in terms of engagement behaviour was not investigated. It is possible that different platforms could produce various engagement behaviour and segments based on the motivations of the consumers. Future research can consider the type of eWOM platforms for segmentation and focus on one platform such as Facebook, Twitter, or Instagram for segmenting users based on individual motivations for engagement in eWOM. A comparative study between social network websites can be worthwhile from theoretical and managerial points of view. Finally, this study was geographically constrained to Iranian users; consumers can be different in other parts of the world as a result of differences in their cultures. It would be interesting to see whether the above findings could be replicated in research carried out in different countries and cultures. Also, future research could further develop this study by focusing on negative word-of-mouth messages.

This paper was intended to contribute insights into the understanding of how consumers are segmented based on individual motivations of engagement, and demographic and behavioural features. This is the first study to provide insights into how companies should communicate with consumers on social networks and what individual motivations should be taken into consideration to engage consumers in eWOM. The use of SOMs is a novel way to segment social network users based on individual motivations for engagement in eWOM communication. SOMs produce some effective and compelling visuals for this purpose. Since this study investigated consumers' motivations for engagement behaviour from a social media perspective and with a segmentation approach, it could provide potential contributions to the wider fields of social media engagement and interactive marketing.

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