The effect of social media influencers' on teenagers Behavior: an empirical study using cognitive map technique

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Abstract

The increase in the use of social media in recent years has enabled users to obtain vast amounts of information from different sources. Unprecedented technological developments are currently enabling social media influencers to build powerful interactivity with their followers. These interactions have, in one way or another, influenced young people's behaviors, attitudes, and choices. Thus, this study contributes to the psychological literature by proposing a new approach for constructing collective cognitive maps to explain the effect of social media influencers' distinctive features on teenagers' behavior. More in depth, this work is an attempt to use cognitive methods to identify adolescents' mental models in the Tunisian context. The findings reveal that the influencers' distinctive features are interconnected. As a result, the influencer's distinctive features are confirmed in one way or another, to the teenagers' behavior. These findings provide important insights and recommendations for different users, including psychologists and academics.

Keywords Social media influencers · Teenagers' behavior · Cognitive approach · Tunisia

Introduction

The number of social media users has increased rapidly in the last few years. According to the global 'State of Digital' report (2021), the number of social media users reached 4.20 billion, which represents 53% of the world's total population. This number has risen by more than 13% compared to the last year (2020). In Tunisia, until January 2021 the number of social media users has increased to 8.20 million, which represents 69 percent of the total population, while 97%, are accessed via mobile phones. According to the ALEXA report (2021), Google.com, Facebook are the most used networks by Tunisian people. Most importantly, 18, 5% of Facebook users are under 13 years old.

In fact, the emphasis on social media has created a consensus among tech companies, leading to the creation of more platforms. Today, the diversity of such platforms has created a new horizon of social media in terms of usage and ideas.

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Many people whose careers' are largely reliant on social media are known as "influencers". More than a profession, for some people, it is even considered as a way of life. Influencers use social media every day to express their opinions and critiques on many topics (like lifestyle, health, beauty) and objects (e.g. brands, services, and products). Accordingly, one of the most important marketing strategies in the market is relying on influencers, which has known as influencer marketing (Audrezet et al., 2020; Boerman, 2020; Lou & Yuan, 2019). In 2017, influencer marketing was considered as the most widespread and trendiest' communication strategy used by the companies. Therefore, influencers have been considered by many marketing experts as opinion leaders because of their important role in persuading and influencing their followers (De Veirman et al., 2017). According to the two-step flow of communication theory, the influencer, as a representative of an organization, is inviting to filter, decode and create messages to match with his particular follower base (Lazarsfeld et al., 1944). An influencer is a mediator between consumers and organizations. According to Tarsakoo and Charoensukmongkol (2019), social media marketing implementation capabilities have a positive effect on customer relationship sustainability. In line with the premise of observational learning theory, influence occurs when the consumers use precedent information

and observations shared with them gradually to extend their decision-making by evolving their beliefs, attitudes, and behaviors, (Bandura & Adams, 1977). In fact, the consumers are sizeable social networks of followers. In their turn, consumers, especially youth and adolescents, consider influencers as a source of transparency, credibility, and source of personal information from what helps the offered brands to be enlarged through the large social media network (e.g. Jin and Phua, 2014).

Social media influencers play a greater role in controlling and influencing the behavior of the consumer especially young people and teenagers (e.g. Marwick, 2015; Sokolova & Kefi, 2020). Actually, the use of Smartphone's has become an integral part of the lives of both young people and adolescents. According to Anderson (2018), 95% of teenagers aged between 13 and 17 own a Smartphone. For young people, the pre-social media era has become something of a blur. This generation has known as Generation Z where its members were born between the nineties and the 2000s. What distinguishes this generation is its extensive use of the Internet at an early age. For them, the social media presents an important part of their social life and since then many thinkers set out to explore the effects of using social media platforms at an early age on adolescents' lives. The excessive use of social media may have an effect on teens' mental health. In fact, adolescence is the interval period between childhood and adulthood. A teenager is not a child to act arbitrarily and is not an adult to make critical decisions. Therefore, young people and teenagers have considered as the most sensitive class of consumers. Teenagers' brain creates many changes that make them more sensitive to the impressions of others, especially the view of their peers (e.g. Elkind, 1967; Dacey & Kenny, 1994; Arnett, 2000). Adolescents' mental changes cause many psychological and cognitive problems. According to Social identity theory, teens appreciate the positive reinforcement they get by being included in a group and dislike the feeling of social rejection (Tajfel, 1972). To reinforce their sense of belonging, teens are following influencers on social media (e.g., Loureiro & Sarmento, 2019). In line with psychological theories, the attachment theory helps to clarify interpersonal relationships between humans. This theory provides the framework to explain the relationship between adolescents and influencers. Several studies have confirmed that the distinctive feature of social media influencers, including relatedness, autonomy and competence affects the behavior, the psychological situation and the emotional side of the consumers (Deci & Ryan, 2000). Does the distinctive feature of social media influencers affect teens' behavior? This kind of questions have become among the most controversial ones (e.g. Djafarova & Rushworth, 2017). This problem is still inconclusive, even not addressed in some developing countries like Tunisia. Indeed, it is clear that there are considerable gaps in terms of the academic understanding of what characteristics of social media influencers and their effect on teen behaviors. This problem still arises because the lack of empirical works is investigating in this area.

Therefore, this study contributes to the literature by different ways. First, this paper presents a review of the social media influencers' distinctive features in Tunisian context. This is important because social influencers have been considered as credible and trustworthy sources of information (e.g. Sokolova & Kefi, 2020). On the others hand, this study identifies the motivations that teens have for following social influencers. MICS6 Survey (2020) shows a gradual increase in suicide rates among Tunisian children (0–19 years). According to the general delegate for child protection, the phenomenon is in part linked to the intensive use of online games. Understanding the main drivers of social media influence among young Tunisians can help professionals and families guide them. Empirically, this study provides the first investigation of teens' mental models using the cognitive approach.

The rest of this paper is organized as the following: The second part presents the theoretical background and research hypotheses. The third part introduces the research methodology. The forth part is reserved to application and results. In the last part, both the conclusion and recommendations are highlighted.

Theoretical background and research hypotheses

Social media influencers' distinctive features

"Informational social influence" is a concept that has been used in literature by Deutsch & Gerard, 1955), and defined as the change in behavior or opinions that happened when people (consumers) are conformed to other people (influencers) because they believe that they have precise and true information (e.g. Djafarova & Rushworth, 2017, Alotaibi et al., 2019). According to (Chahal, 2016), there are two kinds of "influencers". The classic ones are the scientists, reporters, lawyers, and all others examples of people who have expert-level knowledge and the new ones are the Social media influencers. Accordingly, social media influencers have many followers that trust them especially on the topics related to their domain of knowledge (e.g. Moore et al., 2018). According to the Psychology of Influence perspective, people, often, do not realize that they are influenced because the effect occurs mainly in their subconscious (Pligt & Vliek, 2016). When influencers advocate an idea, a service, or a product, they can make a psychological conformity effect on followers through their distinctive features (Colliander, 2019; Jahoda, 1959).

Vollenbroek et al. (2014) investigated a study about social media influencers and the impact of these actors on the corporate reputation. To create their model, the authors use the Delphi method. The experts have exposed to a questionnaire that included the characteristics of influential actors, interactions, and networks. The first round of research indicates that a bulk of experts has highlighted the importance of intrinsic characteristics of influencers such as knowledge, commitment, and trust etcetera. While others believe that, the size of the network or the reach of a message determines the influence. The results of the second round indicate that the most agreed-upon distinctive characteristics to be a great influencer are being an active mind, being credible, having expertise, being authoritative, being a trendsetter, and having a substantive influence in discussions and conversations. According to previous literature, among the characteristics that distinguish the influencers is the ability to be creative, original, and unique. Recently, Casaló et al. (2020) indicated that originality and uniqueness positively influence opinion leadership on Instagram. For the rest of this section, we are going to base on the last two studies to draw on the most important distinctive features of social media influencers.

Credibility (expertise and trustworthiness)

According to Lou and Yuan (2019), one of the most distinctive characteristics that attract the audience is the influencer's credibility specifically the expertise and trustworthiness. In fact, source credibility is a good way of persuasion because it has related to many conceptualizations. Following Hovland et al. (1953), credibility has subdivided into expertise and trustworthiness. The expertise has reflected the knowledge and competence of the source (influencer) in a specific area (Ki & Kim, 2019; McCroskey, 1966). While trustworthiness is represented in influencer honesty and sincerity (Giffin, 1967). Such characteristics help the source (influencer) to be more convincing. According to the source credibility theory, consumers (social media audience) give more importance to the source of information to take advantage of the expertise and knowledge of influencers (e.g. Ohanian, 1990; Teng et al., 2014). Spry et al., (2011) pointed out that a trusted influencer's positive perception of a product and/or service positively affects consumers' attitudes towards recommended brandsHowever, if the product does not meet the required specifications, consumers lose trust in the product and the influencer (Cheung et al., 2009). Based on source credibility theory, this work tested one of the research goals: the effect of expertise and credibility on adolescent behavior.

Originality and creativity

Originality in social media represents the ability of an influencer to provide periodically new and differentiate content that attracts the attention of the audience. The content has perceived as innovative, sophisticated, and unusual. Social media influencers look for creating an authentic image in order to construct their own online identity. Marwick (2013) defined authenticity as "the way in which individuals distinguish themselves, not only from each other but from other types of media". Most of the time, an authentic and different content attracts attention, and sometimes the unusual topics make surprising (Derbaix & Vanhamme, 2003). According to Khamis et al. (2017), social media influencers attract the consumers' attention by posting authentic content. In fact, the audience often appreciates the originality and the creativity of the ideas (Djafarova & Rushworth, 2017). The originality of the content posted by an influencer has considered as a way to resonate with their public (Hashoff, 2017). When a company seeks to promote its products and services through social media, it is looking for an influential representative who excels at presenting original and different content. The brand needs to be presented by credible and believable influencers that create authentic content (Sireni, 2020). One of the aims of this work is to identify the effect of the authentic content on teen's behaviors.

Trendsetter and uniqueness

According to Maslach et al. (1985), uniqueness is the case in which the individual feels distinguished compared to others. Tian et al. (2001) admitted that individuals attempt to be radically different from others to enhance their selves and social images. The uniqueness in content represents the ability of the influencer to provide an uncirculated content specific to him. Gentina et al. (2014) proved that male adolescents take into account the uniqueness of the content when they evaluated the influencer role particularly in evaluating the role of an opinion leader. Casaló et al. (2020) indicated that uniqueness positively influences the leadership opinion. Thus, the uniqueness of influencers' contents may affect audiences' attitude. Therefore, we aim to test the effect of the influencers' contents uniqueness and trendsetter on teenagers' behaviors.

Persuasion

Persuasion has a substantive influence in discussions and conversations. According to the Psychology of Persuasion, the psychological tactic that revolves around harnessing the principles of persuasion supports in one way or another the influencer's marketing. The objective is to persuade people to make purchase decisions. Persuasion aims commonly to

change others attitudes and behavior in a context of relative freedom (e.g. Perloff, 2008; Crano & Prislin, 2011; Shen & Bigsb, 2013). According to Scheer and Stern (1992), the dynamic effect of marketing occurs when an influencer persuades consumers to participate in a specific business. Influencers' goal is to convince the audiences of their own ideas, products, or services. There are six principles of persuasion, which are consensus, consistency, scarcity, reciprocity, authority, and liking. Thus, among the objectives of this study is to set the effect of influencers' persuasion on teens' behavior.

To sum up, our hypothesis is as the following:

H1: Social media influencers' distinctive features affect teenagers' behavior.

Social media influencers' and teenagers' behavior

Young people and adolescents are increasingly using social media, consequently, they receive a lot of information from different sources that may influence in one way or another their behavior and decisions. Accordingly, the Digital report (2021) (published in partnership with Hootsuite and we Are Social) indicated that connected technologies became an integral part of people's lives, and it has seen great development in the last twelve months especially with regard to social media, e-commerce, video games, and streaming content. According to the statistics raised in the global State of Digital (2021), the number of social media users has increased by 490 million users around the world compared to last year to attain 4.20 billion. In Tunisia, until January 2021 the number of social media users has increased to attain 8.20 million, which represents 69 percent of the total population while 97% accessing via mobile phone. According to the ALEXA report (2021), Google.com, Facebook and YouTube are the networks most used by Tunisian people. In addition, 18, 5% of Facebook users are under 13 years old.The use of social media by young people has recently increased, which led us to ask about the influence of such an alternative on their psychological and mental conditions, their identity formation, and their self-estimation. One of this study aims is also to answer the question: why teens follow Social media influencers?

Identity formation

Identity formation relates to the complex way in which human beings institute a continued unique view of the self (Erikson, 1950). Consequently, this concept has largely attached to terms like self-concept, personality development, and value. Identity, in a simplified way, is an aggregation of the "self-concept, who we are" and "self-awareness" (Aronson et al., 2005). In line with communication theory, Scott (1987) indicated that interpersonal connection is a key factor in identity formation. Most importantly, the individual's identity formation is the cornerstone of building a personality. A stream of research indicates that consumers accept influence from others they identify with and refuse influence when they desire to disconnect (Berger & Heath, 2007; White & Dahl, 2006).

Adolescence is a transitional stage in individuals' lives that represents the interval between childhood and adulthood (e.g. Hogan & Astone, 1986; Sawyer et al., 2018). From here begins teens' psychological conflicts that call into question-related to themselves and about their role in society (e.g. Hill et al., 2018). In fact, teens go through many experiences because of the physical and psychological changes during the self-establishment phase, which influences not only their identity formation but also their own personality. At this stage, radical changes occur in their lives, which may affect the course of their future life. The family (precisely parents' behaviors) represents the first influencer on their kids' view of themselves, but this is not the main side. In the era of globalization and technological development, social media has become an important role in shaping the identity of adolescents (see Gajaria et al., 2011). In the adolescent stage, individuals start to use the flood of information received from various sources (especially from social media) to find out a sense of self and personal identity. Davis (2013) affirmed that students who communicated online with their peers express better visibility of self-concept. In its turn, self-concept visibility has related to friendship quality. According to Arnett and Hughes (2014), identity formation is the result of "thinking about the type of person you want to be" (p. 340). Due to the intense appearance of social media in the lives of teenagers, identity formation is highly affected by social media influencers' personalities. Kunkel et al. (2004) affirmed that targeted advertisements in social media affect the identity molding of teens by encouraging them to espouse new habits of appearance and consumption. Identification is easier when there is a previous model to mimic.

This work aims to explore the effect of social media influencers' distinctive features on the healthy identity development of teens.

Mimetic bias

Investigating mimicry in the psychological literature is not a recent subject. Kendon (1970) and LaFrance (1982) were the first researchers that introduce the mimicry concept in literature. Nevertheless, exploring mimicry effect on peoples' behavior presents a new area of research. Many researchers like Chartrand and Dalton (2009) and Stel & Vonk (2010) presented mimicry as the interaction of an individual with others through observing and

mirroring their behaviors, attitudes, expressions, and postures. Chartrand and Dalton (2009) indicated that social surroundings are easily contagious and confirmed the high ability of individuals to mimic what they see in their social environment. Individuals resort to mimicry to fulfill their desire to belong to a group and be active members of society. Therefore, Lakin et al. (2003) affirmed that mimicry could be used to enhance social links with others. Such behavior aims to bring people closer to each other and create intimacy. White and Argo (2011) classified mimicry as conscious and unconscious. According to the Neuroscience literature, unconscious mimicry occurs due to the activation of individual mirror neurons that lead to mimic others (e.g. Hatfield et al., 1994). Thus, mimickers "automatically" imitate others in many situations like facial expressions (e.g., smiling), behavioral expressions (e.g., laughing), and postural expressions (e.g., hand positioning) (Meltzoff & Moore, 1983; LaFrance & Broadbent, 1976; Simner, 1971). On the other hand, a recent stream of research has advocated conscious mimicry (White & Argo, 2011; Ruvio et al., 2013). Ruvio et al. (2013) have presented the "Consumer's Doppelganger Effect" theory. According to the authors, when consumers have the intention to look like their role models, they imitate them.

One of the paradoxical challenges in the adolescence period is the teens' simultaneous need for "mimic" and "differentiation ".Among the most common questions asked between adolescents is "Who we are?". The identification of themselves based commonly on a comparison between them and members of the group to which they aim to belong. The feeling of being normal is an obsession that haunts the majority of teenagers. Their sense of being within the norm and not being alienated or disagreed with others prompts teenagers to do anything even if this poses a danger to them just to be accepted by others. Today, with the development of social media, family, peers and friends are no longer the only influencers that teens mimic, but this environment has expanded to include social media influencers. Teens give more attention to their online image and mimic social media influencers to achieve a sense of belonging. According to Cabourg and Manenti (2017), the content shared by adolescents with each other about their lives on their own social networks helps them understand and discover each other, and create their identity away from their parents. This phenomenon turns into a problem when adolescents mimic each other only not to be excluded or rejected, even if these actions do not represent them.

Another important aim of this study is to explore the effect of social media influencers' distinctive features on teen's mimicry behavior.

Confirmation bias

Cabourg and Manenti (2017) pointed out that it is a necessity for a teenager to be a part of a peer group. Belonging to the group for a teenager reinforces his/her sense of existence away from family restrictions. As we have mentioned before and in line with Hernandez et al. (2014), teens need to create peer relationships, whether to contribute positively or negatively to their psychosocial side and undoubtedly play a crucial role in the development of identity. Araman and Brambilla (2016) argued that: "Teenage is an important stage in life, full of physical and psychological transformation, awakening in love and professional concerns. Identifying yourself with a group makes you feel stronger, to say that you exist, and even to distinguish yourself from society". The development of social media platforms promotes the desire of teens to a group belonging. Social media platforms, such as tick-tock, Facebook, and Instagram, motivate their users to interact with likes and comments on others people's posts. In fact, according to Davis (2012), casual communication between teens through social networking using text and instant messages enhances their sense of belonging. Furthermore, the author indicates that social media helps teens to compare their ideas and experiences with their peers, which support their sense of belonging. According to Zeng et al. (2017), social media interactions aim to create strong social bonds and raise emotional belonging to a community. Confirmation bias occurs when an individual cannot think and create outside the herd. Equally important, due to the confirmation bias, teens cannot identify themselves, except by flying inside the swarm. Teens may identify themselves as fans of a famous influencer just to feel the sense of belonging. This work tests the effect of social media influencers' distinctive features on teens' sense of belonging.

Self-esteem

Psychological literature defines Self-esteem as the individual's evaluation of himself or herself that can be positive or negative (Smith et al., 2014). Coopersmith (1965) affirmed that the self-esteem is the extent to which an individual views his self as competent and worthwhile. A stream of past works highlighted the effects of social media on self-esteem (Błachnio et al., 2016; Denti et al., 2012; Gonzales & Hancock, 2011). The majority of them found that audiences with low self-esteem use more social networks' to reinforce their self-esteem. Due to technological developments, social media networks offer a self-comparison between users. According to Festinger (1954), social media users focus more on self-evaluations by making social comparisons with others concerning many issues like beauty, popularity, social classes or roles, wealth accumulation, etc. Social comparison is a part of building a teen's personal identity

(Weinstein, 2017). Among adolescents, there are two types of comparisons on social media, which are upward comparison, and downward comparison (Steers et al., 2014). The first one has related to weakened levels of self-esteem and high depressive symptoms. The second one is characterized by expanding levels of self-esteem and low levels of anxiety (Burrow & Rainone, 2017). According to Wright et al. (2018), self-presentation on social media is related to the extent to which others accept and the determined level of belonging that based on the number of likes and comments.

This study aims to test the effect of social media influencers' distinctive features on teens' self-esteem.

Digital distraction

Social media has taken over most of the spare time. It has displaced the time spent on other activities like reading, watching TV, make sports etc…. (Twenge et al., 2019). Consequently, the phenomenon of digital distraction has widely spread, especially with the rise of smartphones use. The results of a study established by Luna (2018) indicated that the use of smartphones during a meal leads to minimize the levels of connectedness and enjoyment and increase the levels of distraction comparing to those who set devices off. Martiz (2015) found that students with Internet addiction often feel lonely and depressed. Recently, Emerick et al. (2019) affirmed that the students themselves agree that spending a lot of time using social media leads to distraction. Many studies have proven that most teens spend a lot of time online (e.g., Anderson & Jiang, 2018; Twenge et al., 2018). Thus, they are the most vulnerable to digital distraction. We believe that whenever distinctive features of influencers are good, the most important impact they have on young people, leads to distraction.

At this level, our second hypothesis is as the following:

H2. The behavior and cognitive biases of teens are affected by social media influence.

Research methods

The cognitive maps

The cognitive map is relatively an old technique (Huff, 1990). However, the use of cognitive maps in scientific research has increased in recent years. According to Axelrod (1976), a cognitive map is a mathematical model that reflects a belief system of a person. In another words, a cognitive map is a representation of causal assertion way of a person on a limited area. At the beginning of the 1970s, it was intellectually popular amongst behavioral geographers to investigate the significance of cognitive maps, and their impacts

on people's spatial behavior. A cognitive map is a type of mental representation, which serves an individual to acquire, store, recall, code, and decode information about the relative locations and attributes of phenomena in their everyday or metaphorical spatial environment. It is usually defined as the graphical representation of a person belief about a particular field. A map is not a scientific model based on objective reality, but a graphical representation of an individual's specific beliefs and ideas about complex local situations and issues. It is relatively easy for humans to look at maps (cognitive maps in our case) and understand connections, between different concepts. Cognitive maps can therefore also be thought of as graphs. Graphs can be used to represent many interesting things about our world. It can also be used to solve various problems. According to Bueno & Salmeron (2009), Cognitive Maps are a powerful technique that helps to study human cognitive phenomena and specific topics in the world. This study uses cognitive maps as a tool to investigate the mental schema of teenagers in Tunisian Scouts. In fact, cognitive mapping helps to explore the impact of social media on teenage behavior in the Tunisian context. In other words, we focus on the effect of influencers' distinctive features on teen behavior.

Data collection and sample selection

The aim of this work is to explore the effect of social media influencers' distinctive features on teenagers' behavior in Tunisian context. On the other hand, this work investigates if the psychological health of teens is affected by social media influence. To analyze mentally processing multifactor-interdependencies by the human mind or a scenario with highly complex problems, we need more complex analysis methods like the cognitive map technique.

The questionnaire is one of the appropriate methods used to construct a collective cognitive map (Özesmi & Özesmi, 2004). Following Eden and Ackermann (1998), this study uses face-to-face interviews because it is the most flexible method for data collection and it is the appropriate way to minimize the questionnaire mistiness. The questionnaire contains two parts: the first part is reserved to identify the interviewees. The second part provides the list of concepts for each approach via cross-matrix. The questionnaire takes the form of an adjacency matrix (see Table 1). The data collection technique appropriate to build a cognitive map is the adjacent matrix. The adjacency matrix of a graph is an $(n \times n)$ matrix:

$$A = (a_{i}, j)$$

The variables used in the matrix can be pre-defined (by the interviewer using the previous literature) or it can be identified in the interview by the interviewees. This paper

Table 1 The adjacency matrix

	variable1	variable 2	……	variable n
variable1	0	A1,2		A1,n
variable 2	A2,1	0		A2,n
………			0	
variable n	An,1	An,2		0

Table 2 Variables definition

N°	LONG TITLE	ABBREVIATION	THEME
1	Trust	Trust	influencers' distinctive features
2	Expertise	Exp	influencers' distinctive features
3	Originality	Orig	influencers' distinctive features
4	Uniqueness	Uniqueness	influencers' distinctive features
5	Persuasion	Persuasion	influencers' distinctive features
6	Digital Distraction	Digital Di	cognitive bias
7	Identity formation	Identity f	Individual or collective bias
8	Mimetic bias	Mimetic	Individual or collective bias
9	belongingness	belong	emotional bias
10	Self-estimation	Self-estim	Cognitivebias

uses the first method to restrict the large number of variables related to both influencers' distinctive features and teenagers' behavioral biases (see Table 2). This work identified two types of social media influencers that are Facebook bloggers and Instagrammers for two reasons. Facebook is the most coveted social network for Tunisians. It has more than 6.9 million active users in 2020 or 75% of the population (+ 13 years) of which 44.9% were female users and 55.1% male. On the other hand, Instagram is the second popular social media platform. It has more than 1.9 million, namely 21% of the Tunisian population (+ 13 years).

In this work, we deal with (10 × 10) adjacency matrix.

Experts (psychologists, academics, etc.) often analyze the relationships between social media and young people's behavior. The contribution of this work is that we rely on the adolescents' point of view in order to test this problem using the cognitive maps method. To our knowledge, no similar research has been done before.

This work is in parallel to the framework of the Tunisian State project "Strengthening the partnership between the university and the economic and social environment". It aims to merge the scientific track with the association work. We have organized an intellectual symposium in conjunction with the Citizen Journalism Club of youth home and the Mohamed-Jlaiel Scouts Group of Mahres

entitled "Social Influencers and Their Role in Changing Youth Behaviors".This conference took place on April 3, 2021, in the hall of the municipality, under the supervision of an inspector of youth and childhood". In fact, Scouts is a voluntary educational movement that aims to contribute to the development of young people to reach the full benefit of their physical and social capabilities to make them responsible individuals. Scouts offer children and adolescents an educational space complementary to that of the family and the school. The association emphasizes community life, taking responsibility, and learning resourcefulness.Scouting contributes to enhancing the individual's self-confidence and sense of belonging and keeps them away from digital distraction. Therefore, our sample has based on a questionnaire answered by young people belonging to the Tunisian Scoutsaged between 14 and 17 and, who belong to the Mohamed-Jlaiel Scouts Group of Mahres. In fact, scouting strengthens the willpower of young people and allows them to expand their possibilities for self-discipline. In addition, Scout youth are integrated into the community and spend more time in physical and mental activities than their peers who spend most of their free time on social media. Unfortunately, because of the epidemiological situation that Tunisia experienced during this period due to the spread of the Coronavirus, we could not summon more than 35 people, and the first sample was limited only to 25 young people. Thus, a second study with another data collection is needed. Over two successive months (November and December 2021), we make a few small workshops (due to the pandemic situation) with scouts' young people. The second sample contains 38 teens. Therefore, our total data hold 63young people (26 female and 37 male). It should be noted that the surveys were carried out after parental consent.

We start our interviews with presenting the pros and cons of social mediaand its effect on audiences' behavior. After forming an idea with the topic, we asked young people to answer the questionnaire presented to them after we defined and explained all the variables. We have directly supervised the questionnaire. Teens are invited to fulfill the questionnaire (in the form of a matrix) using four possibilities:

– If variable i has no influence on variable j, the index (i, j) takes a value of zero
– 1 if variable I has a weak influence on variable j.
– 2 if variable I has a strong influence on variable j.
– 3 if variable I has a very strong influence on variable j.

To sumup, the final data contains 63 individual matrices. The aim of the questionnaire is then to build the perception maps (Lajnef et al., 2017).

Fig. 1 Influence-dependence chart, according to MICMAC method

Plan des influences / dépendances directes
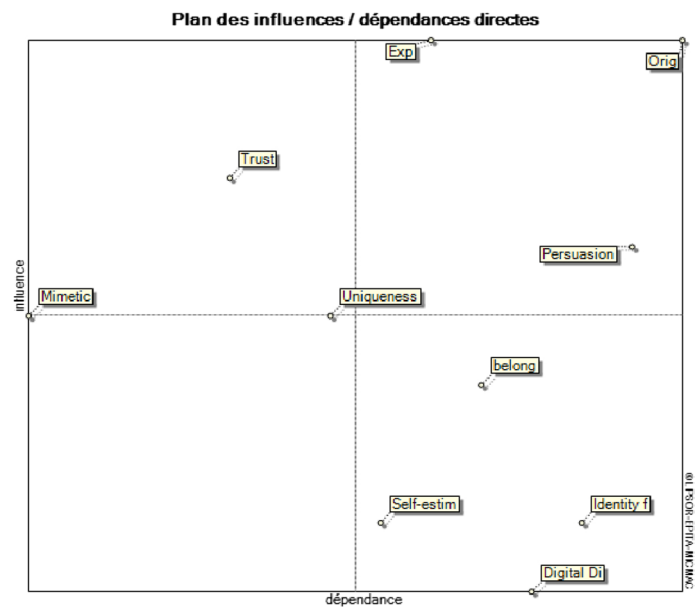
Collective cognitive map method

This work is of qualitative investigation. The research instrument used in this study is the cognitive approach. This work aims to create a collective cognitive map using an interviewing process. Young people are invited to fill the adjacency matrices by giving their opinion about the effect of social media influencers' distinctive features on teenagers' behavior. To draw up an overall view, individual maps (creating based on adjacency matrices) aggregated to create a collective cognitive map. Since individual maps denote individual thinking, collective map is used to understand the group thinking. The aggregation map aimed to show the point of similarities and differences between individuals (Lajnef et al., 2017). The cognitive map has formed essentially by two elements: concepts (variables) and links (relations between variables). The importance of a concept is mainly related to its link with other variables.

This technique helps to better understand the individual and collective cognitive universe. A cognitive map became a mathematical model that reflects a belief system of individuals since the pioneering work of Tolman (1948). Axelrod (1976) investigated the political and economic field and considered "cognitive maps" as graphs, reflecting a mental model to predict, understand and improve people's decisions. Recently, Garoui & Jarboui (2012) have defined the cognitive map as a tool aimed to view certain ideas and beliefs of an individual in a complex area. This work aims to explore a collective cognitive map to set the complex relationships between teenagers and social media influencers. For this reason, we investigate the effect of social media influencers' distinctive features on teenagers' behavior using an aggregated cognitive map.

Results and discussion

In this study, we report all measures, manipulations and exclusions.

Structural analysis and collective cognitive map

This paper uses the structural analysis method to test the relationship between the concepts and to construct a collective cognitive map. According to Godet et al. (2008), the structural analysis is "A systematic, matrix form, analysis of relations between the constituent variables of the studied system and those of its explanatory environment". The structural analysis purpose is aimed to distinguish the key factors that identify the evolution of the system based on a matrix that determines the relationships among them (Villacorta et al., 2012). To deal with our problem, Micmac software allows us to treat the collected information in the form of plans and graphs in order to configure the mental representation of interviewees.

The influence × dependence chart

This work uses the factor analysis of the influence-dependence chart in which factors have categorized due to their clustered position. The influence × dependence plan depends on four categories of factors, which are the determinants variables, the result variables the relay variables, and the

excluded variables. The chart has formed by four zones presented as the following (Fig. 1):

Zone 1: Influent or determinant variables Influent variables are located in the top left of the chart. According to Arcade et al. (1999) this category of variables represents a high influence and low dependence. These kinds of variables play and affect the dynamics of the whole system, depending on how much we can control them as key factors. The obtained results identify uniqueness, trustworthiness, and Mimetic as determinant variables. The ability of influencers' is to provide personalized and unique content that influence Tunisian teens' behavior. This finding is in line with Casaló et al. (2020) work. On the other hand, the results indicate that teens mimic social media influencers to feel their belonging. Such an act allows them to discover each other, and create their identity away from their parents (Cabourg & Manenti, 2017). The most Influential variable of the system is trustworthiness.The more trustworthiness influencers via social media are, the higher their influence on young people will be. This finding is conformed to previous studies (Giffin, 1967; Spry et al., 2011).

Zone 2: Relay variables The intermediate or relay variables are situated at the top right of the chart. These concepts have characterized by high influence and sensitivity. They are also named "stake factors" because they are unstable. Relay variables influence the system depending on the other variables. Any effect of these factors will influence themselves and other external factors to adjust the system. In this study, most of influencers' distinctive features (persuasion, originality, and expertise) play the role of relay variables. The results indicate that the influence of persuasion affects young people's convictions, depending on other variables. The results are in line with previous studies (e.g. Perloff, 2008; Shen et al., 2013). Furthermore, the findings indicate that the more expertise social media influencers' are, the higher their influence on young people will be. The study of Ki and Kim (2019) supported our findings. Additionally, the originality of the content presented on social media attracts the audience more than the standard content. The results are in line with those of Khamis et al., (2017) and Djafarova & Rushworth (2017).

Based on the results of zone 1 and zone 2, we can sum up that Social media influencers' distinctive features tested on this work affect teenagers' behavior. Therefore, H1 is accepted.

Zone 3: Excluded or autonomous variables The excluded variables are positioned in the bottom left of the chart. This category of variables is characterized by a low level of influence and dependence. Such variables have no impact on the overall dynamic changes of the system because their distribution is very close to the origin. This work did not obtain this class of variables.

Zone 4: Dependent variables The dependent variables are located at the bottom right of the chart. These variables have characterized by a low degree of influence and a high degree of dependence. These variables are less influential and highly sensitive to the rest of variables (influential and relay variables). According to our results, the dependent variables are those related to teens' behavior and cognitive biases. Social media influencers affect the identity development of teens. These findings are in line with those of Kunkel et al. (2004).The results show also that young people often identify themselves as fans of a famous influencer just to feel the belonging. These results are in line with previous studies like those of Davis (2012) and Zeng et al. (2017). Furthermore, the findings indicate that young people use more social networks' to reinforce their self-esteem. The results confirm with those of Denti et al. (2012) and Błachnio et al. (2016).Influencers via social media play a role in digital distraction. Thus, the result found by Emerick et al. (2019) supports our findings.

Based on the results of zone 3, we can sum up that the behavior and cognitive biases of teens are affected by social media influencers. Therefore, H2 is accepted.

Collective cognitive maps

During this study, we have gathered the individuals' matrices to create a collective cognitive mind map. The direct influence graph (Figs. 2 and 3) present many interesting findings. First, the high experience of influencers via social media enhances the production of original content. Furthermore, the more expertise the influencers' are, the higher their degree of persuasion on young people will be. As similar to this work, Kirmani et al. (2004) found that the influencers' experience with persuasion emerges as factors that affect customers. Beside the experience, the more an influencer provides unique and uncirculated content specific to him, the higher the originality of the content will be. Previous studies hypothesized that unique ideas are the most stringent method for producing original ideas (e.g., Wallach & Kogan, 1965; Wallach & Wing, 1969).Generally; influencers that produce different contents have a great popularity because they produce new trends. Therefore, our results indicate that young people want to be one of their fans just to feel their belonging. Furthermore, our findings indicate that the originality of content can be a source of digital distraction. Teenagers spend a lot of time on social media to keep up with new trends (e.g. Chassiakos & Stager, 2020).

Graphe des influences directes
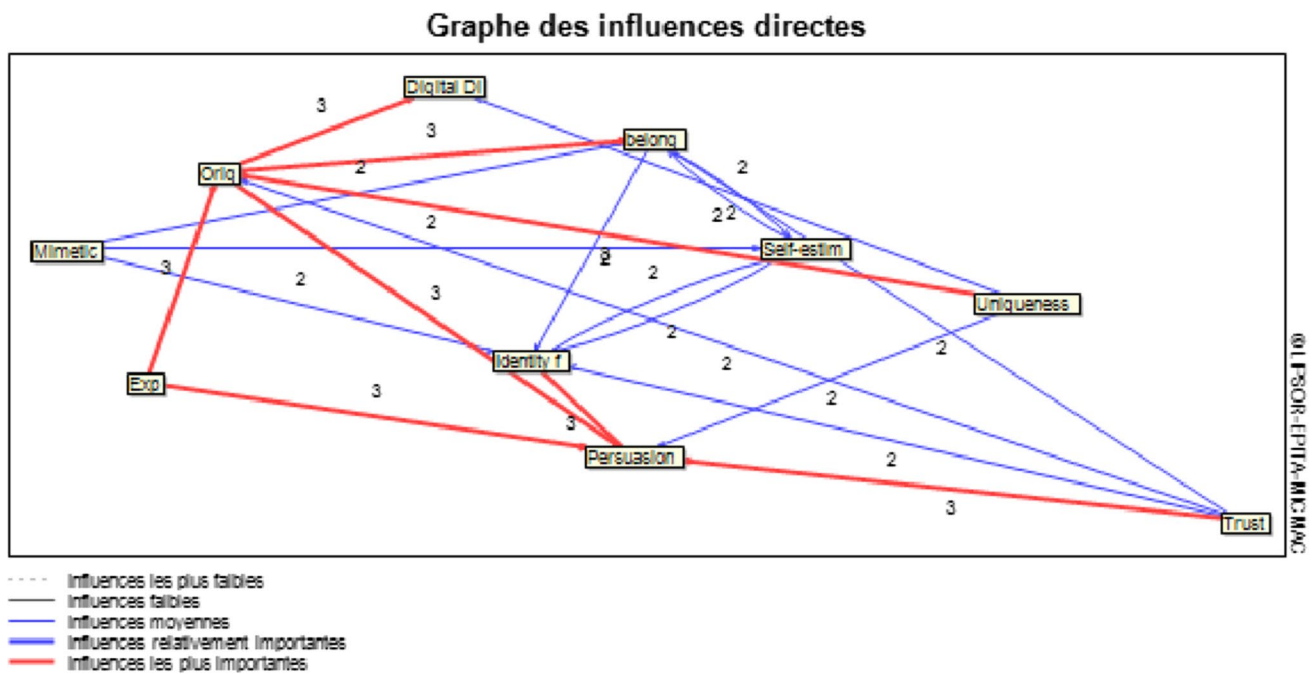
Fig. 2 The collective cognitive maps (25% of links)

The influencers' experience and their degree of trustworthiness, besides the originality of the content, enhance their abilities to persuade adolescents. During adolescence, young people look for a model to follow. According to our results, it can be a social media influencer with a great ability to persuade.

Conclusion

In recent years, the increasing use of social media has enabled users to obtain a large amount of information from different sources. This evolution has affected in one way or another audience's behavior, attitudes, and decisions, especially the young people. Therefore, this study contributes to the literature in many ways. On the first hand, this paper presents the most distinctive features of social media influencers' and tests their effect on teenagers' behavior using a non-clinical sample of young Tunisians. On the other hand, this paper identifies teens' motivations for following social media influencers. This study exercises a new methodology. In fact, it uses the cognitive approach based on structural analysis. According to Benjumea-Arias et al. (2016), the aim of structural analysis is to determine the key factors of a system by identifying their dependency or influence, thus playing a role in decreasing system complexity. The present study successfully provides a collective cognitive map for a sample of Tunisian young people. This map helps to

understand the impact of Facebook bloggers and Instagrammers on Tunisian teen behavior.

This study presents many important findings. First, the results find that influencers' distinctive features tested on this work affect teenagers' behavior. In fact, influencers with a high level of honesty and sincerity prove trustworthiness among teens. This result is in line with those of Giffin (1967). Furthermore, the influencer's ability to provide original and unique content affects the behavior of teens. These findings confirm those of Casaló et al. (2020). In addition, the ability to influence is related with the ability to persuade and expertise.

The findings related to the direct influence graph reveal that the influencers' distinctive features are interconnected. The experience, the degree of trustworthiness, and the originality of the submitted content influence the ability of an influencer to persuade among adolescents. In return, the high degree of persuasion impresses the behavior, attitudes, and decisions of teens with influences in their identity formation. The high experience and uniqueness help the influencer to make content that is more original. Young people spend more time watching original content (e.g. Chassiakos & Stager, 2020). Thus, the originality of content can be a source of digital distraction.

The rise in psychological problems among adolescents in Tunisia carries troubling risks. According to MICS6 Survey (2020), 18.7% of children aged 15–17 years suffer from anxiety, and 5.2% are depressed. The incidence of suicide among children (0–19 years old) was 2.07 cases per 100,000
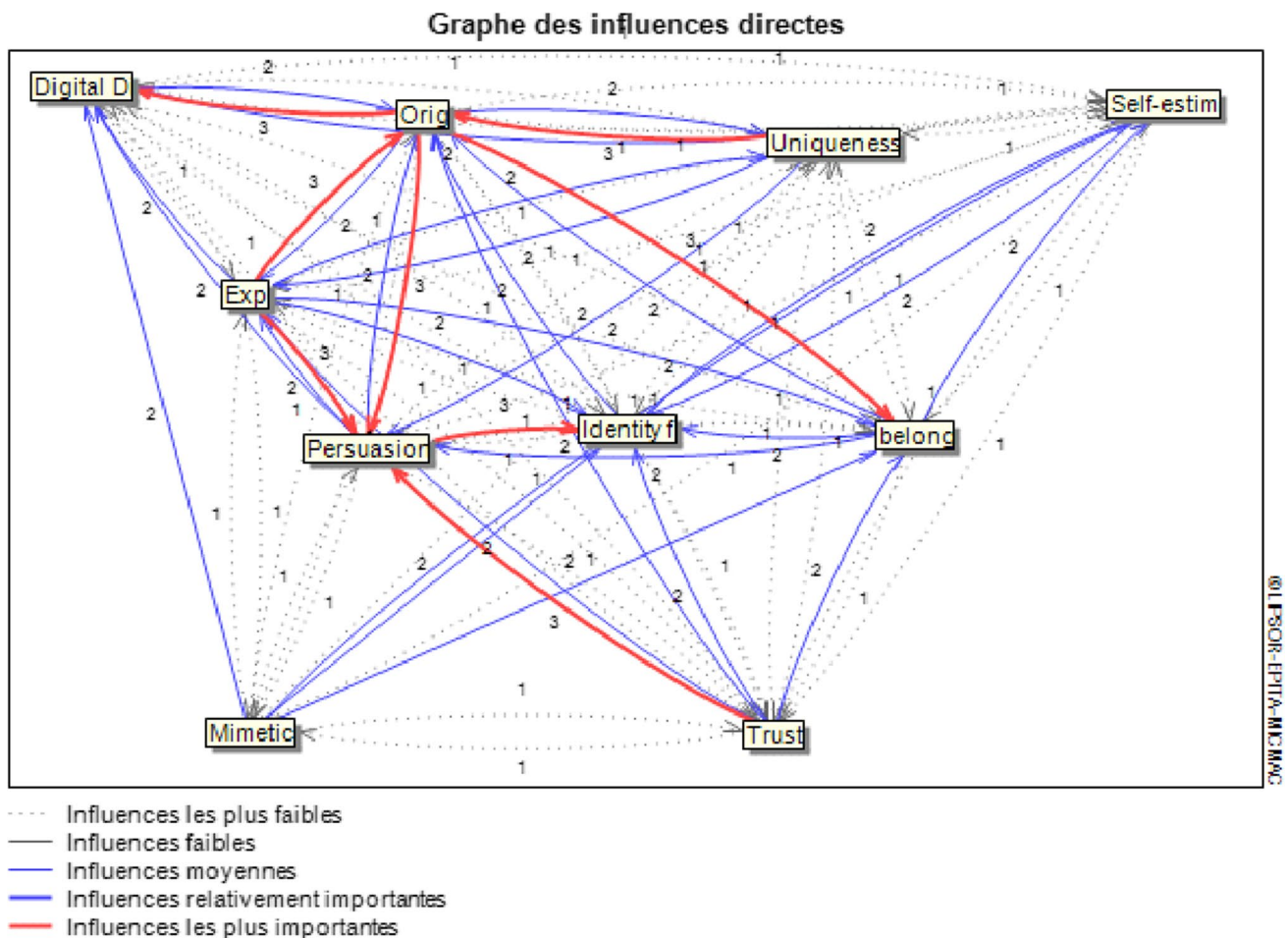
Fig. 3 The collective cognitive map (100% of links)

in 2016, against 1.4 per 100,000 in 2015. Most child suicides concern 15–19-year-olds. They are in part linked to intensive use of online games, according to the general delegate of child protection. However, scientific studies rarely test the link between social media use and psychological disorders for young people in the Tunisian context. In fact, our result emphasized the important role of influencers' distinctive features and their effect on teens' behavior.

Thus, it is necessary and critical to go deeper into those factors that influence the psychological health of teens. We promote researchers to explore further this topic. They can uncover ways to help teens avoid various psychological and cognitive problems, or at least realize them and know the danger they can cause to themselves and others.

These results have many implications for different actors like researchers and experts who were interested in the psychological field.

This work suffers from some methodological and contextual limitations that call recommendations for future research. Fist, the sample size used is relatively small because of the epidemiological situation that Tunisia experienced at the time of completing this work. On the other hand, this work was limited only to study the direct relationship between variables. Therefore, we suggest expanding the questionnaire circle. We can develop this research by interviewing specialists in the psychological field. From an empirical point of view, we can go deeper into this topic by testing the indirect relationship among variables.

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