
NARCISSISM EVIDENCED ON THE SOCIAL NETWORKS AMONG POSTGRADUATE STUDENTS IN BRAZIL BUSINESS AREA

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ABSTRACT

Narcissism is a behavioral trait characterized by excessive focus on oneself and the necessity of attention and admiration. This research aims to verify the intensity of the narcissism evidenced in the social networks of post-graduation students strictly in Brazil's accounting, administration, and economics. It was used a Perception Questionnaire about the Intensity of Virtual Narcissism, which was built to capture narcissistic behaviors evidenced in the social networks. The data was analyzed through Exploratory Factor Analysis (EFA). Among some results founded, the highest concentration of the virtual narcissism was in the necessity of being respected on the social networks. Likewise, master's students showed higher intensity of virtual narcissism than the doctoral students. In turn, the number of interviewers who joined the survey was significant, and it showed their interest about the topic covered. Thus, the study innovates, because it expands on a topic of relevance in the academic field since most behavioral studies deal with narcissism in its conventional form and they do not consider the contemporary aspects which were introduced by the new virtual communication technologies.

Keywords: Social Networks, Virtual Narcissism, Postgraduate studies, Business area.

NARCISISMO EVIDENCIADO EN REDES SOCIALES EN ESTUDIANTES DE POSGRADUACIÓN DEL ÁREA DE NEGOCIOS DE BRASIL

RESUMEN

El narcisismo se define como un rasgo de comportamiento caracterizado por un enfoque excesivo de sí mismo y una necesidad de atención y admiración. Esta

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investigación tuvo como objetivo verificar la intensidad de narcisismo evidenciado en redes sociales de estudiantes de posgraduación *stricto sensu* en contabilidad, administración y economía de Brasil. Para lo cual se utilizó un Cuestionario de Percepciones sobre la Intensidad de Narcisismo Virtual, el que se construyó para capturar comportamientos narcisistas evidenciados en redes sociales. Los datos fueron analizados a través de Análisis Factorial Exploratorio (AFE). Entre los resultados encontrados, la mayor concentración de narcisismo virtual estaba en la afirmación de buscar respeto en las redes sociales. Asimismo, alumnos de maestría presentan mayor intensidad de narcisismo virtual que alumnos de doctorado. Por su parte, el número de respondientes que se adhirió a la investigación fue significativo, lo que demuestra el interés en la materia abordada. Así, el estudio innova porque expande una temática de relevancia en el ámbito académico, una vez que la mayor parte de los estudios conductuales son sobre narcisismo es en su forma convencional y no consideran aspectos contemporáneos introducidos por las nuevas tecnologías de comunicación virtual.

Palabras Claves: Redes Sociales, Narcisismo Virtual, Posgraduación, Área de Negocios.

1 INTRODUCTION

The American Psychiatric Association (APA, 2000) details and differentiates narcissism into two categories: clinical and subclinical. Clinical Narcissism is considered a personality trauma, in which the individual must be treated medically. Subclinical Narcissism is appreciated as non-pathological and that, to some extent, all individuals possess it (APA, 2000). According to Lowen (2000), subclinical narcissism is considered a specific condition of the individual and it refers to a disorder characterized by the exaggeration of the person in himself. This pathology is considered one of the several types of personality disorders, as it is a psychological and cultural condition in which people have an imposing notion of their reality and they are characterized by a deep necessity of attention and an excessive admiration of their environment (Bushman & Baumeister, 1998; Wanderley 1999; Wallace & Baumeister, 2002; Twenge & Campbell, 2003).

Raskin and Terry (1988) describe the psychology's interest in narcissistic phenomena and in light of advances in clinical studies, the APA (2000) included narcissism in its diagnostic classification which was defined by the following criteria: grandiose sense of self-importance or uniqueness; a preoccupation with fantasies of unlimited success, power, brilliance, beauty, or ideal love; exhibitionism; inability to tolerate criticism, indifference from others, or defeat; the right or expectation of special favors without assuming reciprocal responsibilities; interpersonal exploration, relationships that alternate between extremes of excessive idealization and devaluation; and a lack of empathy. All these criteria considered to diagnose narcissistic personality disorder characterizing it as a clinical phenomenon, until Raskin and Hall published the Narcissistic Personality Inventory (NPI) in 1979, thus enabling its use in social and subclinical analyzes (D'Souza et al., 2019).

Thus, narcissism is a behavioral trait of particular interest for studying behavior on the social networks and its impact in the society (Gómez & Lloret, 2016). In this area, digital narcissists look for mechanisms to express themselves and one of them is social networks. It is about a set of communication practices typical of the 2.0 or Social Web universe based on egocentrism so pronounced that it borders on pathological. This phenomenon is called digital narcissism in social networks (Keen, 2007). It is formed by people and organizations connected by a set of significant relationships so they can create, disseminate, and communicate content among themselves digitally (Bufardi & Campbell, 2008; Chou & Chou, 2013; Panek et al., 2013; Holzer, 2017; Mendoza, 2018; Suárez, 2019). Thus, the necessity to belong to a network of people who have the same goals, make them feel intense, exciting, unique, brilliant, which makes to disappear their feelings of insignificance (Melo & Sacchq, 2019), make it an appropriate field for the virtual narcissists.

For Suárez (2019), with the arrival of the information technology and particularly the social networks, digital narcissism has increased substantially. This is expressed through some series of "extreme" actions, such as taking many selfies, which is a way of narcissism that represents vanity, exhibitionism, and worship of the "I" through a mobile device. (Andreolla & Meinart, 2020). The problem that arises from this reality is that narcissistic traits are evident among college students, and it may be related to difficulties, such as an offensive reaction after being criticized (Bushman & Baumeister, 1998; Wallace & Baumeister, 2002; Twenge & Campbell, 2003). Likewise, narcissistic students tend to consider their performance outstanding in an academic environment, although actual performance generally cannot be considered better than that of other students (Wallace & Baumeister, 2002). Students with high degrees of narcissism will even notice that their counselors lack of experience in professional guidance (Li, 2015). For Hudson (2012), narcissism in university students is a real problem since it can lead to academic failure as well as produce poorly prepared students academically.

In turn, using social networks, such as Facebook, TikTok, Twitter and Instagram, among other applications, has become an addiction among students. In this context, this study is concerned to answer the following question: **What is the intensity of narcissism evidenced in social networks of the stricto sensu Brazilian postgraduate degree in the business area?**

Studies involving behavioral and psychological factors are relevant to accounting research (Kachelmeier, 2010). In this context, Bailey (2019) maintains that it is increasingly vital to research psychological aspects in many professional areas and postgraduate studies in the business area can be imagined. Therefore, such characteristics of the virtual narcissism present in some professionals who belong to the business area, sometimes acting in leadership positions and producing information that supports decision-making in organizations, can affect professional performance and generate organizational problems.

The growing interest in narcissism is because it is a dimension of personality that is relatively independent of the race and culture that the individual belongs to, and that Western society is increasingly narcissistic (Lasch, 1979). Thus, virtual narcissism can be understood as an adaptive response to increasingly complex online social interactions. As social media is prevalent daily, people tend to present

an idealized version of themselves to stand out from the similar profiles. In this sense, virtual narcissism may become a psychological survival strategy in a competitive digital environment.

So, virtual narcissism may be seen as a mechanism of defense against the stress and anxiety that arise from the constant exposition from the online opinions and judgments of others. By focusing on building an idealized self-image, people can feel more secure and confident about their online presence. However, this self-presentation strategy may negatively affect their mental health and relationships (Bufardi & Campbell, 2008; Chou & Chou, 2013; Blachnio et al., 2016; Holzer, 2017). People who pay too much attention to their online image may experience feelings of isolation and emotional disconnection from others, which may increase the cycle of the virtual narcissism.

The consumption of social networks worldwide has taken some incalculable proportions, and Ibero-America is no exception (Matassi & Boczkowski, 2020). Studies indicate that Brazilians spend, on average, three and half hours accessing social networks and digital platforms exclusively. Thus, it is not a surprise that social networks and digital platforms work as mechanisms for the propagation of narcissistic actions by the students. Despite of a lot of publications related to the clinical narcissism, empirical research on subclinical narcissism is considered relatively recent, especially when it comes to this new aspect called virtual narcissism.

The present investigation is delimited by its scope at a subclinical level since it is expected to identify the characteristics of narcissistic behavior in the social networks without encompassing theoretical discussions in pathological contexts and other clinical approaches on the topic which is in question.

2 THEORETICAL BACKGROUND

2.1 Narcissism on the Social Networks

New technologies and the parallel universe inaugurated by the Internet are dynamic elements in the way the contemporary man builds his identity consciousness unconditionally available for twenty-four hours. The Internet has increasingly become an ally of the topic in the face of contemporary problems (Pincus et al., 2009; Marra & Santos, 2015).

In the virtual world for Otero and Fuks (2012), the projections of the "I" are involved in a postmodern context, where the authorship of the domains belongs to the subjects themselves; each group that belongs to a virtual world horizontally establishes the mode of sociability among others. Thousands of people, hundreds of times at the same time, log in from different places in the world into a virtual world and they interact in this world without limitations, which are unique to the physical world. They speak in a universal language and lead parallel lives where beings are decentralized and multiply without limits (Marra & Santos, 2015).

For Twenge and Campbell (2009) narcissism is a tendency towards high self-esteem, with a great necessity of attention and admiration, increasing the lack of

empathy with the others. Thus, social media becomes a platform to receive this attention and approval, which could further increase their narcissistic behavior. Thus, this relationship increases as technology evolves and digital narcissists discover new ways to satisfy their desire to be loved and simultaneously have recognition among their peers (Barry & McDougall, 2018; Balci & Gargalik, 2020).

Narcissists are characterized by having a general model to follow, which is grandiosity in imagination and behavior. For this reason, they tend to praise themselves and emphasize problematic relationships, increasing their lack of empathy to the other people (Gómez & Lloret, 2016). In this sense, Bandeira and Postigo (2015) confirm that the uncontrolled search for satisfaction is a narcissistic characteristic of the current culture, in which the individual must always be happy, even if it is superficial. Narcissism is perhaps the personality construction that has been the focus of most attention in terms of an uncertain relationship with social media activity and behavior (Barry & McDougall, 2018).

Social networking sites on the Internet emerged in the late 1990s, where the main characteristic is the formation of networks that bring together actors who are people, groups and institutions and their respective connections (Recuero, 2009; Quintero, 2018; Samico, 2019). Thus, social networks rely on both virtual and real social worlds since both interactions involve online, offline, visual, and linguistic connections (Pazmiño et al., 2019). These networks also allow each user to create a public or semi-public profile and it can be seen and being part of a list of other users with whom they share connections (Boyd & Ellison, 2007).

The influence and notoriety of social networks and the Internet in the daily lives of billions of people, companies, and institutions from different parts of the world has become a fundamental piece of the new generations. Virtual communities are increasingly opening new paths and they have become a way to express their communication (Marra & Santos, 2015). At the same time, a continuous process of intellectual, social, and emotional growth occurs (Marín & Cabero, 2019). Thus, new technologies and the parallel universe are dynamic elements in how contemporary man builds his identity consciousness, available twenty-four hours a day, seven days a week, where the internet has increasingly become an ally against contemporary problems (Marra & Santos, 2015).

The phenomenon of social networks, in addition to the other types of online communities, is one of the most significant events in recent years, building a new way to do society (Pincus et al., 2009). Contemporaneity is understood by Birman (2012), supported by the study of Lasch (1983), as an exacerbation and exaltation of individuality, characterized by them as a culture of narcissism and a society of the spectacle. Furthermore, the illusion of grandeur is common among contemporary narcissists, delusion reflected in their social media placement (Boyd & Ellison, 2007; Melo & Sacchq, 2019).

Although he believes he is powerful, the social media narcissist needs other people to validate his greatness; he always needs an audience to admire him, because despite taking advantage of his individuality, he feels insecure when he does not see his greatness and self-esteem reflected in the attention of other people. Sometimes the virtual narcissist also needs to connect with people who, like him, are considered celebrities and radiate power and charisma. In this way,

for the narcissist, the world is his mirror that must always return to him adoration and admiration for his peace of mind (Lasch, 1983).

In this context, according to Paiva (2012), social networks are a culture of convergence in which individuality and narcissism find a communication ecology irrigated by cooperation and sharing. Then, Paiva (2012) states that although this communication is impregnated with individualistic and narcissistic utility, that is where a zone of transformation and sociability emerges that transcends the individualistic dimension and connects with extensions of the community. Therefore, it can be inferred that participation in social networks occurs in intellectual or emotional communication between two or more subjects, because the user can interact with many people simultaneously. So, the number of people interacting simultaneously is new comparing with the past communication times, in which we do not need immediate physical presence since the virtual image replaces it (Birman, 2012). A large part of the process of interaction and sociability in social networks is based on the impressions that social actors notice and build of other people, partly built by the actors, and partly noticed by them (Paiva, 2012).

Connectivity and social networks are constant ego feedback, precisely where it is possible to host photographic records of a selective reality to obtain through the eyes of others some approval or rejection (Samico, 2019). Currently, there are multiple and varied applications that admit their own and other people's realities through the eyes of individuals, such as Instagram, to mention one application that was launched in 2010. Currently, according to the data published by Facebook in 2023, the social network has more than 2 billion active users, it is one of the audience's favorite (D'Angelo, 2023), which is used with exclusive purposes to spread photos and videos of its users, who can also benefit from the filters for an aesthetic improvement of its content.

According to Dornelles (2004), the Internet allows people to explore facets of their personality that have limited expression in offline face-to-face social relationships. Therefore, it would be possible to create a cyber image that is pleasant to the other (even if it is not genuine), thus obtaining an express approval of the tastes granted by users who access the content exposed through these tools. In this context, the person who uses these applications in an exacerbated way and behaves in a narcissistic manner is because he cries out for acceptance, therefore, there is an immense necessity to have his image approved by the other and the validation acquired through the response of the other who accesses the image of the subject that he shows through social networks, since he considers it ideal (Costa & Moreira, 2010).

Oversharing are how these digital narcissists are in the world, it becomes an instantaneous unthought gesture a natural extension of themselves. Demonstrating, sometimes in a spectacular way and more astonishing, it has become the narcissist's primary way of existing; so, they only exist if they can be seen and recognized (Suárez, 2019). Consequently, narcissism is becoming more prominent with new technologies, and social networks play an essential role since they are an excellent means of expressing their condition since they make it possible for users to show themselves to many people despite that their relationship with these people may be purely superficial (Bufardi & Campbell, 2008).

Private space is no longer so different from public space, people expose their privacy on social networks, publish information, express their opinions, and take personal photos to create a spectacle of themselves and seek the views and approval of others (Kallas, 2016). Narcissist on social networks seeks approval, admiration and allows them to have better effective communication with different types of social connection, which is expressed through the amount of “Likes” they get for each photo and the compliments that confirm the image and the idea that you want to convey about yourself (Chou & Chou, 2013; Swain & Cao, 2013; Valenzuela, 2018). The use of the Internet seems to be the immediate access to infinite browsing possibilities that allow the world to wait for a simple click. Obtaining instant gratification through impulses, games, intellectual curiosities, communication, and consumption, among many others, makes the Internet irresistible (Kallas, 2016).

Under this context, Haroche (2015) defines that contemporaneity is marked by the limitlessness of the virtual, technology and narcissism. Thus, social media is changing traditional face-to-face interpersonal relationships, particularly among younger members of society. So, how people build their individualities, how they demonstrate their preferences, passions, and hatred, in short, how they express themselves, seek respect among their peers and it establishes connections and social ties among the actors of the network, such as these actions will generate social capital in cyberspace. They are demonstrating their importance also in the virtual space as indispensable elements for the establishment and maintenance of digital social media relationships (Kalpidou et al., 2011; Heidemann et al., 2012; De la Hoz et al., 2015; Pérez, 2018).

Dornelles (2004) points out that we are invariably connected through devices such as smartphones and computers, among other technological elements, and with the rise of the fast communication and relationship applications, the poverty of content production has been installed to satisfy his fans. Among recent empirical studies of academic scope, those by Marra and Santos (2015) stand out together with Pinto (2016); Melo and Sacchq (2019); Resende (2019), for mentioning some work.

The study by Marra and Santos (2015) aims to map and reviews the literature about the repercussions of social networks on the subjectivity of their users. They conclude that it is essential to explore further the possible repercussions of the network phenomenon and aspects of the Internet on the balance of contemporary man to better understand the meanings that emerge from the interactions among users which are connected on the networks in a global scale.

According to Pinto (2016) in his study on narcissistic behavior in the world of new technologies, he seeks to discuss how narcissism acquired new configurations from the development of new technologies, which allowed the intensification of virtual relationships. Therefore, by establishing interactions within the scope of cyberspace, the individual is encouraged to have some physical shapes and behavior according to the models he is making contact through the multiple images available on the virtual environment. This reconfiguration leads him to fragment into different identities to adopt increasingly individualized behaviors, which may lead him to establish himself in a narcissistic contemplation. Likewise, it concludes that with the cultural and technological changes of recent decades,

narcissism also ended up adopting new configurations, in view of the valorization of the body and its frequent exposure in the media.

For Melo and Sacchq (2019), the choice of narcissism and social networks is inspired by a search for knowledge to know how subjects relate in a society driven by technology, where the search for relationships and satisfaction takes place through social networks. Therefore, the study sought to understand how the characteristics of an increasingly technological society may influence the constitution of the subjectivity of the narcissistic subject and whether they are related to the current experiences of subjective emptiness and isolation, as this is the only way of interaction which is carried out through virtual networks. As a result, it is highlighted that when narcissism is faced in social networks, it presents itself as an element that is not positive but negative in the sense that the subject involves himself in his ego, in his achievements and success, in do not healthily reverse your libido. On the contrary, the relationships on Instagram are marked by a void of feelings and bonds.

The study by Resende (2019) aimed to investigate internet use and narcissistic personality characteristics in the university students from a public university in the interior of São Paulo. Among the results found, the widespread Internet use among university students was confirmed, especially in social networks and messaging applications. In addition to it, low scores were found that do not classify students as addicts or narcissists. Therefore, Internet use and narcissistic personality characteristics reveal that they are not related in this study and for this sample. Comparisons were also made between the different groups according to the sex of the participants and according to the course area. Concluding that, there are no significant differences between the distributions of men and women or among students.

A lot of investigations have been concerned with measuring the level of non-pathological narcissism and correlating it with many aspects of business and academic daily life. Among the works, those that were concerned with finding out morally questionable behavior in the business environment stand out (Brunell et al., 2011), negative consequences of narcissism in professional and academic careers (Langaro & Benetti, 2014), influence of narcissism on the design of managerial control (Young et al., 2016), the probability of having dishonest behavior by students (Avelino & Lima, 2017), narcissistic behavior and academic performance (De Lima et al., 2017), narcissism and power (D'Souza et al., 2019), non-pathological traits of narcissistic personality, self-esteem and social comparison (Freitas et al., 2020). All these studies used different instruments to capture the level of subclinical narcissism and correlate it with facets of professional, work, and academic life using diverse samples. However, none of them addressed this new aspect of narcissism that appears as a contemporary phenomenon, which is caused by the excessive use of social networks and digital platforms.

The study presented above tends to explain the phenomenon of virtual narcissism as a personality trait from a social, cultural, and behavioral perspective. Thus, new generations are adapting to the growing pace of globalization, which penetrates everywhere and promotes the vision of a global village and a new way to do the society (Ferrer, 1998; Pincus et al., 2009), which is showing the narcissism on social networks or digital narcissism used by new generations.

3 METHODOLOGICAL PROCEDURES

The present study is characterized by being descriptive and quantitative. Descriptive statistics were used to describe the variable information inherent to the characterization of the sample. Exploratory Factor Analysis was used to verify the reliability of the structure and reduce the scale. This technique organizes variables into new groups, making the data set smaller and more manageable while maintaining as much information as possible from the original variables (Field, 2009).

The study population comprised postgraduate students from all over Brazil, specifically academic master's, professional master's, academic doctorate, and professional doctorate students who were regularly enrolled in the second semester of 2020 in Accounting, Administration and Economics courses.

In Brazil these courses are considered *stricto sensu*, because they refer to postgraduate programs focused on more specific areas of research and related to academia, because they require a workload of more than 360 hours and a monographic work in the form of a dissertation for master's degree and thesis for doctoral courses.

To verify the active courses linked to the business area, a search was carried out on the CAPES government site, which is responsible for the authorization, supervision, and evaluation of *stricto sensu* postgraduate courses in Brazil.

The sample was 605 respondents who were contacted through an electronic invitation which was sent to different social network groups such as Facebook, *Instagram*, *LinkedIn* and to the network of contacts of students registered in the Sucupira Platform as well as to the different coordinators and secretaries of some postgraduate programs in the business area. They were chosen at random without representing any conflict of interest on the part of the authors of this research.

Data collection was carried out using an electronic instrument applied online, using the SurveyMonkey® platform. A link was sent remotely to the institutional emails of the business area course coordinators to be transferred to the students. Descriptive statistics were used to organize and describe the quantitative data set. The data were analyzed using the statistical package for the Software *Statistical Package for the Social Sciences-SPSS* version. In addition, the multivariate technique of Exploratory Factor Analysis (EFA) was used to verify groups of variables with a high correlation (Fávero & Belfiore, 2017).

The research instrument was built to capture narcissistic behaviors evidenced in the social networks based on studies related to the topic and highlight the following authors: Lasch (1979); Raskin and Terry (1988); Wanderley (1999); Wallace and Baumeister (2002); Utz et al. (2012); Young et al. (2016); Lima et al. (2017); D'Souza et al. (2019); Freitas et al. (2020).

Below, the attitudes that make up the Perceptions Questionnaire on the Intensity of Virtual Narcissism are presented in Figure 1. For each alternative, the respondent is asked to indicate the intensity of motives of virtual narcissism that he believes identifies him, where 0 represents "lower intensity," and 10 means "higher intensity".

N	ATTITUDES	INTENSITY
1	I consider myself capable of influencing people on social networks	0 1 2 3 4 5 6 7 8 9 10
2	I am looking to have many contacts on social networks	0 1 2 3 4 5 6 7 8 9 10
3	I consider myself important because my posts receive a lot of reactions	0 1 2 3 4 5 6 7 8 9 10
4	I strive to have notoriety on social networks	0 1 2 3 4 5 6 7 8 9 10
5	I want to one day be a digital influencer	0 1 2 3 4 5 6 7 8 9 10
6	I feel confident in my posts	0 1 2 3 4 5 6 7 8 9 10
7	I think it's easy to influence people on social media.	0 1 2 3 4 5 6 7 8 9 10
8	I look for respect on social networks	0 1 2 3 4 5 6 7 8 9 10
9	I like to be forceful in my comments on social networks	0 1 2 3 4 5 6 7 8 9 10
10	I like to display my images on social networks	0 1 2 3 4 5 6 7 8 9 10
11	I like to influence people with my virtual comments	0 1 2 3 4 5 6 7 8 9 10
12	I feel important posting my happiness on social media	0 1 2 3 4 5 6 7 8 9 10
13	I admire my body in my social media posts	0 1 2 3 4 5 6 7 8 9 10
14	I take advantage of opportunities to post and comment on social networks	0 1 2 3 4 5 6 7 8 9 10
15	My posts are always very successful	0 1 2 3 4 5 6 7 8 9 10
16	I like to comment on people's images	0 1 2 3 4 5 6 7 8 9 10
17	I like to comment on the posts of important people	0 1 2 3 4 5 6 7 8 9 10
18	I like my social media contacts to praise me	0 1 2 3 4 5 6 7 8 9 10
19	I feel satisfied publishing my new styles	0 1 2 3 4 5 6 7 8 9 10
20	I would like to publish my life story in digital media	0 1 2 3 4 5 6 7 8 9 10
21	It makes me intrigued when people don't notice my posts.	0 1 2 3 4 5 6 7 8 9 10
22	I share personal events on social networks	0 1 2 3 4 5 6 7 8 9 10
23	I always expect positive reactions from my posts.	0 1 2 3 4 5 6 7 8 9 10
24	My social media profile is public	0 1 2 3 4 5 6 7 8 9 10
25	I post my frustrations to seek social comfort.	0 1 2 3 4 5 6 7 8 9 10
26	I always use filters on my images	0 1 2 3 4 5 6 7 8 9 10
27	I feel happy publishing intimate moments	0 1 2 3 4 5 6 7 8 9 10
28	I need to periodically post on social networks	0 1 2 3 4 5 6 7 8 9 10
29	I like to compare my comments with other people's	0 1 2 3 4 5 6 7 8 9 10
30	My self-esteem improves with the reactions on my posts	0 1 2 3 4 5 6 7 8 9 10
31	Whenever I help other people, I post it on my social networks	0 1 2 3 4 5 6 7 8 9 10
32	I like to be available to advise people on social media	0 1 2 3 4 5 6 7 8 9 10
33	I like to publish my intellectual successes on social networks	0 1 2 3 4 5 6 7 8 9 10
34	I like to publish my professional successes on social networks	0 1 2 3 4 5 6 7 8 9 10
35	I strongly believe that he who is not seen is not remembered.	0 1 2 3 4 5 6 7 8 9 10
36	I post happy moments, even if I don't feel so happy.	0 1 2 3 4 5 6 7 8 9 10

Figure 1 – Perceptions Questionnaire on the Intensity of Virtual Narcissism

Source: Prepared by the authors and inspired by the Raskin and Terry (1988) model.

To test the reliability of the Virtual Narcissism Intensity Perceptions Questionnaire, Cronbach's Alpha coefficient was used. Figure 2 presents Cronbach's Alpha values of the Perceptions Questionnaire on Intensity of Virtual Narcissism with 605 respondents and 36 variables under study of the data collection instrument. Which yielded a reliability of 0.980 for the scale. Fávero and

Belfiore (2017) indicate a percentage classified as excellent due to its proximity to 1.

Cronbach's Alpha	Cronbach's Alpha based on standardized	N of items
0,980	0,980	36

Figure 2 – Reliability Statistics – Virtual Narcissism Intensity Perceptions Questionnaire
Source: Research data.

To ensure that the instrument was adjusted to the purpose of the research, members of the Accounting Education and Research Laboratory (LEPEC) of Universidade Federal do Paraná, they carried out the analysis and verification of each of the parts that make up the research instrument. Once the considerations made by the LEPEC members have been adjusted, a new validation of the instrument is carried out with the professors responsible for the research group, who contributed personally to each of the questions about the instrument previously adjusted by the students.

Subsequently, with the adjustments made by the students and teachers, the instrument was sent to a group of postgraduate students of the Mechanical Engineering course at the Universidade Tecnológica Federal, in Brazil. Those who answered it individually, without expressing any problem about the understanding about the questions, development, and sequence, had an average time of 8 minutes, respectively.

This study was submitted on July 31st, 2020, on Brazil platform of the CEP/SD Research Ethics Committee to avoid future legal and ethical problems. On October 1st, 2020, opinion 4,312,545 was issued, where the investigation was approved under the CAAE protocol number: 36015120.8.0000.0102. Subsequently, at the same date, the disclosure of the instrument begins and closes on January 2021 and the data analysis began.

4 ANALYSIS AND DISCUSSION OF THE RESULTS

4.1 Sample Characterization

The total number of students who answered the questionnaire were 605 valid students. Information about the students' personal characteristics is detailed below, as indicated in Table 1.

Table 1
Profile of respondents

Gender Identified	F	%
Feminine	313	51,73
Male	285	47,11
Non-Binary	5	0,83
Prefer not to answer	2	0,33
Age Range*	F	%
Part 1: between 22 - 30	289	48,8
Part 2: between 31 - 40	220	37,4

Part 3: between 41 - 50	79	13,5
Part 4: between 51 - 64	17	0,40
Color or Ethnicity that is identified	F	%
Yellow	8	1,32
White	392	64,79
Indigenous	3	0,50
Brown	168	27,77
Black	34	5,62

Note: F = frequency; % = percentage; * = parts calculated by quartile inclusive.

Source: Prepared by the authors.

Of these, 313 respondents identified as female, constituting 51.73% of the study sample. Likewise, the age of the participants was grouped, leaving 282 students between the ages of 22 and 30, representing 48.8% of those surveyed.

Information about the course the postgraduate students are enrolled in is detailed below, as indicated in Table 2.

Table 2

Profile of respondents – Information about the course found

Type of institution	F	%
Public	521	86,12
Particular	62	10,25
Community	19	3,14
Other	3	0,50
What is your post-graduation course?	F	%
Academic Master	334	55,21
Professional Master's Degree	45	7,44
Academic Doctorate	220	36,36
Professional Doctorate	6	0,99

Note: F = frequency; % = percentage

Source: Prepared by the authors.

About the type of institution, 521 of the postgraduate students belong to a public institution, which represents 86.12% of the total respondents; 62 students belong to a private institution, which represents 10.25% of those surveyed; 19 students belong to a community institution, which is 3.14% of the sample and only three students say they belong to another institution, in this case, mixed, which represents 0.5%.

For their part, 334 of the students are studying for an academic master's degree, which represents 55.21% of the total number of respondents; 45 students declared studying for a professional master's degree, which represents 7.44% of those surveyed. For their part, 220 students are pursuing an academic doctorate, which represents 36.36% of those surveyed, and only six are pursuing a professional doctorate, which represents 0.99%.

Below, detailed information about how much time the postgraduate students, who make up the sample under study are dedicated to being on social networks and how much time they devote to the studies is indicated in Table 3.

Table 3

Profile of respondents – Information on time use

How many hours do you spend using social networks?	F	%
less than 2 hours	212	35,04
From 2 to 6 hours	276	45.62
From 6 to 10 hours	95	15.70
From 10 a.m. to 4 p.m.	21	3.47
From 16 to 24 hours	1	0.17
How many hours do you spend studying?	F	%
less than 2 hours	59	9.75
From 2 to 6 hours	254	41.98
From 6 to 10 hours	233	38.51
From 10 a.m. to 4 p.m.	57	9.42
From 16 to 24 hours	2	0.33

Note. F = frequency; % = percentage

Source: Prepared by the authors.

Regarding time allocation, postgraduate students were asked how much time they spent on average daily using social networks as Facebook, Twitter, Instagram, LinkedIn, etc. The greatest range of use of the social networks is between 2 to 6 hours on average, with 276 students representing 45.62% of those surveyed, which confirms that the time students spend on social networks in Brazil is 3:45 hours, as stated by Famemass (2019). Complementing what was mentioned previously, in the Mehdizadeh (2010) study, it was found that users with a high score on the narcissism test had the highest frequency of access to Facebook per day, and those who spent the longest time connected to the social networks.

In relation to the allocation of time for the study, the highest concentration of time is between 2 to 6 hours on average, with 41.98% of the students in the study sample.

4.2 Descriptive Statistics of the Virtual Narcissism Intensity Perceptions Questionnaire

The mean, median and standard deviation values were analyzed for each situation in which students were confronted to determine in which situation there was a greater concentration of Intensity of Virtual Narcissism, both for the master's students and for the student's pursuing doctorates.

Below, three highest values are presented in ascending order concerning to the average value to facilitate the comprehension of the data as it was indicated in Table 4.

Table 4

Descriptive Statistics - Virtual Narcissism Intensity Perceptions Questionnaire

ID	Descriptions	Máster			Doctorate		
		M	ME	SD	M	ME	SD
A8	I look for respect on social networks	7,56	9,00	3,283	7,49	9,00	3,406
A6	I feel confident in my posts	7,46	8,00	2,951	7,44	8,00	2,995
A9	I like to be forceful in my comments	7,30	8,00	3,356	6,62	7,00	3,303

A35	I strongly believe that he who is not seen is not	6,61	7,00	3,590	5,85	6,00	3,502
A23	I always expect positive reactions from my posts.	6,57	7,00	3,417	6,17	7,00	3,398
A33	I like to publish my intellectual successes on social	6,28	7,00	3,729	5,52	5,00	3,554
A18	I like my social media contacts to praise me	6,17	7,00	3,392	5,52	5,00	3,270
A34	I like to publish my professional successes on social	6,10	6,00	3,705	5,63	5,50	3,476
A1	I consider myself capable of influencing people	5,77	6,00	3,065	5,51	6,00	2,962
A7	I think it's easy to influence people on social	5,74	6,00	3,288	5,46	5,00	3,197
A22	I share personal events on social networks	5,44	5,00	3,509	5,15	4,50	3,330
A10	I like to display my images on social networks	5,33	5,00	3,516	4,69	4,00	3,207
A30	My self-esteem improves with the reactions on my	5,28	5,00	3,591	4,68	3,00	3,453
A24	My social media profile is public	5,24	3,00	4,429	4,67	3,00	4,440
A2	I am looking to have many contacts on social	5,19	5,00	3,145	4,63	4,00	3,054
A11	I like to influence people with my virtual comments	5,15	5,00	3,535	4,05	3,00	3,084
A26	I always use filters on my images	4,92	3,00	3,893	3,74	2,00	3,444
A16	I like to comment on people's images	4,85	4,00	3,326	4,34	3,00	3,070
A15	My posts are always very successful	4,81	4,00	3,305	4,36	3,00	3,121
A3	I consider myself important because my posts	4,69	4,00	3,160	4,30	4,00	2,893
A14	I take advantage of opportunities to post and	4,67	3,00	3,558	3,71	2,50	3,119
A12	I feel important posting my happiness on social	4,65	3,00	3,529	4,04	3,00	3,305
A21	It makes me intrigued when people don't notice	4,61	3,00	3,630	4,14	3,00	3,375
A32	I like to be available to advise on social networks	4,59	3,00	3,780	3,90	2,00	3,374
A13	I admire my body in my social media posts	4,40	3,00	3,695	3,46	2,00	3,123
A4	I strive to have notoriety on social networks	4,39	3,00	3,281	3,68	3,00	2,939
A36	I post happy moments, even if I don't feel so	4,21	2,00	3,624	3,39	1,50	3,207
A19	I feel satisfied publishing my new styles	4,20	2,00	3,662	3,32	1,50	3,136
A17	I like to comment on the posts of important people	4,10	2,00	3,539	3,42	2,00	3,069
A28	I need to periodically post on social networks	4,09	2,00	3,747	3,28	1,00	3,286
A5	I want to one day be a digital influencer	4,02	2,00	3,559	3,30	1,00	3,167
A27	I feel happy publishing intimate moments	3,94	2,00	3,658	3,31	2,00	3,127
A20	I would like to publish my life story in digital media	3,90	2,00	3,299	3,30	2,00	3,063
A25	I post my frustrations to seek social comfort	3,74	1,00	3,749	3,04	1,00	3,137
A29	I like to compare my comments with other	3,69	1,00	3,629	2,96	1,00	3,207
A31	Whenever I help other people, I post it on my	3,55	1,00	3,802	2,63	1,00	2,997

Note. M = Medium; ME = Median; SD = Standard Deviation.

Source: Research data.

The highest average for both groups was found in the assertive number A8: "I seek respect on the social networks", with 7.53 of the total sample. The same assertiveness presents for both groups with a median of 9.00 points and a standard deviation of 3.283 for master's students and 3.406 for doctoral students. In that sense, the assertive A8 demonstrates that postgraduate students are very concerned about having their opinions and way of thinking respected. Social networks on the Internet have become a space of interrelation for people, in which essential bonds of friendship, family, couples and group relationships in general are maintained and that is why the respect factor plays a fundamental role among social media communities.

Next, statement A6: "I feel confident in my posts," it is presented for both groups in the second highest place in the total sample, with 7.46 for master's

students and 7.44 for doctoral students. With a median of 8.00 points in both groups and a standard deviation of 2.951 for master's students and 2.995 for doctoral students. This tells us that postgraduate students have no problems demonstrating their security when posting on social networks.

Consecutively, the assertive A9: "I like to be forceful in my comments on social networks", appears in third place highest in the total sample, with an average of 7.30 for students studying a master's degree and an average of 6.62 for students pursuing a doctorate. With a median of 8.00 points in the case of master's students and 7.00 points in the case of students pursuing a doctorate and a standard deviation of 3.356 for master's students and 3.303 for students pursuing a doctorate. This indicates that postgraduate students have no problems expressing their opinions critically when publishing something on social networks.

In these three points analyzed, it can be concluded that master's students present higher rates of virtual narcissism about the same elements measured as doctoral students.

4.2.1 Exploratory Factor Analysis: Perceptions Questionnaire about the Intensity of Virtual Narcissism

The Perceptions Questionnaire about the Intensity of Virtual Narcissism presents a total of 36 statements, and the AFE was used to identify the formation of factors, also called latent dimensions, which can arise from the statements of these blocks. To use EFA, the requirement is that the sample size be at least five times larger than the number of variables analyzed (Hair Jr. et al., 2009). For this research, the sample is made up of 605 valid answers, which is considered appropriate for the use of this analysis technique. In addition to the KMO test (Kaiser-Meyer-Olkin) and the Bartlett Sphericity test must be applied, to verify the appropriateness to use the referred technique.

Below, Table 5 presents in detail and separately the KMO tests (Kaiser-Meyer-Olkin) and the Bartlett test for the master's and doctoral students in the two rounds carried out in this study.

Table 5
AFE – Perceptions Questionnaire on Intensity of Virtual Narcissism

KMO and Bartlett test		R1		R2	
		Master	Doctorate	Master	Doctorate
Kaiser-Meyer-Olkin measurement		0,977	0,966	0,978	0,967
Bartlett's test of sphericity	Aprox. Qui-cuadrado	15322,354	8064,674	15226,102	8007,149
	df	630	630	595	595
	Sig.	0,00	0,00	0,00	0,00

Note. R1 = Roll 1; R2 = Roll 2

Source: Prepared by the authors.

The KMO statistical test showed in the first round a value of 0.977 for master's students and 0.966 for doctoral students which, according to the literature, if $KMO \geq 0.9$, the test is considered very good (Hair Jr. et al., 2009).

For the present sample, it was decided to exclude in the second round (R2) the assertive number A24 "My profile on social networks is public", because it is a question with an answer that can be represented by the interviewed as dichotomous, in that the students occupied the ends to answer. Where zero means that the profile on social networks is private and ten means that it is public. When the second round of data was carried out, they showed 0.978 for master's students and 0.967 for students studying doctorates, in which one when excluding the assertive number A24, "My profile on social networks is public" increased slightly, maintaining its excellent result.

Regarding to Bartlett's sphericity test in both runs R1 and R2, it indicates a result of 0.000 significance since the p-value is less than 0.05 and therefore we can continue and apply the EFA. Once the tests have been carried out, we proceed to verify the commonalities of each item, which expresses the part of the variability of each variable or item (variances) that can be explained by the set of factors or components extracted in the analysis. Hair et al., (2009) they point out that the minimum value of accepted commonality is 0.50. Therefore, the only value that was presented under this measure is the assertive number A24, "My profile on social networks is public," in the first round, which returned a value of 0.186, which is not accepted, and it was excluded for carrying out the second roll R2.

4.2.2 Factor Loads in master's Students

When carrying out the second round of data, this was presented as the most appropriate factorial structure for the present study. Therefore, the formation of each factor was analyzed. First, we proceeded to analyze those who trained with students pursuing a master's degree and subsequently the factors of students pursuing a doctorate were analyzed.

To extract the factors, the main component method with Varimax rotation was used. Due to the characteristics that grouped the 3 factors of the teaching students, these were called: Factor 1 as "Self-promotion"; Factor 2 as "Egocentrism" and factor 3 as "Self-confidence".

Table 06 shows the rotating component matrix with the formation of the factors in postgraduate students pursuing a master's degree.

Table 6
AFE – Factor Loads Master's students

ID	Description	Factor I	Factor II	Factor III
		Self-promotion	Egocentrism	Self-confidence
A31	Whenever I help other people, I post it on my social networks	0,863		
A25	I post my frustrations to seek social comfort.	0,849		
A29	I like to compare the comments on my social networks with those of other people	0,848		
A27	I feel happy publishing intimate moments	0,812		
A17	I like to comment on the posts of important people	0,785		
A19	I feel satisfied publishing my new styles	0,785		

A28	I need to periodically post on social networks	0,783	
A32	I like to be available to advise people on social media	0,781	
A36	I post happy moments, even if I don't feel so happy.	0,749	
A4	I strive to have notoriety on social networks	0,737	
A3	I consider myself important because my posts receive a lot of reactions	0,721	
A15	My posts are always very successful	0,712	
A14	I always take advantage of opportunities to post and comment on social media.	0,699	
A16	I like to comment on people's images	0,698	
A21	It makes me intrigued when people don't notice my posts.	0,683	
A5	I want to one day be a digital influencer	0,676	
A13	I admire my body in my social media posts	0,661	
A12	I feel important posting my happiness on social media	0,66	
A26	I always use filters on my images	0,648	
A2	I am looking to have many contacts on social networks	0,621	
A30	My self-esteem improves with the reactions on my posts	0,607	
A20	I would like to publish my life story in digital media	0,577	
A11	I like to influence people with my virtual comments	0,572	
A1	I consider myself capable of influencing people on social networks	0,571	
A18	I like my social media contacts to praise me		0,767
A33	I like to publish my intellectual successes on social networks		0,734
A34	I like to publish my professional successes on social networks		0,726
A23	I always expect positive reactions from my posts.		0,707
A22	I share personal events on social networks		0,591
A10	I like to display my images on social networks		0,577
A35	I strongly believe that he who is not seen is not remembered.		0,504
A9	I like to be forceful in my comments on social networks		0,717
A6	I feel confident in my posts		0,678
A7	I think it's easy to influence people on social media.		0,619
A8	I look for respect on social networks		0,613

Source: Research data.

The first factor is called "Self-promotion". Questions A31 "Whenever I help other people, I post it on my social networks"; A25 "I publish my frustrations as a way of seeking social comfort"; A29 "I like to compare the comments on my social networks with those of other people" and A27, "I feel happy publishing intimate moments," presented the highest values with 0.863, 0.849, 0.848, and 0.812, respectively, narcissism and its relationship with the search.

The first factor, "Self-promotion," is consistent with the result of the work of Weiser (2015), who highlights that attention-seeking and self-promotion are narcissistic behaviors that are strongly evidenced in the social network environments since they are favorable conduits through which they can use their appearance to attract both the attention and admiration of other individuals.

The second factor, called "Egocentrism," presented 20% of the questions. The assertive A18, "I like that my social network contacts praise me," presented the highest value with 0.767. The strong dependence between narcissism and egocentrism is understood and reflected through extreme behaviors on the social networks, which is typical of the time and digital culture we live in. People anchored on the social networks and population trends generally feel very proud of themselves and need to externalize it to their social circle (Infantas, 2018).

The third factor, "Self-confidence," represents 12% of the statements. The assertive A9 "I like to be forceful in my comments on the social networks", has a 0.717, and the assertive A6 "I feel confident in my posts", with 0.678, has a high relationship with self-confidence.

It can also be seen that all statements had a factor loading greater than 0.50. Table 7 shows the internal reliability of the factors through Cronbach's Alpha.

Table 7
AFE - Cronbach's Alpha Factors - Master's Students

ID	Factor 1 – Self-promotion	Cronbach's Alpha
A31	Whenever I help other people, I post it on my social networks	0,983
A25	I post my frustrations to seek social comfort.	
A29	I like to compare the comments on my social networks with those of other people	
A27	I feel happy publishing intimate moments	
A17	I like to comment on the posts of important people	
A19	I feel satisfied publishing my new styles	
A28	I need to periodically post on social networks	
A32	I like to be available to advise people on social media	
A36	I post happy moments, even if I don't feel so happy.	
A4	I strive to have notoriety on social networks	
A3	I consider myself important because my posts receive a lot of reactions	
A15	My posts are always very successful	
A14	I always take advantage of opportunities to post and comment on social media.	
A16	I like to comment on people's images	
A21	It makes me intrigued when people don't notice my posts.	
A5	I want to one day be a digital influencer	
A13	I admire my body in my social media posts	
A12	I feel important posting my happiness on social media	
A26	I always use filters on my images	
A2	I am looking to have many contacts on social networks	
A30	My self-esteem improves with the reactions on my posts	
A20	I would like to publish my life story in digital media	
A11	I like to influence people with my virtual comments	

A1	I consider myself capable of influencing people on social networks	
ID	Factor 2 – Egocentrism	Cronbach's Alpha
A18	I like my social media contacts to praise me	0,932
A33	I like to publish my intellectual successes on social networks	
A34	I like to publish my professional successes on social networks	
A23	I always expect positive reactions from my posts.	
A22	I share personal events on social networks	
A10	I like to display my images on social networks	
A35	I strongly believe that he who is not seen is not remembered.	
ID	Factor 3 – Self-confidence	Cronbach's Alpha
A9	I like to be forceful in my comments on social networks	0,73
A6	I feel confident in my posts	
A7	I think it's easy to influence people on social media.	
A8	I look for respect on social networks	

Source: Research data.

The first factor, "Self-promotion," yielded a Cronbach's Alpha of 0.983, indicating that its internal questions consistency is solid. It should be noticed that this factor brings together 24 of the assertive items on the scale. The second factor, called "Egocentrism," due to the high concentration of assertive statements with superego connotations, yielded a Cronbach's Alpha of 0.932, which is also very good. The third factor was called "Self-confidence", because it concentrates most of the assertive statements that are related to the personal security yielded a Cronbach's Alpha of 0.730, which borders the limit of what is accepted in the literature.

As seen in the Table 7, three factors presented a Cronbach's Alpha more significant than 0.7, which demonstrates the reliability of the scale in which it is being applied, which according to the Field (2009) requires values greater than 0.7 to test the internal consistency of the factors.

4.2.3 Factor Loads in Doctoral Students

When carrying out the second round of data, this was presented as the most appropriate factorial structure for the present study. Due to the characteristics that grouped four factors of the doctoral students these were called: Factor 1 as "Self-promotion"; Factor 2 as "Egocentrism"; Factor 3 is "Presumption" and Factor 4 is "Self-confidence".

The new factor produced by the doctoral students was called "Presumption" since it shares the characteristics of the "Self-promotion" and "Egocentrism" factors. In this understanding, Utz et al., (2012) indicates that presumption is the factor most strongly related to the use of social networks. Because people with a high level of narcissism tend to publish very personal information more frequently with a greater content of vanity.

Table 08 shows the rotating component matrix with the formation of factors in postgraduate students pursuing a doctorate.

Table 8
Factor Loads Doctoral Students

ID	Descriptions	Factor I	Factor II	Factor III	Factor IV
		Self-promotion	Egocentrism	Presumption	Self-confidence
A31	Whenever I help other people, I post it on my social networks	0,855			
A29	I like to compare the comments on my social networks with those of other people	0,84			
A25	I post my frustrations to seek social comfort.	0,828			
A27	I feel happy publishing intimate moments	0,816			
A28	I need to periodically post on social networks	0,769			
A26	I always use filters on my images	0,746			
A12	I feel important posting my happiness on social media	0,727			
A18	I like my social media contacts to praise me	0,711			
A36	I post happy moments, even if I don't feel so happy.	0,683			
A16	I like to comment on people's images	0,657			
A13	I admire my body in my social media posts	0,656			
A32	I like to be available to advise people on social media	0,641			
A20	I would like to publish my life story in digital media	0,637			
A22	I share personal events on social networks	0,588			
A30	My self-esteem improves with the reactions on my posts	0,571			
A15	My posts are always very successful	0,543			
A11	I like to influence people with my virtual comments	0,54			
A23	I always expect positive reactions from my posts.		0,767		
A17	I like to comment on the posts of important people		0,681		
A33	I like to publish my intellectual successes on social networks		0,633		
A34	I like to publish my professional successes on social networks		0,629		
A10	I like to display my images on social networks		0,536		
A19	I feel satisfied publishing my new styles		0,516		
A21	It makes me intrigued when people don't notice my posts.		0,513		

A1	I consider myself capable of influencing people on social networks	0,753	
A3	I consider myself important because my posts receive a lot of reactions	0,622	
A2	I am looking to have many contacts on social networks	0,612	
A4	I strive to have notoriety on social networks	0,592	
A5	I want to one day be a digital influencer	0,56	
A14	I always take advantage of opportunities to post and comment on social media.	0,529	
A35	I strongly believe that he who is not seen is not remembered.	0,54	
A9	I like to be forceful in my comments on social networks		0,688
A8	I look for respect on social networks		0,686
A6	I feel confident in my posts		0,566
A7	I think it's easy to influence people on social media.		0,556

Source: Research data.

EFA caused the formation of one more factor than the master's students. The assertive A31 "Whenever I help other people, I publish it on my social networks"; A29 "I like to compare the comments on my social networks with those of other people"; A25 "I publish my frustrations as a way of seeking social comfort" and A27 "I feel happy publishing intimate moments" as in the master's students, presented the highest values with 0.855; 0.840; 0.828 and 0.816 respectively.

As in the master's students, it is repeated that the first factor, called "Self-promotion," it has a greater concentration of answers with 48.5% of the assertive ones. The "Self-promotion" factor is considered one of the characteristics that are most related to narcissism and the use of social networks. The second factor, called "Egocentrism," represented 20% of the assertive ones; the third factor, called "Presumption," represented 17%, and the fourth factor, called "Self-confidence", accounted for 11% of the statements. So, all the statements presented a factor loading greater than 0.50, which is acceptable.

Table 9 shows the internal reliability of the factors through Cronbach's Alpha for doctoral students.

Table 9

AFE – Cronbach's Alpha Factors – Doctoral Students

ID	Factor 1 – Self-promotion	Cronbach's Alpha
A31	Whenever I help other people, I post it on my social networks	0,969
A29	I like to compare the comments on my social networks with those of other people	

A25	I post my frustrations to seek social comfort.	
A27	I feel happy publishing intimate moments	
A28	I need to periodically post on social networks	
A26	I always use filters on my images	
A12	I feel important posting my happiness on social media	
A18	I like my social media contacts to praise me	
A36	I post happy moments, even if I don't feel so happy.	
A16	I like to comment on people's images	
A13	I admire my body in my social media posts	
A32	I like to be available to advise people on social media	
A20	I would like to publish my life story in digital media	
A22	I share personal events on social networks	
A30	My self-esteem improves with the reactions on my posts	
A15	My posts are always very successful	
A11	I like to influence people with my virtual comments	
ID	Factor 2 – Egocentrism	Cronbach's alpha
A23	I always expect positive reactions from my posts.	0,922
A17	I like to comment on the posts of important people	
A33	I like to publish my intellectual successes on social networks	
A34	I like to publish my professional successes on social networks	
A10	I like to display my images on social networks	
A19	I feel satisfied publishing my new styles	
A21	It makes me intrigued when people don't notice my posts.	
ID	Factor 3 – Presumption	Cronbach's Alpha
A1	I consider myself capable of influencing people on social networks	0,929
A3	I consider myself important because my posts receive a lot of reactions	
A2	I am looking to have many contacts on social networks	
A4	I strive to have notoriety on social networks	
A5	I want to one day be a digital influencer	
A14	I always take advantage of opportunities to post and comment on social media.	
A35	I strongly believe that he who is not seen is not remembered.	
ID	Factor 4 - Self-confidence	Cronbach's Alpha
A9	I like to be forceful in my comments on social networks	0,763
A8	I look for respect on social networks	
A6	I feel confident in my posts	
A7	I think it's easy to influence people on social media.	

Source: Research data.

The first factor was called “Self-promotion” and showed a Cronbach's alpha of 0.969, which denotes the internal consistency of its assertions, which is very strong. It should be noticed that this factor brings together 17 of the assertions on the scale. The second factor, called “Egocentrism,” yielded a Cronbach's Alpha of 0.922, which denotes the internal consistency of their assertions with superego connotations, which is also very strong. The third factor, called “Presumption,” showed a Cronbach's Alpha of 0.929, which is also very good. The fourth factor was called “Self-confidence” because it concentrates most of the assertive statements that are related to the personal security, it yielded a Cronbach's Alpha of 0.763, which borders the limit of what is acceptable in the literature.

5 CONCLUSIONS

Studies about the human behavior, including social networks, have become increasingly common in psychological, educational, and cultural research. With the arrival of information technologies and particularly social networks, digital narcissism has proliferated. It is a set of communication practices typical of the 2.0 or Social Web universe based on egocentrism so accentuated that it borders on the pathological. The objective of this research was to verify the intensity of narcissism evidenced in the social networks of Brazilian postgraduate students of stricto sensu in the business area.

Among the results found, there is a difference in that master's students present higher rates of virtual narcissism about the same elements measured as doctoral students. Likewise, the questions related to respect show that postgraduate students have a clear position regarding to respect for their opinions and defending their way of thinking.

In turn, the statements related to security and expression indicate that postgraduate students feel very confident, and they have no problems expressing their critical opinion of what they think. This result is exciting, because it is perceived that students at a relatively young age, have the courage and willingness to express their opinions, problems, academic and professional achievements to others. This behavior although it may seem narcissistic is characterized as inherent and beneficial for human beings.

The research used the EFA technique that showed a grouping of three groups for the master's students, and a fourth group was added for the students pursuing a doctorate, which were grouped and cataloged according to their characteristics in common with narcissism and use of social networks. Thus, research on the social networks and their relationship with narcissism clearly reflects the complexity of intrapersonal and contextual factors that influence social networks in terms of their activity as well as their behavior. Social media clearly involves a place where narcissism and a variety of other personality builds some influence both quantity and quality of the individuals own attempts at self-presentation and validation.

Finally, the number of answers who joined the research was significant with 605 students, which demonstrates people's interest in the topic addressed. It is believed that one of the main contributions of this study is the topic of the research as well as the creation of a questionnaire to capture Perceptions of the Intensity of the Virtual Narcissism, which was created for the present study to obtain more precise and reliable data about the perceptions and attitudes of graduate students toward this phenomenon. Thus, it was subjected to internal validation procedures and as reported in the methodology, it presents a high degree of reliability, which demonstrates the strength of the instrument.

This research is also important, because it addresses matters of relevance in the academic field when reference is made to behavioral studies, such as narcissism and the new variant that is virtual narcissism evidenced in the social networks.

A suggestion for a future work is to use the same variables in undergraduate and postgraduate students from different courses. It will help future studies to have

comparative data and thus have more in-depth discussions about the topic. Finally, another suggestion is to expand the sample of students from different generations, because it seems that there is a strong relationship between the use of social networks and the age of the students.

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