

Self-expression and addiction: Instagram use by Czech and Spanish university students

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Abstract

Instagram is an image-based social network that has become very popular amongst young people. This social network has become one of the channels for self-expression of its users. This behavior can also lead to the intensive use of this social network, which in turn is beginning to be linked to technological addiction. The objective of this paper was to analyze Instagram use habits in a sample of Czech and Spanish college students ($n = 362$) and its influence on personal variables (self-esteem, self-expression). Another objective was to find out whether the increased use of Instagram fosters addictive behavior. The study was approached from a quantitative perspective, using the questionnaire as a data collection tool. Amongst the findings were the confirmation of a positive correlation between Instagram use and self-expression, as well as between Instagram use and addiction. Finally, differences were found between Instagram use between Czech and Spanish college students and the connection of Instagram use with self-esteem, self-expression and addiction, together with the concept of relapse.

Keywords: Instagram, self-expression, self-esteem, addiction, social media, higher education.

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How to cite this article in APA

Aznar-Díaz, I., Kopecký, K., Sztokowski, R., & Romero-Rodríguez, J. M. (2021). Self-expression and addiction: Instagram use by Czech and Spanish university students. *Plaridel*, 18(2), 119-140. <http://www.plarideljournal.org/article/self-expression-and-addiction-instagram-use-by-czech-and-spanish-university-students/>

Introduction

Social networks have grown enormously in prominence in the last decade. Their main attractions for a large portion of its user base are the fact that they connect users from different geographical regions and that they offer the possibility of sharing multimedia content through social media (Moreno-Guerrero, Rodríguez-Jiménez, Ramos, Soler-Costa, & López, 2020). However, these characteristics have also been exploited by the companies that support social media, and an economic market has been established where information from the users themselves (big data) and advertising are traded (Marín, López, Fernández, & Romero-Rodríguez, 2019).

If we look back in time, the first and most used social networks were established relatively recently: LinkedIn in 2002, Facebook in 2004, YouTube in 2005, Twitter in 2006, WhatsApp in 2009, Instagram in 2010, Snapchat in 2011, Telegram in 2013, and TikTok in 2016. The emergence of increasingly user-friendly social networks, coupled with the development of mobile devices, has led to intensive use practices amongst the youngest segments of the population. This is more prominent in the “Gen Z” or post-millennial generation, who are currently in the age of beginning their higher education (Doval-Avenida, Domínguez, & Dans, 2018).

On the one side, access to social networks starts at an increasingly young age. National studies in the Czech Republic show that children as young as eight already use Facebook (Kopecký, 2016). The situation in Spain is similar, as in that country children start on social networks from the age of nine (Casado, Garitaonandia, Jiménez, Garmendia, Karrera, & Moreno, 2018).

One of the most popular, due to the exponential growth of its user base, with more than 730,000 users (Cantón-Correa & Alberich-Pascual, 2019), is Instagram. This platform allows users to create, edit, and publish pictures on mobile devices. This feature is very attractive for young people (Shane-Simpson, Manago, Gaggi, & Gillespie-Lynch, 2018). In addition, its preset filters make image editing very easy. It is very simple to operate and navigate: users interact through “likes” and comments in the picture. They also have the ability to decide whether to follow other users to see the publications they make (Phua, Venus, & Kim, 2017). The main value of Instagram for the users is entertainment (Alhabash & Ma, 2017; Perez, 2018).

For all these reasons, this work proposes an analysis of Instagram use by Czech and Spanish college students and its influence on some personal variables (self-esteem, self-expression). Another goal was to find out whether the progressively increased Instagram use drives to addictive behavior (Kircaburun & Griffiths, 2018).

Literature review

Social networks addiction

Addiction to social media is becoming a twenty-first century problem (Bányai et al., 2017), within the category of the so-called behavioral addictions (Pedrero-Pérez et al., 2018). This type of addiction is related to the loss of control over one's own behavior. Thus, addicted users will continuously access the social network, sometimes without awareness of their own actions.

This case study presents a series of consequences on human health, such as sleep disturbances, low self-esteem, negative self-perception, loneliness, and lack of self-control (Isidro & Moreno, 2018; Rojas-Jara et al., 2018). These are all detrimental factors for the life of the college student that can severely impair their ability to go about on a normal academic day.

The risks associated with uncontrolled use of social networks include cyberbullying, cybergrooming, phishing, sexting, fake news, malware, and contact with strangers (Kopecký, 2017; Kopecký & Szotkowski, 2017; Lavorgna et al., 2018). In addition, the first contact in cybercrime usually takes place via social networks or email, rendering untrained users particularly vulnerable.

In particular, the use of social networks like Instagram is associated with addiction to mobile devices (Roberts, Honore, & Manolis, 2014). Thus, intensive Instagram use is a risk factor for developing possible behavioral addictions (Romero-Rodríguez, Aznar-Díaz, Marín-Marín, Soler-Costa, & Rodríguez-Jiménez, 2020; Romero-Rodríguez, Rodríguez-Jiménez, Ramos, Marín-Marín, & Gómez-García, 2020). Furthermore, Instagram users tend to be present on other social networks as well, such as Snapchat, Twitter, and WhatsApp (Painén-Aravena, Ramírez-Correa, Alfaro-Pérez, Melo, & Machorro-Ramos, 2019). This can further increase the risk of addiction to mobile devices.

In connection to technological addiction, some authors have studied the concept of relapse. This term refers to the tendency to repeat previous patterns of addictive activity, leading to addiction being restored very fast after a period of abstinence or control (Griffiths, 2005). Previously, the relapse process was mainly associated with other kinds of addictions, such as tobacco or alcohol, where the patient relapsed after some time refraining from consumption. This pattern also emerges in social media addiction: users who have deleted their profile on social networks create another one again.

Instagram and self-expression

Self-expression is the way of letting others know what we like, what we are excited about, what we can do, or simply whatever we want to “broadcast” to the outside world. This feeling is fostered by social networks, since they promote the publication of statuses and pictures (Waterloo, Baumgartner, Peter, & Valkenburg, 2018).

One of the most popular means of self-expression is the selfie, through which the user shares their intimate and private moments of their life (Conrad, 2015; Senft & Baym, 2015). As an image-based social network, Instagram encourages taking selfies. Jessica Ridgway and Russell Clayton (2016) determined that Instagram users publish selfies to improve their level of satisfaction with their body image.

The drive for self-expression and self-projection toward others is a strong predictor of Instagram use (Al-Kandari, Melkote, & Sharif, 2016). In this casuistry, a factor is the construction of the “ideal me” or the idealization of the user’s daily life (Rang & Sung, 2018), for which the user publishes pictures that depict a reality sometimes very removed from the daily routine of the person.

As a result, the figure of the “influencer” has emerged. These users have the capacity to influence others, making recommendations, experiences, and opinions that become a reference for the masses (Martínez-Sanz & González, 2018). This results in social conditioning; there is evidence that users prefer to like pictures with many likes rather than pictures with fewer likes (Sherman, Payton, Hernández, Greenfield, & Dapretto, 2016). This can be described as an adaptive behavior to integrate into a social group or community. This bears witness to the fact that the sense of belonging to a group or ideology continues to be one of the concerns of the human being in the digital age.

Thus, we find idealized depictions of life, where the influencers act as agents who compete to put on display the most credible image to their followers (Reichart & Sanderson, 2015). This way, Instagram encourages social comparisons between users and promotes the belief that the lives of other people are much better than one’s own (Chae, 2018; de Vries, Möller, Wieringa, Eigenraam, & Hamelink, 2018).

This feeds into the need for self-expression by users who, through Instagram, claim a space of their own where they can express themselves. However, this need for constant self-expression is linked to symptoms of self-dissatisfaction. This is illustrated by the work of Katerina Lup, Leora Trub and Lisa Rosenthal (2015) that says that wanting to have a greater number of followers and resorting to following strangers is associated with depressive symptoms. Christopher Barry, Hannah Doucette, Della Loflin,

Nicole Rivera-Hudson and Lacey Herrington (2017) also draw a correlation between low self-esteem and the publication of numerous pictures of oneself in Instagram. On the other hand, Matthew Pittman and Brandon Reich (2016) state that image-based social networks such as Instagram can instigate feelings of loneliness in the users.

Some previous studies on Instagram establish different foci of interest: Jang-Ho Moon, Eunji Lee, Jung-Ah Lee, Tae Rang and Yongjun Sung (2016) focus on the relationship between narcissism and self-promoting behavior amongst Instagram users. The results showed that people with a higher level of narcissism tend to publish more selfies. Lee, Lee, Moon and Sung (2015) analyze the motivations for using Instagram. Their study lists five motivations: social interaction, archiving, self-expression, escapism, and peeking. With similar results, Sheldon and Bryant (2016) find that the main motivations were “Surveillance/Knowledge about others,” “Documentation,” “Coolness,” and “Creativity.” Li et al., (2018) conducted a study on adolescents’ perspectives on the importance of receiving feedback from their peers on the selfies in Instagram as well. They highlight the fact that that likes and/or comments have an influence on their user’s emotions.

On the other hand, there are fewer studies focused on Instagram addiction: Zeinab Ershad and Tahmoures Aghajani (2017) studied addiction to Instagram among students through the lens of personality, alexithymia, and attachment styles. The results of this study emphasized the relationship between neuroticism, alexithymia, ambivalent and avoidant attachment style, and Instagram addiction.

Kagan Kircaburun and Mark Griffiths (2018) analyzed the relationships between personality, self-esteem, daily Internet use, and Instagram addiction. One of the findings was that self-esteem did not influence Instagram addiction, while daily Internet use was positively associated with Instagram addiction.

Chyntia Novita (2018) researched the link between the online relationship of self-presentation and Instagram addiction. The results show that the higher the degree of online self-presentation, the higher the rate of Instagram addiction. Based on different factors, this study follows the general lines of the previous studies that link personality traits with Instagram addiction, with the particularity of being an inter-college study putting in comparison two different populations.

Finally, five dimensions were established as an object of interest: Instagram use (Bryant, 2016; Lee et al., 2015), self-esteem (Barry et al., 2017; Cudjoe & Sarfo, 2019; Li et al., 2018), self-expression (Al-Kandari et al., 2016; Moon et al., 2016), addiction (Ershad & Aghajani, 2017; Kircaburun & Griffiths 2018; Novita, 2018) and relapse (Griffiths, 2005). As a result, the

objectives of the study were established: (1) to assess the use of Instagram by a sample of Czech and Spanish college students; (2) to find out whether there are statistically significant differences between the Czech and Spanish college student population sample; and (3) to establish correlations between the dimensions of the study (Instagram use, self-esteem, self-expression, addiction, and relapse) through a model of structural equations (SEM). And the research questions were:

- RQ1: What kind of use do college students make of Instagram?
- RQ2: Does greater use of Instagram promote the development of addictive behavior?
- RQ3: Is low self-esteem associated to publishing a higher number of pictures?
- RQ4: Does the number of followers influence the number of pictures or stories published?
- RQ5: Are there statistically significant differences in Instagram use patterns between Czech and Spanish college students?

Method

To address these objectives, the same methodological lines as previous studies dealing with Instagram addiction (Ershad & Aghajani, 2017; Kircaburun & Griffiths 2018; Novita, 2018) were followed. For this, the use of a quantitative methodology with the purpose of describing the observed reality was favored (Hernández, Fernández, & Baptista, 2016). This methodological perspective allows the gathering of empirically verifiable data, collected mainly through a questionnaire. This favors the quantification of participants' responses, the establishment of statistically-descriptive values, the comparison between groups and the correlation between latent variables (Aznar-Díaz, Hinojo-Lucena, Cáceres-Reche, Trujillo-Torres, & Romero-Rodríguez, 2019).

Participants

A cross-sectional study design using a self-administered survey was adopted from the publication of an online questionnaire created with Google Form. The research was conducted based on a convenience sampling design between two comparable populations (Kopecký, Szotkowski, Aznar-Díaz, & Romero-Rodríguez, 2020). Teaching students from one university in the Czech Republic and another in Spain (N = 5585) were invited to participate until a significant sample size was obtained. This was established at 360 students with a 95% confidence interval and a 5% margin of error.

This way, finally the research involved college students from two different universities (n = 362). Specifically, there were 180 students from

the Teaching Faculty of Palacký University of Olomouc (UPOL) and 182 students from the Faculty of Education Sciences of the University of Granada (UGR). A total of 316 were women (87.3%), while 46 were men (12.7%). This gender ratio is explained by the tendency for women to prevail over men in college careers in the field of teaching (Navarro & Casero, 2012). The age range of the participants was between 17 and 49 years ($M = 21$; $SD = 3.59$). Before answering the scale, participants gave their informed consent. Information was also provided to all respondents about the purpose of the study, and all were informed about the anonymous processing of their data.

Data collection

Data collection took place during the second semester of the academic year 2018–2019, with the online questionnaire as a basic research tool.

The questionnaire consisted of 30 items, divided into five dimensions, based on a Likert scale with four levels (1 = never; 2 = sometimes; 3 = often; 4 = always), except in the dimension “relapse” for which the answers followed a yes/no format. The dimensions responded to the concerns of different authors who in their studies linked the use of Instagram (Bryant, 2016; Lee et al., 2015) with self-esteem (Barry et al., 2017; Li et al, 2018), self-expression (Al-Kandari et al., 2016; Moon et al., 2016), addiction (Ershad & Aghajani, 2017; Kircaburun & Griffiths 2018; Novita, 2018), and relapse (Griffiths, 2005).

The reliability analysis of the instrument establishes the value of the Cronbach alpha coefficient at $\alpha = 0.67$ and the coefficient of two Guttman halves at 0.68. Acceptable values were also obtained in the Kaiser-Meyer-Olkin test (KMO) of sampling adequacy ($KMO = 0.75$) and in the Barlett sphericity test ($\chi^2 = 1813.86$; $df = 253$; $Sig. = 0.000$).

The dimensions of the study were:

1. Instagram use (IU) collects 10 items linked to the use of Instagram. These include the number of times Instagram is opened per day (IU1), time spent on Instagram (IU2), picture upload frequency (IU3), story upload frequency (IU4), and other issues related to the Instagram query location and time intervals of connection during the day. Information was also gathered on the number of pictures and stories, purpose, and type of content uploaded ($\alpha = 0.65$).
2. Self-esteem (SEST) collects five items about feelings of ease with oneself (SEST1), mood according to the number of “likes” (SEST2), concern for number of followers (SEST3), emotional affection for negative comments (SEST4), and satisfaction with published content (SEST5) ($\alpha = 0.72$).
3. Self-expression (SEXP) is defined by five items about the satisfaction

of viewing “stories” (SEXP1), overlap of the content published in Instagram with real life (SEXP2), being an influencer (SEXP3), belief that others like the content published on Instagram of the user (SEXP4), and belief that others think that the user’s life is wonderful because of the type of content published (SEXP5) ($\alpha = 0.61$).

4. Addiction (ADD): consists of five items that collect: anxiety after being disconnected from Instagram for more than 24 hours (ADD1), call for attention from family or friends for using Instagram and not paying attention (ADD2), need to check Instagram at all times (ADD3), discomfort for not being able to access Instagram (ADD4), and bad moods for being interrupted while checking Instagram (ADD5) ($\alpha = 0.79$).
5. Relapse (RE): collects five items about whether the user has ever closed their Instagram (RE1) profile or has entertained the thought of closing Instagram definitively (RE2). On the other hand, it was also asked whether the user reopened their Instagram account or created another profile, the time that has passed since the account was closed and reopened, and the reasons why the Instagram profile was closed ($\alpha = 0.60$).

Data analysis

For the data analysis, the chosen tools were the quantitative analysis software IBM SPSS and IBM SPSS Amos, version 24. Likewise, the statistical-descriptive data were processed with IBM SPSS, while the correlations between the dimensions were determined from the structural equations model (SEM) created with IBM SPSS Amos.

Before establishing the SEM, asymmetry and kurtosis values were determined to verify the multivariate normality of the data (table 1). This is a key condition for SEM (Humble et al., 2018). This ensures that the values obtained are within normal parameters, which must be below value two for asymmetry and below value seven for kurtosis (Curran et al., 1996).

Table 1. Descriptive Statistics

Dimension	Mean	SD	Skewness	Kurtosis
Instagram use	2.63	0.75	0.04	0.91
Self-esteem	2.14	0.70	0.61	0.47
Self-expression	2.08	0.52	0.66	0.94
Addiction	1.46	0.17	1.72	3.57
Relapse	1.67	0.11	-0.05	0.49

Note: SD = Standard Deviation.

Results

Although Instagram appeared in 2010, most of the accounts of the participants in this study were created between 2013-2015 (60.21%). In addition, Czech and Spanish college students tend also to have profiles on other social networks besides Instagram (fig. 1). Some of the most popular amongst Czech students are Facebook (97.7%), YouTube (87.5%), WhatsApp (61.1%), and Pinterest (56.1%). Spanish students show very similar preferences, although they have different priorities: WhatsApp (99.4%), YouTube (95.6%), Facebook (67.58%), and Twitter (56.59%).

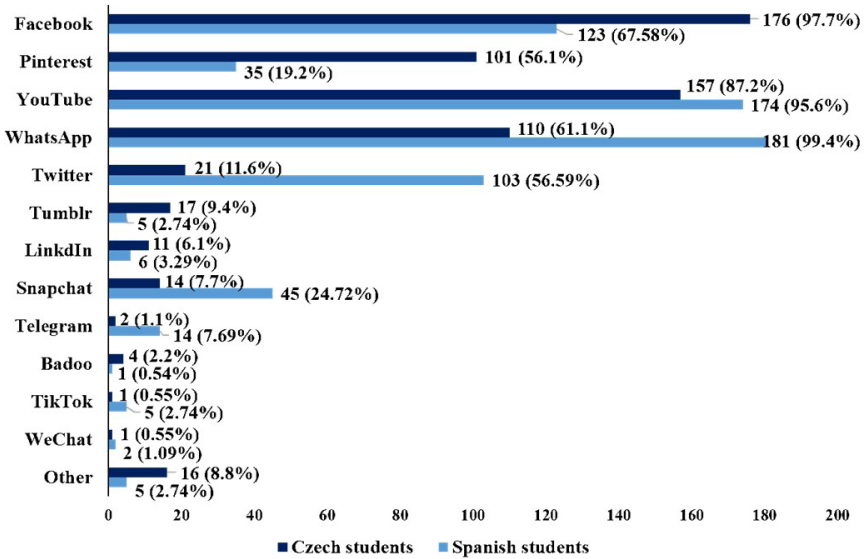


Figure 1. Social media use by Czech and Spanish students.

In terms of Instagram use, the preferred place to use is from home (84%). Other popular places are public transport (7.7%), street (4.1%), college (3.3%), or at work (0.8%). The main time window during the day is during the afternoon (45.6%) and at night (32.3%), all of them way more popular than in the morning (11%) or at noon (11%).

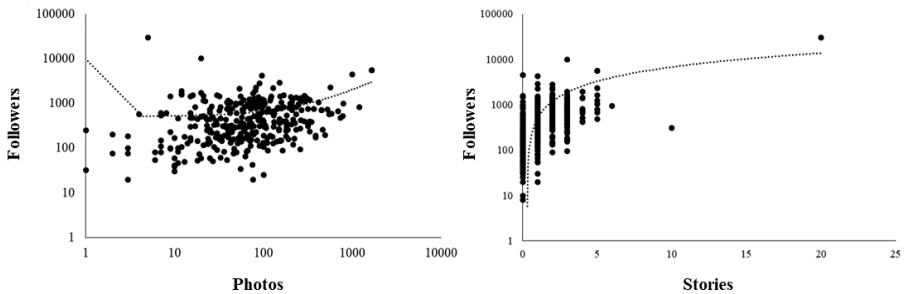
Both student groups express similar reasons for the use. For Czech students, the most common purposes were entertainment (66.1%), “just passing time” (59.4%), information (58.3%), and following famous people (58.3%). On the other hand, Spanish students use it mainly for entertainment (94.5%) and passing time (62.6%), and to a lesser extent for information (31.3%).

The priorities are also different for the type of content. Czech students publish photos related to travel (77.2%), selfies (63.3%), and relevant aspects

of their lives (42.2%), while Spanish students prefer to publish selfies (90.7%), trips (60.4%), and food photographs (41.2%).

The Instagram accounts of the participants range from 0 to 30,000 followers ($M = 695$; $SD = 1754$), 0 to 1657 pictures ($M = 119$; $SD = 185$) and 0 to 20 stories published daily ($M = 1.28$; $SD = 1.65$). Linear regression analysis shows a link between the number of followers and the number of photos published ($r = 0.16$; $p\text{-value} = 0.002$) and the number of followers and the number of stories published daily ($r = 0.65$; $p\text{-value} = < 0.001$) (fig. 2). The correlation is positive and significant in both models. This means that the greater the number of followers, the stronger the tendency to publish more pictures and stories. However, the regression models obtained explain the variability of the Y axis in proportion to its average in 0.2% and 43%, where the value R^2 is 0.026 is applied for the first model (followers/photos) and $R^2 = 0.43$ in the second model (followers/stories).

Figure 2. Correlation between followers (Y axis) and photos/stories (X axis).



Note: the authors are expressed based on \log_{10} (followers/photographs)

On the other hand, a relationship between self-esteem and the number of photos published determined the type of correlation generated was found. This means there is a positive correlation between self-esteem and the number of published pictures, where Pearson's correlation coefficient had a value $r = 0.08$ ($p\text{-value} = 0.095$) (fig. 3). Therefore, the better the self-esteem, the higher the number of published pictures. However, like in the previous models, the calibration obtained was low ($R^2 = 0.005$).

Due to the data typology, the parametric test t was applied to determine whether there were statistically significant differences between Czech and Spanish college students in the different study dimensions (table 2). The data shows differences in the dimensions Instagram use ($p\text{-value} = 0.05$) and self-esteem ($p\text{-value} = < 0.01$).

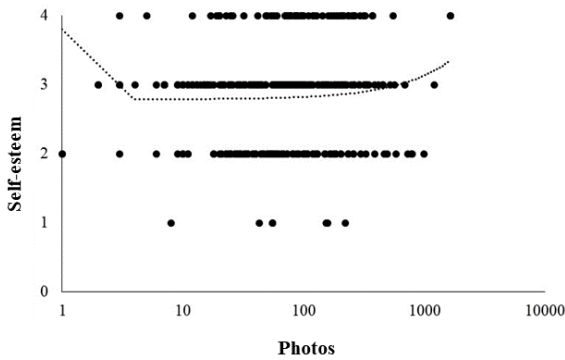


Figure 3. Correlation between self-esteem (Y axis) and pictures (X axis).

Note: the authors are expressed based on $\log_{10}(\text{photographs})$

Table 2. Test t by country in the different dimension

Dimension	Country	N	Mean	SD	t	df	p-value
Instagram use	Czech R.	180	2.51	0.96	-2.75	360	0.05
	Spain	182	2.76	0.82			
Self-esteem	Czech R.	180	2.15	0.75	0.35	360	< 0.01
	Spain	182	2.13	0.70			
Self-expression	Czech R.	180	2.10	0.79	0.78	360	0.35
	Spain	182	2.05	0.76			
Addiction	Czech R.	180	1.43	0.67	-0.80	360	0.17
	Spain	182	1.5	0.67			
Relapse	Czech R.	180	1.69	0.51	1.47	360	0.07
	Spain	182	1.65	0.64			

Note: Czech R. = Czech Republic; SD = Standard Deviation; df = degrees of freedom.

Instagram addiction as a study dimension has not produced alarming values, since the averages are below 2 (sometimes). However, the dependence on this social network is linked to the concept of relapse. This term refers to the act of closing Instagram and reopening it later. Although most students have never closed their Instagram profile ($n = 284$; 78.5%), most of those who have ($n = 78$; 21.5%) have subsequently reopened their profile ($n = 60$; 76.9%). The time period since the profile is closed and reopened is only 1–3 days (44.8%) for most of those users, versus those who reopen the profile after 4–7 days (14.1%), more than a week (19.2%), and more than a month (21.7%). Among the main causes for closing the account were sense of wasting time (64%), concern for privacy (27%), and addiction (21.3%) for the Czech students. In Spanish students, the predominant causes were feelings of wasting time (44.2%), exam period (35%), and concern for privacy (24.2%).

Finally, the establishment of the SEM includes the typology of the correlations between the dimensions of the study. The values obtained

in covariance and correlation (R) point to a positive and negative interdependence between the different dimensions (table 3). The positive correlation between IU ↔ ADD (R = 0.55), IU ↔ SEST (R = 0.01), IU ↔ SEXP (R = 0.15), ADD ↔ SEXP (R = 0.37) and ADD ↔ RE (R = 0.01) is also collected. It was negative between SEST ↔ SEXP (R = -0.55) and SEST ↔ ADD (R = -0.32).

On the other hand, the critical thinking value (CT) establishes the statistical significance of the data (p-value = $X < 0.05$) in scores greater than 1.96 (Iacobucci, 2010). The statistically significant correlations are those generated between IU ↔ ADD (p-value = < 0.001), IU ↔ SEXP (p-value = 0.038) and ADD ↔ SEXP (p-value = < 0.001).

Table 3. Covariances and correlations

Relation	Covariance	SE	TC	p-value	R
IU ↔ ADD	0.062	0.012	5.027	***	0.55
SEST ↔ SEXP	-0.026	0.019	-1.368	0.171	-0.55
IU ↔ SEST	0.001	0.004	0.201	0.841	0.01
IU ↔ SEXP	0.081	0.039	2.073	0.038	0.15
SEST ↔ ADD	-0.003	0.003	-1.318	0.188	-0.32
ADD ↔ SEXP	0.034	0.009	3.899	***	0.37
ADD ↔ RE	0.002	0.005	0.290	0.772	0.01

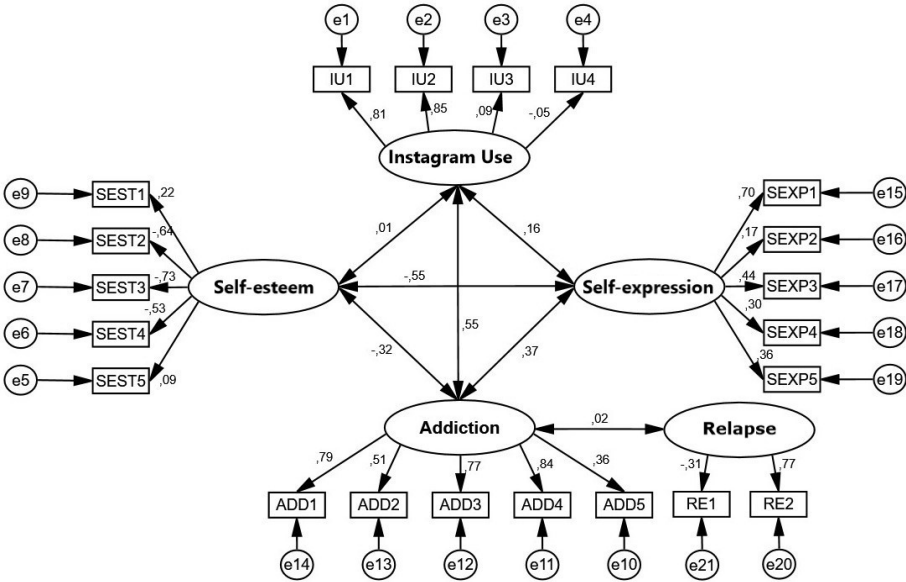
Note: IU = Instagram use; SEST = Self-esteem; SEXP = Self-expression; ADD = Addiction; RE = Relapse; SE = Standard Error; CT = the critical thinking value; p-value *** = < 0.001

The goodness-of-fit indexes of SEM are normal and confirm the adequacy of data (Byrne, 2013): the root mean squared error of approximation (RMSEA = 0.07); the goodness-of-fit index (GFI = 0.86); the root mean residual index (RMR = 0.05); the Tucker-Lewis index (TLI = 0.73); the parsimony goodness-of-fit index (PGFI = 0.68), and the comparative fit index (CFI = 0.77).

On its side, the SEM is made up of the correlations between the five dimensions: Instagram use, self-esteem, self-expression, addiction and relapse (fig. 4). In this respect, Instagram use is defined by four observable variables (IU1, IU2, IU3, and IU4) with regression values ranging from -0.05 to 0.85. Self-esteem is defined by five observable variables (SEST1, SEST2, SEST3, SEST4, and SEST5) and its regression values range from -0.73 to 0.22. Self-expression is composed of five observable variables (SEXP1, SEXP2, SEXP3, SEXP4, and SEXP5) with regression values between 0.17 and 0.70. Addiction collects five other observable variables (ADD1, ADD2, ADD3, ADD4 and ADD5), with regression values between 0.36 and 0.84.

Finally, relapse consists of two observable variables (RE1 and RE2) with regression values ranging from -0.31 to 0.77.

Figure 4. Estimations of the structural equation model.



Note: Chi-square = 555.483; df = 182; p-value = < 0.001.

Discussion

Instagram use by Czech and Spanish college students shows both similarities and differences. Although several dimensions tend to overlap, there are significant differences in certain aspects that reflect the unique aspects of each context, specifically in Instagram use and self-esteem. In turn, the correlations obtained show a link between the dimensions of the study, giving interesting insight into how the use of Instagram affects different parameters (self-esteem, self-expression, addiction, relapse).

The average age of the sample was 21 years old, which corresponds to the members of Generation Z, who were born approximately in 1997–1998. They are an at-risk population to intensive use of mobile devices (Doval-Avedaño et al., 2018). In this regard, it is confirmed that Instagram users use other social networks such as Facebook, YouTube, WhatsApp, Pinterest, amongst others (Painén-Aravena et al., 2019). Therefore, not only are they exposed to the risk of developing an addiction to Instagram, but they are also vulnerable to becoming addicted to other social networks.

This casuistry is reinforced by the fact that this social network is mostly accessed from home, during afternoons and evenings, with the main purposes of spending time for entertainment (Alhabash & Ma, 2017; Lee

et al., 2015; Pérez, 2018). In addition, they tend to follow famous people, called “influencers,” who can influence decision making and user behavior (Martínez-Sanz & González, 2018). On the other hand, the users also check Instagram as an information source (Bryant, 2016), although to a lesser extent.

It also bears to mention that the type of content most frequently published in Instagram are images related to travel, selfies, relevant aspects of life, and food. In particular, Czech students tend to favor travel images, while Spanish students prefer selfies. Such publications paint an idealized picture of everyday life (Rang & Sung, 2018), and foster social comparison between users (Chae, 2018; de Vries et al., 2018). This can generate the feeling of having a “sad life,” which can happen when the user constantly compares their real life of the user with the idealized content published by other influential people.

The recurrence to the publication of selfies is something usual amongst college students, being the most common means of self-expression in Instagram (Conrad, 2015; Senft & Baym, 2015; Waterloo et al., 2018). Self-expression is also linked to wanting to attract as many followers as possible. Linear regression analyses show that the greater the number of followers, the more frequent the publication of photos and stories by the user. It also establishes the need to publish constantly to keep the attention of their followers (Reichert & Sanderson, 2015).

However, the correlation between Instagram use and self-expression is found to be positive and significant (p -value = 0.038). This confirms that the need for self-expression and projection of the self toward others is a strong predictor of the use of Instagram (Al-Kandari et al., 2016). At the same time, it shows a positive correlation between self-expression and addiction, this link being statistically significant (p -value = < 0.001). Therefore, the greater the degree of self-expression, the greater the Instagram addiction and vice versa. The results of Novita (2018) are similar.

On the other hand, higher self-esteem is linked to the publication of more pictures in Instagram. This establishes a positive correlation between Instagram use and self-esteem. Thus, self-esteem and a good self-image affect the posting, the selfie being a statement of satisfaction with one’s own self-image (Ridgway & Clayton, 2016). This shows that a greater number of pictures posted not related to low self-esteem, but to self-expression. These results are opposite to the findings of Barry et al. (2017), which establish the relationship between low self-esteem and the frequent publication of selfie pictures on Instagram. However, the study by Moon et al. (2016), which confirms the relationship between narcissism and the largest publication of selfies, is along the same lines.

Regarding Instagram addiction in this study, as in Kircaburun and Griffiths (2018), it is not confirmed that self-esteem is linked to addiction, since the correlation values obtained are very low and non-significant. On the other hand, together with addiction, there is a relapse dimension present. This link is verified in the positive correlation between addiction and relapse. In addition, most college students reopen their Instagram profile a few days after closing it (Griffiths, 2005). Amongst the motives for closing the accounts are sense of wasting time, addiction, concern for privacy, and closure for exam period.

Finally, the SEM confirms the positive correlation between Instagram use and addiction, obtaining significant values ($p\text{-value} = < 0.001$). In short, constant use of Instagram is linked to the fact of developing addictive behaviors to this social network (Bányai et al., 2017; Ershad & Aghajani, 2017; Kircaburun & Griffiths, 2018; Roberts et al., 2014).

Conclusion

Instagram is a popular social network amongst teenagers and college students, who often intensively use it. They use it mostly for entertainment purposes, which means that young people resort to the use of Instagram to spend their time, often without being aware of the time they spend checking Instagram or using it inadvertently in the presence of others or in a classroom.

This study has focused on different objectives related to Instagram use. The study deals mostly with an assessment of social network use by Czech and Spanish college students from two universities. At the same time, the differences between Instagram use of the two populations have been found, and the correlations between the dimensions of the study have been represented using SEM. Therefore, each question has been answered with specific reference to the research questions:

- RQ1. The most common answer is as a source of entertainment and as a distraction to pass the time. However, the students also use Instagram as a means of staying up-to-date and following famous people. This plays a role in the drive of keeping with social trends and in the adoption of a certain behaviors modeled by influencers.
- RQ2. The SEM empirically proves that constant Instagram use has an impact on the development of addictive behaviors. This means that a positive and significant correlation has been established between these two dimensions (covariance = 0.062; $p\text{-value} = < 0.001$).

- RQ3. High self-esteem is linked to more frequent publication of pictures. So, the greater the satisfaction with the self, the higher the tendency to publish more photos on Instagram, where selfies often predominate.
- RQ4. It is established that having more followers is linked to more frequent publication of pictures ($r = 0.16$; $p\text{-value} = 0.002$) and stories ($r = 0.65$; $p\text{-value} = < 0.001$).
- RQ5. There are differences that are statistically significant in the dimensions of Instagram use ($p\text{-value} = 0.05$) and self-esteem ($p\text{-value} = < 0.01$). In the other dimensions of the study, no significant differences in values are found. However, the mean and standard deviation obtained in most dimensions is similar in both population groups.

It is worthy of mention that one of the limitations of this study is the fact that it only represents a specific population: college students of faculties of education who use Instagram. Coming from a cross-sectional study with a non-random sample, the results are only representative for the study population. In future studies, it would be interesting to extend the sample to other scientific disciplines in order to know if the use patterns are similar. However, the study offers the unique aspect of comparing two different populations (Czech and Spanish students).

Furthermore, as prospective and future lines of research, it is important to continue investigating the drive for self-expression through social networks and the intensive use they entail. It is also worthy of attention to focus on the concept of relapse linked to addiction, since it is a conditioning factor and has not been much researched yet.

Finally, social networks, and particularly Instagram, are a new channel for social interaction, where communication takes place by liking pictures and publishing photos and stories. In addition, individuals have emerged as focal points of interest (influencers) who have become role models for young people who change their behavior accordingly. This, depending on the content disseminated by the role models, can have positive or negative effects. These stimuli encourage the user to check Instagram more frequently, which in turn can trigger addictive behaviors. It is the responsibility of researchers to analyze this link and transfer this knowledge in order to try to alleviate the risks associated with the Instagram intensive use and similar social networks.

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Grant Support Details

Author Contributions: Conceptualization, I.A.D., J.M.R.R., and K.K.; methodology, R.S., I.A.D., and K.K.; investigation, J.M.R.R., and K.K.; data curation, R.S., and I.A.D.; writing—original draft preparation, I.A.D., J.M.R.R., and K.K.; writing—review and editing, I.A.D., J.M.R.R., and K.K.; project administration, R.S., and K.K. All authors have read and agreed to the published version of the manuscript.

Funding: This research was financed by a grant application to the Faculty of Education of Palacký University Olomouc. Project title: Innovative teacher education by combining theory with practice. The grant code is CZ.02.3.68/0.0/0.0/16_038/0006522.

Acknowledgements: The authors would like to thank the study participants. We are grateful for the support of the Erasmus + pre-doctoral programme.

Conflict of Interest: The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analysis, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

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