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Core self-evaluation and loneliness as predictors of internet addictions among undergraduate students

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ABSTRACT

The study investigated core self-evaluation and loneliness as predictors of internet addiction among undergraduate students, two hundred and forty-seven (247) undergraduate students which comprised 139 females and 108 males with a mean age of 21.76 and SD of 5.07 were selected using multi-stage (cluster, simple random: by balloting and purposive) sampling techniques as participants from Enugu State University of Science and Technology, Enugu. Young (1998a) internet addiction test (IAT), Judge et al., (2003) Core Self Evaluation Scale (CSES) and Russell, Peplau, and Ferguson, (1978) UCLA Loneliness Scale were used for the gathering of data, correlational design was adopted, while hierarchical multiple regression using Statistical Package for Social Sciences (SPSS) Version 25 was used for data analysis. Finding revealed that core self-evaluation did not predict internet addict at sig.= .836 which is higher than the threshold of at p< .05, loneliness also failed to predict internet addiction at sig. 556 which is higher than the value of at p< .05. The two independent variable shows no relationship with the dependent variable at r= .1(r= .079), both core self-evaluation and loneliness contributed 0% to the variation of internet addiction at r2= .006, both independent did not jointly predict internet addiction at sig. .752, which is higher than the threshold of at p< .05. Therefore, it is important to encourage students to develop a strong sense of core self-evaluation, as it can help them regulate their internet use and prevent addiction.

KEYWORDS

Core self-evaluation, loneliness, internet, addiction, undergraduate, students.

Undeniably, the internet and smartphones have increased their usage globally, and have become a crucial part of modern-day life. The World Health Organization (WHO) stated this fact in 2014, and recent studies, such as Zewde, et al. (2022), have confirmed it. There is no denying that these technologies have revolutionized the way we interact with the world, from communication to entertainment, education, and work, and we rely on them more than ever before. It's important to note that undergraduates are highly active on the internet. Recent statistics indicate that as of January 2021, over 4.6 billion people worldwide are using the internet, as Kemp (2021) reported. The Internet has become a widely recognised platform for information sharing, academic research, entertainment, communication, and commerce, and its usage has been expanding rapidly across the globe. Internet World Stats reports that the number of Internet users worldwide has grown from 360 million in December 2000 to 4.5 billion in June 2019, equating to a global Internet penetration rate of 58.8% (Internet World Stats, 2019).

It is noteworthy to observe that there exist several phrases that pertain to internet dependency, including internet addiction disorder (IAD), pathological internet use, problematic internet use, excessive internet use, and compulsive internet use. As per Goldberg's research (1996), internet addiction is a form of behavioural addiction that manifests six primary addiction components: salience, mood modification, tolerance, withdrawal, conflict, and relapse (Mark, 2000; Kumari, et al., 2022). Excessive and uncontrolled internet use is a defining characteristic of internet addiction, and can have negative impacts on everyday life (Young, 1998: Zewde, et al., 2022). With the internet being so easily accessible and affordable, it has expanded its user group from computer scientists, engineers, and technicians to undergraduates. While the internet serves as a global platform to share and distribute information at a low cost, its use and impact have become a somewhat contentious issue in modern times. On one hand, it is an essential and useful tool for modern society. On the other hand, people can become overly addicted to it. Studies have shown that frequent internet use can lead to psychological and mental disorders, such as anxiety, depression, stress, and obsessive-compulsive disorder, among young people.

Internet use in Africa has seen a significant surge, with the number of users increasing from 120 million in 2014 to 270 million in 2019 (Okae & Gyasi, 2013: Kumari, et al., 2022). While appropriate internet usage can bring about a plethora of benefits such as improved communications, research, socialization, entertainment, and more, it's important to acknowledge that excessive internet use can have negative impacts on mental health. Internet overuse has been linked to addiction and various mental health issues (Chao et al., 2020). Internet addiction is a complex problem that encompasses various online activities such as gaming, pornography, social networking, and shopping (Nissen, 2006). It's worth noting that internet gaming disorder is now recognized as a clinically significant problem and is included in the classification of mental and behavioural disorders by the World Health Organization and the American Psychiatric Association (World Health Organization, 2018). Despite its prevalence, internet addiction is not yet recognized as a specific disorder or diagnosis in either ICD-11 or DSM-5 (Musetti et al., 2016). However, it is generally accepted as a real phenomenon with a significant impact on mental health. Young adults are considered to be the primary risk group for internet addiction (Öztürk & Özmen, 2016). This is because developmental changes in the brain during adolescence, particularly in cognition, stress, and motivation, make this age group particularly vulnerable to addictive behaviours (Casey et al., 2005; Hammond et al., 2014: Zewde, et al., 2022).

Internet addiction among individuals can have multiple negative impacts including cognitive problems (Park et al., 2011: Zewde, et al., 2022), and loneliness (Hasmujaj, 2016). The prevalence of internet addiction among college and university students is higher than that of the general population, according to a growing body of research (Sharma & Sharma, 2018; Gong et al., 2021). This

phenomenon can have severe negative consequences on physical health (Yang et al., 2019), mental health (Lebni et al., 2020), sleep quality (Wang et al., 2019), and academic performance (Asokan et al., 2019) of affected students. These findings suggest that addressing internet addiction among college and university students is crucial in promoting their overall well-being and academic success. Existing literature has investigated the factors that influence internet addiction among college students. However, many studies have only examined individual or environmental factors separately (Yang et al., 2016; Tian et al., 2020), with only a few studies focusing on the simultaneous impact of both personality and environmental factors on internet addiction among this population. The role of emotional factors in the development and maintenance of internet addiction among college students has also received limited attention. Moreover, while some studies have found a significant positive correlation between internet addiction and core self-evaluation (Kumar & Mondal, 2018; Budak et al., 2015), others have found no significant relationship between these variables (Iftikhar & Tariq, 2014; Lee & Cho, 2015; Błachnio & Przepiorka, 2016; Choi et al., 2013; Öğütçü et al., 2016; Zhou, 2017).

The core self-evaluation construct is a higher-order trait that encompasses four well-established personality traits, namely self-esteem, generalized self-efficacy, locus of control, and emotional stability (Judge et al., 1997; Peláez-Fernández et al., 2021). Self-esteem pertains to one's overall sense of self-worth and value as an individual (Harter, 1998; Peláez-Fernández et al., 2021). Generalized self-efficacy, on the other hand, is a global evaluation of one's perceived ability to perform effectively across a range of diverse tasks and situations (Locke et al., 1996; Peláez-Fernández et al., 2021). Emotional stability is often viewed in contrast to neuroticism and refers to an individual's tendency to adopt a positive cognitive and interpretive style and focus on positive aspects of the self (Peláez-Fernández et al., 2021). Lastly, locus of control is a belief system that reflects the degree to which individuals perceive the causes of events in their lives as being contingent on their own behaviour (internal locus of control) or external circumstances (external locus of control) (Peláez-Fernández et al., 2021). In summary, core self-evaluation is a fundamental aspect of one's self-perception, encompassing feelings of worthiness, capability, and effectiveness in various situations (Judge et al., 2003; Peláez-Fernández et al., 2021). Individuals with high core self-evaluation tend to evaluate themselves positively across diverse contexts (Peláez-Fernández et al., 2021). He et al. (2022) have proposed that loneliness and core self-evaluation are closely linked and can moderate various variables, including internet addiction.

Loneliness is a universal experience that can affect individuals of all ages. It is a subjective feeling of social isolation and dissatisfaction with one's social relationships. According to Cherry (2021), loneliness is a state of mind that causes individuals to feel empty, alone, and unwanted. It arises from a discrepancy between one's desired and actual social relationships, leading to distress (Bhagchandani, 2017). Individuals who experience loneliness often seek human connection, but their emotional state can make it challenging to form meaningful relationships with others (Cherry, 2021). The feeling of loneliness is typically linked to an individual's subjective evaluation of their overall level of social interaction and is characterized by a discrepancy between their desired and actual level of social engagement in terms of both quality and quantity (Peplau & Perlman, 1982; Bhagchandani, 2017). Loneliness can result from a lack of social relationships that meet an individual's needs or from relationships that are not satisfying or intimate enough to fulfil their emotional requirements. According to Peplau and Perlman (1989) and Bhagchandani (2017), human beings are naturally social creatures who actively engage with others and their environment through communication. Loneliness, therefore, can be viewed as the feeling of disconnection from this process of engagement and interaction.

Loneliness can be influenced by various situational and psychological factors. Situational variables, such as physical isolation, relocation, and divorce, can contribute to feelings of loneliness (Cherry, 2022). The loss of a significant person in one's life can also trigger loneliness (Cherry, 2022). Furthermore, loneliness can be a symptom of mental health disorders such as depression, which can cause individuals to withdraw socially, leading to social isolation (Cherry, 2022). Research has also suggested that loneliness can be a contributing factor to symptoms of depression (Erzen & Çikrikci, 2021). Thus, the causes of loneliness are multifaceted and can vary depending on the individual's circumstances. Studies have indicated that loneliness is a widespread issue that can affect individuals across various demographics, including those in marriages or other strong relationships, successful professionals, and students (Cacioppo & Cacioppo, 2018; Hawkley & Cacioppo, 2010). Despite having fulfilling relationships or successful careers, individuals can experience feelings of loneliness, highlighting the subjective nature of this phenomenon. These findings emphasize that loneliness can affect anyone and can be influenced by a range of factors, including personal circumstances, social support, and psychological well-being. To date, no research has explored the potential predictive role of core self-evaluation and loneliness in internet addiction. This gap in the literature underscores the need to investigate the independent and combined effects of these variables on the likelihood of developing internet addiction. Understanding the extent to which core self-evaluation and loneliness can contribute to internet addiction can inform the development of targeted interventions that effectively address these factors and mitigate the risk of internet addiction among affected individuals.

The following hypotheses were tested:
Loneliness will significantly predict internet addiction among undergraduate students
Core self-evaluations will significantly predict internet addiction among undergraduate students
Loneliness and core self-evaluation will jointly predict internet addiction among undergraduate among undergraduate students.

Method

Participants

Two hundred and forty-seven (247) undergraduate students which comprise 139 females and 108 males with a mean age of 21.76 and SD of 5.07 were selected using multi-stage (cluster, simple random: by balloting and purposive) sampling techniques as participants from Enugu State University of Science and Technology, Enugu. The students were clustered according to their faculties, simple random: balloting was used to pick the faculties/departments, while purposive sampling techniques were used to select the participants, from Applied Natural Sciences fifty-four (54), from faculty of Agriculture and Natural Resource Management forty-eight (48), from Environmental sciences forty-five (45), from Engineering fifty-one (51) and from Law forty-nine (49). Inclusive criterion: undergraduate student from the selected faculties. Exclusive criterion: none-graduate student, and students outside the selected faculties.

Instrument

The following instrument were used:

- Young (1998a) internet addiction test (IAT)
- Judge et al., (2003) Core Self Evaluation Scale (CSES) and
- Russell, Peplau, and Ferguson, (1978) UCLA Loneliness Scale

Young (1998a) internet addiction test (IAT)

IAT consists of 20 items rated on a Likert scale from 1 (rarely) to 5 (always) (Young, 1998a). These items were derived from the DSM-IV-TR (American Psychiatric Association, 2000) diagnostic

criteria of pathological gambling, which examines the degree of preoccupation and compulsiveness to go online, and the impact on life related to Internet usage. In the Chinese version of IAT, items were translated with considerations of relevance to adolescents. For instance, "household chores" in Item 2 was translated into "daily hassles," and "intimacy with partner" of Item 3 was translated into "activities with companions." According to Young (1998a), respondents who scored ≥70 were classified as addictive Internet users who have encountered significant life problems due to excessive Internet use. Those with an IAT score between 40 and 69 were classified as problematic Internet users who encounter general life problems due to excessive Internet use. Respondents with an IAT score of ≤39 were classified as average Internet users only having some problems of controlling Internet use. A high reliability estimate of IAT was consistently reported in adolescents with a Cronbach's $\alpha > .80$ in the previous studies (Bayraktar & Gün, 2007; Milani, Osualdella, & Di Blasio, 2009; Wang et al., 2011).

Russell, Peplau and Cutrona, (1980). The revised UCLA Loneliness Scale

Russell, Peplau and Cutrona, (1980) revised UCLA Loneliness Scale consisting of 20 items, examined concurrent and discriminate validity. The scale consists of 10 positively and 10 negatively scored items, items 1, 5, 6, 9, 10, 15, 16, 19, 20 are all reverse scored. The measure has high internal Consistency (coefficient alpha = .96) and a test-retest correlation over a two-month period of .73. (Russell, Peplau, & Ferguson, 1978)

Judge et al., (2003) Core Self Evaluation Scale (CSES)

The Core Self-Evaluations Scale was used to measure each participant's CSE and revalidated by Sheykhshabani (2011). This is a 12-item scale and in this study a 5-point Likert format ranging from 1 (disagree strongly) to 5 (agree strongly) was used. The CSES measures a single factor that is the communality of self-esteem, locus of control, generalized self-efficacy, and emotional stability. Sheykhshabani (2011) obtained a Cronbach alpha of 0.71 and item-total correlations were ranging from .25 to .61. Also, a mean and standard deviation 43.29 and 5.93 was obtained.

Procedure

Undergraduate students were selected as participants from four faculties in Enugu State University of Science and Technology (ESUT) using multi-stage sampling (cluster, simple random: by balloting, and purposive) techniques for this study. The students were clustered according to their faculties, simple random: by balloting was used to pick the faculties while availability sampling techniques was used to drawn the students. The researcher employed the research assistants whom are faculties' executives from the selected faculties to help distribute and retrieve the questionnaire. Two hundred and fifty-two questionnaires were distributed; two hundred and forty-nine were returned. Among the returning ones, two were not properly responded to, which make the numbers properly responded to be two hundred and forty-seven, which was used for data analysis.

Design and Statistics

Correlational design was adopted based on the fact that the relationships between the predictor variables and dependent variable are being investigated and also they do not manipulate or control any of the variables.. The statistical test that was used for data analysis is hierarchical multiple regression using Statistical Package for Social Sciences (SPSS) Version 25 software. Thus, Means and standard deviation distributions will be investigated. These will help to determine the direction and strength of the relationships among the study variables, as well as the moderating role. (George, 2008)

Result

Table 1: descriptive statistics

S/N	Variables	M	SD	1	2	3	4	5
1	Internet addiction	50.7447	13.94531	1.000	-.049	.076	.002	-.094
2	Core-self evaluation	41.0000	6.25274		1.000	-.383	.105	-.086
3	loneliness	42.5957	9.10786			1.000	-.026	.037
4	age	21.7553	5.06662				1.000	-.115
5	gender	1.5638	.49857					1.000

Table 1 above shows that internet addiction and (core self-evaluation r= -.1(r= -.049) and gender at r= -.1(r= -.094)) shows a no correlation with negative interaction with internet addiction among undergraduate student. This means that the dependent variable and the two criterion variables are not compatible; it indicated that the increase in core self-evaluation will lead to decrease in internet addiction. This shows that the presence of core self-evaluation will lead to the absence of internet addiction. Also gender can cause the decrease in internet addiction according to the findings. This implies that the presence of the other gender can lead to the absence of students spending more time online.

Table 1 indicated that core self-evaluation and loneliness displayed a negative correlation at r= -.4(r= -.383) which means that the increase in core self-evaluation will lead to the decrease in loneliness. This implies that loneliness and core self-evaluation are incompatible, the presence of one variable will cause the absence of the other variable.

Table 2: regression statistics

Model	**r**	**R^2**	**Adj. R^2**	**UnSt**	**St**	**t**	**Sig.**
1	.079	.006	-.016				.752
Core-self evaluation				-.052	-.024	-.208	.836
loneliness				.102	.067	.592	.556
2	.126	.016	-.028				.646
Age				-.013	-.005	-.044	.965
Gender				-2.775	-.099	-.935	.352

Dependent variable= internet addiction, at p< .05. r= relationship, r^2= relationship square, UnSt= unstandardised, St= standardised

Table 2 above indicated that core self-evaluation did not predict internet addict at sig.= .836 which is higher than the threshold of at p< .05, a negative interaction was confirmed from the result. This means that the increase in core self-evaluation will cause the decrease of internet addiction among undergraduate. Loneliness also failed to predict internet addiction at sig. 556 which is higher than the value of at p< .05. The two independent variable shows no relationship with the dependent variable at r= .1(r= .079), both core self-evaluation and loneliness contributed 0% to the variation of internet addiction at r^2= .006, both independent did not jointly predict internet addiction at sig. .752, which is higher than the threshold of at p< .05.

The two demographic variables of age at sig. .965 and gender at sig. 352 did not predict internet addiction as well because both sig. value are higher than the threshold value at p< .05

Discussion

The first hypothesis tested which stated that core self-evaluation will significantly predict internet addiction among undergraduates was not confirmed. According to the study, there is no relationship between core self-evaluation and internet addiction. These findings contradict the previous studies conducted by Sarıalioğlua, Atayb and Arıkana (2022) and Alsumait, Alheneidi and Smith (2022), who claimed that there is an association between the two. However, the study did find a negative interaction between core self-evaluation and internet addiction. This implies that an increase in core self-evaluation can lead to a decrease in internet addiction, despite the lack of a direct relationship between the two. Overall, the study strongly suggests that having a strong sense of core self-evaluation can effectively regulate internet addiction among undergraduate students.
The second hypothesis tested which stated that loneliness will significantly predict internet addiction among undergraduate student was not confirmed. The results of this study indicate that loneliness does not contribute to internet addiction among undergraduate students, which contradicts the theories proposed by Ofole (2022) and Xinwei, Hui, and Weilong (2022) who suggested that loneliness is a determining factor for internet addiction. This implies that loneliness is not a significant factor that causes internet addiction or its absence among undergraduate students. When individuals feel lonely, they tend to isolate themselves from social interaction, whether it's physical or internet-based.

The findings of this study suggest that negative feelings associated with deficient social relationships do not lead to internet addiction among undergraduate students. This means that even when students have access to the internet, they do not turn to it for help when they experience negative emotions related to loneliness. Instead, they tend to shy away from anything that would bring them closer to people, which leads to a non-prediction of internet addiction. The study also suggests that when students use the internet less, they tend to be less addicted to it.

The third hypothesis tested which stated that core self-evaluation and loneliness will jointly predict internet addiction was not confirmed. The results of the study indicate that the presence of both core self-evaluation and loneliness does not cause the presence of internet addiction. In other words, neither of these independent variables is a determining factor for internet addiction, and their presence alone will not lead to internet addiction.

Implication of the Findings

The result obtained is in congruity with social-cognitive theory by Bandura, (1986) which was adopted as theoretical framework because it described how humans learn from experience. In the social-cognitive view, interactions with the environment influence exposure by continually reforming expectations about the likely outcomes of future behaviour (Bandura, 1986). Seemingly, this represents the same process that describes the relationship among gratifications sought, behaviour, and gratifications obtained (Palmgreen et al., 1985). This implies that the interpretation given to situation perceived from the environment can determine level of addiction to the internet among undergraduate students.

The study found that both independent variables, core self-evaluation and loneliness, did not predict internet addiction. Moreover, core self-evaluation showed a negative interaction with internet addiction, suggesting that students with higher core self-evaluation are better equipped to regulate their internet use. Therefore, it is important to encourage students to develop a strong sense of core self-evaluation, as it can help them regulate their internet use and prevent addiction.

Limitation of the Study

So many factors militated against this study, one of such is the sampled size. The use of only one state government university reduces the population of participants, the number would have increased assuming more than one university was sampled.
Secondly, this study was conducted when some of the departments facing accreditation which limited the numbers of students' available.

Suggestion for further study

Future researchers should consider sampling more than one schools so as to increase the numbers of students that will participate in the work.

Future researcher should consider carrying out this study when student are less busy and available.

Summary and Conclusion

The aim of this study was to investigate core self-evaluation and loneliness as predictors of internet addiction among undergraduate students. The findings revealed that neither of these predictor variables was able to predict internet addiction. However, core self-evaluation showed a negative interaction with internet addiction, suggesting that higher levels of core self-evaluation may be helpful in regulating internet use and preventing addiction. Therefore, it is important to encourage students to develop a strong sense of core self-evaluation in order to assist them in regulating their internet use.

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