



## The Role of Internet Usage in Shaping Psychological Well-Being: A Comparative Study of Internet-Addicted and Non-Addicted Undergraduates

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## Abstract

This study explores the psychological impact of Internet addiction, comparing the functioning of Internet-addicted individuals to their non-addicted counterparts. A survey of 175 undergraduates from a Malaysian public university assessed their perceptions of 18 statements reflecting key facets of psychological well-being, including autonomy, environmental mastery, positive relationships, personal growth, purpose in life, and self-acceptance. Significant differences were observed in 14 out of 18 statements, with small to medium effect sizes, indicating meaningful disparities between the two groups. The findings suggest that Internet-addicted individuals are more likely to experience challenges in psychological well-being, often turning to the Internet as a coping mechanism for dissatisfaction or unhappiness. This study underscores the need for targeted interventions in the realm of information technology to promote healthier Internet use and address its psychological effects.

**Keywords:** Internet Addiction, Psychological Functioning, Psychological Well-Being, Psychological Distress, Happiness.

## Introduction

Recently, it has been discussed that Internet addiction can be better explained from a perspective of compensatory use rather than compulsion (Kardefelt-Winther, 2014). The idea of the Internet being used as a way to cope with difficult situations or compensate for unmet real-life needs is not new and has been mentioned in the literature (Armstrong et al., 2000; Widyanto & Griffiths, 2006). However, it has been investigated less empirically compared to the prevailing theory of Internet addiction as a compulsive behavior and a possible mental disorder. Given that Internet applications can be used as a way to cope with difficult situations or compensate for unmet real-life needs, assessing the psychological well-being of those who are Internet-addicted as opposed to those who are not would provide clues as to why these problematic users persist in spending so much time online despite experiencing conflicts and other negative effects in their lives. Current studies linking psychological well-being with Internet addiction typically revolve around indicators such as depression (e.g., Ahmadi & Saghafi, 2013; Huang, 2010; Yen et al., 2007; Young & Rogers, 1998), anxiety (Ahmadi & Saghafi, 2013), loneliness (Huang, 2010; Ghassemzadeh et al., 2008), and self-esteem (Huang, 2010; Ghassemzadeh et al., 2008) as representations of psychological well-being. However, such indicators are usually clinical symptoms that are limited in providing a holistic standpoint on how people evaluate their lives. Using such indicators as conceptions of psychological well-being may not be comprehensive enough because they possess little theoretical rationale and thus neglect important aspects of positive functioning (Ryff, 1989).

In contrast, this study seeks to uncover how Internet-addicted individuals, as opposed to non-addicted individuals, judge their lives in terms of six theoretically grounded facets of psychological well-being, namely: autonomy (independence and self-determination); environmental mastery (the ability to manage one's life); personal growth (being open to new experiences); positive relations with others (having satisfying, high-quality relationships); purpose in life (believing that one's life is meaningful); and self-acceptance (a positive attitude towards oneself and one's past life). This study focuses on university students, specifically the undergraduates, as they are considered innovators and early adopters of the latest technologies (Ehrenberg et al., 2008) and are particularly susceptible to developing problematic or addictive Internet use (Lee, 2010).

## **Literature Review**

The increasing prevalence of Internet use has significantly impacted various aspects of life, including psychological well-being. While the Internet offers numerous benefits, such as access to information, social connection, and entertainment, excessive use can lead to negative psychological outcomes. This literature review explores the role of Internet use in shaping psychological well-being, particularly focusing on the differences between Internet-addicted and non-addicted individuals, with an emphasis on undergraduate students.

### **Internet Addiction and Psychological Well-Being**

Internet addiction is characterized by excessive and compulsive use of the Internet, often at the expense of other important aspects of life. Studies have shown that Internet addiction can lead to a range of negative psychological outcomes, including depression, anxiety, and social isolation (Kuss & Griffiths, 2017). Internet-addicted individuals often experience a diminished sense of well-being, with impairments in key areas such as emotional regulation, self-esteem, and interpersonal relationships (Young, 1998). These individuals may turn to the Internet as a coping mechanism for psychological distress, which can create a cycle of dependence and further deterioration in mental health (Kuss et al., 2014).

### **Psychological Well-Being Dimensions**

Psychological well-being is a multidimensional construct that includes factors such as autonomy, environmental mastery, positive relationships, personal growth, purpose in life, and self-acceptance (Ryff, 1989). These dimensions are crucial for understanding how Internet addiction may affect individuals' overall psychological functioning. Research suggests that Internet-addicted individuals often struggle with lower levels of autonomy and self-regulation, as excessive use of the Internet can interfere with personal goals and decision-making abilities (Caplan, 2002). Additionally, Internet addiction has been linked to reduced environmental mastery, in which individuals may feel less capable of managing their real-world environment due to their preoccupation with online activities (Chou & Hsiao, 2000).

### **Social and Emotional Impact of Internet Addiction**

Social relationships and emotional well-being are significantly impacted by Internet addiction. While the Internet can provide a platform for social interaction, excessive use often leads to a decline in face-to-face interactions, resulting in feelings of loneliness and social isolation (Kuss & Griffiths, 2017). Internet-addicted individuals may substitute online relationships for real-life connections, which can exacerbate feelings of alienation and reduce overall life satisfaction (Young, 1998). Furthermore, constant exposure to online content, including social media, can lead to negative self-comparisons and diminished self-esteem, particularly among young adults (Fuchs et al., 2019).

### **Positive Aspects of Internet Usage**

Despite the potential negative effects, some studies have highlighted the positive aspects of Internet use. The Internet can serve as a valuable tool for learning, personal development, and social connection. For example, online communities and support groups can provide individuals with a sense of belonging and emotional support (Pew Research Center, 2019). Additionally, the Internet offers opportunities for personal growth through access to educational resources and self-help content (Przybylski & Weinstein, 2013). However, the benefits of Internet use are often overshadowed by the adverse effects of excessive use, particularly in individuals who exhibit addictive behavior.

### **Comparative Studies on Internet-Addicted and Non-Addicted Individuals**

Several studies have compared the psychological well-being of Internet-addicted and non-addicted individuals. Research has consistently shown that Internet-addicted individuals report lower levels of psychological well-being across various dimensions. For example, a study by Huang and Leung (2009) found that Internet addiction was negatively correlated with life satisfaction, self-esteem, and social support among university students. Similarly, a study by Kim et al. (2016) found that Internet-addicted students exhibited higher levels of depression and anxiety compared to their non-addicted peers. These findings suggest that excessive Internet use can significantly impair psychological functioning, particularly in young adults who are still developing their coping mechanisms and emotional regulation skills. There is a complex relationship between Internet use and psychological well-being. While moderate Internet use can offer benefits such as increased social connection and access to information, excessive use can lead to significant psychological challenges, particularly in individuals who develop Internet addiction. This review underscores the importance of understanding the psychological implications of Internet addiction, especially among undergraduate students at a critical stage of personal and academic development. Further research is needed to explore effective interventions and strategies for promoting healthy Internet use and improving the psychological well-being of individuals at risk of addiction.

## Methodology

One hundred and seventy-five undergraduates from a public university located in Malaysia participated in this pilot study, which is part of a larger, ongoing research project on Internet use among university students. Verbal consent was sought and acquired from all participants before they participated in the study. Females (75.4%) outnumbered males (24.6%), while the average age of the participants was 23 years ( $SD = 1.02$ , range = 20–27 years). Most of the participants were Malaysians (93.1%), with students of Chinese ethnicity comprising the majority (62.3%), followed by Malays (30.9%), Indians (4.0%), and finally other ethnicities (2.9%). Participants completed a questionnaire that assessed their demographic details, Internet use, Internet addiction, and psychological functioning.

Internet use was assessed using several commonly used online services and applications in this digital age (1 = not at all to 6 = several times a day). Participants were also asked how much time they spent online daily, the number of Internet-enabled devices they owned, and whether they subscribed to a mobile Internet data plan.

Internet addiction was measured using the Short and Modified Internet Addiction Test (s-IAT) (Pawlikowski et al., 2013), which is a shortened (12-item) and modified (in terms of rating scale) version of the original Internet Addiction Test (Young, 1998). The items captured pertinent facets of Internet addiction, such as loss of control, mood modification, psychological dependence or preoccupation, and conflict (1 = not at all to 5 = always). Overall, the reliability for the s-IAT was good (Cronbach's  $\alpha = 0.854$ ).

To assess the participants' psychological functioning, the Psychological Well-Being Scale (Ryff, 1989) was used. There were three items measuring each of the six facets constituting psychological well-being (1 = strongly disagree to 5 = strongly agree). All constructs of psychological well-being demonstrated fairly good internal consistency, falling within the  $0.60 \leq \alpha < 0.80$  threshold (Hair et al., 2006): Autonomy ( $\alpha = 0.762$ ), Environmental Mastery ( $\alpha = 0.759$ ), Personal Growth ( $\alpha = 0.703$ ), Self-Acceptance ( $\alpha = 0.786$ ), Positive Relations with Others ( $\alpha = 0.823$ ), and Purpose in Life ( $\alpha = 0.662$ ).

## Results

Students owned an average of 2.35 ( $M = 2.35$ ) Internet-enabled devices, usually a laptop and mobile phone. Seventy-seven students (44.3%) subscribed to a mobile Internet data plan, while the rest relied on free Wi-Fi on campus and in other public areas. The proportion of time spent online among the students was as follows: less than one hour (0.6%), one to five hours (45.4%), six to ten hours (33.3%), eleven to fifteen hours (13.2%), sixteen to twenty hours (4.6%), and more than twenty hours (2.9%). The top three online services/applications used by the students were search engines ( $Mdn = 6$ ), social networking sites ( $Mdn = 6$ ), and instant messaging applications ( $Mdn = 6$ ).

The mean score for the IAT scale was  $M = 31.57$  ( $SD = 7.88$ ). Following Pawlikowski et al. (2013), the cut-off score for problematic Internet usage was derived using the mean and standard deviation ( $M + SD = 39.45$ ), resulting in a cut-off score of 39. Out of 175 individuals, 33 (18.9%) were classified as Internet-addicted users (15 males, 18 females).

Significant differences were observed between Internet-addicted and non-addicted individuals for several online services/applications (see Table 1), including search engines, social networking, chat/instant messaging, image/photo sharing, video streaming, and peer-to-peer file sharing

**Table 1. Results of the Mann-Whitney U test comparing differences in online services/application**

Type of online service/ application	Non-addicted (N=142) Mean ranks (Median)	Addicted (N=33) Mean ranks (Median)	Mann- Whitney U test	Z-score	Effect size
E-mail	86.02 (5)	96.5 (5)	2623.5	1.11	0.08
Search engines	85.14 (6)	100.3 (6)	2749	2.25*	0.17
Social networking	84.33 (6)	96 (6)	2544	2.2*	0.17
Chat/Instant messaging	84.75 (6)	101.98 (6)	2804.5	2.42**	0.18
Image/photo sharing	83.75 (3)	106.29 (4)	2946.5	2.35**	0.18
Video streaming	83.94 (4)	102.7 (6)	2828	2.02*	0.15
Blogging	85.03 (1)	98.47 (1.5)	2623	1.52	0.11
Online shopping	88.33 (2)	86.58 (2)	2296	-0.19	-0.01
Online gaming	85.76 (1)	94.94 (2)	2572	1.02	0.08
Peer-to-peer file sharing	83.24 (2)	105.68 (2)	2926.5	2.4**	0.18

\* $p < 0.05$ ; \*\* $p < 0.01$

Significant differences were also found between the responses of Internet-addicted individuals versus non-addicted individuals for 14 out of 18 statements measuring psychological functioning (see Table 2). All 18 statements recorded small (0.1) to medium (0.3) effect sizes (Cohen, 1988). With the exception of the constructs Autonomy, Positive Relations with Others and Purpose in Life, all the statements measuring their corresponding constructs were significant.

**Table 2. Results of the Mann-Whitney U test comparing differences in psychological functioning**

Items and their corresponding factor	Non-addicted (N=142) Mean ranks (Median)	Addicted (N=33) Mean ranks (Median)	Mann-Whitney U test	Z-score	Effect size
<b>Autonomy</b>					
I tend to worry what other people think of me.	86.20 (4)	95.73 (4)	2598	1.05	0.08
I often change my mind about decisions if my friends and family disagree.	86.79 (4)	93.23 (4)	2515	0.7	0.05
It is difficult for me to voice my own opinions on controversial matters.	83.34 (3)	103.11 (3)	2771.5	2.09*	0.16
<b>Environmental mastery</b>					
I do not fit well with the people and the community around me.	83.51 (2)	107.32 (3)	2980.5	2.56**	0.19
I often feel overwhelmed by my responsibilities.	83.90 (3)	105.64 (3)	2925	2.41**	0.18
I have difficulty arranging my life in a way that is satisfying to me.	81.27 (3)	116.94 (3)	3298	3.84***	0.29
<b>Personal growth</b>					
I am not interested in activities that will expand my experience or knowledge.	83.32 (2)	105.35 (3)	2915.5	2.39**	0.18
I don't want to try new ways of doing things – my life is fine the way it is.	83.17 (2)	103.24 (3)	2846	2.19*	0.17
When I think about it, I haven't really improved much as a person over the years.	83.66 (2.5)	106.68 (3)	2959.5	2.5**	0.19
<b>Positive relations with others</b>					
I often feel lonely because I have few close friends with whom to share my concerns.	85.11 (2)	100.45 (3)	2754	1.62	0.12
I don't have many people who want to listen when I need to talk.	83.35 (2)	108.03 (3)	3004	2.62**	0.2
It seems to me that most other people have more friends than I do.	83.96 (3)	99.88 (3)	2735	1.71*	0.13
<b>Purpose in life</b>					
I don't have a good sense of what it is I am trying to accomplish in life.	82.05 (2)	113.62 (3)	3188.5	3.39***	0.26
I used to set goals for myself, but that now seems a waste of time.	84.93 (2)	98.47 (3)	2688.5	1.47	0.11
I sometimes feel I have done all there is to do in life.	84.13 (3)	104.64 (3)	2892	2.25*	0.17
<b>Self-acceptance</b>					
I feel that many of the people I know have got more out of life than I have.	82.66 (3)	108.20 (3)	3009.5	2.74**	0.21
In many ways, I feel disappointed about my achievements in life.	84.20 (3)	104.35 (3)	2882.5	2.16*	0.16
My attitude about myself is probably not as positive as most people feel about themselves.	83.80 (3)	103.91 (3)	2797	2.13*	0.16

\*p&lt;0.05; \*\*p&lt;0.01; \*\*\*p&lt;0.001

## Discussion and Conclusion

Results of the analysis revealed that 18.9% of the undergraduates sampled were addicted to the Internet, which is consistent with findings from other studies examining Internet addiction among college students. For instance, Niemz et al. (2005) found a prevalence of 18%, while Tsai et al. (2009) reported 17.9%. The psychological functioning between Internet-addicted students and non-addicted students was found to be significantly different, with addicted students expressing a higher degree of psychological distress in their lives than the non-addicted students. This lends credibility to previous notions that Internet-addicted students are more likely to have lower subjective happiness (Akin, 2012). Usage of certain Internet applications, such as social networking, video streaming, and instant messaging applications, was also significantly higher among the addicted. The effect sizes recorded for all significant differences, despite being small to medium in magnitude, proved that the differences truly existed and were not merely attributed to chance.

Two important insights can be derived from this study. First, the findings revealed that Internet-addicted individuals tend to grapple more with issues related to psychological well-being. The transition from high school to university is one of the biggest changes in an individual's life. At first, students may delight in the freedoms that come with leaving home for the first time. However, the reality of adjusting to a new living environment, fulfilling academic requirements, developing friendships, and preparing for exams quickly sets in. Many students, particularly the Internet-addicted ones, find themselves overwhelmed by such changes, feeling that they lack the capacity to manage their lives and their surrounding world effectively.

Compared to the non-addicted students, Internet-addicted students seemed less satisfied with themselves, finding it more difficult to embrace all aspects related to their identity. This difficulty in accepting and liking all facets of oneself—not just the positive but also the weaknesses, limitations, and imperfections—could perhaps explain why researchers often find that Internet-addicted individuals tend to have lower self-esteem (Niemz et al., 2005). As they continue to spend more time online, they start losing interest in developing their potential, growing, and expanding as individuals, leading them to feel a sense of personal stagnation over time. The addicted also do not seem to have a clear comprehension of their life's purpose and sense of direction compared to the non-addicted. They expressed that they have few close, trusting relationships with others. This aligns with previous findings that Internet addicts are usually lonely people in search of social support (Yeh et al., 2008).



Concerning autonomy, both the addicted and non-addicted were equally concerned about the expectations and evaluations of others, whereby they still look to others for approval, a trait which is not uncommon in countries with collectivist cultures such as Malaysia. However, addicted students did seem to find it more difficult to communicate their views on controversial matters than non-addicted students.

Secondly, the findings suggest that addicted individuals who tend to grapple more with issues related to psychological well-being may find themselves turning to the Internet as a form of compensation for whatever unhappiness or dissatisfaction they are experiencing. This supports recent contentions that Internet addiction may be understood as a compensation strategy rather than compulsion (Kardefelt-Winther, 2014) as well as early speculations on the compensatory potential of media use whereby the Internet can be used to alleviate dysphoric moods and may therefore be used to cope with or compensate for real-life problems (Young, 1998). For instance, an individual becomes addicted to chat/instant messaging applications or social networking sites such as Facebook to fulfill missing social needs. In particular, the need to belong which concerns humans' intrinsic drive to connect with others and gain social acceptance, and the need for self-presentation which concerns the ongoing process of impression management (Nadkarni & Hofmann, 2012).

As observed from the findings, Internet-addicted students tend to spend more time surfing the Internet, using social networking as well as image/photo sharing sites, watching videos online, and downloading media. Their inclination to indulge in these applications more than their non-addicted counterparts suggests that unconsciously the addicted students may be using the applications to cope with psychosocial problems or satisfy unfulfilled real-life needs: to alleviate stress when they feel overwhelmed by problems (environmental mastery), to pass the time as they feel disillusioned (purpose in life/personal growth), to find social support (positive relation with others) and to assert or find their identity (self-acceptance).

The findings of this study should be interpreted in light of its limitations. The sampling of undergraduates in a single university restricts generalizability to the whole population of students. Nevertheless, it should be reminded that this is a pilot study. Larger studies involving more representative samples should follow suit. As an initiation, this study explored differences in the psychological functioning between the Internet-addicted and non-addicted but did not establish any causal link between these facets of psychological well-being to Internet addiction. Future studies can perhaps take a step further by looking into this issue.

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