Volume 8 (1) (2025): 87-105

The Indonesian Journal of Social Studies

Available at https://journal.unesa.ac.id/index.php/jpips/index

INTERNET ADDICTION AMONG YOUNG ADULT WORKERS: A REVIEW OF PSYCHOLOGY, SOCIOLOGY, AND ANTHROPOLOGY THROUGH A MIXED METHODS USING MACHINE LEARNING AI

Putu Bunga Amara Sasmita [1)], Erin Josephine Murtidjaja [1)]
1) Psychology, Universitas Surabaya, Indonesia, bungaamara03@gmail.com
2) Psychology, Universitas Surabaya, Indonesia, itserinjosephinr42@gmail.com

Abstract

The increasing internet usage in Indonesia has brought both positive impacts and new challenges, including internet addiction in the workplace. Internet addiction is characterized by uncontrolled, excessive online behavior, which can reduce productivity, mental health, and social functioning. This study examines internet addiction among formal workers through psychological, sociological, and anthropological perspectives. Psychologically, internet addiction is linked to low self-control, emotional distress, and sensation-seeking behavior. Sociologically, it reflects changing social norms and the human need to stay connected. Anthropologically, it highlights cultural shifts toward virtual interactions. A mixed-methods approach is used, combining qualitative exploration of subjective experiences with quantitative analysis to identify behavioral patterns using machine learning. This research aims to provide a comprehensive understanding of the individual, social, and cultural dimensions of internet addiction, emphasizing its significance in affecting daily life, mental health, and work performance.

Keywords: Internet Addiction, Internet Misuse, work place

***How to Cite**:* Sasmita, P. B. A. & Murtidjaja, E. J. (2025).Internet Addiction among Formal Workers: A Review of Psychology, Sociology, and Anthropology through Machine Learning AI. *The Indonesian Journal of Social Studies,* Vol 8 (1): 87-105.

*Corresponding author:
E-mail: bungaamara03@gmail.com

e-ISSN 2615-5966 (Online)

INTRODUCTION

The presence of the internet has significantly facilitated humans in various aspects. In Indonesia, internet usage has increased by 10.12% and the number of users has reached 171 million people. In January 2020, around 175.4 million of the total population of 272.1 million people were recorded using the internet, which means that around 64.46% of Indonesia's population has accessed and connected to the internet (Indonesian Internet Service Providers Association, 2018). This shows that the internet has become an important part of Indonesian life and has affected various aspects.

One aspect that has been affected by the internet is the work environment. In the work environment, the internet can be used to increase efficiency and productivity. However, internet misuse often occurs in the work environment. Internet misuse occurs when someone uses the internet for personal purposes that are not related to work during working hours. A study shows that at least 30% - 50% of employees use the internet that is not correlated with work and use the internet for personal purposes, which can result in losses of $1 billion per year (Restublog et al., 2011). The phenomenon of internet misuse while working shows that individuals have been using the internet excessively which ultimately has an impact on productivity.

Excessive internet use has been associated with internet addiction which is characterized by behaviors such as accessing the internet continuously and without control. This is supported by research by Arpaci et al. (2018) which states that internet addiction is related to the excessive amount of time spent online, compulsive use of the internet, difficulty in managing time spent on the Internet to feeling that the world outside the Internet is boring. The American Psychiatric Association (2018) defines internet addiction as the behavior of losing control over their online behavior. In line with this, Poon (2018) defines Internet Addiction as a person's inability to control the use of the internet which ultimately has an impact on their personal life. Internet addiction behavior can consist of compulsive use of social media, online shopping, video games, online sexual activities (Kayis et al., 2016; Park et al., 2017). Meanwhile, Kurniasih (2017) argues that internet addiction is a conceptualization of people who cannot distinguish between online and offline life. Overall, it can be concluded that internet addiction is related to individuals who cannot control their internet use.

A study found excessive internet use was more prevalent in younger individuals (de Vries et al., 2018; Tran et al., 2017). Internet addiction can lead to feelings of isolation, choosing and seeking solitude rather than socializing (Poon, 2018), difficulties in self-awareness, low extroversion (Blachnio et al., 2017), low self-concept and emotional intelligence (Lémenager et al., 2018), social withdrawal (Stavropoulos et al., 2019), and low quality of life both physical, social, psychological, and environmental (Chern & Huang, 2018). These previous studies show that excessive internet use can make a person become addicted which will ultimately harm themselves.

When viewed through a psychological approach, excessive internet use can be a sign of a person overcoming social anxiety and other negative feelings by seeking escape on the internet which can result in behavioral problems. In a study conducted by Kumar dan Mondal (2018), it was found that individuals who are addicted to the internet can reduce interest, bring up guilt and negative emotions, emotional distress, and show mild symptoms of depression. In research conducted by Usni Dwi Ambarwati (2018) in Khairunnisa et al., (2022) 3 main factors are mentioned that can cause internet addiction including 1) Low self-control so that individuals find it difficult to direct and control their behavior 2) Difficulty processing stimuli, individuals have difficulty responding appropriately accompanied by loneliness 3) Sensation-seeking behavior, the

individual's desire to seek and obtain experiences that are varied, unique, challenging, and there is a risk to be taken physically and emotionally.

Through an anthropological perspective, internet addiction can be understood as a result of cultural shifts. Humans have experienced changes caused by the presence of technology and the internet. People who used to build relationships face-to-face have now interacted online. The presence of the internet also causes changes in the rhythm of daily life where almost all activities can be carried out with the mediation of technology and the internet. This can cause individuals to feel more comfortable with virtuality than the real world. Previous research (Dumitrescu et al., 2023) revealed that individuals who are increasingly immersed in virtual reality, lead to social isolation and can foster dependence on the internet to social media.

Meanwhile, through a sociological perspective, internet addiction can be caused by humans who basically continue to develop following social developments. In modern society, the internet has become an important part of daily life, whether for work, education, entertainment, or social interaction. Humans, who are basically social creatures, will certainly look for ways to stay connected with others. The presence of the internet can help individuals to stay connected with other individuals.

Internet usage in urban areas, the number of women and men, and the proportion of formal workers are sociological variables that can contribute to predicting the level of internet addiction in working individuals. High access and intensity of internet usage in urban areas tend to create pressure to always be connected online, both for work and social activities, which has the potential to increase the risk of internet addiction. Additionally, demographic structure based on gender has its own implications. Men and women often exhibit different patterns of internet use, both in terms of duration and the types of activities accessed. These differences can influence the level of exposure and vulnerability of each group to addiction, depending on how the internet is used in their daily lives. Meanwhile, the presence of formal workers, whose jobs often require high digital connectivity and internet-based multitasking, can also increase exposure to internet use that is not always directly related to work productivity.

Furthermore, the digital culture ingrained in today's young generation—such as the habit of endless social media scrolling, excessive consumption of entertainment content, and the urge to always stay updated and present in the virtual world—also plays a role in shaping interaction patterns that are increasingly difficult to separate from the internet. This culture does not only manifest in personal life but also carries over into the workplace, blurring the boundaries between professional activities and personal digital consumption. In the context of urban workers, the interaction between social structures, workplace pressures, and the digital culture of the younger generation constitutes a significant sociological factor in understanding the development of addictive behavior toward the internet.

This study aims to examine internet addiction in formal workers through three perspectives, namely psychology, sociology, and anthropology. Internet addiction behavior is a complex behavior and cannot be understood from only one perspective, so multidimensionality is needed. The psychology perspective can help to explore individual aspects and psychological reasons that accompany internet addiction behavior. The sociological perspective provides another understanding of the influence of social norms, social relationships, community structure and culture. Anthropological perspectives help understand internet addiction as part of cultural construction and the process of human adaptation to technology.

Research on internet addiction is important to study because whether we realize it or not, this behavior has become a part of people's daily lives that can affect mental health, reduce work functions, disrupt sleep, and social isolation. In this study, data analysis will use machine learning

to identify more accurate and objective patterns of internet addiction behavior. This is aided by large-scale data management so that it can find complex patterns that are often difficult to show and the analysis process can be done more quickly. In addition, this research uses mixed methods with the aim of understanding individual psychological aspects, social dynamics, and cultural constructions, therefore qualitative methods are used to explore the meaning of participants' subjective experiences and quantitative methods to provide a more accurate description of time, factors, and context.

PROBLEM

The increase in internet usage in the past year indicates that the internet has become a part of people's daily lives. With the widespread access to digital devices and internet networks, many individuals are beginning to show signs of excessive internet usage. Previous research has even shown that individuals begin to have difficulty controlling their internet usage, which is manifested by the misuse of internet usage that occurs.

RESEARCH OBJECTIVES

This phenomenon is important to study because it not only impacts productivity, but also impacts the individual themselves. This is because excessive internet use can have an impact on the quality of life both physically, socially, psychologically, and environmentally. Therefore, this research is expected to understand the characteristics of internet addiction behavior in formal workforce settings and wants to find out what are the driving factors for internet addiction in formal workforce settings. The research will use psychology, sociology, and anthropology approaches to understand internet addiction behavior.

LITERATURE REVIEW

Internet addiction is a term that was coined by Young in 1999 (Kurniasih, 2017). This term refers to the behavior of individuals who cannot distinguish between online and offline life. The term began to emerge in the late 1990s when the internet became more widely used in everyday life. Further strengthening this point, Kraut et al. (1998, in Arpaci et al., 2018) explain that internet addiction is associated with excessive internet use, a compulsive urge to stay online, difficulty in controlling the amount of time spent on the internet, the perception that the world outside the internet is boring, becoming easily irritated when online activities are interrupted, and a decrease in social interaction.

This phenomenon reflects a shift in how individuals relate to digital environments, where the virtual world becomes more appealing and dominating than real-life interactions. This term was then generally accepted in the early 2000s. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) by the American Psychiatric Association (APA) has also acknowledged the concept of internet addiction by including Internet Gaming Disorder in Section III as a condition warranting further study. It is considered a persistent compulsive disorder that can be diagnosed with reliability (APA, 2013, p. 795). Internet addiction is said to occur when an individual loses control over their online behavior, in a manner comparable to how substance abusers lose control over drug use.

In an effort to provide clearer diagnostic guidelines, Tao et al. (2010) proposed several diagnostic criteria for internet addiction, which include: a) Symptom criteria, such as preoccupation with the internet and withdrawal symptoms when not online b) At least one of the

following: (1) tolerance, (2) repeated unsuccessful efforts to control use, (3) continued use despite negative consequences, (4) loss of interest in other activities, and (5) using the internet as a way to escape or relieve negative mood c) Clinical impairment, such as disrupted relationships, academic, or occupational functioning; and d) A duration of problematic use for more than three months with a minimum of six hours of non-work or non-academic internet use per day.

RESEARCH METHODS

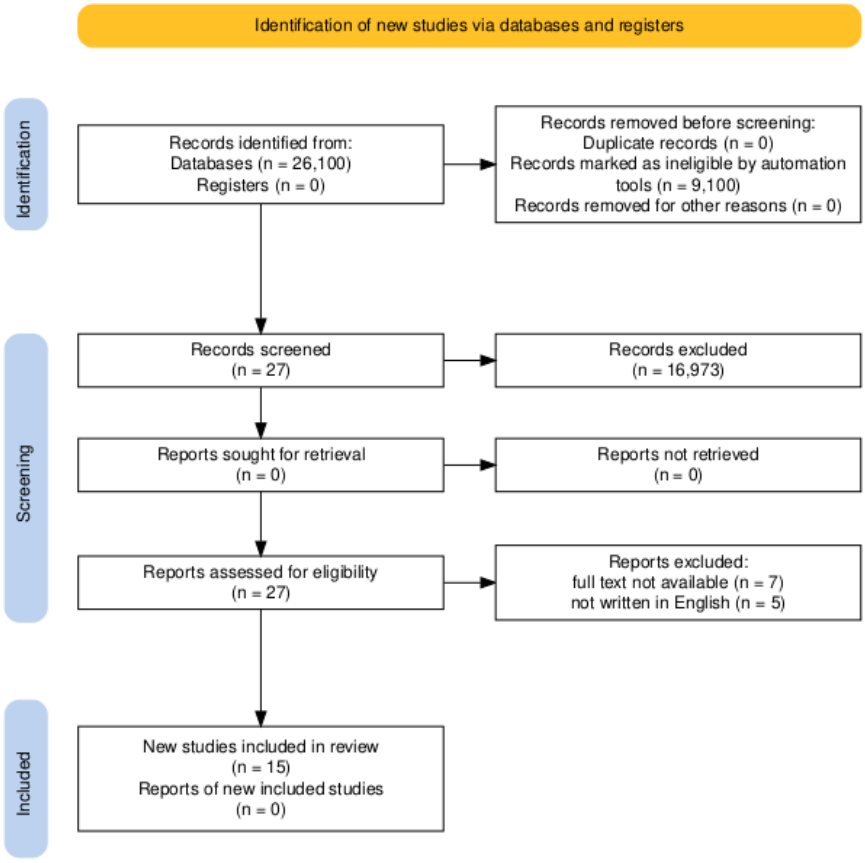
This research uses a mixed-method approach by combining literature review, secondary data analysis, and qualitative study to explore self-diagnosis behavior in Indonesia. A systematic literature review was conducted to map trends, theories and look for research gaps based on the PRISMA 2020 guidelines (Page et al., 2021) which can help maintain transparency in study selection, setting criteria and data extraction. Furthermore, secondary data analysis at the provincial level in the form of BPS was carried out using machine learning techniques through Orange Data Mining version 3.1. Some of the algorithm models used include Support Vector Machine (SVM), Random Forest, Neural Network, and Decision Tree. SVM is used for classification and regression on high-dimensional data (Cortes & Vapnik, 1995), Random Forest is useful for combining many decision trees to predict more accurately (Breiman, 2001), Neural Network serves to mimic the way human neurons work in detecting complex patterns (Lecun et al., 2015), and Decision Tree aims to make decisions based on feature sharing (Quinlan, 1998). Various metrics such as AUC, accuracy, F1-Score, precision, recall, and Matthews Correlation Coefficient (MCC) are performed to evaluate model performance along with Feature Importance to identify key predictors. In this study, internet usage, proportion of formal workers, number of male and female workers, average wage, and unemployment rate are used as predictor variables to model and analyze the patterns of internet addiction among workers. A qualitative study will be conducted involving three participants to explore their subjective meaning of self-diagnosis behavior (Creswell & Poth, 2018).

RESULTS AND DISCUSSION

Result of Literature Review Result using PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)

A systematic literature search was conducted using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework. The search was conducted using keywords such as internet addiction, internet addicts, internet use, online addiction. The research selection flow is illustrated in the following PRISMA diagram.

Figure 1. PRISMA Diagram Flow



At the identification stage, 26,000 articles were found through a Google Scholar database search. Then a quick filtering was carried out based on the publication year (≥ 2015), 17,000 articles were obtained. Next, researchers selected about 27 articles by considering the suitability of the title. Through full-text review based on the established inclusion and exclusion criteria, 15 articles were found eligible and included in the analysis. Researchers did not perform additional processes such as Reports Sought and others.

After conducting the screening process, the researchers summarized 15 relevant articles. The summary covered research design, participants, methodological approaches, and important insights related to internet addiction from psychological, sociological, and anthropological perspectives.

Table 1. Literature Review

Research	Method	Results
Adorjan, M., & Ricciardelli, R. (2021)	35 focus groups with 115 Canadian teenagers aged 13–19 years, using qualitative thematic analysis	Teens acknowledged "addiction" ironically, driven by social peer pressure and fear of missing out (FOMO) rather than device dependency itself.
Arpaci, I., Kesici, Ş., & Baloğlu, M. (2018)	Mixed-method, 602 college students in Turkey, using surveys on individualism, psychological needs, and	Higher affiliation needs increase addiction, while needs for dominance, achievement, and autonomy

	Internet addiction	lower it.
Błachnio, A., Przepiórka, A., & Gorbaniuk, O. et al. (2019)	Quantitative survey, 3,279 Internet users from 9 countries, using the Internet Addiction Test (IAT)	Internet addiction is positively linked to economic well-being and social progress, but negatively to health and safety.
Dumitrescu, M., Dumitrescu, N., & Turliuc, Ş. (2023)	Narrative literature review of studies related to social media addiction, with an anthropological and psychological perspective.	Social media addiction is not officially recognized in DSM-5, but is associated with mental health issues, poor sleep, low self-esteem, and requires preventive and cognitive-behavioral interventions.
Fatema, K., Nasreen, S., Parvez, M. S., & Rahaman, M. A. (2020)	Mixed methods: survey and case studies; 85 university students in Bangladesh.	Internet usage positively improved academics, but internet addiction harmed academic performance and social life.
Johnson, N. F., & Keane, H. (2017).	Qualitative study of four adult heavy internet users, using interviews analyzed through Bourdieu's theory of practice and flow.	Internet addiction is better understood as a shift in how people experience time online, rather than as a medical disorder; social context matters more than universal pathology.
Kurniasih, N. (2017)	Phenomenological study; in-depth interviews with 9 self-identified internet addicts and a psychologist	Participants saw internet use as lifestyle, not disorder. Use was habitual and emotional; not perceived as clinically problematic.
Le, D. T. K., Nguyen, L. T. T., & Cu, L. N. T. (2025)	Survey of 464 parent-child pairs using questionnaires and ANOVA analysis in Vietnam.	Internet use increased during COVID-19, and while it boosted communication satisfaction, parents perceived more negative impacts than children.
Fernandez, O. L. (2015).	Systematic review of 8 cross-cultural studies on Internet addiction with adolescent and adult participants from Asia, America, and Europe.	Internet addiction is higher in Asia, males are more vulnerable, but cultural factors are rarely deeply analyzed.
Lozano-Blasco, R., Quilez Robres, A., & Soto Sánchez, A. (2022)	Meta-analysis and systematic review of 30 studies (21,378 participants aged 18–40) from Europe, Asia, America, and Oceania	Internet addiction rates increased from 2017–2020; younger males are more affected; cultural differences impact prevalence.

McNicol, M. L., & Thorsteinsson, E. B. (2017)	Online survey of 449 participants (16–71 years) assessing IA, distress, and coping; AICA-S, DASS-21 used	Adolescents: IA linked to rumination and low self-care. Adults: IA linked to anxiety, avoidant coping, and specific online behaviors (e.g., gaming).
Pissin, A. (2021).	Critical analysis; participants are Chinese youths shown in Web Junkie documentary	Internet addiction in China is socially constructed, tied to struggles over time autonomy and societal control.
Rao, Y. (2019)	Ethnographic fieldwork and historical review at a Chinese internet addiction camp	IA is a cultural idiom of distress in China, shaped by Confucian values and social control, rather than a universal medical condition.
Siste, K., Hanafi, E., Sen, L. T., Christian, H., Adrian, Siswidiani, L. P., ... & Suwartono, C. (2020)	Online survey using KDAI, SCL-90, PSQI; N=4,734 adults across 34 provinces in Indonesia	Internet addiction prevalence was 14.4%. Increased usage correlated with IA; physical distancing not a risk factor; IA linked to mental health issues and poor sleep quality.
Snodgrass, J. G., Dengah, H. J. F., Lacy, M. G., Bagwell, A., Van Oostenburg, M., & Lende, D. (2016)	Ethnography, semi-structured interviews (n=20), and web survey (n=672) among gamers.	Found shared positive views about gaming but less consensus on negative aspects; cautioned against labeling engaged gaming as addiction

Result of Secondary Data using ORANGE Data Mining

To determine the best model for predicting internet addiction tendencies among formal workers, researchers used several machine learning algorithms, namely Decision Tree, AdaBoost, Support Vector Machine (SVM), Neural Network, and Random Forest. Each model was evaluated based on a number of metrics such as Area Under Curve (AUC), Classification Accuracy (CA), F1 Score, Precision, Recall, and Matthews Correlation Coefficient (MCC)

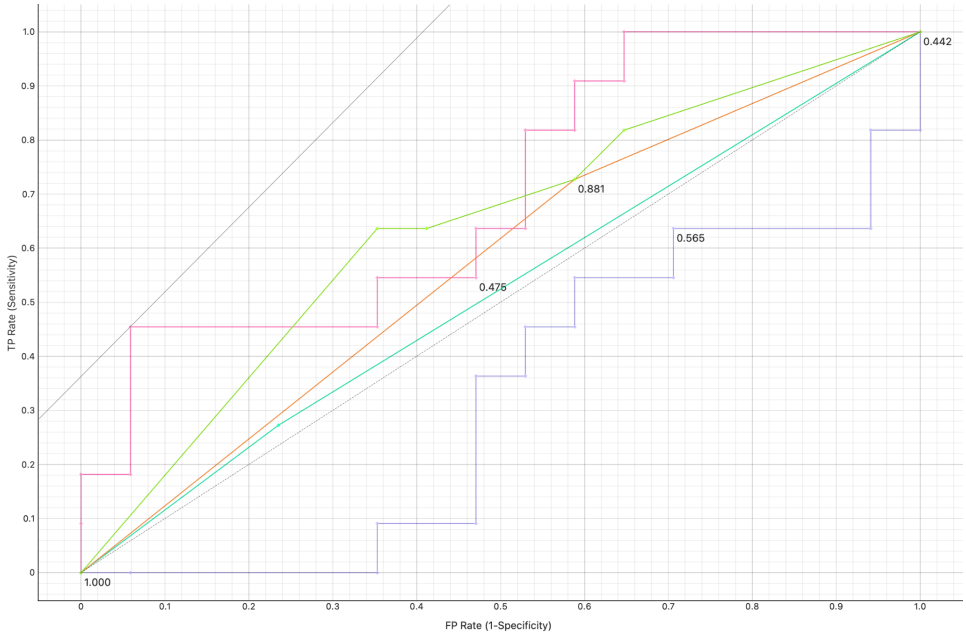
Table 2. Matrix Evaluation

Model	AUC	CA	F1	Prec	Recall	MCC
Tree	0.519	0.571	0.546	0.544	0.571	0.042
AdaBoost	0.570	0.536	0.532	0.600	0.536	0.142
SVM	0.321	0.571	0.530	0.795	0.571	0.375
Neural Network	0.701	0.607	0.610	0.614	0.607	0.190
Random	0.636	0.536	0.520	0.632	0.536	0.185

Forest

In terms of predictions, the Neural Network showed the best performance in almost all metrics. AUC reached 0.701, the highest score compared to other models. In addition, CA and F1 are also the highest where the CA score is 0.607 while the F1 score is 0.610. Then, precision shows a score of 0.614 and Recall of 0.607, both of which are balanced and classified as high. MCC is at 0.190, which is moderate but still better than some other models.

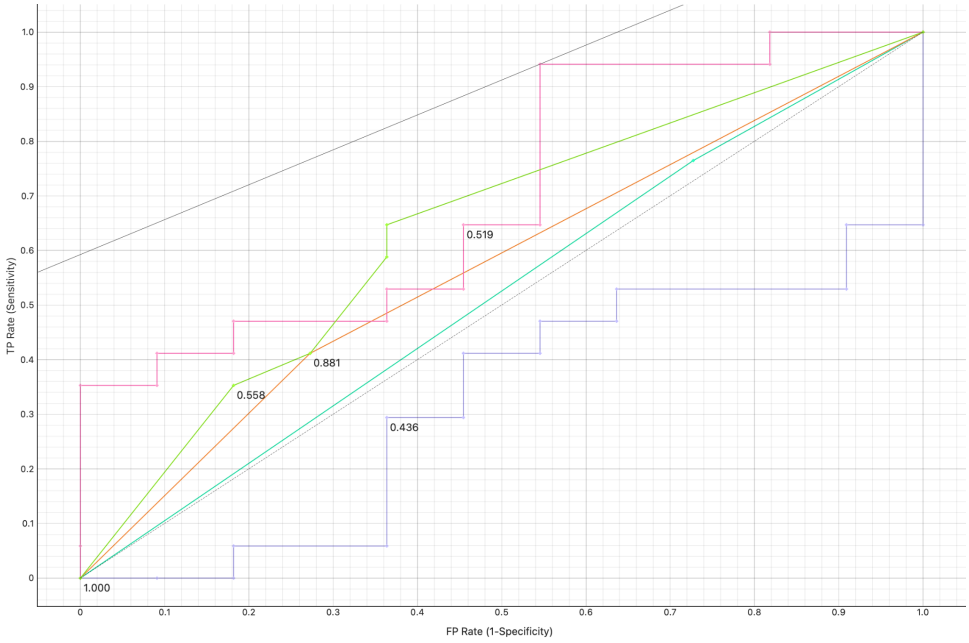
The AUC of 0.701 shows that the model is able to distinguish between positive and negative classes with an accuracy rate of about 70%, which is quite good. CA of 0.607 indicates that more than half of the model predictions are correct. Furthermore, the F1 Score of 0.610 shows the balance between Precision and Recall, which are 0.614 and 0.607 respectively. This indicates that the model is quite good at identifying positive data. Meanwhile, the MCC value of 0.190 indicates a correlation although the correlation is still relatively weak.



Graph 1. ROC Row for Low Score Prediction

(Dark green = Tree, Orange = AdaBoost, Purple = SVM, Pink = Neural Network, Green = Random Forest)

Based on the graph below the average, the AdaBoost model shows the best performance with a value of 0.881. The SVM model obtained a value of 0.565, Neural Network of 0.475, and Random Forest of 0.442. Meanwhile, the Tree Model itself has a performance that is almost close to the baseline (around 0.5), so its performance is less than optimal.



Graph 2. ROC Row for High Score Prediction

(Dark green = Tree, Orange = AdaBoost, Purple = SVM, Pink = Neural Network, Green = Random Forest)

Based on the graph above, on average, the AdaBoost model also shows the best performance with a value of 0.881. Random Forest is 0.558, Neural Network is 0.519, and SVM obtained a value of 0.436. Meanwhile, the Tree Model still has a performance that is almost close to the baseline (around 0.5), so its performance is less than optimal.

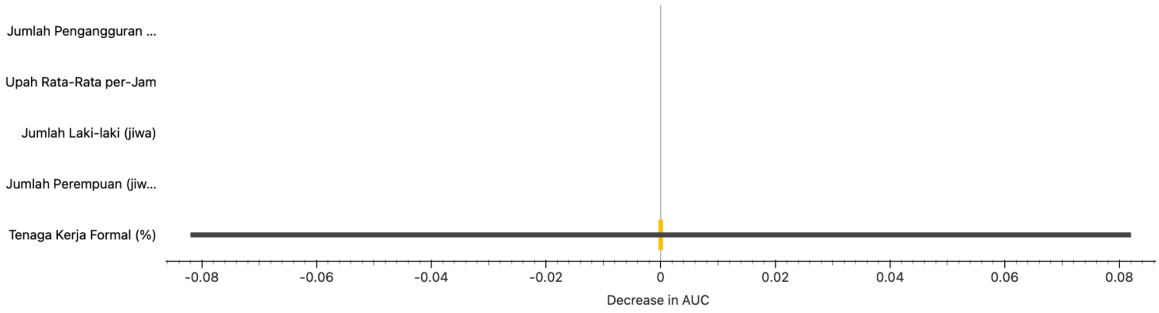


Figure 2. Feature Important

Based on the Feature Importance graph against AUC, it can be seen that "Formal Employment (%)" contributes the most to the model performance. Meanwhile, "Total Unemployment", "Average Hourly Wage", "Number of Males (people)", and "Number of Females (people)" show a much smaller impact on the change in AUC. This shows that "Formal Employment" has the most influence in making a prediction.

Qualitative Result

Participant 1

Participant 1 is a student from Riau who has been working part-time for about a year. She works as a teaching assistant and student employee. As a teaching assistant, she has a fixed schedule every week, twice a week, in accordance with the schedule of the courses he assists. In addition, she also regularly tutors other students, either in person or online if needed. As a student employee, Participant 1 mentioned that she is part of the marketing team, specifically handling the design aspect. Her work as a student employee has a more flexible schedule, though she occasionally needs to attend meetings or discussions related to content creation. Most of her work activities are conducted offline, but they still involve the use of the internet, particularly for design tasks and online communication with students or the work team.

As a student from Riau, Participant 1 uses Indonesian and Chinese (Hokkien dialect) in her daily communication, so she is not familiar with the Riau language used locally. However, she realizes that most people around him in Riau tend to use Indonesian and Malay in everyday conversation. When asked about the reasons for using the internet, Participant 1 explained that the internet has become an integral part of her daily life. Almost all of her activities, from communication, information search, to entertainment, depend on an internet connection. She also acknowledged that she often uses her phone and accesses the internet for a considerable amount of time, to the point where her close relatives sometimes scold him in Chinese. These reprimands generally imply that she spends too much time on her phone without doing anything else. However, she explained that those who reprimand him do not always understand that most of the activities she does on her phone are actually related to her college assignments or part-time job, which require intensive internet access.

Participant 1 acknowledged that almost all of her activities, or around 80%, depend on the internet. Without internet access, she feels unable to do many things because both her work and entertainment are highly dependent on internet connectivity. Although the internet is very helpful, she also realizes that there are challenges in controlling himself when accessing the internet. Especially due to the presence of social media, she admits that she is often distracted by social media notifications. This causes him to be distracted from certain tasks, such as designing, because she reflexively opens social media. In addition to social media, she is also often tempted to open e-commerce apps like Shopee just to scroll through them.

> *"... maybe 80% depends on the internet because that's my job and also most of my entertainment comes from the internet because I can't go out due to my busy schedule."*

> *"Actually, there are benefits and challenges. The benefit is that the internet makes work easier, but the challenge is that the internet is related to social media, so sometimes I get distracted and can't focus on work. It's like suddenly opening social media to play around..."*

To organize her daily routine, Participant 1 created a to-do list with a clear time allocation for each activity. However, when distractions arose, the schedule he had set became chaotic and her work was delayed. As a result, they have to reschedule the plan they had made. They actually try to limit their personal internet use, for example, to just one hour, but in reality, the duration often exceeds the set limit. They also feel that when they are away from their phone and the internet, they can actually focus better and be more productive in completing various tasks.

> *"I have a to-do list, for example, from this time to that time I have to do certain tasks, but sometimes I get carried away playing on social media, so I don't finish my tasks..."*

> *"Usually, when I'm behind schedule, I end up playing on my phone again and do my tasks at another time."*

The impact of her difficulty in limiting her internet use is very noticeable. Participant 1 admitted that if work was delayed due to distraction, she would feel she lacked the time to complete the task, which ultimately overwhelmed him. In such circumstances, she felt unable to perform at her best, although she would still feel reasonably satisfied with the results of her work. Another impact she felt was that her sleep was disrupted because she had to catch up on delayed work.

Although Participant 1 realizes that staying away from cell phones and the internet can improve focus and productivity, she also acknowledges his strong dependence on both. When she is not holding his cell phone or connected to the internet, he often feels uncomfortable and worries about missing important information. These feelings drive him to find ways to access her phone, even when she should not be able to, such as at work. She has even been reprimanded for accessing the internet for personal purposes while at work.

> *"I realize that the internet makes me easily distracted... so if I don't have internet access, there's nothing to distract me and I can really focus on my work."*

> *"... but I often think about scrolling, like if I don't have my phone, I'm afraid I'll miss something important..."*

For Participant 1, it is difficult not to access the internet. A poor connection alone is enough to make him anxious, unable to focus, and even daydream because he feels disturbed by the lack of connection. However, he is fully aware that his work is a professional responsibility that must be carried out to the best of his ability. Especially since he receives a salary for that work.

Participant 2

Participant 2 is a student from North Kalimantan who works as a freelancer in the fields of fence decoration and dancing. This work is irregular and only done when there are event calls, so the working hours are highly dependent on the needs of each event. However, usually as the event approaches, she becomes busier because she must attend rehearsals first. She has been involved in the world of dance since before entering university, while as a dancer, her experience has been nearly two years.

As a student from North Kalimantan, she mentioned that the people around her usually communicate using the Dayak language, although in practice Indonesian is more dominant in everyday use. This is because the use of the local language in his home region is now declining. Participant 2 also predominantly uses Indonesian for communication in his daily life. When asked about internet usage, Participant 2 explained that in his tribe, the use of the internet is seen as an inevitable part of modern development. Whereas children used to play directly with their peers, now interactions are more often conducted via mobile phones and the internet.

For her, the internet has become an important part of her daily life, especially in supporting her daily work. Although her profession as a dancer and model does not directly

depend on the internet, its presence greatly helps her complete her work. For example, it helps her communicate and find inspiration for concepts. She feels that the internet makes it easier for her to access various references, especially dance movements or ideas relevant to the needs of an event. However, she also acknowledges that the internet presents its own challenges, particularly in terms of maintaining focus. She mentioned that while working, she often gets distracted by the temptation to use the internet for personal purposes, such as checking social media to respond to messages or simply scrolling through feeds.

> *"I use the internet very often. The internet helps because without it, my work would be delayed, but with the internet, I am easily distracted, usually by notifications. So it's 50-50."*

> *"For example, if there is a notification, it can distract my attention to social media... and if the others are not ready yet, I'll be like, 'Okay, I'll play with my phone first...'"*

The impact he feels when he is distracted is a delay in the activities he is doing. He feels that it will take longer. Therefore, he usually sets a time limit for internet use, for example one hour. However, he finds it quite difficult to control his personal internet use while working. On several occasions, he has exceeded this time limit because he was too engrossed. Additionally, he explains that he feels a strong urge to reconnect immediately when he cannot access the internet. Sometimes this makes him want to quickly finish his work so he can access the internet again. When his work is done and he can access the internet again, he feels happy and relieved.

> *"... often, I get bored, so I think, 'Let's play with my phone'..."*

> *"If I can't use my phone at work, it doesn't really distract me, but I feel impatient and want to finish the job quickly... After I can use my phone, I'm happy because I feel like I haven't used it in a long time, so I'm like, 'Finally, I can scroll and relax'..."*

According to Participant 2, the internet can both help and hinder productivity. For her, it all comes down to each individual's ability to control their internet use. She herself often accesses the internet for personal reasons while at work, such as checking social media. This causes her to pay less attention to her surroundings. However, she is still aware of the need to refocus in order to maintain her professionalism.

Partisipan 3

Participant 3 is a sixth-semester student from East Kalimantan who has lived in Surabaya since she was a child. Participant 3 works as an administrator for SK (Sanggar Krisna) and SE (Student Employee). Participant 3 has worked in the marketing department of the psychology faculty's social media team for one year and as a part-time employee at a children's playgroup school for eight months. The participant's part-time work at the playgroup school is conducted offline and has a fixed schedule from 8 to 10 a.m., excluding preparation time for materials. Over the course of a week, the participant works for six hours across three working days. The participant's work as an SE was done online with flexible hours, but the weekly work hours must be fulfilled for 20 hours. However, the participant worked for 12 hours per week. When asked about popular phrases related to internet usage in the native language of Kalimantan, the participant admitted that they were not very familiar with these phrases but were not entirely unfamiliar, as they had

occasionally heard them by chance. Although their close relatives often scolded them for limiting internet usage, the participant stated that their family was also heavily reliant on the internet, including their grandmother.

Participants feel that the internet is very important and helpful, especially in the context of work, such as coordinating with related parties, and in marketing, such as social media, which is very necessary. For her, the use of the internet brings benefits and obstacles. Communication becomes unlimited and feels easy, but its use must be done wisely, and the information available is difficult to filter, and differences in signals between regions also hinder it. As an SE in the marketing department, participants highly value the internet and consider it essential for content creation, marketing, and branding. During their 12-hour workweek, participants spend 3–4 hours online, with an additional 10 hours outside of work hours. At work, participants often use their time to open social media to see what is trending, what is happening, find inspiration, and understand statistics. However, they often feel distracted by the internet because social media is filled with various information, causing them to lose focus and focus on unrelated things.

> *"I often think about online activities while working, like when I see funny videos on TikTok or Instagram, I remember them. To be honest, even if I'm not doing anything or just spacing out, I can remember those videos and I feel like scrolling through TikTok, wanting to scroll again and again."*

Participants felt more productive when she avoided accessing the internet with the awareness to control her internet usage and when the purpose of using the internet was clear, namely that her work targets had been met, but she felt less productive when she shirked her responsibilities. On the other hand, participants felt that they had to limit their internet usage more because of their physical health, namely their vision, which was starting to deteriorate. While working, she often finds herself thinking about using the internet to watch funny videos on social media apps like Instagram and TikTok, which makes her want to scroll and browse. With the busy and packed work schedule, the participant often feels bored and thinks about using the internet for non-work-related purposes, often spending more time than allotted, which causes his work to be delayed and the results to fall short of targets.

> *".....It's a bit difficult for me not to use the internet because when I'm using it for work, I get ads and notifications, so it's quite distracting and it's a bit difficult to stop using it for my personal needs."*

Discussion

The results of this study indicate that internet addiction behavior among young workers cannot be explained from a single perspective, but rather is the result of interactions between psychological, social, and cultural factors. The mixed methods approach allows researchers to obtain a comprehensive picture of this phenomenon by combining secondary data analysis through Orange Data Mining machine learning and exploration of subjective experiences through qualitative interviews.

From the machine learning analysis results, the Neural Network model showed the best performance (AUC = 0.701; F1 = 0.610), indicating a fairly good ability to classify the risk of internet addiction. One of the main findings was that "Formal Employment (%)" was the most significant predictor, compared to variables such as unemployment rate, gender, or average wage. This aligns with the view of Arpaci et al. (2018), that the need to feel affiliated in a digitally connected work environment can increase the risk of internet addiction. Furthermore, these results reinforce the findings of Siste et al. (2020), who found that high internet use during the

pandemic was strongly correlated with internet addiction and decreased sleep quality and mental health.

The results of interviews with the three participants showed that internet addiction among young workers is often unrecognized because it is camouflaged in work activities. All participants reported high dependence on the internet for work purposes, but found it difficult to limit internet access for personal matters (e.g., scrolling through social media, e-commerce), which ultimately delayed productivity and caused emotional stress. This experience mirrors the findings of Kurniasih (2017), who noted that individuals do not always view their online behavior as a clinical disorder but rather as part of their lifestyle and emotional needs. Similar insights were shared by Johnson & Keane (2017), who perceive internet addiction as a shift in how humans experience time and social interaction, rather than solely as a medical condition.

Sociologically, these results show how new norms in digital work culture drive expectations to be "always connected," creating its own pressures and increasing continuous exposure to the internet. This supports the findings of Lozano-Blasco et al. (2022) that young people are vulnerable to addiction due to the demands of always being present in the virtual world. From an anthropological framework, qualitative data also highlights how virtual interactions have become the dominant form of social relations, replacing face-to-face interactions. Participants feel more comfortable in digital spaces, although at the same time they struggle to separate work and personal spaces. These findings align with the review by Dumitrescu et al. (2023), which suggests that digital culture can reinforce social isolation and trigger dependence on online media. From a psychological perspective, participants demonstrated awareness of the digital distractions they experience, as well as efforts to control them, such as creating to-do lists or setting time limits. However, as found by Usni Dwi Ambarwati (2018) and Poon (2018), low self-control and emotional pressure make it difficult for individuals to maintain self-regulation, making them more vulnerable to addiction.

In addition, it is important to highlight that the definition of internet addiction developed since the late 1990s may no longer be entirely relevant in the context of today's digital life. Young (1999, in Kurniasih, 2017) describes internet addiction as an individual's inability to distinguish between online and offline life. Kraut et al. (1998, in Arpaci et al., 2018) further explain that internet addiction is characterized by excessive use, a compulsive urge to stay online, difficulty managing usage time, irritability when online activities are interrupted, and reduced social interaction. However, in today's digital reality, especially among workers, the separation between online and offline spaces has become increasingly difficult to maintain. Professional workers are often required to stay connected at all times to meet communication, collaboration, and productivity needs.

In this context, behaviors previously considered addictive, such as spending hours online, have become part of workplace norms and expectations. This phenomenon is reflected in participants' experiences. For example, Participant 1 admitted that although most of his internet activities were related to work and studies, he was often distracted by social media or e-commerce, causing his main tasks to be delayed. He even regularly made daily to-do lists, but often failed to follow them due to notification interruptions. A similar experience was shared by Participant 2, who felt a strong urge to check his phone even while working offline. Meanwhile, Participant 3 mentioned that his habit of opening social media to search for content ideas sometimes extended to consuming irrelevant entertainment content, causing him to lose focus and delay completing his tasks. All three participants indicated that digital distractions were not solely the result of personal weaknesses but were also influenced by a work environment that

required them to remain constantly connected and a digital culture that blurred the boundaries between productivity and entertainment.

In other words, changes in job demands and digital work culture have blurred the line between functional and problematic internet use. Therefore, it is necessary to question whether the concept of "addiction" that emerged at a time when the internet was not yet an integral part of daily activities can still be used absolutely. It is possible that the modern digital work environment is one of the main triggers for addictive behavior, rather than simply due to an individual's inability to regulate themselves. This highlights the need for an update in the theoretical framework of internet addiction, so that it can capture the functional, social, and contextual dimensions of internet use in modern professional life.

CONCLUSION

This study shows that internet addiction behavior among young workers is a complex phenomenon that cannot be explained by a single factor, but rather involves the interaction of psychological, sociological, and anthropological factors. The mixed methods approach allows researchers to obtain a comprehensive picture, both through the identification of risk patterns using machine learning and through the exploration of the subjective experiences of affected workers. Quantitatively, the Neural Network model achieved the highest accuracy in predicting internet addiction tendencies, with "Formal Employment (%)" as the most significant predictor variable. This suggests that formal employment requiring high connectivity may increase exposure to addiction risks. Meanwhile, qualitative findings reinforce that young workers often experience unnoticed digital distractions, especially as the boundaries between work needs and personal use become increasingly blurred. Participants reported that while the internet aids productivity, they often experience work delays, disrupted focus, and emotional stress due to uncontrolled use. These findings also raise critiques of the classical definition of internet addiction that emerged in the early days of the internet. In today's digital context, especially in the workplace, behaviors previously deemed "addictive" have become part of professional norms. Therefore, it is crucial to reformulate the concept of internet addiction to be more contextual, taking into account contemporary digital realities that influence work dynamics, social expectations, and individual identity. Overall, this study emphasizes the need for a more dynamic and contextual understanding of internet addiction, as well as the importance of a multidisciplinary approach to designing interventions that focus not only on the individual but also on the work culture and digital environment surrounding them.

LITERATURE

Adorjan, M., & Ricciardelli, R. (2021). Smartphone and social media addiction: Exploring the perceptions and experiences of Canadian teenagers. Canadian Review of Sociology, 58(1), 45–64. https://doi.org/10.1111/cars.12319

American Psychological Association. (2018.). Internet addiction. In APA Dictionary of Psychology. Retrieved June 17, 2025, from https://dictionary.apa.org/internet-addiction

Arpaci, I., Baloğlu, M., & Kesici, Ş. (2018). The relationship among individual differences in individualism-collectivism, extraversion, and self-presentation. Personality and Individual Differences, 121, 89–92. https://doi.org/10.1016/j.paid.2017.09.034

Błachnio, A., Przepiórka, A., Gorbaniuk, O., Benvenuti, M., Ciobanu, A. M., Senol-Durak, E., Durak, M., Giannakos, M. N., Mazzoni, E., Pappas, I. O., Popa, C., Seidman, G., Wu, A. M. S., Yu, S., & Ben-Ezra, M. (2019). Cultural Correlates of Internet Addiction. Cyberpsychology, behavior and social networking, 22(4), 258–263. https://doi.org/10.1089/cyber.2018.0667

Chern, K. C., & Huang, J. H. (2018). Internet addiction: Associated with lower health-related quality of life among college students in Taiwan, and in what aspects?. Computers in Human Behavior, 84, 460-466. http://dx.doi.org/10.1016/j.chb.2018.03.011

de Vries, D. A., Vossen, H. G. M., & van der Kolk-van der Boom, P. (2019). Social Media and Body Dissatisfaction: Investigating the Attenuating Role of Positive Parent-Adolescent Relationships. Journal of youth and adolescence, 48(3), 527–536. https://doi.org/10.1007/s10964-018-0956-9

Dumitrescu, M., Dumitrescu, N., & TURLIUC, Ş. (2023). The social media addiction: What have we learned so far?—A review. BRAIN. Broad Research in Artificial Intelligence and Neuroscience, 14(1), 117-137. http://dx.doi.org/10.18662/brain/14.1/410

Fatema, K., Nasreen, S., Parvez, M. S., & Rahaman, M. A. (2020). Impact of using the internet on students: A sociological analysis at bangabandhu sheikh mujibur Rahman science and technology university, gopalganj, Bangladesh. Open Journal of Social Sciences, 8(12), 71-83. http://dx.doi.org/10.4236/jss.2020.812007

Fernandez, O. L. (2015). Cross-cultural research on Internet addiction: A systematic review. International Archives of Addiction Research and Medicine, 1(2), 1-5. http://dx.doi.org/10.23937/2474-3631/1510011

Johnson, N. F., & Keane, H. (2017). Internet addiction? Temporality and life online in the networked society. Time & Society, 26(3), 267-285. http://dx.doi.org/10.1177/0961463X15577279

Kayiş, A. R., Satici, S. A., Yilmaz, M. F., Şimşek, D., Ceyhan, E., & Bakioğlu, F. (2016). Big five-personality trait and internet addiction: A meta-analytic review. Computers in Human Behavior, 63, 35-40. https://doi.org/10.1016/j.chb.2016.05.012

Khairunnisa, R., Putri, M. Z., Siregar, D. P., Jannah, F. M., Zafira, S. D., Dalina, D., ... & Amelia, S. (2022). Internet Addiction Disorder Pada Generasi-Z Di Era Modernisasi. In Proceeding Conference on Psychology and Behavioral Sciences (Vol. 1, pp. 73-77). https://doi.org/10.61994/cpbs.v1i1.13

Kurniasih, N. (2017). Internet addiction, lifestyle or mental disorder? a phenomenological study on social media addiction in Indonesia. KnE Social Sciences, 135-144. http://dx.doi.org/10.18502/kss.v2i4.879

Kumar, M., & Mondal, A. (2018). A study on Internet addiction and its relation to psychopathology and self-esteem among college students. Industrial psychiatry journal, 27(1), 61–66. https://doi.org/10.4103/ipj.ipj_61_17

LE, D. T. K., NGUYEN, L. T. T., & CU, L. N. T. (2025). The impact of the internet on family communication in the context of the COVID-19 pandemic: A comparative study of parents and children in urban families in Vietnam. Anthropological Researches and Studies, 15(1), 444–459. https://doi.org/10.26758/15.1.30

Leménager, T., Hoffmann, S., Dieter, J., Reinhard, I., Mann, K., & Kiefer, F. (2018). The links between healthy, problematic, and addicted Internet use regarding comorbidities and self-concept-related characteristics. Journal of Behavioral Addictions, 7(1), 31-43. https://doi.org/10.1556/2006.7.2018.13

Lozano-Blasco, R., Robres, A. Q., & Sánchez, A. S. (2022). Internet addiction in young adults: A meta-analysis and systematic review. Computers in Human Behavior, 130, 107201. https://doi.org/10.1016/j.chb.2022.107201

McNicol, M. L., & Thorsteinsson, E. B. (2017). Internet addiction, psychological distress, and coping responses among adolescents and adults. Cyberpsychology, Behavior, and Social Networking, 20(5), 296-304. https://doi.org/10.1089/cyber.2016.0669

Park, S., Jeon, H. J., Bae, J. N., Seong, S. J., & Hong, J. P. (2017). Prevalence and psychiatric comorbidities of Internet addiction in a nationwide sample of Korean adults. Psychiatry investigation, 14(6), 879. https://doi.org/10.4306/pi.2017.14.6.879

Pissin, A. (2021). The social construction of internet addiction in china: youth between reality and temporal autonomy in the documentary web junkie. Journal of Current Chinese Affairs, 50(1), 86-105. https://doi.org/10.1177/1868102621993134

Poon, K. T. (2018). Unpacking the mechanisms underlying the relation between ostracism and Internet addiction. Psychiatry research, 270, 724-730. https://doi.org/10.1016/j.psychres.2018.10.056

Rao, Y. (2019). From confucianism to psychology: rebooting internet addicts in China. History of psychology, 22(4), 328. https://doi.org/10.1037/hop0000111

Restubog, S. L. D., Garcia, P. R. J. M., Toledano, L. S., Amarnani, R. K., Tolentino, L. R., & Tang, R. L. (2011). Yielding to (cyber)-temptation: Exploring the buffering role of self-control in the relationship between organizational justice and cyberloafing behavior in the workplace. Journal of Research in Personality, 45(2), 247-251. https://doi.org/10.1016/j.jrp.2011.01.006

Siste, K., Hanafi, E., Sen, L. T., Christian, H., Adrian, Siswidiani, L. P., Limawan, A. P., Murtani, B. J., & Suwartono, C. (2020). The impact of physical distancing and associated factors towards internet addiction among adults in indonesia during COVID-19 pandemic: A nationwide web-based study. Frontiers in Psychiatry, 11, Article 580977. https://doi.org/10.3389/fpsyt.2020.580977

Snodgrass, J. G., Dengah, H. J. F. II, Lacy, M. G., Bagwell, A., Van Oostenburg, M., & Lende, D. (2017). Online gaming involvement and its positive and negative consequences: A cognitive anthropological "cultural consensus" approach to psychiatric measurement and assessment. Computers in Human Behavior, 66, 291–302. https://doi.org/10.1016/j.chb.2016.09.025

Stavropoulos, V., Adams, B. L., Beard, C. L., Dumble, E., Trawley, S., Gomez, R., & Pontes, H. M. (2019). Associations between attention deficit hyperactivity and internet gaming disorder symptoms: Is there consistency across types of symptoms, gender and countries?. Addictive behaviors reports, 9, 100158. http://dx.doi.org/10.1016/j.abrep.2018.100158

Tran, B. X., Huong, L. T., Hinh, N. D., Nguyen, L. H., Le, B. N., Nong, V. M., ... & Ho, R. C. (2017). A study on the influence of internet addiction and online interpersonal influences on health-related quality of life in young Vietnamese. BMC public health, 17, 1-8. https://doi.org/10.1186/s12889-016-3983-z

Van Rooij, A., & Prause, N. (2014). A critical review of "Internet addiction" criteria with suggestions for the future. *Journal of behavioral addictions*, *3*(4), 203-213. http://dx.doi.org/10.1556/JBA.3.2014.4.1