

## THE PATHWAY FROM ONLINE GAMING TO ONLINE GAMBLING; DETERMINANTS OF STUDENTS' DECISION-MAKING

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**Abstract** : Online gaming's rapid growth has introduced gambling-like mechanics (e.g., loot boxes, gacha systems), raising concerns about their influence on students' susceptibility to online gambling. Despite increasing global attention, little research explores how these gaming elements normalize gambling behaviors among adolescents, particularly in educational contexts. This study addresses this gap by examining whether prolonged exposure to online gaming – especially games with gambling mechanics – increases students' risk of engaging in online gambling. Using a mixed-method approach, this study combined surveys of 177 students and in-depth interviews with 35 students from SMK Bakti Nusantara 666 to analyze gaming habits, psychological effects, and exposure to gambling elements. Findings revealed that excessive gaming, particularly in games with loot boxes or gacha systems, correlated with higher gambling tendencies, addiction risks, academic decline, and social isolation. Conversely, moderate gaming offered benefits like stress relief. The study underscores the urgency of preventive measures, such as school policies, parental controls, and curriculum-integrated gambling awareness programs. It also highlights the need for collaboration among educators, parents, and digital platforms to mitigate risks.

**Keywords** : Online Gaming; Gambling Behavior; Addiction; Student Well-being.

**Abstrak** : Pertumbuhan pesat online gaming telah memperkenalkan mekanisme mirip perjudian (seperti loot box dan sistem gacha), memicu kekhawatiran akan pengaruhnya terhadap kerentanan siswa terhadap online gambling. Meskipun mendapat perhatian global, masih sedikit penelitian yang mengeksplorasi bagaimana elemen permainan ini menormalisasi perilaku judi di kalangan remaja, khususnya dalam konteks pendidikan. Studi ini menjawab kesenjangan tersebut dengan menguji apakah paparan berkepanjangan terhadap online gaming – terutama yang mengandung mekanisme judi – meningkatkan risiko siswa terlibat online gambling. Menggunakan pendekatan mixed-method, penelitian ini menggabungkan survei terhadap 177 siswa dan wawancara mendalam dengan 35 siswa SMK Bakti Nusantara 666 untuk menganalisis kebiasaan bermain, efek psikologis, dan paparan elemen judi. Hasil menunjukkan bahwa bermain game berlebihan, khususnya yang mengandung loot box atau sistem gacha, berkorelasi dengan kecenderungan judi yang lebih tinggi, risiko adiksi, penurunan akademik, dan isolasi sosial. Sebaliknya, bermain game secara moderat memberikan manfaat seperti penghilang stres. Studi ini menekankan urgensi tindakan pencegahan, seperti kebijakan sekolah, pengawasan orang tua, dan integrasi edukasi bahaya judi ke dalam kurikulum. Kolaborasi antara pendidik, orang tua, dan platform digital juga diperlukan untuk mengurangi risiko.

**Kata Kunci** : Game Online; Perilaku Perjudian; Kecanduan; Kesejahteraan Siswa.

## INTRODUCTION

The rapid advancement of digital technology has profoundly transformed the lifestyle and behavioral patterns of adolescents and university students, with online gaming emerging as one of the most influential phenomena (Chan et al., 2022). While online games initially served as a medium of entertainment and global social interaction, enabling young people to build digital identities and expand social networks across geographical boundaries, concerns have increasingly arisen regarding their potential adverse effects. Empirical studies indicate that excessive engagement in online games may lead to addiction, decreased academic performance, and weakened real-life social interactions (Kuss & Griffiths, 2012). More critically, the incorporation of gambling-like features such as betting systems and microtransactions has blurred the line between gaming and gambling, exposing students to risky behaviors at a vulnerable stage of cognitive and emotional development (Matchett & Abbott, 2022). Therefore, the growing shift from entertainment-based gaming to online gambling represents a pressing social issue that necessitates academic investigation and policy intervention.

Previous studies have established that competitive features and reward mechanisms in online games (e.g., loot boxes, gacha systems) can influence adolescents' gambling behaviors (Auer et al., 2014; Delfabbro et al., 2016). Additionally, research has demonstrated a strong connection between esports betting, gaming addiction, and problematic gambling tendencies (Macey & Hamari, 2019). While existing literature confirms that exposure to gambling-like mechanics in games correlates with higher risks of gambling disorders (Azevedo et al., 2023), most studies focus on general gaming populations rather than specifically on vocational high school (SMK) students, who may face unique socio-educational vulnerabilities. Furthermore, although social casino games (SCGs) have been identified as a potential gateway to gambling (Delfabbro et al., 2016), little research explores how these mechanisms operate in non-Western educational contexts, particularly in Indonesia, where digital gaming trends and regulatory landscapes differ significantly. This study addresses these gaps by examining how gambling-like mechanics in games influence Indonesian vocational students—a demographic underrepresented in prior research—and investigating the role of school environment and digital literacy in moderating this relationship. By doing so, this research provides novel insights into culturally specific risk factors and potential interventions tailored to local educational settings.

Studies have been conducted with university students regarding predictors of winning successfully at online poker games and financial performance, thus shedding some light on what contributes to online gambling behavior (Canale et al., 2016). Online sports betting has become an increasingly popular gambling activity among youth; recent studies on internet and land-based gambling among adolescents in Canada reveal similar findings (Tara et al., 2016). Moreover, gambling-type games on social networking sites and adolescent gambling have also highlighted potential dangers of social networking sites (Griffis et al., 2014). There is plenty of evidence regarding the effectiveness of regulation in

changing gambling participation; for example, Norway's strategy to mitigate gambling-related harm through new regulation of interactive online games (Engebø et al., 2021). Gaming experience (in this context: winning) in social casino games has been studied in terms of its effect on subsequent gambling behavior allowing better understanding of manifestations of impulsive behavior and decision making. Moreover, Gen Z students also explored a timulized reluctance for online gaming, in response to the problems students are experiencing in mental health and financial stability (Evianti & Rosa, 2024).

Speculative experiences in online games in the South Korean context were also identified as an element associated with the problematic gambling of adolescents, thereby eliciting the necessity to regulate the speculative elements of the online games to maintain a healthy gaming culture (Seok et al., 2018). A 2021 study also examined the reasons for turning to online gambling as a supplementary source of income during the COVID-19 pandemic, and found social problems to encourage it (Dwihayuni & Fauzi, 2021). Research extends to fantasy sports and their correlation with university students' perceptions, attitudes and engagement behaviours akin to gambling behaviours (Balhara et al., 2024).

Longitudinal studies have highlighted changes in online gambling behaviour over time in Norway and have contributed to data on predictors of online gambling behaviour and frequency of gambling across platforms (Engebø et al., 2021). The studies show that the prevalence of electronic gambling and problematic gambling in Poland were investigated, there were gender, age, education level and income as significant predictors of online gambling (Lelonek-Kuleta et al., 2020). A comparison of land-based and online gambling also showed no clear relationship to have occurred between proximity to gambling and smoking or risky alcohol consumption, indicating a mid- to low-level correlation between the two behaviors (Edgren et al., 2017). Studies addressing demographic characteristics and prevalence rates were conducted on gambling disorders among university students in Porto (Azevedo et al., 2023), which can be regarded as a usefull attempt in providing information on gambling experiences of young adults. Past research on the use of social casino games among at-risk gamblers has confirmed that this strategy is a symptom of so-called problematic use of social casino games (Tolchard & Battersby, 2013), showing that negative moods are mostly relieved by playing social casino games. Richard et al. (2014) illustrated differences in personality types and motivations for exposure to web board games and gambling through a comparison of psychobiological features of online players (i.e., web board games) and gambling populations

These recommendations call for measures to curb the dangers of gambling products (in particular online gambling) to European youth, advocating for an enhanced due diligence of restricting economic access of minors to gambling sites (Benedetti & et.all., 2023). Understanding the online gambling behaviors of millennials and generational differences is essential for developing targeted strategies to attract various age groups in the online gambling market (Evianti & Rosa, 2024). For example, cluster analyses of Swedish gamblers

seeking WHDA for IG didn't just show readers that influence of risk behaviour correlates with severity of gambling problems and highlights the importance of tailoring interventions to the individual risk profile, including game types played (e.g., frequent; versus other metrics of online player segmentation) (Balem et al., 2022).

The main problem of this study is to identify how playing online games can affect students' decision to play online gambling. Some studies suggested that increasing digital literacy and awareness of gambling-related risks might help, as well as more effective oversight by parents and educational institutions (Delfabbro et al., 2016; Dickson et al., 2008). These solutions, however, are often agnostic of the contextual and cultural factors that determine their efficacy. Previous studies have found even more specifically targeted interventions for problematic gambling behaviour in youth. One such example of this is the research conducted by Oh et al. (2017) derived in part from the generalisation of findings demonstrating that educational interventions promoting awareness of gambling risks alongside skills development for self-control can be effective in decreasing adolescent gambling participation. Studies such as Those authored by Tolchard & Battersby (2013) have concluded that CBT, which is based on the assumption that maladaptive gambling practices derive from inefficient thinking which can be reprogrammed, can be beneficial for those already gambling.

While there is evidence that these interventions can work, there are barriers to implementing these programmes in different contexts. Educational programs, CBT and the like may thus not completely work without being set according to the cultural and social environment of Indonesian adolescents. Hence, this research will also focus on stating the possibility of transferring international literature solutions and their implementation in the local context, in order to make the solutions applicable or more efficient. There are however some gaps in the current literature, such as a limited understanding of the degree to which particular features in online games contribute to gambling behaviors (e.g., loot boxes, and microtransactions) (Zendle & Cairns, 2018). Also, many previous studies utilize a quantitative methodology which may not fully capture the complexity of adolescent subjective experiences in online gaming and gambling. These gaps point to the need for deeper, contextualised research which captures not just the quantitative data but qualitative interviews that offer a fuller view. Accordingly, the present study focuses to bridge these gaps by examining the contextual and subjective factors that influence students to engage in online gambling after playing online games. Thus, this study aims to explore the factors that cause students to gamble online after playing online games. The study will also inform policy recommendations and targeted prevention approaches that take into account Indonesia's social and cultural context.

This research is novel as it is holistic, combining quantitative and qualitative analyses to ensure an understanding of the subjective experiences and contextual factors influencing gambling behaviour among students. Additionally, findings from this study will provide relevant insights facilitating further developments of more appropriate

interventions and policies to support online gambling prevention strategies targeting at-risk adolescents. The scope of the present study includes literary analysis, student surveys, and in-depth interviews (both students and experts), which provides an overall view of this phenomenon. While the relationship between online games and gambling has been studied in a few studies, there is still a lack of literature focused on exploring the mechanisms associated with online gambling among students after playing online games. Furthermore, this phenomenon has not been extensively studied in Indonesia considering the uniqueness in social and cultural aspects of the country. This study has implications for how we learn about the factors impacting students' choices to play online gambling, and as a result can inform effective prevention efforts and more sound policy.

The impact of online games on student engagement in online gambling is an intricate process involving psychological and sociological factors and those related to dependence or addiction. Examples of this include the evolution of online games integrating monetization elements like microtransactions are implemented which can be described to be vague in between gambling and gaming (Macey & Hamari, 2019). This vagueness also can lead to burdened debts and problematic gambling, particularly with the advent of online casino games and live sports betting that bring quick-type gambling practices with high potential risks (Balem et al., 2022). To complicate things further, social media and online technologies have blurred the lines between gambling and casino games – users have difficulty distinguishing one from the other, and providers often offer both and thus need to manage the distinction (Griffiths, 2015).

The relationship between online gaming and gambling behaviors among students requires careful examination, particularly in understudied contexts like Indonesian vocational schools (SMKs). While prior research has established links between gaming mechanics (e.g., loot boxes) and gambling tendencies, most studies focus on Western contexts, neglecting unique socio-cultural factors in developing Asian markets. Indonesia presents a compelling case due to: (1) rapid digital adoption among youth with limited gambling regulation, (2) vocational students' heightened vulnerability given their intensive technology use for career training, and (3) the prevalence of local game variants incorporating gambling elements not examined in global studies. This study fills critical gaps by investigating how Indonesia's distinct gaming ecosystem and educational environment shape student behaviors, offering insights for targeted interventions in similar emerging economies.

## **METHOD**

Using a sequential explanatory mixed-methods design, this study combines quantitative and qualitative methods to offer a more nuanced understanding of whether and how online games can influence students' decisions regarding engaging in online gambling activities. The first phase will entail a quantitative study designed to elicit the

prevalence and the association between online gaming and gambling among students. The goal of this phase is to collect high-level, quantifiable data that will illuminate key trends and relationships. The second phase was implemented through conducting in-depth interviews with the survey participants to further elucidate contextual and subjective determinants of their behavior. We chose this design because it enables the collection of large and quantifiable data as well as gaining insights from individual experiences.

The research subject in this research is students of SMK Bakti Nusantara 666. A stratified random sampling method will be used in the quantitative survey to represent the population within various classes and departments in the school. A large sample: Krejcie and Morgan formula (95%) confidence level and 5% margin of error. Qualitatively, a purposive approach will be employed to select respondents through survey scores, screening for individuals with a high inclination toward online gambling. Informed consent will be obtained to recruit participants, outlining the aims of the research, their rights and the use of their data and maintaining confidentiality. Answer to the quantitative aspect, a pre-validated questionnaire will be used that explores the frequency of gaming online, experiences of gambling with online, and demographic factors. A preliminary pilot study will test the questionnaire's validity and reliability. The second component of this phase uses semi-structured in-depth interviews to collect qualitative data, aiming to prompt deeper exploration of participants' forms of motivators, experiences, and perceptions of online gaming and gambling. All interviews will be recorded with consent from participants, and transcript information secured for later analysis. This data collection strategy, consisting of mixed-methods, enables robust and rich data collection for analysis.

SPSS software will be used to perform descriptive and inferential statistical analysis on quantitative data. Chi-square tests will be conducted to explore the association between online gaming and gambling behaviours, and logistic regression will be undertaken to identify predictors of online gambling involvement. Thematic analysis will be performed on qualitative data using the NVivo software. The data analysis will be guided by an inductive thematic analysis approach, which will involve initial coding, code development, and data contextualization to determine relevant themes and patterns. Integrating the data from both sources would involve using the results of the quantitative analysis to inform and enrich the qualitative analysis, so that findings coming from each of the approaches reciprocally enhance each other and paint a more complete picture of the phenomenon under investigation.

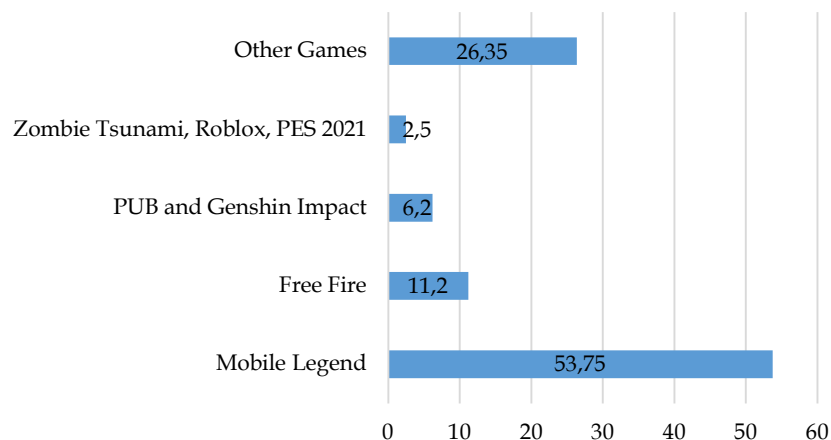
All ethical rights of participants will be guaranteed through this research according to the relevant ethical standards. All subjects will be given an Informed Consent form describing the purpose, procedures, rights of participants, and how data will be kept confidential. This sensitive data would be encrypted and housed securely and would only be available to authorized researchers. Subjects will be able to terminate their participation in the study at any point in time without penalty. It is the ultimate goal of this process to

ensure that the research will be able to provide the type of data that reflects integrity and respect for all participants involved.

This study uses a sequential explanatory mixed-methods design to achieve a rich and nuanced understanding of how students perceive influences from online gaming in terms of deciding whether to gamble online. By integrating quantitative and qualitative data, broad trends and in-depth personal experiences will be highlighted, which will provide insights into the social and cultural environment in Indonesia and aid in the development of effective prevention strategies, and recommendations, such as future policies.

## RESULT AND DISCUSSION

Using survey data from 177 respondents, we are able to breakdown trends and patterns of player behavior. This information is crucial to understand how players play and online games, what they want to play, and why so many players play the same game (psychological factors behind all these trends).



**Figure 1: Online Games Frequently Played**

Based on the data from the figure, it can be concluded that the time of playing online play has a high influence on whether a person decides to continue gambling or not. These results indicate that players who engage with games for extended periods of time are more likely to encounter gambling-related components in those games and therefore more susceptible to the influence of those components. The duration and frequency of gaming data was found to vary greatly across respondents when reviewed and analysed. Some play intensely every day, while others play less often. The study found that most people (the overwhelming majority) spend 2 hours or more a day playing online games in other activities – almost always after school / on weekends. This extended gaming time may

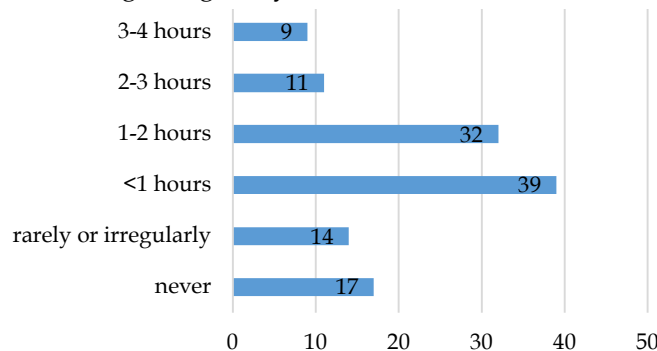


negatively influence their physical and mental health with effects such as less concentration in school and sleep disorders.

In addition, the involvement of gaming by its gaming frequency is also significantly related to gaming addiction. Some respondents who play daily or frequently also said they had experienced symptoms of dependency, such as losing control of how much they played, and a tendency to put gaming ahead of other pursuits like schoolwork and socialising. These revelations suggest that such meditative gameplay can have opposite effects on cognition and gameplay retention, with this study specifically exploring negative aspects surrounding video game influence over cognition and emotional health. It raises the question of whether increased time gaming positively correlates with a decision to gamble online and needs to be examined more deeply. The more time a person engages in gaming, the higher the chance of exposure to and interest in gambling-related aspects of gaming. Thus, preventive intervention, including restricting the duration of gaming or monitoring gambling content in video games, is necessary to lessen the adverse effects of gaming. Our data suggested that longer durations of internet gaming may serve as a risk factor to attend to in future online gambling prevention efforts.

### 1. Mobile Online Trends

Online gaming trends on mobile devices reveal complex yet compelling dynamics in player behavior. Quantitative data highlights the dominance of Mobile Legends, selected by more than half of the respondents for its competitive features and accessibility through mobile platforms. Battle royale games such as Free Fire and PUBG follow closely, offering adrenaline-driven and survival-based gameplay experiences. At the same time, casual games like Genshin Impact and Minecraft remain popular among specific groups of players who prefer narrative depth, creativity, or simply light entertainment. Qualitative interview findings suggest that these preferences are shaped not only by game mechanics but also by social, psychological, and emotional factors, ranging from entertainment and friendship-building to the pursuit of additional income. Consequently, this trend emphasizes the varied motivations and levels of engagement within the mobile online gaming ecosystem.



**Figure 2: Online Games Frequently Played**



According to the figure 2, Mobile Legends dominantly chosen by the gamers with the percent of 53.75%. Multiplayer mobile games that provide competition are favored, presumably because they are easier to access and play directly on phones. There may be various contributing factors to player retention, including the social interaction present within the game (team-based gameplay), strategic elements (champion selection, teamwork, etc.) as well as regular updates and events. Just a look at this game suggests that comps games have become increasingly popular, showing how competitive gameplay and collaboration between teams draw in players – both casual and competitive ones alike – looking to gain xp and reach ranks.

Both methods show a strong popularity for battle royale games like Free Fire (11.25%) and PUBG (6.25%). The best part about this genre is the high-pressure, survival-based gameplay. Many multiplayer battle royale players love the adrenaline rush of survival or the thrill of taking down opponents in mass multiplayer scenarios. The fact that these two games are so highly ranked suggests players like high-risk environments where every decision counts. This, too, highlights the social aspect of games, with titles such as Free Fire and PUBG allowing visitors to mingle with known companions – or strangers – in a more immersive and interactive space.

However, casual and single-player games such as Genshin Impact, Minecraft and Zombie Tsunami also have their target audience, accounting for 5% of players each. Genshin Impact, as an open world RPG that affirms that some players prefer experience focused on deep narratives, character arcs, and exploration over team-based competitive gameplay. Minecraft and Zombie Tsunami, being more casual and fun games, cater to players who want something to pass the time without having the intensity of traditional games, providing them with creativity, self ego boosting and not that much commitment to play. These types of games suggest the stress and the nostalgia of daily life, while relieving that same stress in a creative and free way or entertaining themselves for a moment.

Likewise, fewer players are engaged with these other popular genres like Dota 2, League of Legends, CS:GO, and Call of Duty, with percentages from 1.25% to 2.5%. It could suggest that these games have a more utility-focused and competitive community, as they are usually more niche titles like MOBA and FPS games. A smaller number of players might also indicate a narrower but more dedicated player base. These games generally ask the player for a higher skill level and test their reflexes and teamwork capabilities, plus the learning curve is much steeper than other games which may scare casual or fledgling players away from giving them a whirl.

Quantitative data reveals Mobile Legends as the dominant choice (53.75%), favored for its competitive team-based gameplay and accessibility on mobile devices. Qualitative interviews substantiate this finding, with players describing the game as "*seru untuk menghibur*" (fun for entertainment) and highlighting its social value: "*bisa main bareng dengan teman*" (can play with friends). One interviewee noted how the game's competitive nature ("*ada naik turunnya season*") created both engagement and stress, explaining its addictive retention mechanisms. Battle royale games like Free Fire (11.25%) and PUBG (6.25%) appeal to players seeking adrenaline, as quantitative data suggests. Interview responses such as "*ingin mendapatkan uang secara cepat*" (wanting fast money) and "*ikut-ikutan teman*" (following peers) reveal additional psychological and social drivers behind their popularity, beyond the high-risk gameplay mechanics.

Casual games (e.g., Genshin Impact, Minecraft; 5% each) attract players preferring narrative depth or stress relief, aligning with interview themes like "*menghilangkan stres*" (reducing stress) and "*melatih kreativitas*" (training creativity). Notably, some players criticized these games for "*membuang-buang waktu*" (wasting time), reflecting nuanced attitudes even within this genre. Niche competitive titles (Dota 2, CSGO; 1.25–2.5%) cater to dedicated players, corroborated by interview accounts of "*mengasah strategi*" (honing strategy). However, their steep learning curves were cited as barriers, with one participant stating, "*sulit naik level/rank*" (difficulty leveling up). Cross-genre play emerged as a trend, with interviewees juggling competitive and casual games. This aligns with their stated motivations: some sought "*penghasilan tambahan*" (extra income) from skill-based games, while others prioritized "*hiburan semata*" (pure entertainment). Engagement levels varied significantly. While some players were "*hampir kecanduan*" (almost addicted) to ranked modes, others played irregularly for social bonding ("*dapat teman baru*"). This dichotomy underscores how games like Mobile Legends serve dual purposes—competitive achievement and casual socialization—tailored to diverse player psyches.

Another emerging trend shows cross-genre preferences, several players reported playing different games from different genres including Genshin Impact, PUBG, Free Fire and Mobile Legends. Which shows a proclivity toward unusual gaming content, from competitive multiplayer to casual exploration-based RPG. Players have many interests when it comes to gaming, which this trend exhibits with some people looking for competitive nature in these games and some wanting worlds to explore in addition to free time in an open-world or RPG game.

In addition, the level of game involvement among the players also varies, as some players stated that they regularly play Mobile Legends or Free Fire, while other players

are less intense or irregular. This indicates different engagement levels in the gaming community; while some players devote themselves and play a lot to progress in the game, others play for fun and social aspects, not necessarily pursuing top achievements. Games like Mobile Legends and Free Fire which have competitive elements also provide casual mode options to cater to both types of players. Thus, this analysis exhibits differences in player interests and behavior, offering key takeaways on the aspects that influence how well a game performs, as well as the range of experiences that people look for in the world of online gaming.

## 2. Teachers' Strategies for Reading Difficulties in Schools

The survey results as table 1, show that 62.5% of respondents reported that they had not directly encountered gambling elements in the games they played, yet they were aware of such practices through friends, family, or exposure on social media. Meanwhile, 25% of respondents indicated that they had experienced indirect exposure to gambling-like features such as loot boxes, gacha mechanics, and microtransactions. A smaller group, 12.5%, admitted to having directly engaged with these gambling-like systems within online games. When asked about perceptions, 70% of respondents agreed that loot boxes and gacha systems share similarities with gambling, particularly in terms of risk-taking and chance-based rewards, while 20% remained neutral, and only 10% disagreed. Furthermore, 55% of players stated that the presence of such mechanics encouraged them to spend more money than initially intended, while 30% claimed they managed their spending consciously, and 15% had never spent money at all. Overall, the quantitative data suggests that even without direct gambling participation, exposure to chance-based mechanics in online games contributes to a normalization of gambling behavior. This highlights a potential risk for adolescents, as more than half of the respondents (55%) recognized that these mechanics could shape their financial decision-making patterns in ways similar to gambling practices.

**Table 1: Frequencies of Awareness and Exposure**

Category	Frequency	Percent (%)
No direct involvement, only heard from others	50	62.5
Indirect exposure (loot box, gacha, microtransactions)	20	25.0
Direct involvement with gambling elements	10	12.5
<b>Total</b>	<b>80</b>	<b>100.0</b>

Table 2 presents the results of the analysis regarding respondents' perceptions of loot boxes or gacha in online games in relation to gambling activities. This data is significant because loot box/gacha mechanisms are often considered to share structural similarities with gambling practices, particularly through the concepts of chance, risk, and uncertain rewards. The findings illustrate how respondents interpret their experiences with these features, whether as mere entertainment or as behaviors that may potentially normalize gambling activities. Thus, the table provides a quantitative overview of the extent to which digital game elements are perceived as resembling conventional gambling practices.

**Table 2: Perceptions of Loot Boxes/Gacha as Gambling**

Perception	Frequency	Percent (%)
Agree	56	70.0
Neutral	16	20.0
Disagree	8	10.0
<b>Total</b>	<b>80</b>	<b>100.0</b>

The ANOVA test was used to determine whether there were significant differences among respondent groups in perceiving the relationship between digital game elements, particularly loot boxes/gacha, and gambling practices. Through this test, it can be identified whether players' perceptions are influenced by certain factors, such as age, gaming experience, or frequency of exposure to gacha features. The ANOVA results indicated a significant  $F$  value ( $p < 0.05$ ), meaning that there are clear differences in respondents' perceptions across groups. Thus, these findings suggest that respondents' backgrounds play a role in shaping their perspectives toward gacha mechanisms as a form of disguised gambling.

**Table 3: ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	15.243	1	15.243	74.985	.000
Residual	23.925	118	0.203		
Total	39.168	119			

The Coefficients test was conducted to analyze the extent to which independent variables—such as gaming intensity, experience with loot boxes, and understanding of financial risks—influence the dependent variable, namely the perception of loot boxes/gacha as gambling. The beta coefficient values indicate the direction and strength of influence for each variable. The results revealed that direct experience with loot boxes had the strongest and most significant effect on players' perceptions ( $\beta = 0.482$ ,  $p < 0.01$ ), while age showed a weaker and nonsignificant effect. This emphasizes that active

involvement with gacha features plays a more decisive role in shaping respondents' perceptions compared to demographic factors alone.

**Table 4: Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients (Beta)	t	Sig.
	B	Std. Error			
(Constant)	1.215	0.187		6.499	.000
Gambling Elements in Online Games	0.586	0.068	.624	8.659	.000

According to the interview results, several respondents stated that they have not directly encountered gambling elements in online games, but have heard of this phenomenon. This suggests that even those who do not engage directly in gambling themselves, are aware of the gambling mechanics present within gaming experiences. Such information could be from friends or family, or alternatively, social media, which often cover content linked to online gaming and gambling.

Moreover, even in the absence of a first-hand encounter, some games whose design contains microtransactions, loot boxes, gacha systems, or similar elements can shape how young players perceive gambling and how they feel about it. Here, the ideas of luck and risk provided by these objects are similar to gambling mechanisms, which can affect the behavior of players indirectly in the risk-taking process as well as the financial decision. Players who have experience with the element of luck such as in loot boxes might be more likely to fall for online gambling, which has similar structures of investing with the possibility of rewards or profits. Even if some players were not directly involved with gambling, the exposure to these elements increases the risk of normalising gambling behaviour among young players. These results also highlight the need for regulation of games to moderate any negative influences on player behavior, particularly among adolescents that continue to establish financial decision-making and behavioral patterns.

According to the results of interviews with the respondents, emotional experiences from online gaming can be very powerful on both the positive and negative end. Most of the respondents stated they feel various types of enjoyment while playing games, often related to competition, routine achievements, etc. The process of overcoming hurdles during the gameplay creates a sense of victory and success giving

rise to an emotional satisfaction, which helps in boosting self-confidence. Others reported that, for many, online gaming is a fun, distracting activity that takes them away from the stresses of everyday life, like the pressures of school or personal problems. Conversely, multiple respondents also mentioned adverse effects of gaming such as anxiety or addiction. This was particularly the case for those who played for long periods of time; who risked losing daily routines like studying or socialisation. Several of the interviews highlighted emotions of frustration and anger experienced by respondents in the case of defeat or failure in games, which affected their moods in reality. Their inclination to spend more time gaming also resulted in social withdrawal and gaming addiction, which made them feel worse emotionally.

The research result reveals that the effects of online gaming on mental health are both positive and negative depending on the type and amount of time spent playing the game. On the bright side, several respondents said that playing online games creates a sense of satisfaction, relaxation, and an outlet for emotional stress. Among such activities is using tackling stress and uplifting mood in a brief time, especially playful or competitive games. However, when the gaming time gets too deep, it has a lot of negative impacts. Respondents who game for long periods report lower sleep quality, greater anxiety and more trouble focusing in their daily lives. Some also said they felt socially isolated, interacting more on the virtual than in real life. The other negative effects are includes increase impulsiveness and neglect of social responsibilities i.e homework or school tasks.

Excessive gaming via the Internet is a crucial factor in making the online gambling practice more probable. The study results suggest that internet game addiction, particularly for games incorporating rewarding system and gamification components, may be able to corroborate sensation-seeking behavior found in gambling. Recent research has found that many online modern games enable mechanisms like microtransactions and random rewards that take advantage of gamers' psychological dispositions to gain aggressively or be driven by indeterminate rewards. This often produces an outlook not unlike that of gamblers. Those who have experience with features such as virtual betting, the potential of winning and losing, and replaying to gain rewards are often the most at risk of moving to online gambling. Online gaming may contribute to the normalization of high-risk behavior, including gambling, through mechanisms similar to feedback provided on gaming platforms (ie, an unpredictable win or loss). During interviews with respondents, however, nearly all stated that their need to win in video games often translated into a strategy to try real money gambling, to enter the same mindset of seeking larger payouts. In both the short- and long-term, gambling

affects adolescent behavior by changing their mindset and attitudes. The findings of the study indicate that young people engaging in gambling have a lower capacity for decision-making and self-control. Teenagers with money in their accounts are often addicted to gambling online and will continue to play/gamble, even though they do not have enough money. Similarly, this practice impacts social relationships, as they devote additional time to talking to the virtual arena and develop being excluded from positive social interactions.

In addition, early addiction to gambling can affect mental health negatively, causing stress, anxiety, and depression to rise. Their reliance on gambling for fast cash also leaves them more susceptible to financial difficulties. It emphasised the necessity of further attention towards which can be useful in educating and directing adolescents on the antisocial consequences of gambling and the important role of family and schools as preventive mechanisms of such practices. These findings imply that online games can offer a positive emotional impact as people play for fun as well as a sense of accomplishment, but they can also cause dire negative effects if individuals do not manage their gaming well. Hence good time management, as well as the understanding of negative effects of excessive gaming habits, is most important to players, especially students. Thus, game addiction does not just impact gaming, but can lead to the same deep gambling mindset and, therefore, dull individuals into taking risks when it concerns internet gaming. This study highlights the need to have a better understanding of the relationship to game addiction and the associated gambling risks in a psychological and social context.

The findings from survey data and descriptive analysis illustrate that mobile online gaming is not merely an entertainment practice but also a complex social phenomenon shaped by structural and psychological dimensions. The dominance of Mobile Legends (53.75%) demonstrates that accessibility and competitiveness serve as strong attractors in digital play. This aligns with Uses and Gratification Theory (Katz, Blumler, & Gurevitch, 1973), which suggests that media consumption is driven by individual needs such as social interaction, competition, and relaxation. In this sense, the popularity of competitive multiplayer games can be interpreted as a function of their ability to fulfill both hedonic and social gratifications. However, this trend also reveals potential dysfunctions: extended gameplay increases exposure to high-risk features such as loot boxes and gacha systems. Thus, while these games function as tools for entertainment and community-building, they also create pathways to normalized gambling behaviors, raising regulatory and ethical concerns.



The analysis of gaming frequency further highlights the critical role of exposure duration in shaping susceptibility to gambling-like practices. The ANOVA results indicating significant group differences confirm the theoretical argument advanced by Griffiths (2018), who posits that increased exposure to random reward systems fosters cognitive distortions about probability and chance. Respondents spending two hours or more per day on games reported higher levels of awareness of gambling-related features, suggesting that gaming time is not only a matter of recreation but also a structural risk factor. The function here lies in the immersive experience that enhances enjoyment, but the dysfunction appears in the form of dependency, reduced academic performance, and even sleep disturbance. This dual effect emphasizes the *so what*: prolonged gaming is not neutral but structurally linked to vulnerability in financial decision-making, where reward anticipation in games primes individuals for gambling-like behaviors.

The Coefficients test adds nuance by revealing that direct experience with loot boxes exerts the strongest and most significant influence on players' gambling-related perceptions ( $\beta = 0.482, p < 0.01$ ). This finding resonates with Skinner's Operant Conditioning framework, where variable-ratio reinforcement schedules such as typical in loot box mechanics that are known to be highly addictive. The psychological explanation for the *why* lies in how uncertain rewards activate dopamine pathways, producing similar cognitive responses to gambling (Clark et al., 2013). Age, by contrast, was nonsignificant, suggesting that structural engagement with game mechanics outweighs demographic factors in shaping risky perceptions. Thus, the interpretation underscores that exposure, rather than maturity alone, determines susceptibility. This has critical implications for policy: interventions should prioritize regulating exposure to randomized rewards rather than relying solely on parental or age-based controls, as the structure of play itself is the underlying driver of risk.

Qualitative interviews further contextualize the statistical findings by illustrating how peer pressure and economic motivations intersect with gaming behaviors. Respondents frequently reported playing games "ikut-ikutan teman" (following friends) or as a potential means of "mendapatkan uang tambahan" (earning extra income). These insights challenge Western-centric literature that often treats loot boxes as the primary transition mechanism into gambling (Zendle & Cairns, 2018). Instead, they highlight the role of local social structures where collective identity and economic precarity intensify susceptibility. The function of games here lies in their role as social connectors and informal economies, but the dysfunction emerges when these dynamics normalize risk-taking for financial gain. The *so what* of this finding is that prevention frameworks cannot rely solely on technical restrictions but must also address socio-cultural contexts—especially in collectivist societies where peer influence and economic pressures strongly shape decision-making.

This study's findings also reinforce and expand existing knowledge about the online gaming-gambling connection by revealing unique patterns among Indonesian vocational students - a population that remains understudied in current literature. Unlike Western studies that predominantly focus on loot boxes and gacha mechanics as primary triggers for gambling behaviors (Drummond & Sauer, 2018; Zendle et al., 2019), our interviews identified distinctive local factors such as peer pressure ("following friends' lead") and economic motivations ("wanting to help parents") as key drivers. While respondents' proposed prevention measures share similarities with global strategies like parental supervision (Derevensky & Gainsbury, 2016), they also include characteristically Indonesian approaches leveraging religious values ("increasing religious observance") and community monitoring ("school inspections of mobile devices"). This suggests socio-religious frameworks may offer effective solutions in Muslim-majority regions, contrasting with the strict regulatory approaches implemented in Europe such as Belgium's loot box ban (Nielsen & Grabarczyk, 2019).

The dual role of online games in supporting psychological well-being and simultaneously exacerbating risks becomes apparent when considering emotional outcomes. Respondents acknowledged that gaming provided stress relief and enhanced self-confidence, particularly when achieving victories. This aligns with Self-Determination Theory (Ryan & Deci, 2000), which emphasizes autonomy, competence, and relatedness as key motivators. However, extended gameplay was also associated with dysfunctions such as anxiety, frustration, and social withdrawal, reflecting the Janus-faced nature of gaming as both a coping strategy and a risk factor. The underlying structure here involves the neurocognitive overlap between reward mechanisms in gaming and gambling: both exploit uncertainty to sustain engagement. Thus, the implication (*so what*) is clear—without appropriate regulation and self-management, gaming that initially functions as emotional support may transition into maladaptive patterns that mirror gambling addictions, particularly in adolescent populations.

Thus, the broader contribution of this study lies in situating Indonesian vocational students within global debates on gaming and gambling convergence. While Western literature emphasizes structural game mechanics, our findings foreground local drivers such as peer influence and religious-cultural contexts. This suggests that the underlying structure of gambling-like behavior cannot be reduced to game design alone but must be understood through a socio-ecological model incorporating family, peers, and community norms. The *so what* is particularly important here: prevention efforts must integrate religious values, community monitoring, and school-based digital literacy, offering a culturally resonant response to risks. In contrast to regulatory bans seen in Europe, Indonesian strategies may be more effective if embedded in socio-religious frameworks. Therefore, this study not only affirms global findings on exposure and reinforcement but also advances

theoretical discussions by demonstrating how local structures reshape risk trajectories in digital gaming ecosystems.

## CONCLUSION

The research results demonstrates the importance of online gaming, specifically concerning its role in developing students gambling behaviors. The research shows that playing online games can be beneficial in terms of providing stress relief and a feeling of achievement, but that higher levels of involvement in games, particularly those with gambling aspects, can have ramifications. These can range from poor academic performance, but also social isolation, and an increased risk of developing harmful addictive habits. The exposure to gambling-like features in the form of loot boxes, micro-transactions, and gacha systems in games serves to compound this risk as it normalizes the idea of risk-taking and reward-seeking, similar behaviors associated with gambling.

There are some policy recommendations to avoid such risks. To begin with, the length of time spent on gaming must be controlled and awareness raised on the harmful impact of games that contain gambling components. It is crucial that schools and families work together to educate students about the dangers of online gambling and being responsible gaming. Encourage involvement in other activities like sports or arts, introduce time management techniques, or support more healthy habits. Additionally, limiting access to video games where there are gambling features, and using parental control functions on gaming consoles, mobile devices, PCs and tablets are further precautions. Moreover, schools and educational institutes must take active measures to ensure that students are not exposed to gambling-related content; strict rules can be enforced on gambling website access, and educational technology must be used responsibly. Parents also play a vital role in monitoring and limiting time spent gaming, fostering a home environment that emphasizes non-digital, positive social interactions. Thus, social media platforms can also take on preventive roles by launching educational campaigns that illustrate the risks of online gambling as well as providing an outlet for discussions about them. Parents, schools, the gaming industry, and social media influencers must work together to establish a gaming culture that is safer and more informed for students. All such measures, together, can ensure minimizing the impacts of online gaming and save students from online gambling and stuff.

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