

The Effect Of Participation Intensity In Online Games On Students' Side Income Opportunities In Manado City

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Abstract

This study examines the effect of online-game participation intensity on opportunities for students to earn supplementary income in Manado City. An associative quantitative survey design was employed. Primary data were collected using a Likert-scale questionnaire administered to 60 active university students in Manado who played online games. The analysis included validity and reliability tests, classical assumption tests, Pearson correlation, simple linear regression, a t-test, and the coefficient of determination. All questionnaire items were valid, while Cronbach's alpha values of 0.849 for participation intensity and 0.890 for income opportunity indicated good internal consistency. The results revealed a strong positive relationship between the variables ($r = 0.766$; $p < 0.001$). The estimated regression equation was $Y = 5.482 + 0.781X$, with $t = 9.070$ and $p < 0.001$. The R^2 value of 0.587 indicates that participation intensity explained 58.7% of the variation in supplementary-income opportunities. Greater involvement in online games may therefore expand monetization opportunities through streaming, content creation, tournaments, and digital services or asset transactions. Nevertheless, gaming intensity must be accompanied by digital skills, ethical conduct, and time management to generate economic value without undermining academic responsibilities

Keywords

online games; participation intensity; university students; supplementary income; digital economy



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INTRODUCTION

Digital transformation has transformed the way Indonesians communicate, work, consume entertainment, and conduct economic activities. This change is driven by increasing internet access and the use of mobile devices. The Central Statistics Agency (BPS) recorded that 72.78% of Indonesia's population had internet access in 2024, up from 69.21% in 2023 (BPS, 2025a). This increase continues a previous trend, when the percentage of the population accessing the internet increased from 62.10% in

2021 to 66.48% in 2022 (BPS, 2023). This development demonstrates that the internet has become a crucial infrastructure for people's social and economic activities. The growth of Indonesia's digital industry has also driven the emergence of various platform-based business models, including e-commerce, content production, digital services, and creative work that can be performed flexibly (Haris et al., 2024) (Imansyah et al., 2023).

The platform-based economy provides opportunities for individuals to act not only as consumers, but also as producers, creators, service providers, and digital entrepreneurs. Platforms bring together users, creators, advertisers, and consumers in an ecosystem that enables the exchange of economic value. In the creator economy, revenue can be generated through advertising, subscriptions, donations, affiliates, sponsorships, product sales, and the provision of digital services. However, these opportunities are heavily influenced by platform design, recommendation systems, monetization policies, audience characteristics, and the creator's ability to retain user attention (Maghfiroh et al., 2023). Creators also tend to use multiple platforms to expand their audience reach and diversify their revenue streams to avoid relying solely on a single platform (Suryana, 2025).

One growing sector in the digital economy is the online gaming and electronic sports, or e-sports, industry. Online games are no longer simply a form of entertainment, but have evolved into an ecosystem involving developers, publishers, players, tournament organizers, professional teams, streamers, content creators, advertisers, sponsors, and support service providers. This development makes the gaming industry a component of the creative economy with the potential to create jobs, income, investment, and new entrepreneurial activities. A bibliometric study of the e-sports business shows that academic discussion on this industry continues to evolve, particularly with regard to innovation, technology, marketing, consumer behavior, and business opportunities (Putri et al., 2025). The success of a country's e-sports industry is also influenced by economic development, digital infrastructure, the quality of human resources, and institutional support (Purba et al., 2024).

The strategic potential of the gaming industry prompted the Indonesian Government to enact Presidential Regulation Number 19 of 2024 concerning the Acceleration of the Development of the National Gaming Industry (<https://peraturan.bpk.go.id/Details/277601/perpres-no-19-tahun-2024>, n.d.). This policy is aimed at improving the quality of human resources, opening access to financing, product promotion, strengthening technology, expanding markets, and building a national gaming industry ecosystem (Republik Indonesia, 2024).

(<https://peraturan.bpk.go.id/Details/277601/perpres-no-19-tahun-2024>, n.d.) The government also encourages collaboration between developers, communities, educational institutions, industry players, and other stakeholders through various gaming industry development programs (Ministry of Communication and Informatics, 2024). This policy shows that gaming has been positioned as a subsector of the digital economy that has strategic potential, not just an entertainment activity.

For individuals, opportunities to earn income from online gaming can be pursued through various activities. Players with competitive skills can earn prizes from tournaments or become members of e-sports teams. Players can also generate income by becoming streamers, creating gameplay videos, providing coaching, managing communities, editing videos, acting as match commentators, or offering other digital services. Thus, the gaming industry value chain provides opportunities not only for professional players but also for individuals with skills in communication, media production, marketing, design, and event management. However, economic opportunities in the e-sports industry are not evenly distributed. Research on the e-sports labor market indicates income inequality, as a small percentage of players earn significantly higher prizes and income than the majority (Rizky, 2022).

Live-streaming has become one of the most prominent monetization mechanisms in the gaming industry (Robiansyah et al., 2025). Through platforms like Twitch, YouTube, and similar platforms, players can broadcast their gaming activities to a live audience. Revenue can come from advertising, subscriptions, donations, sponsorships, affiliate marketing, and brand partnerships. The development of streaming demonstrates a shift from traditional broadcasting systems to platform-based content distribution, where platforms act as a bridge between creators, audiences, and advertisers (Chalaby, 2024). In practice, creators must consistently produce content, build an identity, maintain engagement with their audience, and keep up with algorithmic changes to generate revenue.

However, platform access does not guarantee that every creator will earn adequate income. Houssard found that revenue distribution on Twitch is highly unequal. A small number of streamers with large audiences are able to command a dominant share of revenue, while the majority receive relatively limited income (Houssard et al., 2023). Studies also show that platform features, visibility systems, monetization rules, and user behavior can both facilitate and restrict the flow of economic value to streamers. Thus, intense participation can increase opportunities to build skills, audiences, and networks, but does not automatically guarantee economic success (Rojabi, 2025).

Income uncertainty is one of the characteristics of work in the creator economy. Streamers must navigate changing algorithms, content competition, fluctuations in audience attention, changes in platform rules, and dependence on the platform provider. Wollborn et al. (2023) explain that streamers need to consider opportunity costs because the time spent producing content may not necessarily yield comparable rewards. DeJong (2024) also points out that digital work related to the gaming industry can be unstable because it is mediated by platforms, territories, consumer demand, and employment relationships that do not always provide adequate protection. These conditions require actors to develop diverse skills, strategies, and sources of income.

College students are a group with a high affinity for digital technology and online gaming. They generally have access to the internet, digital devices, online communities, and social media. They also tend to learn new technologies more easily and require flexible work patterns to accommodate their class schedules. These characteristics provide students with the opportunity to utilize online gaming as a productive activity. Consistent gaming can develop skills in gaming, communication, problem-solving, teamwork, media production, and community management. These skills can then be utilized to produce content or provide services with economic value.

The shift from a hobby to a digital career demonstrates the increasingly fluid boundaries between leisure and work. Cisternino (2024) explains that game streamers fall along a spectrum, from gamers who stream as a hobby, to part-time creators, to streamers who make it a full-time job (YULIANTI, 2026). This shift demonstrates that participation in online gaming can develop into an economic activity if accompanied by skills, consistency, a productive orientation, and the ability to build an audience. High participation intensity also allows players to gain more experience, understand the game's character, build a reputation, and expand relationships with the community.

Revenue opportunities from gaming are also influenced by audience behavior and motivation (Fitroh, 2026a). Septian points out that game genre and live-streaming type can influence the relationship between audience motivation and consumption behavior (Septian, 2025). Viewers are not only interested in player skill, but also in entertainment, social interaction, information, and the streamer's character. Entertainment, social, and relaxation motivations play a role in driving young people to watch game livestreams (Aini & Nugraha, 2024). Therefore, students who wish to monetize their gaming activities need more than just playing skills. They also need to understand audience needs, develop communication skills, and produce content formats that suit their audience's characteristics.

The intensity of participation in online games can be understood through the frequency of play, duration, depth of engagement, community activity, participation in competitions, and involvement in content production. Frequency and duration reflect the quantity of use, while participation in communities, competitions, streaming, and content creation reflects the quality and orientation of the activity. Two students can spend the same amount of time playing but achieve different results. Students who play solely for entertainment may not derive any economic benefit, while those who use the activity to practice, create content, participate in tournaments, or offer services have greater monetization opportunities.

Despite its economic potential, high-intensity gaming can also pose various risks if not managed properly. Excessive gaming time can reduce study time, sleep, face-to-face interactions, and other productive activities. Furthermore, students may face unstable incomes, pressure to maintain performance, negative feedback from audiences, platform dependency, and digital transaction security risks. Therefore, utilizing online games as a source of secondary income requires skills in time management, digital literacy, financial management, data protection, and an understanding of ethics.

Based on the above description, intense participation can increase income opportunities through several mechanisms. First, repeated activities can improve technical skills and knowledge of the game. Second, community involvement expands networks, access to information, and collaboration opportunities. Third, consistency in content production increases the opportunity to build an audience and generate income. Fourth, participation in competitions or providing services provides opportunities for direct income generation. However, these effects can vary depending on the type of game, digital skills, device quality, social network, creativity, and platform mechanisms.

Previous research has extensively discussed the e-sports industry, live streaming, audience behavior, the creator economy, and digital income inequality. However, empirical research specifically analyzing the relationship between the intensity of online game participation and students' side income opportunities in Manado City is still limited. The social, economic, digital infrastructure, and gaming community conditions in Manado may create distinct characteristics from other regions. Therefore, local research is needed to determine whether students' involvement in online games is solely consumptive or has developed into a productive economic activity.

Based on this research gap, this study aims to analyze the effect of the intensity of online game participation on students' side income opportunities in Manado City.

This research is expected to provide empirical contributions to the study of the digital economy and student entrepreneurship. The results can also be used as considerations for students, universities, local governments, and creative economy stakeholders in developing digital literacy programs, entrepreneurship, and fostering a productive and responsible gaming industry. The hypothesis proposed is that the intensity of online game participation has a positive and significant effect on students' side income opportunities in Manado City.

METHODS

This study uses a quantitative approach with an associative-causal design to test the effect of independent variables on the dependent variable. The independent variable (X) is the intensity of online gaming participation, while the dependent variable (Y) is the opportunity for side income. The unit of analysis is active college students in Manado City who play online games.

Primary data was obtained through a Likert-scale questionnaire. Based on the results of this thesis, 60 respondents were analyzed. The intensity of participation variable was measured using indicators representing frequency, duration, involvement in gaming activities, and participation in communities or productive activities. Side income opportunities were measured through respondents' perceptions and experiences regarding the possibility of earning income from activities such as streaming, content creation, tournaments, selling items or accounts, and providing game-related services. Instrument quality was assessed using item-total correlation and Cronbach's alpha. Model testing included classical assumption tests, Pearson correlation, simple linear regression, partial significance tests, and the coefficient of determination. The research model was formulated as $Y = a + bX + e$. The hypothesis decision used a 5% significance level; the alternative hypothesis was accepted if $p < 0.05$.

FINDINGS AND DISCUSSION

Instrument Quality and Model Suitability

The results of the validity test in Table 1 show that all items in both variables meet the validity criteria because the validity test uses Pearson correlation with 60 respondents and the r value in Table = 0.254.

Table 1

Validity Test Results

Variable	Number of Items	Range	Significance	Results
Online Game Participation Intensity (X)	6	0,375–0,882	< 0,05	All items valid
Side Income Opportunities (Y)	6	0,586–0,923	< 0,05	All items valid

Source: Processed primary data.

The reliability of the instrument is also in the good category, as summarized in Table 2.

Table 2
Reliability Test Results

Variable	Number of Items	Cronbach's Alpha	Kesimpulan
Online Game Participation Intensity (X)	6	0,849	Reliabel
Side Income Opportunities (Y)	6	0,890	Reliabel

Source: Processed primary data.

A Cronbach's Alpha value exceeding 0.70 indicates that the items in each construct have adequate internal consistency. The results of the classical assumption test in this thesis also indicate that the residuals are normally distributed, no heteroscedasticity is found, and the tolerance and VIF values are each 1.000. Because the model has only one predictor, the absence of multicollinearity issues is a natural consequence of the simple regression specification.

Relationship and Influence Between Variables

A Pearson correlation of 0.766 with $p < 0.001$ indicates a strong positive relationship between participation intensity and side income opportunities. The results of a simple linear regression are presented in Table 3.

Table 3
Simple linear regression results

Indicator	Value	Interpretation
Constant	5.482	Value of Y when X = 0
Regression Coefficient (X)	0.781	Positive effect
Correlation Coefficient	0.766	Strong positive relationship

(r)		
t-statistic	9.070	Statistically significant
Significance Level	< 0.001	H_0 is rejected
Coefficient of Determination (R^2)	0.587	X explains 58.7% of the variance in Y
Source: Processed primary data.		

The resulting regression equation is $Y = 5.482 + 0.781X$. A positive coefficient of 0.781 indicates that a one-unit increase in participation intensity is followed by a 0.781-unit increase in the side income opportunity score. The t-value of 9.070 with $p < 0.001$ indicates that the effect is statistically significant. Thus, the research hypothesis is accepted.

The R^2 value of 0.587 indicates that participation intensity explains 58.7% of the variation in side income opportunities. The remaining 41.3% is likely explained by other factors not included in the model, such as content production skills, device and connection quality, game type, audience size, communication skills, social networks, publication consistency, reputation, financial literacy, and platform policies.

Discussion

The research results show that intense participation in online games has a positive and significant impact on students' opportunities for additional income in Manado City. These findings suggest that online games serve not only as a means of entertainment but can also be part of the digital economy. The more actively students engage in online games, the greater their chances of recognizing and exploiting the various economic opportunities within the gaming ecosystem.

Intense involvement can help students develop both technical and non-technical skills. Technical skills include game mastery, understanding strategies, using digital tools, and the ability to produce and edit content. Meanwhile, non-technical skills include communication, teamwork, problem-solving, creativity, time management, and the ability to build relationships with the community. When developed in a targeted manner, these skills can be translated into economic value through streaming,

content creation, tournament participation, training, community management, and the provision of other game-related services.

Intense participation also expands students' access to information and networks. Students who are active in gaming communities have a greater opportunity to obtain information about tournaments, changing gaming trends, collaboration opportunities, service demand, and developments in monetization mechanisms. Communities can serve as a source of knowledge, a place to build reputation, and a means of connecting service providers with potential users. Therefore, the influence of intensity on revenue opportunities stems not only from the amount of time spent playing, but also from the experience, skills, and networks developed during the engagement process.

In the context of streaming and content creation, consistent activity can increase a creator's chances of being discovered by an audience. Creators who produce content regularly have more opportunities to build interactions and maintain relationships with their audience. Repeated relationships can increase audience trust and loyalty. This, in turn, can open up revenue opportunities through advertising, subscriptions, donations, sponsorships, affiliate marketing, or collaborations with other parties.

However, the positive relationship between participation intensity and income opportunities should not be interpreted as implying that the longer someone plays, the greater their income will be. This research finding is more accurately interpreted as increasing opportunities, not a guarantee of economic success. Extensive time spent playing does not necessarily generate income without clear goals, adequate skills, and an appropriate monetization strategy.

(Houssard et al., 2023) shows that income on streaming platforms is concentrated among a small number of creators. Creators with large audiences earn a dominant share of the revenue, while many other streamers receive only limited income. These findings suggest that access to platforms does not automatically translate into equal economic outcomes. Students still have to face competition, changing audience interests, algorithm uncertainty, and the demand to produce content consistently.

(Fitroh, 2026b) also emphasized that creators' economic opportunities are influenced by platform features, visibility mechanisms, monetization policies, and community norms. Platforms can help creators reach audiences, but they can also limit opportunities through changing algorithms and monetization requirements. Therefore, intense participation will have a greater chance of generating income if accompanied by content differentiation, communication skills, personal branding, audience understanding, and distribution strategies across multiple platforms.

Students also need to understand that income from gaming can be volatile. Income from tournaments, streaming, content creation, or service sales can fluctuate depending on market demand and the game's popularity. Therefore, online gaming should be positioned as a supplemental source of income, rather than immediately becoming the primary source. Students need to consider the costs of internet, electricity, devices, promotion, and time spent to determine the true net profit.

The results of this study are relevant to national gaming industry development policies. The economic potential of the gaming industry demonstrates the need for competency-building programs that emphasize more than just gaming skills. Students need to acquire knowledge in digital entrepreneurship, content management, marketing, financial record-keeping, transaction security, consumer protection, intellectual property rights, and digital ethics. Mastering these skills can help students transform gaming from a purely consumptive activity into a more sustainable and productive one.

Universities can play a role by organizing seminars, training, competitions, business incubations, and mentoring for students interested in the gaming industry. This mentoring can involve various disciplines, such as management, communications, information technology, design, and law. Students can be guided beyond simply becoming gamers to become content creators, video editors, social media managers, tournament organizers, game analysts, and digital product developers.

Besides its economic opportunities, monetizing online games also carries a number of risks. Unsecured account or item transactions can lead to fraud and the loss of digital assets. The use of illegal programs, hidden gambling, violations of game terms, and unauthorized use of copyrighted material can pose legal risks and damage reputations. Students must understand game rules, platform policies, and legal provisions before engaging in gaming-related economic activities.

High levels of gaming intensity also need to be balanced with academic responsibilities. Playing, streaming, and content production can be time-consuming if not managed properly. Students must create a schedule, set goals, and regularly evaluate the results of these activities. If playing time continues to increase without development in skills, audience, or income, students need to adjust their strategy or limit these activities. This way, economic opportunities can be exploited without disrupting their studies, health, and social life.

CONCLUSION

The intensity of online game participation has a positive and significant effect on students' opportunities for side income in Manado City. The relationship between the two variables is strong ($r = 0.766$; $p < 0.001$), while the regression model $Y = 5.482 + 0.781X$ yields $t = 9.070$ and $p < 0.001$. The intensity of participation explains 58.7% of the variation in opportunities for side income, while 41.3% is influenced by factors outside the model.

Students are advised to develop complementary skills such as content production, communication, personal branding, financial management, and time management. Universities can provide digital entrepreneurship training and an e-sports or creator development ecosystem that prioritizes ethics. Future research should expand and clarify the sample frame, measure actual income—not just opportunities—and include mediating or control variables such as digital skills, game type, audience size, and playing time. Longitudinal or mixed methods designs are also needed to strengthen causal explanations

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