

The Power of Idol? The Impact of Age Regulation on Internet Addiction

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ABSTRACT

Since age restriction on professional e-sport players has a significant impact on players' careers and e-sport industry development, this study aims to investigate whether the policy is effective in controlling Internet addiction among teenagers. The study designs questionnaire with anchoring vignette and receives 152 questionnaires for further analysis using linear regression. The study finds that the policy can only limit teenagers' time spent on playing games nowadays but have no reduction in reducing future time, even seems to increase future time, spent on playing games. Therefore, the policy has little impact. Because of the little effect, the policy should be edited. Mandatory identity verification and then limiting the time of underage accounts is sufficient enforcement policy. And government should focus more on the publicity of Internet addiction prevention, creating a good environment for young people to grow up and establishing correct values.

Keywords: *Internet addiction, age limitation policy*

1. INTRODUCTION

With the development and application of the game industry and virtual network technology in recent years, the harm of teenagers' Internet addiction has been further intensified, which has attracted more scholars' attention. However, due to the progress of network technology and the necessity of developing digital life, most of the influencing factors of teenagers' Internet addiction cannot be properly controlled or reduced. Therefore, many policies start from the audience of this specific addiction and introduce control policies and publicity education for the audience.

In September 2021, China issued a new "Notice on Further Strict Management and Prevention of Minors' Addiction to Online Games". In the wake of this, some e-sports events have moved to impose age restrictions on participants. And this is noting more than a new aspect of the control of teenagers' Internet addiction. But as e-sports has been included in the Asian Games, why should it limit the age of players instead of keeping the standard as same as other traditional sports? E-sports is a great test for players' fitness to the version and responsiveness. It's obvious that the older players get, the worse they will do in the competition. The 18-year age limit, in addition to shortening the professional life of e-sports players, also caused temporary unemployment for underage players

who have been suddenly affected. As for Asian Games, since this policy was introduced by China, the Olympic Council of Asia and the Hangzhou Asian Games officials did not have further clear regulations and explanations on whether to restrict foreign e-sports players by the same policy.

Such vague but influential provision makes necessary and urgent to study whether they can effectively achieve the purpose. It is known that the goal of the age limit on e-sports is to reduce the harm of Internet addiction among young people, and that if the policy is not effective in achieving its goal, it should be changed.

Therefore, this essay will be the first to analyze the impact of this policy. Secondly, this essay uses the method of quantitative evaluation, combined with a survey experiment, to draw conclusions. Finally, the essay can identify the short-term and long-term effects of this policy by the questions asking about the current weekly time spent on playing games and the expected weekly time spent on playing games in adulthood [1].

2. LITERATURE REVIEW

At present, there have been many studies at the micro individual level, which state that the individual characteristics such as gender, age and personality will

affect the formation of Internet addiction. At the same time, the unique physical and psychological characteristics of teenagers are also the main reasons for the easy occurrence of Internet addiction among them. First of all, teenagers in the period of drastic physical and psychological changes desire to communicate with others, but they lack social skills and equal opportunities for communication. The virtual hidden network can meet their such needs. Secondly, teenagers have a need for self-actualization during this period. But in real life, the factors that predict success are very uncontrollable and most of them can only be acquired over a long period of time. So teenagers choose to shape themselves on the Internet to achieve satisfaction. Finally, due to various pressures, the colorful Internet has become a haven for teenagers. They get a rare pleasure in the Internet, but because of the lack of self-control and unable to extricate themselves [2].

Since then, educationalists have gradually found that social factors such as family and school also play a great role in teenagers' Internet addiction. In 2020, some scholars found that all kinds of conflicts within the family are not correlated with the adolescent's social media dependence, whereas the global distress in the family, conflict between the mother and the adolescent due to the school, the case that the parents want the adolescent to be perfect, and the effort of the parents to attract the adolescent to their own sides are correlated with the social media dependence [3]. After that, other scholars stated that general self-esteem, social self-esteem, home-family self-esteem and total self-esteem were significantly and negatively correlated with Internet addiction among adolescents. Besides, social self-esteem and home-family self-esteem were found to be significant predictors of Internet addiction [4].

With the development of the Internet, teenagers' online behavior has aroused the concern of the government. Many countries in the world have carried out classification control on games: The Entertainment Software Classification (ESRB) of the United States, the Pan-European Game Information Classification (PEGI) of the European Union, USK of Germany, ClassInd of Brazil, Australian Classification Committee, International Federation of Age Classification (IARC), CERO of Japan, GRB of South Korea and so on. From the birth of the game rating system in the United States and Japan, we can see that problematic games arouse public opinions and game manufacturers' self-regulation. The former is the spear that strikes the game, while the latter is the shield that the game raises itself. The ESRB of the United States, PEGI of the European Union, and the EOCs and CERO of Japan in the early stage are all the balance between the interlacing and contradiction of the industry inside and outside. These classification systems actually have no legal force, but they almost cover the three major game markets of North America, Europe and Japan [5].

In recent years, the Chinese government has also introduced corresponding policies. However, only a few reports have been reported and descriptive analyses have been used. The policy does not carefully explore the effects of Internet addiction on teenagers, especially in adulthood. This paper attempts to explore the short-term and long-term effects of the policy and estimate its possible policy effects through a combination of virtual scenarios and survey experiments.

3. RESEARCH DESIGN

3.1. Data

For the data survey, I used the method of sending questionnaires. I designed a questionnaire with anchoring vignette and publicized it on social platforms through QR code. After a week, I interviewed 200 respondents. Finally, 152 questionnaires of them were considered valid and were used for further analysis.

3.2. Measurement

The independent variable of the study is the policy of age limit for professional e-sports players released on September 2021 in China. A survey experiment with anchoring vignette was implemented in the survey. Respondents are randomly divided into two groups. The treatment group read a paragraph of material of the policy- "The National Press and Publication Administration recently issued a notice on further strict management to prevent minors from indulging in online games. Some e-sports events have begun to impose age restrictions on competitors. Among them, PEL announced that it would carry out compliance work on the age of competitors. KPL specified that KPL and KGL players must be at least 18 years old."-while the control group read nothing. Since the policy has been introduced for a short period of time, the influence of people's own perception of the policy on their answer results can be almost excluded.

The dependent variable of the study is adolescents' Internet addiction. The survey used five factors to measure adolescents' Internet addiction.

(1) Hourn shows how much time teenagers spend playing games per week recently. (2) Ahourn shows how much time adolescents predict themselves spending playing games per weeks when they become adults. (3) Add represents the difference between Ahourn and Hourn. (4) Happy shows the degree to which teenagers feel extra happy when playing games, measured on a scale from zero to ten. Zero means adolescents don't feel exceptionally happy while playing games. Ten means adolescents feel exceptionally happy while playing games. (5) Better represents the degree to which teenagers think the in-game world is better than the real world, qualified on a scale from zero to ten. Zero means

adolescents don't think the in-game world is better than the real world at all. Ten means adolescents think the in-game world is better than the real world at all.

There are four control variables in the study. (1) Gender. (2) Education level: The questionnaire measures the education level of respondents by asking whether they are in primary school, junior middle school or senior high school, divided into the above three levels. (3) Mobile phone price: The questionnaire measures the income level of the respondents by asking the price of the mobile phones used by the respondents. The price of the phone is divided into four ranges: less than 1,000 yuan, 1,000 to 2,000 yuan, 2,000 to 3,000 yuan, and more than 3,000 yuan. So there are four levels of income. (4) Parental discipline: The questionnaire measures parental discipline by asking respondents to quantify, from zero to ten, how much their parents interfere with playing games. Zero represents that parents don't interfere with playing games. Ten represents that parents interfere a lot with playing games.

3.3. Empirical Analysis

The study uses linear regression analysis. The equation (1) is used to estimate the policy impact of adolescents' Internet addiction.

$$\text{Addiction} = \beta_0 + \beta_1 \text{policy} + \beta_2 X + \varepsilon \quad (1)$$

Addiction denotes the dependent variables, including Hourn, Ahourn, Add, Happy and Better, which have been defined above. Policy is the policy of age limit for professional e-sports players released on September 2021 in China. If policy=1, it is denoted respondents are treated. Otherwise, policy=0. X denotes control variables including gender, education level, income level and parental discipline. β_1 is the key policy's impact of the regulation on adolescents' Internet addiction.

4. RESULTS

4.1. Descriptive analysis

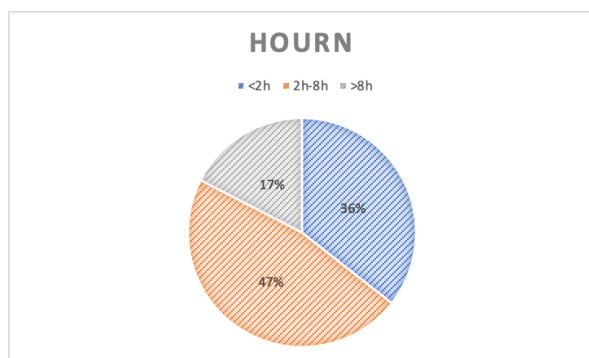


Figure 1 Hours of teens spent on playing games recently

Figure 1 shows that hours of teenagers spent on playing games every week nowadays. Nearly half of the teenagers being interviewed play games for between two hours and eight hours, within the normal range. The percentage of teens who play games more than eight hours is relatively small, but still nearly 20 percent. The majority of teenagers, 36 percent, play games for less than two hours.

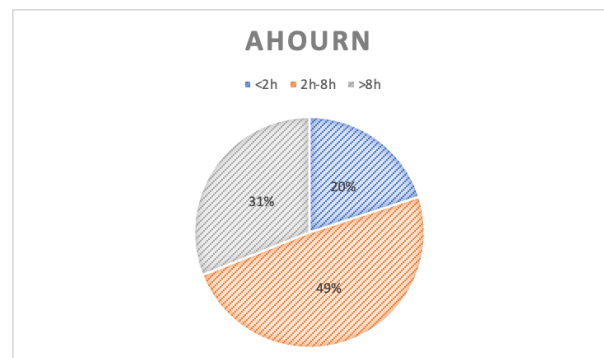


Figure 2 Hours of teens expected to spend on playing games in adulthood

Figure 2 shows the hours of teens expected to spend on playing games when they become adults. Surprisingly, 49 percent of teens predict that they will spend between two hours and eight hours playing games when grow up to adults. In addition, 31 percent of teens predict that they will spend more than eight hours playing games in the future, which is higher than the current percentage. Those who play for less than two hours when they become adults see a significant decrease, suggesting that teenagers predicted they will spend more time playing games as they grow up.

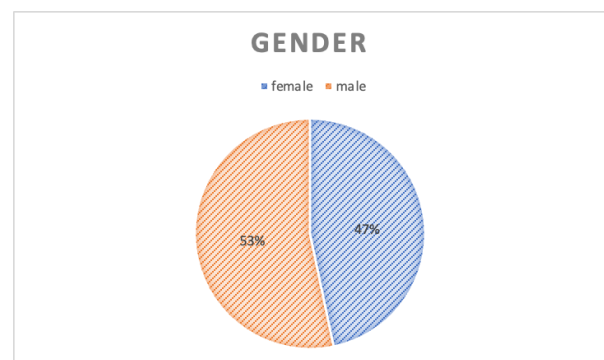


Figure 3 Gender of respondents

Figure 3 shows the gender of questionnaire's respondents. As can be seen from the graph above, the survey is relatively evenly split between male and female, about 50 percent to 50 percent.

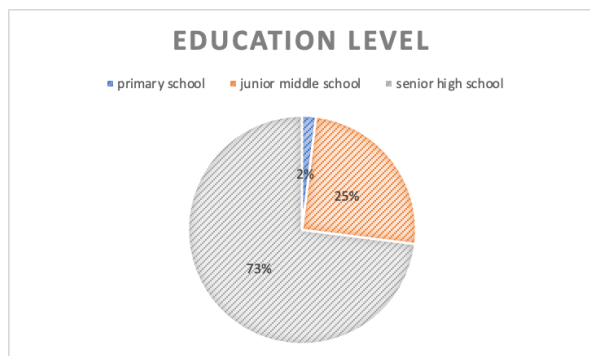


Figure 4 Education level of respondents

Figure 4 shows the education level of questionnaire's respondents. As can be seen from the pie chart above, the majority of this survey is high school students, accounting for 73 percent. Junior middle school students also account for a quarter of the survey, while primary school students are very low at 2 percent.

Table 1 Descriptive analysis of Age regulation on teenagers Internet addiction

Variable	Definition	Obs	Mean	Std. Dev.
Hourn	Hours of teens spent on playing games recently	149	6.467	15.242
Ahourn	Hours of teens expected to spend on playing games in adulthood	145	11.068	25.335
Add	The difference between Ahourn and Hourn	145	4.591	18.223
Happy	The degree to which teenagers feel extra happy when playing	152	6.559	2.686
Better	The degree to which teenagers think the in-game world is better than the real world	152	3.164	3.078
Treatment (policy)		152	0.500	0.502
Gender	Gender of respondents	152	1.467	0.501
Edu	Education level of respondents	152	2.711	0.497
Price	The price of the mobile phones used by the respondents	152	3.382	0.935
Parent	The degree to which parents interfere teenagers with playing	152	4.125	3.033

For teenagers, the average time spent playing games recently is 6.5 hours. Due to the age limitation policy for normal players, the minimum time for teenagers to play games is 0 hours, but the maximum time is still 140 hours. It can be seen that under the restriction policy, there are still teenagers who play games for a long time. When teenagers predict how much time they will spend playing games as adults, the average time increases dramatically to 11 hours. Meanwhile, the minimum time for playing games remains at 0 hours and the maximum time increases to 168 hours per week. The gap between the time spent playing games before and after adulthood decreases by as little as 15 hours and increase by as much as 168 hours. The average difference is a 4.5 hours increase. The average of the evaluation index for the happiness degree of playing games is 6.5, indicating that teenagers generally believe that games can bring them happiness to a large extent, and that they enjoy this way

of relaxation. For the index evaluating whether the in-game world is better than the real world, the average value is 3, indicating that teenagers still prefer the real world, which also states that most teenagers do not fall into the inclination of being Internet addicted.

4.2. Regression analysis

Model 1 estimates the impact on hours of teens spent on playing games recently. The coefficient of treatment is negative, which indicates the policy has a positive impact on reducing hours that teenagers spent on playing games recently. However, this relationship is insignificant. Besides, the coefficient of parental discipline is also negative, which shows stricter parental discipline can also reduce the time that teenagers spent on playing games nowadays.

Table 2 Regression analysis of Age regulation on teenagers Internet addiction

	(1)	(2)	(3)	(4)	(5)
	Hourn	Ahourn	Add	Happy	Better
Treatment	-1.095	2.392	3.427	0.692	0.209

	(2.525)	(4.312)	(3.105)	(0.439)	(0.505)
Gender	-2.733	-5.726	-3.416	-1.075**	-1.098**
	(2.488)	(4.246)	(3.057)	(0.435)	(0.500)
Edu	-5.462**	-5.168	0.474	0.327	-0.713
	(2.739)	(4.708)	(3.390)	(0.478)	(0.550)
Price (1=less than 1000)					
1000-2000	0.775	4.013	1.317	-0.0609	0.627
	(6.196)	(10.94)	(7.877)	(1.091)	(1.254)
2000-3000	0.485	10.52	8.241	-0.0618	0.573
	(6.137)	(10.74)	(7.732)	(1.070)	(1.231)
3000-4000	6.494	11.53	3.113	-0.202	0.756
	(5.518)	(9.749)	(7.020)	(0.971)	(1.116)
Parent	-0.206	0.201	0.399	0.0146	0.0687
	(0.437)	(0.739)	(0.532)	(0.0765)	(0.0880)
Constant	22.38**	21.87	1.455	6.991***	5.657***
	(9.609)	(16.76)	(12.07)	(1.686)	(1.939)
R-squared	0.061	0.038	0.036	0.060	0.054
Observations	149	145	145	152	152

Model 2 estimates the impact on hours of teens expected to spend on playing games in adulthood. The coefficient of treatment is positive, which indicates the policy has a negative on reducing hours that teenagers may spend on playing games when they become adults. This relationship is insignificant again. This data shows that the establishment of the policy may enhance the possibility of Internet addiction of teenagers after they grow up, but the relationship haven't been verified. Other control variables have little impact on time that teenagers may spend on playing games when they become adults.

Model 3 estimates the impact on the difference between Ahourn and Hourn. The coefficient of treatment is positive, indicating the policy leads to an increase in time spent on playing games from teenagers grow up to adults. But this relationship is insignificant.

Model 4 estimates the impact on the degree to which teenagers feel extra happy when playing games. The coefficient of treatment is positive, indicating that the policy makes teenagers feel happier while playing games, but the relationship is insignificant. Only the impact of parental discipline on Happy is significant, showing strict parental discipline increases teenagers happiness received from playing games.

Model 5 estimates the impact on the degree to which teenagers think the in-game world is better than the real world. The coefficient of treatment is positive, which indicates the policy increases teenagers' satisfaction of in-game world compared with real world, but the

relationship is insignificant. Only the impact of parental discipline on Better is significant, indicating strict parental discipline increases teenagers' satisfaction of in-game world compared with real world.

5. DISCUSSION

In September 2021, the Chinese government issued an age limitation for professional e-sports players. This policy was issued very suddenly, and all the event organizers as well as clubs were unprepared, resulting in many players being unemployed without preparation and completely losing the possibility of finding a job in a short period of time. Therefore, the policy has a big impact on players and even the whole industry.

This article tries to estimate the impact of the policy on teenagers' Internet addiction as the purpose of the policy is to prevent teenagers from considering these professional players as their idols, which may lead to higher possibility of being Internet addicted. In order to find, the study implement a survey experiment with anchoring vignette. By collecting 152 questionnaire, using linear model, the study finds the policy has no impact.

There may be several reasons why this policy is not effective. First of all, adolescent children will have a strong rebellious mentality. For example, Mingming (pseudonym), a 14-year-old child living in Jiangbei District, saw his academic performance decline due to his long-term obsession with online games, and he often

fraternized with the riff-raff in the society. One day, his father tore the network cable. Because of that, Mingming threatened his parents not to "interfere" with his hobbies by running away from home. The same is true for such coercive policies. The more strongly teenagers are told to stay away from games, the more rebellious they will be, and the more time and energy they will spend on playing games. Secondly, family influence is also a major factor affecting the effect of this policy. With the popularity of games and the digital devices, more young parents are being exposed to games. They tend to play games during breaks or after work, which sets the example for kids and leads teens to spend more time playing games.

6. CONCLUSION

Since this study has proved that the age limit policy for professional e-sports players is not effective in controlling Internet addiction among teenagers, the policy should be revised. Adolescent Internet addiction is an important factor affecting the development and growth of a generation of adolescents, which needs to be skillfully controlled from many aspects. Although coercive measures may lead to rebellious behaviors, appropriate coercive measures are also necessary. I think mandatory identity verification and then limiting the time of underage accounts is sufficient enforcement policy, and there is no need to limit the age of professional e-sports players so as to reduce the exemplary role of idols. In addition, both schools and communities should strengthen the publicity of Internet addiction prevention, so as to create a good environment for young people to grow up and establish correct values.

The study also has several limitations. Firstly, the sampling isn't a random sample, because of the limitation of publicizing the questionnaire on social platforms through QR code. The sampling mostly includes teenagers in my district because of my limited social circle. Secondly, the size of the data is small, which means the data base may be too small to be representative, and significance therefore cannot be revealed. Lastly, anchoring vignette is not equal to real policy scenarios, and more evidence is needed.

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