PROBLEMATIC INTERNET USE (PIU) IDENTIFICATION USING THE BIOPSYCHOSOCIAL MODEL APPROACH IN EMERGING ADULTHOOD

Aneke Dewi Rahayu[*, a,1], Ari Prasetyoaji [b,2]

[a] Psychology Program , University of Technology Yogyakarta
[b] Guidance and Counseling Program, University of Technology Yogyakarta
[*, a] anekedewi.psi@uty.ac.id, [b] ariprasetyoaji@uty.ac.id

Abstract

Individuals with Problematic Internet Use (PIU) who use the internet excessively, it gave the causes of the difficulties to control using the internet and bad impact of physical and mental disorder.   The research aims to show the relationship among biological, psychological, and social factors with PIU so it can be created some relation model which explain about this phenomenon. Simple random sampling is a sampling technique used of this research. Subjects used of this research were 403 individuals who were in the age of emerging adulthood. Data collection method used in this research is PIU and bio psychosocial scale which consists of three parts are biology, psychology, and social. Based on the data processing, a relationship model among biology, psychology, social, and PIU where the relationship model has a chi square score of 0.102 with a probability score of 0.061, a CMIN / DF score of 1.518, a GFI of 0.919, an AGFI of 0.971, a CFI equal to 1.00, TLI of 0.90, and the score of RMSEA 0.072 so the model was proposed as strong and acceptable category. The model shows strongest relationship is the relationship between social and PIU was 0.47, psychology with PIU was 0.22, and biology with PIU was 0.12.

Keywords: *Problematic Internet Use, bio psychosocial, emerging adulthood*

I.   INTRODUCTION

Internet provides space for individual to interact with other individual through a system which does not require meeting directly in one place. Based on this phenomenon there is a shift in the order of life was originally conventional to modern and it is not all individual are able to adapt well. It gives evidence that technology can provide change in various aspect of human life, but in the face of these change requires a certain way so individuals are able to respond to change wisely. Internet technology in addition to provide positive things and it has also a negative impact. The emergence of a research on Problematic Internet Use (PIU) is evidence which there are individuals who are not able to respond to technological changes properly. PIU can cause disruption of individual psychosocial functions (Kormas, 2011) such as withdrawing from the social environment, lying to family members, and running away from anxiety (Tokunaga, 2014).

Research on PIU has been carried out by several previous researchers, including research conducted by Parisa and Leonardi (2014) with the aim to see the relationship between PIU and social anxiety in adolescents aged 15-18 years. The result of this research indicate a significant relationship between PIU and social anxiety in adolescents. Similar research conducted by Soliha (2015) where Soliha using quantitative descriptive method found that there is a strong enough relationship was 31.4%

despite having a very small effect. Based on the result of the R Square statistical test shows the score was 12.7% of the variance of level in dependence on social media while 87.3% is explained by other factors. Reinaldo (2016) examines internet phenomenon under the title Students and the Internet: Two Sides of Currency? *Problematic Internet Use* on Students. The research used a sample of 474 students from three universities in Jakarta. The method used a quantitative with Generalized Problematic Internet Use Scale 2 as a measurement tool. The result showed that there were significant differences in PIU symptom, both in sex and duration of internet use. The result indicate the presence of a PIU at a moderate level experienced by participants.

Based on some previous research it can be seen that focus of the research subjects is in the age range of 15 to 18 years while according to data was 49.52% of internet users in Indonesia as many as 143 million people aged 19 - 34 years. Judging from the perspective of developmental psychology, ages 19-34 are age ranges in which there are stages of adolescent developmental age. The theory of the development of human life always changes according to culture and social condition. One of the development in theory of life development is the research of *emerging adulthood*. The research appears in the late 20th century, which has focus on the age of 18-25 years. Arnett (2010) defined that emerging *adulthood* as a transitional phase from adolescents to adulthood. In this stage individual begins to be responsible for all action taken, it begins

to be separated from parent and it has a satisfying relationship with the social environment and begins to realize life goals. This stage of life development can be passed well if individual performs the role as they should been (Nelson and Barry, 2015). The role as individual can be passed normally if there is a balance between physical, spiritual, and environment.

There are facts in the field related to physical and spiritual imbalances experienced by individuals due to excessive internet activities. One of them was the case in Bekasi, West Java in October 2019 was written on the Indonesian CNN website that there were cases of teenagers experiencing psychiatric disorder due to the internet. Behavior is raised by adolescents who emotional condition that are not stable, against parents, and even rule out physical and biological condition.

Based on the case in the field shows that the balance between biology, psychology and social becomes important in facing technological development. There is one model that explain the relationship between biological, psychological, and social factor, such as bio psychosocial theory model developed by Engle in 1977. Engle said that the elements in humans consist of physical, spiritual, and environmental. Determinants of human behavior are physical conditions, mental quality, and environmental situations so there must be harmony in the functioning of the soul, body, and social (Sarafino and Smith, 2014). Bio psychosocial is a method interactions between biological factors, psychological factors, and social factors. The interaction is formed with the aim to make an effort to find cause of the emergence of a disorder, so appropriate actions can be given to maintain the mental health of individual. Bio psychosocial model enables the overall acquisition of data related to understand the emergence of a disorder in which the condition of the illness is associated with social and psychological factor.

Based on the description above, the research is intended to look at the dynamics of PIU experienced by individual if it is related to biological, psychological, and social factor so the main factor causing PIU can be identified. After finding the answering, the next hope is the results of the research can be used as a reference in determining intervention for individuals identified by PIU.

METHODS

The research uses quantitative research method with a descriptive approach. Sugiyono (2015) defines quantitative research method as method which can be used to examine populations or specific samples where sampling is done randomly and data collection uses research instrument. Analysis of quantitative research data is statistical in nature which aims to test hypothesis has been set. Descriptive approach to quantitative research with the aim to describe the result of research in the form of numbers so that a clear description of the object of research is obtained. In addition, to help describe the condition of subject a number of open-ended questions accompany the scale of the study. Open-ended questions include aimed at identifying how subjects make sense of internet in their lives. An example of an open question given is "How would you describe your relationship with the internet?". The question is given with the aim of the subject is free to answer the questions in accordance with the actual condition felt.

In the stage of determining the sampling carried out population and sample determination. Sampling is needed as part of the population to be studied. Data from sample will be processed and analyzed then used to generalize the population to the place where the sample was taken. The population of *emerging adulthood* who have student status in Yogyakarta until 2017 both men and women are approximately 350,000. The sample used in the research was 403 respondents with the characteristics of active students, ages 18-24 years, and the intensity of internet usage above 8 hours per day with an average internet quota usage above 20 gigabytes every month. The research used a research instrument in the form of a Problematic Internet Use scale that adapts to Generalized Problematic Internet Use Scale 2 from Caplan (2010). PIU has several dimensions, such as preference for online social interaction, mood regulation, cognitive preoccupation, compulsive internet use, and negative outcomes. The PIU scale consists of 31 items with a reliability value of 0.881. The second scale used in this research is the bio psychosocial scale model which is based on the theory revealed by Ghaemi (2010). The bio psychosocial scale consisted of 49 items with a reliability score was 0.892 where 20 items revealed biological conditions, 17 items revealed psychology, and 12 items revealed social conditions. The scale uses a score of 0 to 5 in the form of a *semantic differential scale*.

The scale of the instrument test is needed because the scale of the research is made based on the construct of theory found. To determine the appropriateness of research instruments used, it must go through a validity and a reliability test. Validity test is intended to determine the extent which the research instruments used can truly measure what should be measured (Azwar, 2011). While the reliability test is the extent which the results of a measurement can be trusted which refers to the consistency or reliability of the measurement results that indicate the accuracy of the measurement. Measurements are said to have high reliability if they are able to provide reliable measurement result. Reliability is expressed by the reliability coefficient which is in the range of r xxxx '= 0 to r xxxx' = 1.00 (Azwar, 2011). The research was tested using

confirmatory factor analysis and if *Cronbach's alpha* score is greater than or equal to 0.70, the instrument is declared reliable. If the *Cronbach's alpha* score is more than 0.60 in bad category, while in the range 0.70 (0.60 to 0.80) is categorized as acceptable, and above 0.80 is categorized as good.

RESULT

Data collected and further processed were 403. Based on gender, male subjects consisted of 194 respondents (48.14%) and female subjects consisted of 209 respondents (51.86%). As revealed by Arnett (2010) that emerging adulthood has an age range of 18-25 years, the respondents used in this research are in the age range of 18-25 years with an average internet quota usage of 40 Gigabytes in the average duration of usage internet 15 hours a day.

The research data has been obtained can be used to answer the problems raised in this research. It is suspected that PIU can be caused by biological, psychological and social factor. Submission of the relationship model between PIU and bio psychological model has been tested and analyzed. This research uses 403 subjects so the parameter used is *Maximum Likelihood Estimation* (MLE). Path analysis has several kinds of fix index which can be used to measure the degree of suitability of the model. There are several criteria to reject or accept a proposed model by considering the score of *probability chi square*, GFI, AGFI, CMIN / DF, CFI, and RMSEA.

Based on the result of the analysis has been done, the chi square score was 0.102 with a probability was 0.061 so the model is said to be good. *Goodness of Fit Index* is calculated in order to see the weighted proportion of the variance in the sample covariance matrix described by the estimated population covariance matrix. The model is said to be good if the GFI score is greater than 0.90. Through calculations, the GFI score in this research shows a value of 0.919 so it can be said to fall into either category. AGFI or Adjusted *Goodness of Fit* is a criterion which taken into account the weighted proportion of the variance in a sample covariance matrix. The recommended AGFI score is greater than 0.90. Based on the calculation result, the AGFI score was 0.971, so it is included in good criteria.

The Minimum Sample Discrepancy Function or CMIN / DF is one indicator in measuring the level of fit or not of a model. An indication of a model can be accepted if the CMIN / DF score is smaller or equal to 2.00. The calculation results show that the CMIN / DF score was 1.518 so it can be said that the proposed model is acceptable. CFI or *Comparative Fit Index* has a range of score 0 - 1 which means that the closer to 1, the model is at the recommended value level. CFI in this assessment produces a number of 1.00 so that it is at the level of a *good fit*.

The Root Mean Square Error of Approximation or RMSEA is a value that indicates the expected *goodness of fit* if estimated in the population. The RMSEA score indicates the acceptance of a model if the score obtained was <0.08 because it shows the *close fit* of the model based on *degrees of freedom* (Ferdinand, 2002). In this research the RMSEA value of 0.072 is obtained so the model can be accepted.

Critical Ratio (CR) analysis on the results of data processing is done to answer a research hypothesis where the limit of CR was > 2.0. *Regression Weight* test results show that over all the CR score was above 2.0 so it can be concluded that each variable has a relationship. Based on the analysis has been done, the structural relationship between variables can be seen through the following picture:
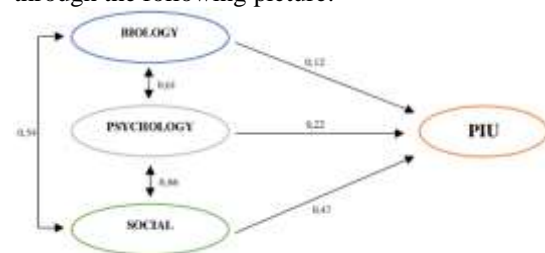

Figure 1. Structural Relationship Model between variables

DISCUSSION

In accordance with the structural relationship has been described, it can be seen that the biggest factor influencing the formation of PIU is social factor, the second biggest influence is psychology, the third is biology and the rest is from other factors. The data also mentioned that there were seven respondents who were in the very high category on the PIU scale and the bio psychosocial scale. Based on open-ended questions raised by researchers and filled in freely, as many as 23.7% stated that the relationship between subjects with the internet was like an inseparable part. The internet usage quota used by respondents has an average was 40 gigabytes every month with an online time of 15 to 20 hours every day.

Based on these data it can be said that technology has entered the aspect of human life indefinitely even though on the other hand the subject feels a negative effect related to biological and social conditions. Socially, the presence of technology can have both positive and negative impacts. According to Lawyer, Yoon, and Thye (2000) normal social relations can bring up emotional processes and cognitive processes, but the presence of technology shifts. In average respondents do not experience emotional processes and tend to reject when dealing directly in the real world with other individuals, but emotional processes are experienced when interacting with the internet in daily activities.

Communication without regard to meeting and complete identity is part of the attractiveness of cyberspace communication. 43% of research

respondents choose to interact in cyberspace because it is based on self-confidence in themselves and others. Arnett (2010) revealed that the state of *emerging adulthood* sometimes has instability within itself. The phrase is in line with the results of research that the experience of interacting with others and psychological comfort gained in cyberspace is more emotionally calm. So the situation is the background of respondents more comfortable interacting in cyberspace. It can also be related to trust that arises due to the behavior of others and individual characteristics. If someone is active in cyberspace and has no reason to suspect others, what happens is a high level of trust. The statement is in line with the opinion of McKnight, Kacmar, and Choudhury (2004) so that activities in cyberspace are felt to reduce the risk of psychological discomfort.

The data states that as many as 21% of subjects experience health problems such as depression and *obsessive compulsive*. In subjects who were identified as having depression, excessive anxiety and anxiety arose when the subject found no internet connection. Whereas the subject that experienced *obsessive compulsive* showed the behavior of wanting to see the gadget as often as possible and immediately because it seemed to feel or hear a notification message. These conditions indicate an imbalance between psychology and biology.

Based on the explanation above, it can be drawn an understanding that the internet has different impacts for its users, besides having a positive impact the internet can also have a negative impact (Young, 2009). One characteristic of individuals who experience problem with internet usage which has a negative impact after internet usage (Caplan, 2010). The negative impacts that arise in individuals in *emerging adulthood* age can be classified into five groups, are addiction to the internet, fear of being rejected in real life, anxiety disorders if without the internet, meeting sexual needs through the internet, and deeming need in the romantic category. This is in line with what was expressed by Hussain and Griffits (2008) that addiction to cyberspace can be motivated by the desire of individuals to seek pleasure, entertainment, challenges, and escape from reality.

CONCLUSION AND SUGGESTION

The bio psychosocial model sees PIU from three things such as biology, psychology, and social. Based on quantitative data, the results of data processing show that these three things have an effective contribution was 0.859 affecting PIU, while the remaining 0.141 is influenced by other variables. Existing research data are expected to be used as a basis for appropriate treatment of individuals identified by PIU. Recommended treatment can be done using Cognitive Behavior Therapy and relaxation with the aim of reducing the level of anxiety experienced by individuals identified by PIU.

Other intervention model can also be designed to address individual identified PIUs where the model needs to go through a series of studies before being used as a therapeutic medium. In further research it is necessary to consider the personality elements that underlie the behavior of individuals who also color someone's activities in *cyber space*.

REFERENCES

Arnett, J.J. (2010). Emerging Adulthood: Theory, Assessment and Aplication. *Journal of Youth Development*, 2, 40-50.

Azwar, S. (2011). *Penyusunan Skala Psikologi.* Yogyakarta: Pustaka Pelajar.

Caplan, S. E. (2010). Theory and Measurement of Generalized Problematic Internet Use: A Two-step Approach. *Journal Computers in Human Behavior,26, (5), 1089-1097.*

Ferdinand, A. (2002). *Structural Equation Model 2th.ed.* Semarang: Seri Pustaka Kunci.

Hussain, Z., & Griffiths, M. D. (2008). Excessive use of Massively Multi-Player Online Role-Playing Games: A Pilot Study. *International Journal Mental Health Addiction*, 7, 563-571

Lawyer, E. J., Yoon, J., & Thye, S. R. (2000). Emotion and Grup Cohesion in Productive Exchange. *American Journal of Sociology*, 106, 616-657.

McKnight, D.H., Kacmar, C. J., & Choudhury, V. (2004). Dispositional Trust and Distrust Distinction in Predicting High and Low Risk Internet Expert Advice Site Perception. *E-service Journal*, 3, (2), 35.

Nelson, L. J., & Barry, C.M. (2015). The role of Self-Classification as an Adult. *Journal of Adolescent Research*, 1, 113-120.

Parisa, N., & Leonardi, T. (2014). Hubungan antara Problematic Internet Use dengan Social Anxiety pada Remaja. *Jurnal Psikologi Keperibadian dan Sosial*, 3 (1), 44-51.

Reinaldo, Y. A. S. (2016). Mahasiswa dan Internet: Dua Sisi Mata Uang? Problematic Internet Use pada Mahasiswa. *Jurnal Psikologi*, 43, (2), 107-120.

Sarafino, E. P., & Smith, T. W. (2014). *Health Psychology: Biopsychosocial Interactions*. USA: Wiley.

Soliha, S. F. (2015). Tingkat Ketergantungan Pengguna Media Sosial dan Kecemasan Sosial. *Jurnal Interaksi*, 4, (1), 1-10.

Sugiyono. (2015). *Metode Penelitian (Pendekatan Kuantitatif, Kualitatif, dan R&D)*. Bandung: Alfabeta CV.

Young, K. (2009). Understanding Online Gaming Addiction and Treatment Issues for Adolescents. *The American Journal of Family Therapy, 37*, 355-372.