Is Academic Achievement Influenced By Self-Esteem, Loneliness, And Internet Addiction?

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Abstract. The purpose of this study is to measure whether self-esteem, loneliness, and internet addiction affect academic achievement in college students empirically. This study involved 369 students who actively used the internet in the Greater Jakarta area and several other cities in Indonesia. Structural equation modeling (SEM) is used to analyze the theoretical model. The findings of this research show that the empirical model is fit with data, and self-esteem, loneliness, and internet addiction affect academic achievement in college students simultaneously. However, the influence shows that self-esteem has no direct influence on academic achievement, but it has strong negative influence to loneliness and internet addiction. Loneliness has negative influence to academic achievement. The other result also show that internet addiction has positive effect to academic achievement.

Keywords: academic achievement, self-esteem, loneliness, internet addiction, college students

Abstrak. Tujuan dari penelitian ini adalah untuk mengukur secara empiris apakah harga diri, kesepian, dan kecanduan internet mempengaruhi prestasi akademik mahasiswa. Penelitian ini melibatkan 369 mahasiswa yang aktif menggunakan internet di wilayah Jabodetabek dan beberapa kota lain di Indonesia. Pemodelan persamaan struktural (SEM) digunakan untuk menganalisis model teoretis. Temuan penelitian ini menunjukkan bahwa model empiris sesuai dengan data, di mana harga diri, kesepian, dan kecanduan internet mempengaruhi prestasi akademik mahasiswa secara simultan. Namun pengaruh secara parsial menunjukkan bahwa harga diri tidak memiliki pengaruh langsung terhadap prestasi akademik, namun memiliki pengaruh negatif yang kuat terhadap kesepian dan kecanduan internet. Kesepian berpengaruh negatif terhadap prestasi akademik. Hasil lainnya juga menunjukkan bahwa adiksi internet berpengaruh positif terhadap prestasi akademik.

Kata kunci: prestasi akademik, harga diri, kesepian, adiksi internet, mahasiswa

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Academic achievement is being considered as one aspect of individual intellectual achievement (Bahmani, Faraji, Faraji, Lang, Holsboer-Trachler, & Brand, 2018). Good academic achievement is desired by school students and college students. It is, however, easier said than done. The matter of academic achievement often considered as one serious problem faced by school students and college students with personal and professional consequences. Academic achievement is a multidimensional issue bringing its own positive and negative factors.

There are some causes, both internal and external, handicapping the maximum academic achievement. External factors have long been considered and many have been involved in various researches on academic achievement. Some of the external factors in question are teacher teaching methods, facilities and infrastructure, and social support from peers, teachers, and parents (Hernandez, Oubrayrie-Roussel, & Prêteur, 2015; Hidalgo-Cabrillana, & Lopez-Mayan, 2018; Vizeshfar & Torabizadeh, 2018; Walberg, Fraser, & Welch, 1986). Meanwhile, internal factors are very interesting to be involved in the factors that are also dominant in decreasing academic performance (Cherif, Adams, Movahedzadeh, Martyn, & Dunning, 2013). By increasing the use of technology, individuals experience changes in internal characteristics in an effort to achieve maximum academic achievement (Choden, Bagchi, Udo, & Kirs, 2019; Labăr, & Țepordei, 2018).

Based on previous findings, there are several internal factors that are related to one another (Mo et al., 2020; Shi, Wang, & Zhou, 2017; So & Fiori, 2022; Ti, Wei, & Hao, 2022) so that can be constructed in a constellation of variables in a model that affect academic achievement in students. Those internal factors are self-esteem, loneliness, and internet addiction.

Self-esteem affects individual academic achievement. Positive self-esteem should increase academic self-efficacy of college students (di Giunta, Alessandri, Gerbino, Kanacri, Zuffiano, & Caprara, 2013). That being said, college students that think they are less valuable and less competent tend to be underachieved and underconfident. This happens because when students feel they are less valuable, their achievement motivation will also decrease and affect their academic performance (Moyano, Quilez-Robres, & Pascual, 2020). As a consequence, their academic achievement is not really good (Li, Han, Wang, Sun, & Cheng, 2018).

Self-esteem is also related to loneliness and internet addiction. Students who feel they are less valuable tend to feel less accepted by the environment, do not have enough friends and feel alone (Harris & Orth, 2020; Ishaq, Solomon, & Khan, 2017; Kashdan et al., 2014). Meanwhile, negative self-esteem can also lead to internet addiction in students. Negative self-esteem often leads students to seek access so that they feel valuable and competent, one of which is by involving themselves in various activities on the internet (Bahrainian, Alizadeh, Raeisoon, Gorji, & Khazaee, 2014). In the end, internet usage behavior is getting more intense (Chupradit, Takham, & Chupradit, 2021; Kircaburun, 2016), and students are trapped in internet addiction (Kircaburun, 2016).

On the other hand, school students and college students are those susceptible to loneliness (Gurses, Merhametli, Sahin, Gunes, & Acikyildiz, 2011; Lu & Zhou, 2013), especially those with only few bestfriends (Benner, 2011). Few contemporaneous friends, who help and support each other to cope with academic demands, potentially hinder maximum academic achievement (Mattanah, Brooks, Brand, Quimby, & Ayers, 2012). This can happen because feeling alone causes an

increase in cognitive load when facing academic pressure (Rosenstreich & Margalit, 2015).

Internet addiction is the contextual variable worth considering since technology literacy, and opinion that the involvement of technology and media, may decrease academic achievement (Uzun & Kilis, 2019). Utilization of internet for tertiary needs encourages internet addiction. This is, then, deemed to be helpful for the college students, especially those with psychological problems, such as solitary life and negative self-esteem to seek amusement, thus turning their focus from the responsibility as college students, and consequently, they are prevented from gaining maximum academic achievement (Choi, Chun, Lee, Han, & Park, 2018; Jun & Choi, 2015; Zhang, Qin, & Ren, 2018). Internet addiction is an important thing to understand in the context of students considering the closeness of students to all activities related to using the internet such as for academic needs or to establish social relations and have fun such as using social media (Antiwi & Nasution, 2021; Kurniaputri & Adhyatma, 2021).

For published research related to academic achievement and internet addiction in Indonesia, none has involved the variables of self-esteem and loneliness. Research by Gultom, Wardhani, and Fitrikasari (2018) only mentions academic achievement in the presentation of the findings, not as one of the variables involved in inferential statistics with internet addiction. If there is, purely looking at the relationship between academic achievement and internet addiction (Christie, Wardani, & Widianti, 2021; Muliani & Widjaja, 2022). Other research focuses on variables in educational psychology (Simanjuntak, 2017). Of all the research, no one has constructed a research design in the form of a model. Therefore, this study seeks to fill the gap by involving other variables besides internet addiction and academic achievement in research in the form of model tests.

This study is aimed to empirically measure whether variables of self-esteem, loneliness, and internet addiction may explain academic achievement of college students. Some of the effects that will be measured are the effect of self-esteem on academic achievement, the effect of self-esteem on loneliness, the influence of self-esteem on internet addiction, the influence of loneliness on academic achievement, the influence of loneliness on internet addiction, and the influence of internet addiction on academic achievement.

Based on the explanation of the theoretical arguments previously mentioned, the research hypothesis is self-esteem, loneliness, internet addiction have an influence on academic achievement in college students.

METHOD

There are 369 college students as participants of this study, 223 female and 146 male. They are originated from Jakarta Greater area and other parts of Indonesia. The average age of participants was 20.50 years ($SD = 1.43$). All participants who filled out the scale were detected eligible to continue to be calculated because they met the predetermined inclusion criteria and there was no demographic data that did not meet the requirements. The participants were met from several campuses in different locations. They are recruited through head of the class or lecturers who teach them. They get a questionnaire to fill in directly in their classes.

Academic achievement is obtained from Grade Point Average (GPA). In the questionnaire, GPA is asked as the part of identity.

Self-esteem is positive evaluation concerning self-perception (Mruk, 2006). In this study, it is measured by Rosenberg's Self-Esteem (1965) consisting of 10 items. One of them is "On the whole, I am satisfied with myself". The response categories on this scale are Very Inappropriate to Very Appropriate, with a score range of 1-5. The reliability of this scale from this research is 0.891.

Loneliness is the feeling of discomfort due to the deterioration of social relations, both quantitatively and qualitatively (Pearlman & Peplau in Gierveld, 1998). In this study, loneliness is measured by Revised-UCLA Loneliness Scale (Russel, Peplau, & Cutrona, 1980) consisting of 20 items. The response categories on this scale are Very Inappropriate to Very Appropriate, with a score range of 1-5. One item is disqualified because of poor discrimination because it has a score below 0.3, leaving only 19 items. One example item is "There is no one I can turn to'. The reliability from this research is 0.936.

Internet addiction is a condition where a person excessively, uncontrollaby feels the urge and shows behavior of internet utilization resulting in the new pressure and problem (Gorse & Lejoyeux, 2011). In this study, this aspect is measured by Internet Addiction Test of Faraci, Craparo, Messina, and Severino (2013) consisting of two aspects as follows: (1) emotional and cognitive preoccupation with the internet, and (2) loss of control and interference with daily life. This measurement is made of 20 items, among others, "Do you choose to spend more time online over going out with others?" for the first aspect and "Do you feel that you stay online longer than you intend?" for the second one. Response categories on this scale are Never to Very Often, with a score range of 1-5. The reliability from this research is 0.933.

The scale was translated into Indonesian and directly validated in this study through a good reliability score.

In this study, academic achievement is an exogenous variable, self-esteem is an endogenous variable, and loneliness and internet addiction are mediator variables. Meanwhile, academic achievement, self-esteem and loneliness are the observed variables because both are unidimensional, while internet addiction is a latent variable with both aspects being the observed variables.

The type of data used for all variables other than academic achievement is continuous. Composite scores were used for the self-esteem and loneliness scales. Meanwhile, the total score was carried out for both aspects of internet addiction. For academic achievement, the data is ratio.

Structural Equation Modeling (SEM) from AMOS is used as primary analysis technique in answering hypothesis of this research. This technique is considered to be accommodative in helping to construct hypothetical assumptions and measure them by involving constellations of variables that have been previously compiled.

The main estimator used in this research is Chi-Square and its probability. The smaller the Chi-Square score and the greater the probability number, the more fit the model is to the data.

RESULT AND DISCUSSION

The results of the study show that age only correlates with GPA. This is shown in Table 1 which performs the Pearson correlation. This is natural because individuals usually master the material that must be learned along with age, so that the more they grow older, the better their academic achievement will be. Some previous research has supported this

finding (Eldag & Rose, 1983; Eng & Daneil, 2016). Meanwhile, GPA correlates positively with self-esteem, and negatively correlates with loneliness, and both aspects of internet addiction, namely emotional and cognitive preoccupation with the internet, and loss of control and interference with daily life.

Table 1. Correlations Between Variables

	1	2	3	4	5	6
Age						
GPA	.142**					
Loneliness	.025	-.479**				
Self-esteem	-.048	.430**	-.709**			
AI1	.017	-.281**	.478**	-.506**		
AI2	.010	-.300**	.498**	-.552**	.837**	
Mean	20.50	3.31	46.34	32.49	28.09	19.86
SD	1.43	0.36	12.15	6.99	8.10	5.19

Note: 1 = age, 2 = GPA, 3 = loneliness, 4 = self-esteem, 5 = emotional and cognitive preoccupation with the internet, 6 = loss of control and interference with daily life
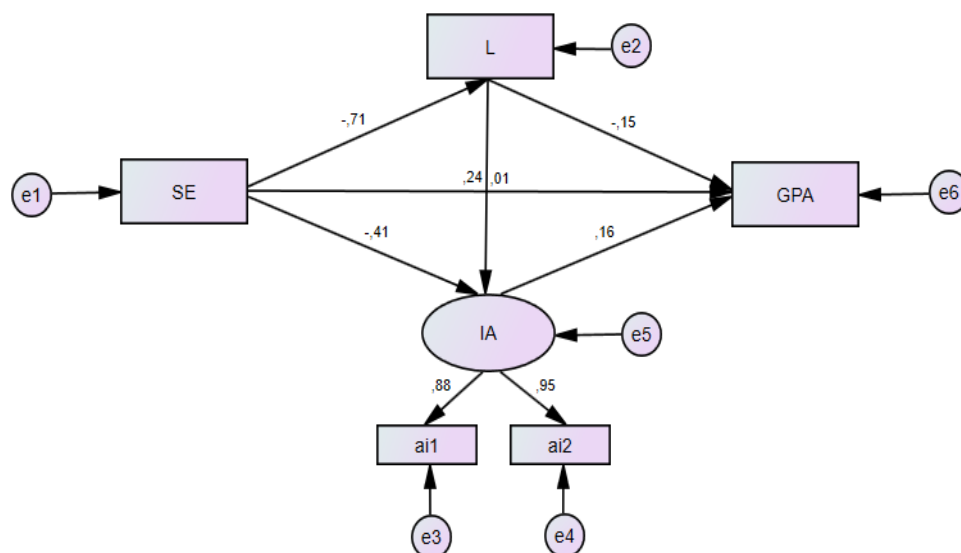** = < .01, *= < .05

Figure 1. Empirical Model

Table 2. Regression Weight for Each Variables

			Estimate	S.E.	C.R.	P	Estimate
L	<---	SE	-1.233	.064	-19.268	***	-.709
IA	<---	SE	-.419	.066	-6.353	***	-.409
IA	<---	L	.142	.037	3.805	***	.240
GPA	<---	IA	.395	.173	2.281	.023	.157
GPA	<---	L	-.223	.111	-2.006	.045	-.150

			Estimate	S.E.	C.R.	P	Estimate
GPA	<---	SE	.031	.202	.153	.878	.012
ai1	<---	IA	1.000				.883
ai2	<---	IA	.687	.037	18.665	***	.947

Note: GPA = Grade Poin Average, SE = self-esteem, IA = internet addiction, L = loneliness, ia1 = aspect number one for internet addiction, ia2 = aspect number two for internet addiction

Empirical model obtained from this research has the goodness of fit, it means that the data is obtained in accordance with theoretical model as established. This model also describes that academic achievement may be elaborated from a series of effects of self-esteem, loneliness, and internet addiction. Chi-square obtained from the research is $X^2 = 1.085$ ($p > .05$). Other findings statetd that CMIN/DF = 0.543, GFI = 0.999, AFGI = 0.991, and RMSEA = 0.000 with 95% CI (0.00; 0.86).

There are some interesting findings if the effect of variables towards academic achievement is examined. First, self-esteem has no direct effect to academic achievement. Wang, Xia, Li, Wilson, Bush, and Peterson (2016) discovered that low self-esteem encourages poor academic adjustment. Whereas, the GPAs of participants hereof are quite high. It means that, should participants feel not too valuable, it is not released with the attempts to show that they are academically smart.

Self-esteem has a possibility related to the position of individuals in social relations. Individuals try to develop warm social relations with their peers to get good self-acceptance. Some studies have found that positive self-esteem avoids individuals from peer rejection (Gorrese & Ruggieri; 2013; Jiang, Zhang, Ke, Hawk, & Qiu, 2015). This is important for individuals because peer acceptance at the place of study will reduce perceived loneliness (Saricam, Gencdogan, & Erozkan, 2012;

Zhao, Kong, & Wang, 2013) For some individuals who have already had problems in social relations often move their affiliate needs and self-actualization through internet activities so that they are involved in addiction internet (Shi, Wang, & Zou, 2017).The other explanation is that those with low self-esteem may tend to withdraw from society as a part of coping style because of embarrassment and social anxiety (Guangming, Qi, & Hao, 2018; Yelsma, Brown, & Elison, 2002). Self-attracting behavior displayed by students influences the social competencies possessed (Olivier, Archambault, & Dupere, 2018). As a consequence, students become increasingly difficult to get social support from peers (Mortenson, 2009). Owned social relations do not support students to get maximum academic achievement because developed self-regulation does not work well (Moilanen & Manuel, 2017). This also explains why individuals with poor social competence also tend to experience loneliness (Satici, Uysal, & Deniz, 2016; Zhang, You, Fan, Gao, Cohen, Hsueh, & Zhou, 2013).

The finding also indicates significant negative effect of loneliness to academic achievement. It means that, the less lonely they are, the more highly achieved they are. The role of contemporaneous friends is important to reduce loneliness. Warm and supportive friends tend to boost the ability of college students to have better academic achievement (Bek, 2017; Lu & Zhou, 2013). In fact, for individuals who have experienced failure of achievement,

opportunities and possibilities to rise and succeed in gaining good academic achievements can be done with the help of their peers' support (Dougherty & Sharkey, 2017). The findings of Bond, Chykina, and Jones (2017) support this by explaining that social networking has a large positive influence in providing support to individuals in going through difficult times while studying and getting better academic achievement.

Positive impact of internet addiction to academic achievement is also interesting finding hereof. When an individual becomes closer and more attached to internet, the better academic achievement may be gained. There are several factors to this. First, social media have positive function in accommodating social relation and reduce anxiety, thus individuals may be more focused on gaining good academic achievement (Neto, Golz, & Polega, 2015). Second, internet helps individuals fulfilling tertiary needs of amusement and reducing academic pressure and stress (Jun & Choi, 2015). Some research also explains that the use of social media as a matter which often results in individuals experiencing internet addiction can also provide happiness for individuals (Chae, 2018; Mitchell, Lebow, Uribe, Grathouse, & Shoger, 2011; Phu & Gow, 2018). As a result, individuals are more relaxed in learning and in turn, have good academic achievement (Elias, Ping, & Abdullah, 2011). This is also confirmed by several findings which state that the feeling of happiness felt by students encourages better academic achievement (Bucker, Nuraydin, Simonsmeier, Schneider, & Luhmann, 2018; Datu, King, & Valdez, 2017).

The positive effect of internet addiction on academic achievement can also be caused by prolonged use of the internet to fulfill college assignments and various other academic demands. This is supported by the study of Heijstra and Rafnsdottir

(2010) who found that internet use is directly proportional to academic workload, especially to obtain optimal academic performance. Internet is used by individuals to help themselves finishing academic tasks and support academic performance (Zhu, Chen, Chen, & Chern, 2011).

Despite the influence of internet addiction on academic achievement, it seems that the influence is not too large. This can happen because the possibility of internet addiction displayed by students influences their attachment to their academic assignments first (Zhang, Qin, & Ren, 2018), and then to the academic achievement. Several researches show positive impacts of loneliness towards internet addiction for college students (Nowland, Necka, & Cacioppo, 2017; Simcharoen, Pinyopornpanish, Haoprom, Kuntawong, Wongpakaran, & Wongpakaran, 2018). This happens because those tend to be lonely in real life usually have not really good social competence. They do not find ways to establish pleasant social relations so that they do not have many close friends, or other people who can be relied on to help overcome problems they have. As a result, they strive to gain social relation in digital world using internet via social media (Nowland, Necka, & Cacioppo, 2017). Social networks that come from academic backgrounds that provide social support are also commonly found digitally (Courtois & Verdegem, 2016). Other findings also explains that those lonely individuals have poor self-control and therefore, easily addicted to internet (Mei, Yau, Chai, Guo, & Potenza, 2016; Ozdemir, Kuzucu, & Ak, 2014).

Although self-esteem has no influence on academic achievement, loneliness shows that personal factors do prove to have an important role. This is consistent with what was stated by Reynold and Walberg (1992) related to the theory that explains

the basic factors that have a large role in influencing academic achievement. Walberg, Fraser, and Welch (1986) further explain that there is a role of peer groups and mass media that influence academic achievement. That is, loneliness is indeed a personal characteristic that needs to be considered as something that negatively affects academic achievement. This influence has become increasingly strong when the role of mass media, especially those currently in the form of online, influence academic achievement. The findings in this research provide a different perspective than the previous theory which explains that learning achievement is more determined by learning factors and cognitive factors (Muelas & Navarro, 2015).

This research has several limitations. The first is that gender is not involved as a moderator variable in the model. Gender often affects self-esteem, individual perceptions of perceived loneliness, and internet addiction that is displayed, given that internet usage activities can differ specifically for men and women. Second, the faculties and disciplines of students who are research participants have not been considered as a demographic variable that might influence the amount of student academic achievement.

CONCLUSION

Low self-esteem encourages college students to be lonely and addicted to internet that in turn affects academic achievement. Nevertheless, self-esteem per se is not the internal factor independently affects academic achievement of college students. Meanwhile, internet addiction, in positive context, such as internet for completing academic demands, and for coping with academic pressure, has positive impact for the academic achievement of college students. The

research findings also shows that several internal factors that are related to one another can be strong predictors of academic achievement in students. This research also shows that internet addiction in certain contexts can have different effects on academic achievement.

Future researchers can consider other internal and external variables that might affect academic achievement in the cyber context, for example the Big Five, cyberloafing, or research with blended learning settings. For universities, considerations regarding the complexity of using technology such as the internet must be considered. In addition to its major role in academic achievement, mixed use of the internet can also make it difficult for students to focus on meeting academic demands or the need for fun.

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