The determinant factor of juvenile delinquency (path analysis model)

 Tri Anjaswarni

1 Department of Nursing, Poltekkes Kemenkes Malang, Malang, Indonesia
Email Penulis: trianjaswarnii@gmail.com

Abstract

There are many determinants of juvenile delinquency, one of them is technology. Technology is an integral part of modern society. However, misuse and uncontrolled use of technology may lead to negative impacts, one of which is juvenile delinquency. The objective of the study was to develop a determinant model of juvenile delinquency elicited from a path analysis. It was an observational study with a cross-sectional design. The sample size was 295 adolescents aged 12-19 years, consisting of adolescents at school and in the Juvenile Detention Centre (JDC). The data were taken a simple random sampling technique.. The analysis used Structural Equation Modelling. The determinants, which had a direct influence on juvenile delinquency were technology, peers, and lifestyle. Technology played a central role as the determinant that directly affected juvenile delinquency as many as 2.03 (203%). Digital technology may threaten adolescents as it can create and increase their delinquent behavior if its use is not controlled. The use of technology by adolescents needs to be supervised by parents and teachers together with nurses in community-based health practice.

Faktor penentu terjadinya kenakalan remaja banyak sekali, salah satunya adalah teknologi. Teknologi merupakan bagian yang tidak terpisahkan dari masyarakat modern. Namun penyalahgunaan dan penggunaan teknologi yang tidak terkendali dapat menimbulkan dampak negatif, salah satunya adalah kenakalan remaja. Tujuan dari penelitian ini adalah untuk mengembangkan model determinan kenakalan remaja yang diperoleh dari analisis jalur. Penelitian ini merupakan penelitian observasional dengan desain cross-sectional. Besar sampelnya adalah 295 remaja usia 12-19 tahun yang terdiri dari remaja sekolah dan di Rumah Tahanan Remaja (JDC). Data diambil dengan teknik simple random sampling. Analisis

yang digunakan adalah Structural Equation Modelling. Faktor determinan yang mempunyai pengaruh langsung terhadap kenakalan remaja adalah teknologi, teman sebaya, dan gaya hidup. Teknologi berperan sentral sebagai determinan yang berdampak langsung terhadap kenakalan remaja sebanyak 2,03 (203%). Teknologi digital dapat mengancam remaja karena dapat menciptakan dan meningkatkan perilaku nakal jika penggunaannya tidak terkontrol. Penggunaan teknologi oleh remaja perlu diawasi oleh orang tua, guru, dan perawat dalam praktik kesehatan berbasis komunitas.

Introduction

The complex life of modern society and the rapid development of modern technology has resulted in rapid changes in human social life. Technology is one of the most vital parts of modern society; it has become the primary need for various daily purposes. Technology is consumed by not only adults and adolescents, but also children, even toddlers, and pre-schoolers. It is following the findings of a study explaining that many pre-schools aged children are well-acquainted with gadgets. The level of smartphone uses among children aged 4-6 years is relatively high. The purpose of using smartphones in this age group is as a means of introducing information and communication technology; educational media, and expanding their knowledge. It is also used as a means of entertainment for children to avoid them being sulky or fussy (Zaini and Soenarto 2019).

The fast development of information technology and the unstoppable enthusiasm of modern society may result in either a positive or negative impact (DeLisi et al., 2012). A device that is connected to a network (internet) with various features is like a double-edged sword. On one hand, it is beneficial; on the other hand, it contains harm to children (Kementerian Komunikasi dan Informatika Republik Indonesia 2018). The growth of technology needs to be addressed wisely as it is an important tool for the realization of a developed country.

The positive impact of technological development is the ease of information accessibility for various interests and fields, including economy, education, trade, health, etc. In education, technology has undoubtedly been a reliable learning tool. In healthcare fields, technology has widely been employed for health management, health check-ups, and solving various health problems. Meanwhile, the negative impact of technology is reflected in its users' unpreparedness to control the use of

technology. Fraud, quarrels, and promiscuity may happen due to the irresponsibility of using gadgets, especially in accessing social media. Many children and adolescents find it problematic to get rid of gadgets; it even drags them to the point of addiction. They use technology inappropriately mainly for fun or entertainment.

Improper use of technology includes inappropriate chats, virtual friendship, promiscuity, blasphemy, insults, and bullying; these issues may potentially lead to hostility. Other unacceptable uses of technology are watching trashy-content videos or YouTube, pornographic images, online games with loads of violation, conducting sexual exploitation or illegal drug transactions, and even planning on a murder. In adolescents, the improper use of this technology can lead to deviant behaviour or delinquency. It is consistent with the findings of the previous study discussing that juvenile delinquency tends to occur to adolescents who have too frequent access to gadgets for inappropriate use. The more they use technology for unacceptable things, the more likely delinquency to occur (Anjaswarni et al., 2020).

Nowadays, the phenomena of adolescents' gadget addiction show an alarming situation. Adolescents are not mere victims; due to irresponsible use of gadgets, they may turn into doers who are involved in various cases, even criminal acts. For this reason, children's and adolescents' gadget addiction is a serious challenge for adults as they need guidance to use gadgets wisely for a good purpose (Kementerian Komunikasi dan Informatika Republik Indonesia, 2018).

While experts are discussing the negative impacts gadgets technology on adolescents' behaviour, and the rising trend of juvenile delinquency due to the use of inappropriate technology, we are currently faced with the Corona Virus Disease (Covid-19) pandemic. This pandemic has forced us all, including children and adolescents to use more gadgets and other technological devices for online activities. It is the most effective way to limit people from making direct contact with others to prevent the transmission of Covid-19. Everyone has to stay indoors and work from home; children and adolescents also do their learning activities from home. They need to be in the network in front of the laptop or their gadgets for their online class. This condition forces them to always be intact with gadgets all day. It somehow creates new problems for children and adolescents. On one hand, they have to limit themselves from and be wise in using technology; on the other hand, they need to always be in front of the screen. Thus, adults need to make sure that this situation does not trigger any juvenile delinquency, even crime. It supports

Srivastava & Sinha (2019) who revealed that technology, which is supposed to help the development of adolescents has been proven to be a threat as various types of crimes found in cyberspace are related to them.

Method

This study employed an observational method with a cross-sectional design, in which independent and dependent variables were taken at the same time (Nursalam 2015). The research objective is to develop the determinant model of juvenile delinquency based on path analysis. The independent variables were individual factors, coping mechanisms, family factors, peers, lifestyles, and technology utilization. The dependent variable was juvenile delinquency. The data from schools were gathered out from November to December 2018. Meanwhile, the data from JDC were collected in January 2019. The population in this study comprised adolescents between 12-19 years old. The samples included 295 respondents, taken by simple random sampling technique. The respondents were students of junior high schools and senior high schools in Malang (80%) and teenagers in JDC in Blitar (20%). This study utilized a questionnaire as an instrument. In the questionnaire, the respondents were asked to perform a self-assessment associated with the determining factors being measured.

To find out the determinants, inferential analysis with linear regression was carried out. Meanwhile, to examine the influence of the independent variables (determinants) on the dependent variable (juvenile delinquency), path analysis using Structural Equation Modelling (SEM) was done (Wijanto 2008). The SEM analysis was applied to build the determinant model of juvenile delinquency. This study was approved by the Health Research Ethics Commission (KEPK) of the Faculty of Public Health, Universitas Airlangga Surabaya, number 534/EA/KEPK/2018. The research protocol was declared to have passed the ethical test.

Result

1. Determinants of Juvenile Delinquency

Table 1

Juvenile Delinquency Determinants

Determinants	Frequency (n = 295)	Percentage (%)
1. Self-individual (X1)		
Very good	73	24,7 %
Good	146	49,5 %
Bad	76	25.8 %
2. Coping mechanism (X2)		
Adaptive	147	49,8 %
Maladaptive	148	50,2 %
3. Family (X3)		
Very good	71	24,1 %
Good	147	49,8 %
Bad	77	26,1 %
4. Peers (X5)		
Very solid	71	24,1 %
Solid	137	46,4 %
Not Solid	87	29,5 %
5. Lifestyle (X6)		
Very good	60	20,3 %
Good	145	49,2 %
Bad	90	30,5 %
6. Technology (X7)		
Very frequently	73	24,7 %
Frequently	128	43,4 %
Occasionally	94	31,9 %

According to Table 1, factors of self-individual and family demonstrate a good category. Very good and bad categories show somewhat similar results. In terms of the coping mechanisms, both adaptive and maladaptive coping mechanisms share almost similar percentages. Meanwhile, the peer factor is measured based on

the closeness (solidity) of their interaction. The finding reveals that most of them are solid. For lifestyle, most teenagers have a good lifestyle. For technology, most respondents answered that they frequently access the technology for less appropriate purposes.

2. **Linear Regression Model of the Influence of the Independent Variables (Determinants) on the Dependent Variable (Juvenile Delinquency)**

Table 2

Result of Linear Regression Model of the influence of the Independent Variables (Determinants) on the Dependant Variable (Juvenile Delinquency)

Variable		Estimation (R^2)	S.E.	C.R.	Pv
X2	X3	0,066	0,014	4,860	0,000
X2	X1	0,071	0,022	3,171	0,002
X6	X2	0,153	0,063	2,412	0,016
X6	X7	-0,173	0,059	-2,959	0,003
X5	X7	0,638	0,067	9,543	0,000
X6	X1	0,055	0,025	2,239	0,025
X6	X3	0,071	0,015	4,616	0,000
Y	X7	2,031	0,312	6,518	0,000
Y	X5	2,260	0,235	9,600	0,000
Y	X6	-1,085	0,246	-4,419	0,000
X3	X1	58,706	11,218	5,233	0,000

According to Table 2, all paths in the model indicate significant values with P-value < 0,05. Family determinant (X3) and self-individual determinant (X1) affect coping mechanism (X2) significantly. Self-determinant (X1) and family (X3) considerably affect each other with P-value 0,000 and alpha (α) = 0,05. Family significantly influences adolescents' coping mechanism with P-value = 0,000 and self-individual also affects coping mechanism with P-value = 0,002 on alpha (α) = 0,05. Coping mechanism (X2), self-individual (X1), and family (X3) have significant influence on adolescents' lifestyle (X6) with P-value < 0,05 and alpha (α) = 0,05. Technology (X7) significantly affects the lifestyle factor (X6) with p-value 0,003

and peer factor (X5) with p-value = 0,000 on alpha (α) = 0,05 respectively. Lifestyle (X6), technology (X7), and peers (X5) have a big influence on juvenile delinquency with P-value 0,000 on alpha (α) = 0,05. In other words, juvenile delinquency is determined by technology, peers, and lifestyle with P-value 0,000.

3.   Structural Model Analysis of Juvenile Delinquency According to Determinants

The analysis of juvenile delinquency determinants employed SEM to investigate the paths of various determinants on the occurrence of juvenile delinquency.
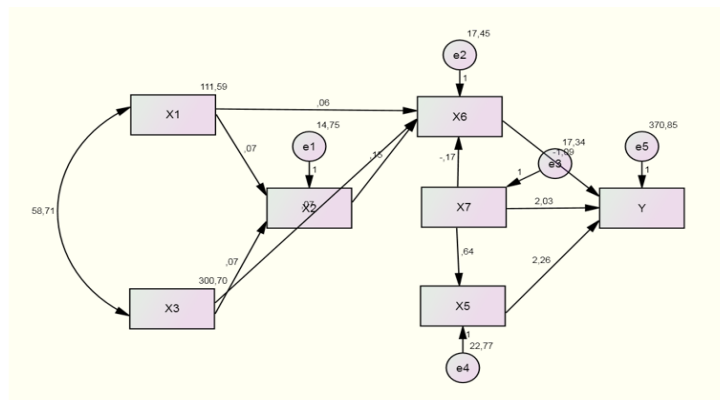
Figure 1
Structural Model: Juvenile Delinquency Determinants
Source: own research

According to Picture 1, technology (X7), peers (X5), and peers (X6) are direct factors of juvenile delinquency. Technology (X7) has a vital role as the determinant, which straightforwardly affects juvenile delinquency, with the size effect as many as 2,03 (203%). Meanwhile, the other two variables show the size effect as many as 2,26 (226%) for peers and -1,085 (109%) for lifestyle respectively.

Technology (X7) is the main determinant as well as the central factor that determines juvenile delinquency because its existence is not preceded by any other factor. The existence of technology in the model cannot be affected by any other factor. It explains that technology is the essential cause of juvenile delinquency as its occurrence as the determinant cannot be avoided. Technology also strengthens the roles of lifestyle and peers as the determinants of juvenile delinquency.

Peers (X5) directly affect juvenile delinquency; however, its presence is influenced and preceded by technology (X7). Lifestyle (X6) also gives a direct contribution to juvenile delinquency, yet its occurrence is highly affected by technology (X7), coping mechanism (X2), self-individual (X1), and family (X3). It can be assumed that self-individual (X1), coping mechanism (X2), and family (X3) are the indirect factors of juvenile delinquency through lifestyle (X6) as the mediator.

Discussion

The factors of adolescents' self-individual and family mostly belong to the good category. It is very beneficial as it can be used to support adolescents' development or serve as a source of coping to solve their problems. The self-individual factor itself refers to the internal factor of the adolescents that affects their behavior (Calhoun, Glaser, and Bartolomucci 2011). Some experts employ Bronfenbrenner's socio-ecological model to explain that behaviour is the result of continuous interactions within the individual, interpersonal, organizational, community, and intercultural domains. (Kenny, Blacker, and Allerton 2014). According to the experts, negative stimulations from the adolescents' self-individual, environment, and culture will affect the adolescents' behaviour, which can be a further determinant of juvenile delinquency.

Regarding the family factor as another pivotal determinant of adolescent development, it is in line with the previous study revealing that the important support system for adolescent development is their family. A supportive family pattern will also result in adolescents' positive development. It is further explained that the development of the adolescents' self-esteem requires family support as a family is the first important social environment in their development (Anjaswarni et al. 2019). Parents need to facilitate the development of their children, from family intimacy to complex social systems where children learn to function according to their competence. (Kenny, Blacker, and Allerton 2014). Related to this family factor, it is also explained that the risk factors contributing to the occurrence of juvenile delinquency constitute poor parenting skills and family cohesion. (Tanner-Smith et al., 2013 in Howell et al., 2014).

The number of adolescents with adaptive and maladaptive coping mechanism is almost the same. Coping mechanism is another essential factor for adolescents to

adjust themselves. Coping is a cognitive and behavioural effort to control, reduce, or tolerate stress. Through coping mechanism, adolescents find their ways to ease the impact of the stress they encounter (Folkman & Lazarus, 1980 as cited in Baqutayan, 2015). The role of parents in improving their children's coping skills is imperative. It is consistent with Kenny, Blacker & Allerton (2014) who assert that innate characteristics of parents and early life experiences of adolescents, including their relationship with their caregivers, can determine the degree of their psychosocial adjustment and their ability to cope with problems.

According to the path analysis model, family and self-individual reinforce each other and also significantly influence the factor coping mechanism. The position of family and self-individual indicates that both factors may lead to juvenile delinquency through coping mechanisms and lifestyle mediators. In other words, self-individual and family factors do not have a direct influence on the occurrence of juvenile delinquency.

Coping mechanism does not directly influence the occurrence of juvenile delinquency as it needs to pass through the lifestyle mediator. The result of this analysis is in accordance with the finding of the previous study revealing that the coping mechanism does not have a significant effect on juvenile delinquency; while lifestyle does (Anjaswarni et al. 2020). In the path analysis model, the role of lifestyle in the occurrence of juvenile delinquency is present. Its position is strengthened by the interaction or exposure to technology. It is fairly reasonable as in today's digital era, gadgets and other devices that utilize technology are the main and essential requirements for various activities. Gadgets and technology are the lifestyles of modern society.

In terms of peers, the solid category among adolescents shows as the most dominant one. It illustrates that most adolescents have close relationships with their peer groups. This condition can have both positive and negative influences on adolescents. A solid relationship among adolescents in terms of good activities can stimulate them to behave acceptably and constructively. Conversely, a solid relationship in carrying out unacceptable activities may result in deviant behaviour, and delinquency. It is in accordance with the previous study showing that peers have a considerable influence on adolescents' behaviour. Further, it is also found that teenagers in the United States tend to have some mischievous friends. Other studies also observe that a strong predictor of delinquent behaviour is due to abnormal peer relationships (Henggeler, 1989; Hanson; 1984; and Warr, 1993 in Calhoun et al.,

2011). This finding portrays the significance of peers as the determinant of juvenile delinquency.

According to the path analysis model, peers serve as one of the factors responsible for juvenile delinquency. It is even strengthened by technology. This finding is quite reasonable as technology is widely used by adolescents as a means of communication and interaction in cyberspace. They chat and communicate with their 'virtual' friends until morning when they find that their new friends match them. On the other hand, adolescents may become hostile to 'virtual' friends if they find a mismatch. It is in line with the findings of a criminologist stating that the increasingly widespread use of electronic devices enables teenagers to make friends online. Deviant behaviour of their online friends can have a damaging effect on the behaviour of adolescents; It has pivotal implications for juvenile delinquency. Teenagers nowadays are digital natives, which means they spend most of their development in a world that depends on technology and devices connected to the internet. In this era, adolescents can make friends with people they find in cyberspace, namely a virtual environment that is not limited by time and space (McCuddy 2018).

The use of technology nowadays is very worrying, especially for children and adolescents as the condition has reached the level of addiction. Based on a survey conducted by Paramadina University, it was found that 85 percent of students are addicted to their cell phones. They even play their gadgets during the class without being noticed by their teacher. (Radar Bogor 2017). It is in accordance with the statement of the Ministry of Communication and Informatics of the Republic of Indonesia, which explains that gadget addiction has threatened children. It is further explained that the device that is connected to the system in the network may serve as a double-edged sword. It indicates that the existence of gadgets for children may not only provide many benefits but also endanger their lives. Some children experience 'mental disorders' due to gadget addiction. Gadgets should be used as a means of communication and a source of information. However, gadgets with a variety of interesting features can be an entry point for children and adolescents to access social media and other inappropriate features not suitable to their age. The uncontrolled use of gadgets has the potential to interfere growth of children and adolescents as they may become addicted. Children gadget addiction has reached 70 percent (Azhar 2019).

The findings indicate that technology (gadgets) is frequently used by adolescents to access inappropriate content, in which it may trigger juvenile delinquency. According to the path analysis model, technology has become is the central factor of juvenile delinquency as its existence is not preceded by any other factor. The existence of the technology in the model cannot be influenced by other variables; it depicts that technology is nothing but the determining factor of juvenile delinquency—its existence as the determinant cannot be avoided. This result is in line with that of the previous study. It is found that currently the internet can make a change and create an increase in unacceptable behaviour in adolescents. It is also explained that the media has a huge contribution to children's psychological development. The menace of gadgets and mass media have also been found; the advancement in communication technology and children's exposure to various forms of mass media tends to develop their criminal behaviour. The media, through different platforms, can influence in instilling violent thoughts in adolescents' minds, it then may lead to the occurrence of inappropriate behaviour (Pathak 2017).

The impact of technology has been explained by previous studies saying that the accessibility and efficiency of the internet as well as the use of information technology in supporting the infrastructure of social institutions have encouraged the development of cybercrime and deviant subcultures. It is also explicated that the internet provides visibility and accessibility in facilitating deviation and cybercrime. The fragmented and layered nature of the internet can stimulate deviant and criminal activities as there is not any government policy that establishes appropriate norms of behaviour, let alone the law enforcement of cybercrime in some countries (Stalans and Finn 2016). The research findings on technology as the determining factor of juvenile delinquency are also presented in Rokven et al (2018). The study is a national study on Dutch adolescents aged 12-17 years. It shows that adolescents from this group of age have the highest risk profile in committing cyberspace crimes.

Conclusion

Technology is a major determinant and central factor of juvenile delinquency. The existence of technology as the determinant of juvenile delinquency is either not preceded or influenced by any other factor. It shows that technology is an important factor responsible for juvenile delinquency. Its existence as the determinant is inevitable. Technology can be used as a focus for preventive interventions in juvenile delinquency nursing care. The use of technology by adolescents needs to be

supervised by parents and teachers together with nurses or providers in community-based health practice.

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