Intergenerational Smoking Among Adolescent in Indonesia

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Abstract

Children, in general, make fathers a role model in the family. This condition causes children to often change their father's habits, including smoking. To analyze the intrageneration relationship between smoking habits of teenagers and fathers, this study uses data obtained from the 2014 Indonesian Family Life Survey (IFLS). Taking into account the characteristics used, we got a sample of 1,507 respondents produced 15-21 years. We use a logistic regression model to classify smoking habits that affect smoking habits in adolescents in rural and urban areas. The estimation results found that a father's smoking habit does not change the child's smoking habit — a children's home. Children who are active in youth activities have a high chance of smoking. Based on family characteristics, teenagers who have educated parents have a lower possibility of tobacco. Besides, children who do not live in Java have higher smoking freedom than those who live in Java.

Keywords: Smoking, Family History, Young Adults

Introduction/Background

Smoking behavior is one of the six main causes of death. In 2030 it is projected that the death resulting from smoking behavior reaches 8 million people every year worldwide and 80 percent occurs mostly in low and middle-income countries (World Health Organization, 2019). One-third of the world's population aged 15 years and over are active smokers (Fawibe AE, 2011). Data from Basic Health Research (2013) shows that 50 percent of Indonesia's population starts consuming cigarettes at the age of 15-19 years, and about 9 percent start smoking at the age of 10-14 years.

Smoking behavior in adolescence is influenced by environmental factors, one of which is family. Previous research has shown that parental smoking behavior is a predictor of adolescent smoking behavior (Chassin, 1994). Research by Peterson et al. (2006) stated that individuals with a history of smoking in their families have a greater tendency to smoke. The more often one family member smokes, the greater the tendency for other family members to follow the habit (Tully, Correa, & Doran, 2019).

Not only family factors, the environment in which individuals live also correlates with health-related behaviors including smoking (Shenassa, et al., 2003; Diez-Roux, 2002). This study aims to analyze the intrageneration of adolescent smoking behavior caused by family smoking history and family socioeconomic conditions. Besides, looking

at environmental factors in which adolescents live by dividing the two areas of residence, namely villages and cities.

This study uses data from the Indonesian Family Life Survey (IFLS) 2014 and uses logistic regression in determining the likelihood of adolescents smoking. The results showed smoking behavior was related to the location of the individual's residence. Family smoking history did not significantly influence adolescent smoking behavior, while intragenerational transmission through parental education confirmed that parental control awareness of family healthy lifestyle was able to reduce adolescent smoking tendency. In rural areas, the mother's education has a greater influence than the father's education on adolescent smoking behavior. Meanwhile, the education city of the father and mother reduced the tendency of adolescents to smoke respectively.

Methodology

Research Subjects

This study aims to analyze the effect of intragenerational transmission of adolescent smoking behavior through father's smoking behavior on children's smoking behavior. Also, it looks at the influence of other control variables such as parental education and the social environment in which the family lives. This study uses data from the 5th batch of the Indonesia Family Life Survey (IFLS) conducted in 2014. This survey provides information on people's behavior, demographic conditions, and socio-economic conditions. Based on the criteria used, this study obtained a sample of 1,507 respondents aged 15-21 years.

Measurement

All models control for smoking based on individual characteristics, parental characteristics, household characteristics, and community characteristics. Dependency measure, adolescent smoking status based on self-reporting. Respondents were asked whether they had a smoking habit or not. Respondents who have a habit of smoking or chewing tobacco are coded 1. In the individual characteristics section, this study controls the last education taken, dummy 1 if they work, and dummy 1 for married. Another factor that was observed was whether youth participated in community participation, especially youth groups. This control variable is important to observe regarding how adolescents interact in the neighborhood where they live.

Based on the research objectives, namely observing adolescent smoking behavior is influenced by the smoking habit of the father, thus involving parental characteristics such as smoking dummy (1 if smoking, and 0 not smoking), father's age, working father's dummy (1 if father works, and 0 if not), father's latest education, as well as mother's education. The longer duration the father smoked and the number of cigarettes consumed per cigarette per week as a proxy for adolescent exposure to the father's smoking habits. Since the number of cigarettes consumed per cigarette in a week produces biased estimation results, it is necessary to control the amount of cigarette consumption of the father per week. Besides, this study looked at whether household per capita expenditure and household wealth affected teen smoking habits.

In measuring the characteristics of the area, this study uses the location of residence. The

separation of the locations of Java Island and outside Java Island is due to differences in geographical characteristics and a population density which causes changes in community behavior patterns. Besides, the involvement of the acculturation of location causes differences in the orientation of community behavior. Measuring the location of residence uses the dummy 1 city for respondents who live in the city, and the Java island dummy (1 for respondents who live in Java, and 0 others).

Method of Analysis

The first analysis assessing the relationship between parents' smoking status and adolescent smoking status obtained a sample of 1.507 respondents. After observing the sample, then estimated using the logistic regression method to analyze the prevalence of smoking in adolescents. The logistic regression analysis was calculated involving the characteristics entered on the control variable to test the length of exposure of the parents to smoking and the current smoking behavior of adolescents. The test was measured based on the father's smoking habits and duration. This was done to explore the risk of smoking in adolescents as a function of the length of parental smoking exposure. The analysis also involved a father's education and mother's education in influencing adolescent smoking behavior. This study used 95 percent Confidence Intervals (CIs) for odds ratios.

Result and Discussion

Statistical Description

Table 1 presents the sample characteristics of the smoking characteristics of adolescents, which are differentiated by the location of residence, namely city, and village. Based on observations, the prevalence of smoking among teenagers in the villages was higher, namely 25.4 percent, while in the city it was 21.9 percent. The findings showed that the dependency status of adolescent smoking habits answered 76.6 percent of respondents did not smoke. In general, the average teenager smoked at the age of 17 and 97 percent answered that they lived with their parents. As you get older, the likelihood of smoking behavior increases. The average length of education for respondents is 10 years, or they have completed junior high school.

Table 1.

Statistical Description

Variable	Urban		Rural	
	Mean	Std. dev	Mean	Std. dev
Adolescent smoking	0,2187	0,4136	0,2544	0,4359
Working status (yes=1)	0,2551	0,4362	0,2401	0,4275
Marital status (yes=1)	0,0513	0,2206	0,0859	0,2804
Year education (year)	10,2050	2,1850	9,4213	2,2599
Society participation (yes=1)	0,2335	0,4233	0,2464	0,4313
Age	17,5399	2,0040	17,3688	1,9420
Father smokes (yes=1)	0,6891	0,4631	0,7345	0,4420
Living with parents (yes = 1)	0,9772	0,1493	0,9777	0,1476
Father works (yes = 1)	0,8633	0,3437	0,8712	0,3352

Father age	49,1913	7,3219	49,0143	7,8264
Father year of education (year)	8,3405	4,2898	6,1415	4,0750
Mother year of education (year)	7,6401	4,0933	5,7504	3,6833
Number of cigarettes (per day)	10,0934	9,9002	10,5310	9,4936
Cigarette expenditure (Ln)	8,3298	4,6682	8,3655	4,3748
Grandpa smokes (yes = 1)	0,7426	0,4375	0,7615	0,4265
Duration of smoking by father (years)	22,0444	14,7136	23,5501	14,4750
Household wealth (Ln)	18,2554	1,5878	17,9971	1,2803
Javanese=1	0,6606	0,4738	0,5739	0,4949
Observation	878		629	

Source: Indonesia Family Life Survey (IFLS) 2014 processed data

Concerning the independent measure, the father's smoking status was 76.6 percent. Fathers also mentioned that 80.9 percent of their smoking behavior was due to the duration of exposure due to their father's smoking behavior. This shows a link between the father's smoking habit and the smoking status of his parents. The difference in smoking behavior between regions is shown in Figure 1. The high smoking tendency among adolescents outside Java is known to be 24.03 percent. Many things encourage smoking behavior, such as environmental and cultural influences, as well as the socio-economic conditions of the family.

Logistic Regression

The findings of the logistic regression analysis in Table 2 column 1 report that 1,507 respondents who have a smoking habit are related to parenting patterns that are controlled by their respective individual characteristics. Age, length of education, employment status, marital status, and community participation in youth organizations affect adolescent smoking habits. Respondents living with highly educated parents significantly reduced the likelihood of adolescents

smoking by an odds ratio of 0.95. What is different from this case is that the grandfather's smoking behavior has a significant effect in increasing the smoking habit of the respondents with an odds ratio of 1.49. The relationship between generations is because respondents live with their grandparents.

To explore the differences between the smoking status of parents and their adolescents, this study separated the analysis based on the location of residence. The estimation results found that working fathers will reduce the likelihood of adolescents smoking by the odds ratio of 0.69. The characteristics of educated parents also influence adolescent smoking habits. Fathers with higher education will reduce the adolescent's likelihood of smoking by an odds ratio of 0.95. The opposite result states that mothers with higher education will increase their chances of smoking by the odds ratio of 1.07. The high level of education causes parents to tend to work to improve family welfare, thereby reducing control over adolescents. It appears that the higher the expenditure per capita will increase the likelihood of adolescents smoking by the odds ratio of 1.45. Although in other conditions, it is stated that respondents who live in Java will significantly reduce their smoking habits by an

odds ratio of 0.72. Conditions are different for respondents who live in the village. Adolescents who live with their parents have an increased likelihood of smoking by the odds ratio of 6.69. If in the household they have a more educated mother, it will reduce the likelihood of smoking by an odds ratio of 0.91.

Table 2.
Adolescent Smoking Behavior Regression Analysis

Variable	Adolescent Smoking Behavior					
	Observation	Odds Ratio	Urban	Odds Ratio	Rural	*Odds Ratio*
Working status (yes=1)	0,7326***	2,0804	0,6332***	1,8836	0,9155***	2,4979
	(0,1722)		(0,2185)		(0,2653)	
Marital status (yes=1)	-2,0883***	0,1239	-1,9148***	0,1474	-2,2252***	0,1080
	(0,4195)		(0,5808)		(0,5515)	
Year education (year)	-0,2267***	0,7972	-0,2476***	0,7807	-0,2272***	0,7968
	(0,0356)		(0,0512)		(0,0510)	
Society participation (yes=1)	0,4949***	1,6403	0,4616**	1,5867	0,6389***	1,8944
	(0,1514)		(0,2023)		(0,2432)	
Age	0,3715***	1,4499	0,4098***	1,5064	0,3448***	1,4118
	(0,0475)		(0,0642)		(0,0715)	
Father smokes (yes=1)	0,2612	1,2985	0,3519	1,4218	0,0900	1,0942
	(0,2071)		(0,2731)		(0,3491)	
Living with parents (yes = 1)	0,3568	1,4287	-0,3588	0,6985	1,9007*	6,6905
	(0,5225)		(0,5551)		(1,1095)	
Father works (yes = 1)	-0,2209	0,8018	-0,6199**	0,5380	0,3729	1,4520
	(0,1990)		(0,2442)		(0,3366)	
Father age	-0,0127	0,9874	-0,0152	0,9849	-0,0171	0,9831
	(0,0119)		(0,0171)		(0,0184)	
Mother year of education (year	-0,0519**	0,9494	-0,0489*	0,9523	-0,0423	0,9586
	(0,0221)		(0,0293)		(0,0349)	
Mother year of education (year	0,0105	1,0106	0,0666**	1,0688	-0,0934***	0,9108
	(0,0237)		(0,0312)		(0,0396)	
Number of cigarettes (per day)	-0,0072	0,9928	0,0038	1,0038	-0,0198	0,9804
	(0,0096)		(0,0115)		(0,0150)	
Cigarette expenditure (Ln)	0,0067	1,0067	-0,0405	0,9603	0,0546	1,0561
	(0,0319)		(0,0444)		0,0525)	
Grandpa smokes (yes = 1)	0,3987**	1,4898	0,2260	1,2536	0,6428**	1,9018
	(0,1675)		(0,2131)		(0,2709)	
Duration of smoking by father (years)	0,0078	1,0078	0,0203	1,0205	-0,0037	0,9963
	(0,0088)		(0,0124)		(0,0131)	

Household wealth (Ln)	-0,1232**	0,8841	-0,1072*	0,8983	-0,1496	0,8610
	(0,0484)		(0,0618)		(0,0957)	
Javanese=1	-0,2030	0,8163	-0,3227*	0,7242	-0,0702	0,9322
	(0,1410)		(0,1923)		(0,2198)	
Cons	-11,3297***	0,0000	-8,4934***	0,0002	-14,0901***	0,0000
	(1,9159)		(2,6025)		(3,1560)	
Observations	1507	878	629			
Prob>Chi2	0,000	0,000	0,000			
Pseudo R2	0,1460	0,1367	0,1996			

Source: N = 1.507 * p <0.10; ** p <0.05; *** p <0.01, Standard error in parentheses, All standard errors are adjusted based on cluster. Dependent variable is smoking behavior of adolescents aged 15-21 years.

Several studies have stated that family has a significant effect on smoking habits than peers. This study took into account the smoking habits of fathers and adolescents. The results obtained do not support the results of the study (den Exter Blokland, Engels, Hale III, Meeus, & Willemsen, 2004) and (Bailey, Ennett, & Ringwalt, 1993). Both studies emphasize that the smoking history of parents at any age will affect the smoking habits of adolescents. The results of this study indicate that adolescent behavior is more influenced by the social environment than the smoking behavior of the parents. Even so, adolescents who lived with parents for observation in rural areas influenced adolescent smoking behavior, while adolescents who lived with parents for city observations did not affect adolescent smoking behavior.

Another finding was that parental education affects adolescent smoking behavior. Parental education is a proxy for the ability of parents to provide the information given. This parental control according to King (2013) is a direction for adolescents to make good choices and decisions to avoid negative behavior such as

smoking. Moreover, family as an effective communication channel to limit adolescent behavior.

This study also looked at the effect of parents' marital status on adolescent smoking behavior. The results showed that adolescents who live with married parents or have a complete family structure will significantly reduce the tendency of adolescent smoking behavior. Research by Septiana, Syahrul, and Hermansyah (2016) and Ledoux, Miller, Choquet, and Plant (2002) found that adolescents who live with incomplete families, such as living with single parents, are more susceptible to consuming alcohol, cigarettes, or abuse. drugs.

Next, we examined the association of social norms with smoking status. It was found that adolescents living in Java Island have significantly lower smoking habits than those outside Java. According to Echeverría, Gundersen, Manderski, and Delnevo (2015), the causal role of policymakers in reducing smoking prevalence has not been demonstrated in various regions. This is the reason why the population in Java has a lower smoking habit,

because of the many prohibitions and dangers of smoking that can play an important role in changing the norms of people's behavior.

Adolescent social environmental factors play an important role in explaining adolescent smoking behavior because peers have a major influence on changes in one's behavior (den Exter Blokland, Engels, Hale III, Meeus, & Willemsen,

Conclusion

This study uses data from the 2014 Indonesia Family Life Survey and uses logistic regression in determining the likelihood of adolescents smoking. The results showed smoking behavior was related to the location of the individual's residence. Family smoking history did not significantly affect adolescent smoking behavior. The results of this study indicate that adolescent behavior is more influenced by the social environment than the smoking behavior of their parents. Meanwhile, intragenerational transmission through parental education confirms that parental control of awareness of a healthy family lifestyle can reduce the tendency of adolescents to smoke. In rural areas, the mother's education has a greater influence than the father's education on adolescent smoking behavior. Meanwhile, families living in urban areas where the father and mother educated each reduced the tendency for adolescents to smoke.

The results showed that adolescents who participated or were active in youth activities had a greater tendency to smoke than those who did not. This smoking behavior shows that the influence of friends in the social environment significantly affects adolescent smoking behavior.

2004). The results showed that adolescents who participated or were active in youth activities had a greater tendency to smoke than those who did not. This smoking behavior shows that the influence of friends in the social environment, especially Karang Taruna, significantly affects adolescent smoking behavior.

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