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Economic activity of Polish junior high school students and their learning outcomes

Aktywność ekonomiczna polskich gimnazjalistów a ich efekty uczenia się

Key words: youth, youth work, school achievements, education.

Słowa kluczowe: młodzież, praca młodzieży, osiągnięcia szkolne, edukacja.

Streszczenie: Wyniki badań prowadzonych w krajach o niskim poziomie rozwoju gospodarczego wskazują, że prace zarobkowe dzieci i młodzieży negatywnie wpływają na ich edukację, a często pozbawiają możliwości uczęszczania do szkoły. Celem niniejszego opracowania jest próba odpowiedzi na pytanie, czy istnieje związek pomiędzy podejmowaniem przez młodzież polską prac zarobkowych a osiąganymi wynikami w nauce szkolnej. Podstawą opracowania podjętej problematyki są badania ankietowe przeprowadzone w ramach grantu NCN (nr: UMO-2014/15/B/HS6/03534) na grupie 4568 osób w wieku od 14 do 15 lat. Badana próba jest reprezentatywną wobec populacji młodzieży polskiej w tym wieku. Z przeprowadzonych analiz wynika, że młodzież wykonująca w roku szkolnym prace najemne oraz prace w ramach rodzinnej działalności gospodarczej osiągają niższe wyniki w nauce. Takiego związku nie stwierdzono w przypadku prowadzenia przez młodzież samodzielnej działalności gospodarczej, nawet przeciwnie, wykonywanie tych prac współwystępuje z uzyskiwaniem lepszych ocen szkolnych. Pozytywny związek z wynikami w nauce ma motywacja młodzieży do podejmowania pracy. Taką zależność stwierdzono w przypadku, gdy motywacją podjęcia tej pracy w rodzinnej firmie było poczucie obowiązku, a także gdy motywacją do prowadzenia samodzielnej działalności była chęć rozwoju.

Introduction. According to estimations by the International Labour Organization, in 2016, on a global scale, 218 million children and adolescents aged from 5–17 showed economic activity. This number constitutes 13.8% of the total number of persons in

this age category (Global Estimates of Child Labour 2017, p. 9). The majority of them performed light work activities; however, 1/3 of those who were economically active (72.5 million) were engaged in dangerous work threatening their health and life. Analysis of the phenomenon of child labour in individual countries and continents indicated that it depends on national income in an individual country. The highest percentage of working children (nearly ¼) was observed in countries with a very low national income. In the countries with low income approximately 9% of children are engaged in work, whereas in those with a mediocre income – about 6% (Child labour and education, 2015). Some researchers pay attention to the fact that despite high development in the majority of the European countries, this continent is not free from the phenomenon of child labour (Egan 2017, p. 603). This concerns especially countries of Central and Eastern Europe.

The undertaking by children and adolescents of work activities appropriate for their abilities is generally evaluated in positive terms. Many benefits resulting from such activity are indicated, such as acquisition of material resources (Kim et al., 2005), shaping personality traits and learning new skills (Lachowski, 2013). It is also emphasized that work is an important element of the process of economic socialization, due to which a child acquires the skills of understanding the surrounding world of economy, and learns to act effectively in this world (Goszczyńska, 2014: 31).

However, many studies concerning underage labour indicate that that this work exerts a negative effect on those who perform it, mainly on their health and development (Ibrahim et al., 2018). The second group of negative effects of work of children and adolescents are disorders in the education process. In many poor countries of Africa and Asia, labour frequently excludes education. Due to paid education and poverty in many families, children do not send their children to school, but to work. According to statistics, at the beginning of the 21st century, approximately 80% of Ethiopian children at school age did not undertake education, and more than 60% of children aged 11–14, engaged in work within the household or on a farm had never attended school (Admassie, 2003, p. 172). Experiences of many countries show that an introduction of compulsory and free education decreases the phenomenon of child labour (Tripathi, 2010, Quattri M., and Watkins K., 2016). Nevertheless, this does not mean that in such a situation children discontinue working; thus, the problem remains whether work activities performed by children and adolescents affect the process of their education. In accordance with the ILO estimations in the matter of underage labour, nearly a half of the total number of working children also attend school (The end of child Labour, 2006). Despite the fact that certain forms of work performed by children and adolescents do not have to render attending school impossible, undoubtedly work limits the time which a child may devote to education (Brown 2011). Studies conducted by Kim confirm that a long working time of children exerts a negative effect on their educational outcomes (Kim, Zepeda, Kantor, 2005, p. 167). Some researchers note that work limits their time for education, they feel tired from working, and therefore achieve poor learning outcomes. This relationship is confirmed by studies conducted in Poland among farmers' children, who help their parents with work on a family farm (Lachowski, 2013). Nevertheless, the researchers' opinions

concerning the relationship between the work of schoolchildren and the education process of are inconclusive. Some of them consider that the engagement of children in work has a decisively negative effect on their education: hinders their learning and accelerates entering into adult life, while others are of the opinion that not very exhausting work does not interfere with education, and simultaneously exerts a positive effect on the acquisition of independence and the preparation for adult life (Bourdillon, 2006, p. 1215). The results of studies concerning the relationship between work and functioning in the role of a pupil are also equivocal. Taking into account the relationships between work and various aspects of school functioning, R. M. Frone analyzed 10 research projects conducted in the 1980s and 1990s in the USA (Frone, 1999, p. 94). In four analyzed studies it was observed that working adolescents showed lower indicators of school functioning than those who did not work, whereas in two studies the relationship was opposite, and in four studies no relationship was found between school functioning and work.

In Poland, the possibilities of employing underage persons are regulated primarily by the Labour Code (2018), Regulation by the Council in the matter of the list of work activities prohibited for adolescents (2004), Family and Guardianship Code (2017), and the ILO Conventions ratified by Poland. All the above-mentioned legal acts concern the possibility of employment of the underaged as hired workers based on a contract of employment or commission agreement, most often for apprenticeship. These documents define the conditions of employing underage persons in the way that the work performed would not interfere with the education system and negatively affect the achieved education outcomes. Apart from the sphere of legal protection there remain underage persons who are engaged by their parents in work on own farm or other family economic activity, those who are employed illegally (grey market), and the underaged who undertake non-registered independent economic activity.

The objective of the presented study is an attempt to provide an answer to the question whether there is any relationship between undertaking gainful employment by adolescents aged 14–15 and the outcomes achieved in school education.

Materials and Method. Analysis covered the results of a survey conducted among Polish adolescents aged 14–15[1]. The study was conducted during the period 2016–2017 in a representative group of 4,568 junior high school adolescents. The sample was selected by the method of stratified sampling and is representative for Polish adolescents at this age from the aspect of four characteristics: age, gender, place of residence (rural, urban), region of residence.

The study was conducted using a questionnaire for the assessment of the phenomenon of economic activity of adolescents. The questionnaire consists of 8 thematic blocks, including the first 5 pertaining to the assessment of the scale of the phenomenon of undertaking various forms of economic activity. The subsequent block of items concerns the evaluation of the effect of individual types of activity on various

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aspects of adolescents' situations (health, relations in a family, at school, with their contemporaries, and education outcomes). The last block concerns demographic and psychophysical characteristics of the examined adolescents, and socio-demographic characteristics of their families.

Analysis of the data obtained was performed using statistical software IBM SPSS verison 24. The research material was analyzed by means of Mann-Whitney U test, Pearson's correlation (r), and stepwise linear regression analysis.

Results. The term 'child labour' was understood as any activities undertaken which provide income or earnings. In the study, such activities were treated as a manifestation of economic activity. The concept 'economic activity' refers mainly to adults; however, in Poland it also covers adolescents aged 15–18. The Main Statistical Office (GUS) considers as economically active persons who, within the period of one week covered by the study performed for at least one hour, work providing income or earnings. These are persons employed as hired labour, working on own (or leased) farm, or running own business activity outside agriculture, as well as persons who help (without payment) in running a family farm or family business outside agriculture (Aktywność ekonomiczna (*Economic activity*), 2009). For the needs of the conducted study it was adopted that the term 'adolescent labour' refers to persons aged 14–15 who undertake at least one of 3 types of activities: 1) paid work activities outside the family (hired labour), 2) work activities performed within a family business activity (farm or other business outside agriculture), 3) independent economic activity (e.g. collection of recyclable materials, collection of forest undergrowth, trade, educational services, etc.). In the case of hired labour and independent economic activity, adolescents obtain income or earnings while working within a family business where income or earnings are obtained by the family. During the study, the time of performing the above-mentioned activities was determined during 3 periods directly preceding the study: within a week, month, and during summer vacations.

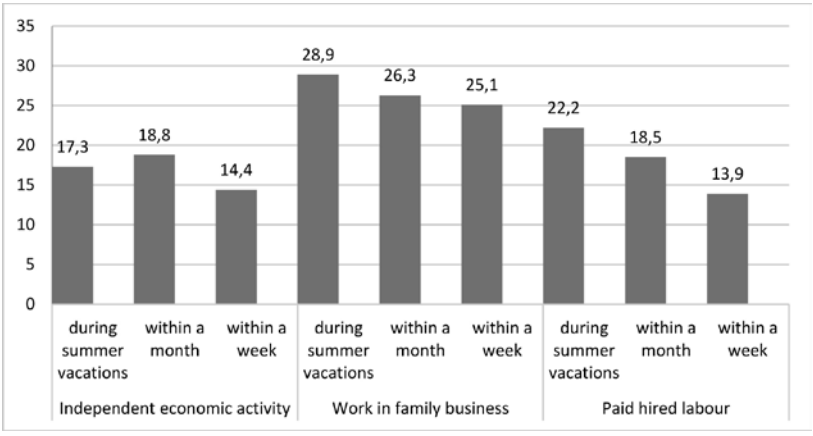

Fig. 1. Percentage of adolescents undertaking work activities according to type and period of performance

The data obtained indicate that the highest percentage of Polish adolescents undertake work within a family economic activity (family farms, family businesses outside agriculture) (Fig.1). It was found that in the week preceding the study such work activities were performed by ¼ of the respondents, and a slightly higher percentage of respondents within a month preceding the study (26.3%). During summer vacations, 28.9% of respondents helped within a family business. Paid work was undertaken by the adolescents to a smaller degree: within the period of one week by 14.9%, within a month – 18.5%, while during vacations by 22.2% of the adolescents in the study. The scale of the phenomenon of running an independent economic activity was very similar to the scale of undertaking paid work. Only the percentage of respondents engaged in own business during vacations was slightly higher (17.3%).

The grades obtained in the course of implementing the curriculum are an objective indicator of school achievements. The examined adolescents were asked to provide the average grade obtained in the semester preceding the study. It was found that slightly more than 1/4 of respondents (27.7%) obtained a relatively low average grade – below 3.5; a similar percentage of respondents (26.7%) obtained a high average grade – more than 4.5, while the average grade of the remaining adolescents (45.6%) was at the level of 3.5 – 4.5.

Table 1. Average school grade for the semester preceding the study obtained by working and non-working adolescents, according to the types of work

Type of work	Period	Working	N	M	SD	Mann-Whitney U test		
						mean rank	U	p<
Hired	Week	No	3686	4,01	0,76	2200,45	892180,5	0,001
		Yes	599	3,75	0,85	1789,45		
	Month	No	3489	4,02	0,75	2210,73	1152298	0,001
		Yes	796	3,79	0,85	1846,11		
	Vacations	No	3328	4,01	0,76	2188,19	1442064	0,001
		Yes	957	3,87	0,84	1985,86		
In a family business	Week	No	3215	4,00	0,78	2184,56	1586422	0,001
		Yes	1070	3,90	0,77	2018,14		
	Month	No	3145	3,99	0,79	2173,57	1696503	0,01
		Yes	1140	3,93	0,75	2058,66		
	Vacations	No	3033	3,99	0,79	2164,35	1833893	0,078
		Yes	1252	3,95	0,76	2091,27		
Independent economic activity	Week	No	3660	3,98	0,77	2137,45	1123437	0,477
		Yes	625	3,99	0,81	2175,5		
	Month	No	3467	3,97	0,77	2117,88	1330921	0,001
		Yes	818	4,03	0,82	2249,46		
	Vacations	No	3528	3,98	0,77	2136,89	1313775	0,485
		Yes	757	3,99	0,80	2171,5		

Analysis of average grades in the sub-groups of economically active and passive adolescents in various periods showed statistically significant differences. This mainly concerned work as a hired labourer (Tab. 1). In all analyzed periods (week, month, summer vacations preceding the study) the average grade of adolescents performing this type of work activities was significantly lower than the average grade of those who did not perform such work (significance of differences on the level of $p<0.001$). Significant differences were also observed in the case of performing work within family economic activity; however, only with respect to working time within a week and month preceding the study. Adolescents who helped their parents in running a family business during the school year (week and month preceding the study) obtained a lower average grade for the semester preceding the study than those who did not undertake such work. In turn, the undertaking of such a type of work activity during vacations was not related with the education outcomes achieved. However, it should be emphasized that the difference between average grade in the sub-groups of adolescents who helped and did not help their parents was considerably lower (differences in average grade: within a week – 0.1; within a month – 0.06; during vacations – 0.04), than the difference between average grade in the sub-groups performing and not performing hired work (in a week – 0.26; in a month – 0.23, during vacations – 0.14).

Various factors exert an effect on school achievements, such as the characteristics of the family environment, characteristics of the place of residence, demographic characteristics and level of development of schoolchildren, technical infrastructure and pedagogic staff at school (Ostrach, 2014; Łuczak, 2000; Półtorak, 2016). One of the factors hindering the education process may be an excessive economic activity. In order to establish the actual effect of work activities performed by the adolescents on their school achievements, a multivariable analysis was performed of the conditioning of the average grade obtained by them for the semester preceding the study. Into the analysis of the model of conditioning (stepwise linear regression) of the average grade, 4 groups of variables were introduced: 1) characteristics of the work performed (severity, danger, working time, accident at work), 2) family characteristics (age and education of parents, number of children in a family, number of generations, material standard of the family), 3) characteristics of the environment of residence (type and size of place of residence) 4) characteristics of the child (gender, age, assessment of fitness and state of health, motivation for work). The analysis was performed separately for 3 groups of adolescents: 1) performing hired labour, 2) performing work in a family business, and 3) running independent economic activity (Tab. 2).

Four variables: education of the mother, gender and age of the schoolchild, and structure of the family, were the predictors significantly related with the education outcomes achieved by the adolescents from all the analyzed groups (Tab. 2). Adolescents whose mothers possessed a higher level of education achieve better education outcomes, better outcomes were achieved by girls than boys, younger schoolchildren, and schoolchildren from complete families (living together with their mother and father). This direction of the relationship was observed with respect to all 3 groups

Table 2. Models of conditioning of education outcomes achieved by adolescents (results of stepwise linear regression analysis)

Predictors	Unstandardized coefficients		Standardized coefficients	t	p	Model summing-up		
	B	SD	Beta			R^2	F	p<
Model of conditioning of education outcomes – performing hired labour								
(Constant)	5,455	1,016		5,368	0	0,202	21,03	0,001
Education of the mother	0,221	0,038	0,239	5,864	0			
Gender	-0,48	0,068	-0,306	-7,048	0			
Age of the schoolchild	-0,246	0,061	-0,169	-4,07	0			
Structure of the family	0,245	0,089	0,111	2,765	0,006			
Height	0,01	0,004	0,11	2,476	0,014			
Working time in a month	-0,002	0,001	-0,099	-2,452	0,015			
Model of conditioning of education outcomes – running independent activity								
(Constant)	5,726	0,74		7,738	0	0,213	23,285	0,001
Education of the mother	0,247	0,033	0,257	7,439	0			
Gender	-0,365	0,054	-0,233	-6,804	0			
Age of the schoolchild	-0,21	0,049	-0,147	-4,278	0			
Age of the mother	0,023	0,005	0,151	4,363	0			
Material standard of the family	-0,089	0,03	-0,103	-2,907	0,004			
Motivation for work – development	0,151	0,065	0,079	2,323	0,02			
Structure of the family	0,181	0,078	0,081	2,314	0,021			
Number of children in the family	-0,041	0,02	-0,072	-2,072	0,039			
Model of conditioning of education outcomes – performing work in a family business								
(Constant)	6,784	1,164		5,83	0	0,217	12,274	0,001
Gender	-0,34	0,082	-0,232	-4,14	0			
Education of the mother	0,25	0,051	0,267	4,871	0			
Age of the schoolchild	-0,245	0,075	-0,179	-3,25	0,001			
Motivation for work – duty	0,276	0,112	0,136	2,46	0,015			
Structure of the family	0,254	0,121	0,115	2,092	0,037			
Working time in a week	-0,006	0,003	-0,111	-1,975	0,049			

Gender: 1 girl, 2 boy: Structure of the family: 1 incomplete, 2 complete;
Material standard of the family: from '1' – good to '6' – poor.

of adolescents: performing hired work, working in a family business, and running independent economic activity. In addition, the material standard of the family was positively related with the education outcomes of adolescents engaged in independent

economic activity: the better the material standard of the family, the better the education outcomes achieved by adolescents. In the group of respondents running an independent business, one more variable characterizing their family environment was significantly related with education outcomes, i.e. the number of children in the family. Adolescents who had a larger number of siblings achieved lower outcomes at school.

From among significant predictors of education outcomes achieved by the adolescents, variables referring to the work performed were also observed. Among schoolchildren performing hired work and work within a family business the time of performing these work activities was significantly negatively related with education outcomes – within a month in the case of performing hired work, and in a week in the case of work in a family business (Tab. 2). In both situations, the longer the working time, the lower the average grade. The time devoted to independent economic activity did not have any significant effect on education outcomes. Moreover, the education outcomes of adolescents working in a family business and those engaged in independent economic activity depended on the motivation for work. Adolescents who were engaged in independent activity obtained better education outcomes when the motivation for work was the feeling that work was their duty. In turn, in the case of respondents who helped their parents in a family business, better education outcomes co-occurred with the undertaking of these work activities from the desire for personal development.

Summary: Studies conducted in the countries with a low level of economic development show that the phenomenon of child labour in children aged 7–14 is closely related with the fact that these children remain outside the education system (Guarcello, Lyon; Rosati 2015). This means that the performance of work by these children prevents them from attending school. Simultaneously, studies by the International Labour Organization (ILO) conducted on a world scale indicate that child labour clearly hinders the achievement of educational goals, decreases the recruitment index net, negatively affects school attendance and education outcomes (Progress, challenges… 2015). In Poland, the phenomenon of children and adolescents remaining outside the education system on the level of primary school and junior high school due to the undertaking of work does not exist. Nevertheless, the participation of adolescents in various forms of economic activity may exert a negative effect on school achievements.

The conducted studies indicate that educational outcomes achieved by Polish adolescents aged 14–15 are related with the engagement in work providing income or earnings. Schoolchildren who perform hired labour or work within family economic activity achieve lower educational outcomes than those who are not active economically. Such a relationship was not observed in the case of adolescents running an independent economic activity. It should be presumed that the scope of engagement in this form of activity to the greatest degree depends on the adolescents themselves. This means that adolescents who undertake an independent economic activity generally have the skill to organize their activities (work, education) in such a way that they do not interfere with each other.

Multivariate regression analysis confirmed the negative relationship between time devoted to hired labour and in family businesses, and education outcomes. Thus, while perceiving the positive aspects of underage labour – including its economic value (Yotopoulos, Kuroda, 1988) and the positive role of work in the process of education and socialization, vocational preparation, or economic education of children and adolescents (Sobieraj 2014; Lieten 2004) – it should be emphasized that devoting an excessive amount of time to the performance of work (especially hired labour and in family businesses) during the school year, exerts a negative effect on education outcomes. This relationship was confirmed by the results of a study conducted in 2008 among children engaged in work on family farms in the Lublin Region (Lachowski, 2009).

Multivariate analysis demonstrated a positive relationship between education outcomes and adolescents' motivation for undertaking work. In the case of work in a family business, such a relationship was observed when the motivation for undertaking work was the sense of duty, whereas in the case of independent activity – when the motivation was the desire for development. It should be emphasized that the predictors of work characteristics (working time, motivation for work) play a less important role in the model of conditioning of education outcomes than demographic and environmental factors. Education outcomes are more closely related with the characteristics of the family environment (education of the mother and family material standard), and demographic characteristics of adolescents (gender, age).

While appreciating the importance of economic activity of adolescents in the process of socialization and education, especially economic and vocational education, it should be remembered that adolescents aged 14–15 (in the current system of education – final classes at a primary school) who undertake work providing income or earnings, for this reason cannot neglect their school duties. It seems that the underage who undertake various types of work should remain the special concern of appropriate institutions and individuals. Here, the role of parents is irreplaceable in this regard, especially their knowledge, awareness, responsibility, due to which they are able to support comprehensive development of their own children, as well as the children's choices concerning work activities undertaken.

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