THE WORLD PHENOMENON OF OVER EDUCATION (The case of Israel)

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Summary: The phenomenon of surplus education that existing in many countries is defined by the research literature as a situation where when an individual's formal education exceeds job performance requirements. There may also be a social-occupational reality related to surplus education regarding a mismatch between one's trade and an employee's subject of study. Both phenomena have negative effects on an employee, an employer, the economy, and fabric of economic-international relations that are affected by each country's ability to, export' human capital. In recent decades, the level of education has increased in Israel and throughout the world. According to a common perception, this increase led to a surplus level of education in an uncontrolled manner. This article examines the phenomenon of surplus education occurring these days in the world, its situation in Israel, including the scope and the reasons underlying the phenomenon.

Keywords: Over education; Higher Education; National Education Policy; Economic Relation; Over Skilling

FENOMENUL MONDIAL AL SUPRAEDUCAȚIEI (CAZUL ISRAELULUI)

Rezumat: Fenomenul de surplus de educaţie, care există în multe ţări, este definit în literatura de specialitate ca o situaţie în care educaţia formală a unui individ depăşeşte cerinţele de performanţă la locul de muncă. Poate exista şi o realitate socio-profesională legată de surplusul de educaţie privind o nepotrivire între meseria cuiva şi subiectul de studiu al unui angajat. Ambele fenomene au efecte negative asupra unui angajat, a unui angajator, a economiei şi a structurii

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relațiilor economico-internaționale care sunt afectate de capacitatea fiecărei țări de a „exporta" capital uman. În ultimele decenii, nivelul de educație a crescut în Israel și în întreaga lume. Conform unei percepții comune, această creștere a dus la un nivel excedentar de educație în mod necontrolat. Acest articol examinează fenomenul educației excedentare care are loc în aceste zile în lume, situația acestuia în Israel.

Cuvinte cheie: supra educație, educație inaltă, politica națională a educatiei; relație economică, peste Schilling.

Introduction. The phenomenon of surplus education that existing in many countries is defined by the research literature as a situation where when an individual's formal education exceeds job performance requirements. There may also be a social-occupational reality related to surplus education regarding a mismatch between one's trade and an employee's subject of study. Both phenomena have negative effects on an employee, an employer, the economy, and fabric of economic-international relations that are affected by each country's ability to ‚export' human capital. In recent decades, the level of education has increased in Israel and throughout the world. According to a common perception, this increase led to a surplus level of education in an uncontrolled manner. Excess education exists when an individual's formal education exceeds requirements for performing his/her job, and it is also known as a vertical mismatch. Another phenomenon, addressed for the first time, is a mismatch between one's profession and subject of study acquired, also known as a horizontal mismatch [11, P.179-198].

Excess education can have a negative effect on employees, employer and the economy in a variety of channels [15, P.46]. From employees' point of view, excess education decreases job satisfaction and reduces their efforts and salary, and leads to frequent job turnover. As a result, an employer may reduce investment in specific human capital, and together with the damage to labor productivity due to the reduction of effort, his profitability may decrease.

From the overall economy point of view, a high proportion of employees with excess education may indicate an inefficient allocation of workers to jobs while harming labor productivity [3]. On top of that, frictional unemployment will increase because of frequent turnover

between jobs. Ultimately, excess education may slow down a product's growth rate [5]. The match between profession and the subject of study has negative effects similar to those of excess education. They may be more difficult, since some of the individuals will have to undergo professional conversion, with all that it entails [7, 12 p.]. At the same time, previous studies [7; 9] show that other factors have a greater influence on success in the labor market - the subject of study itself and, to a lesser extent, the type of higher education or professional institution in which an individual studied [2, P.259-278].

1. Main Materials – Definition of Terms

The excess education phenomenon was first raised by Flisi et al [14] in 1976, and since then it has been examined in many studies, among them by Flisi et al [14], Allen & Van der [3], Adalet & Andrews [1] and other researchers. They are the ones who first pointed out that the phenomenon is widespread and ongoing at the level of the economy as a whole, while at the level of the individual it is usually temporary, until finding a job that matches the level of education thanks to the accumulation of seniority in the labor market. Excess education correlates with relatively low wages [12]. The research literature offers objective and subjective indicators for measuring education.

The objective indicators are based on company's approach, economic-employment situation and meeting the needs of the country or the employee's area of residence. Bender & Roche [6] added that the degree of compatibility between occupation and level of education will also affect the degree of objectivity in such statements, and they can also be determined by economic-occupational criteria that change in each period according to occupational "fashions" and/or promotion and integration of the technology.

The subjective indicators are based on the employee's personal approach, in relation to self, in relation to those around him/her and level of quality of life [6]. In addition, it is also possible to o use the international classification system of occupations known as the International Standard of Occupations Classification. A term coined by the International Labor Organization (ILO). The assumption is that every trade requires a certain level of education, and every worker whose level of

education is higher than that required in his workplace according to the classification system, is defined as having excess education. Another objective measure is based on the distribution of education levels in a certain trade. Workers are defined as having excess education if their level of education (i.e., their number of years of schooling) is higher than the average (or median) level of education of the other workers by a certain predetermined measure, usually by one standard deviation. Alba Ramirez [2, P.259-278] pointed out that each of these approaches, objective and subjective, has its own advantages and disadvantages.

The first objective approach presented assumes homogeneity of skills and ignores the possibility that workers in positions with a similar or identical names do essentially very different jobs. The second objective approach, based on the distribution of education levels in a particular trade, is relatively easy to implement due to availability of data. Its disadvantage is its arbitrariness, and it can be affected by a rapid expansion of education in a certain age group, without a substantial change in the job requirements.

Alba Ramirez [2, P.259-278] also claimed that excess education may reduce an employee's job satisfaction, reduce the effort invested in work and salary, and increase the rate of turnover. Ultimately, the researchers maintain that this phenomenon harms labor productivity and negatively affects an employer's profitability. From the point of view of the economy as a whole, a high proportion of those with excess education can indicate an inefficient allocation of workers to jobs while harming labor productivity and ultimately slowing down the product growth. Many countries in the Western world are dealing with the trend that has been gaining momentum for years, and among other things are raising doubts about the importance of academic education – high education.

The relationship between functional productivity and excess education. Excess education is defined as a situation in which an individual had difficulty finding employment suitable for his/her level of education, and therefore had to settle for employment that required, according to the majority, a lower level of education than his/her own. Thus, for example, studies have found that when comparing the effect of salary averages on individuals' productivity, according to their level

of education, the salary of those whose education is suitable for the profession in which they are engaged is higher than the salary of those with excess education, as is the level of organization's commitment regarding the products it is supposed to produce [7].

Craft et al [10] stated in his article that, as we will see later, excess education is linked to lower wages, as well as to lesser motivation and lower job satisfaction. These may be reflected in many absences from work and high frequency turnover. These consequences may lead to a decrease in employees labor productivity and damage to a company's productivity [3, P.434-452]. In a broader sense, excess education has economic consequences for society as a whole, because it reflects a waste of resources and causes employers to not make the most of the skills and abilities of employees.

Analysis of the trend of excess education in Israel. Statistically speaking, the level of education of Israelis has increased significantly in recent decades. This growth is reflected both in the average number of years of schooling and in the number of residents who are graduates of academic studies. This phenomenon has several main reasons [13]. First, there is an Israeli government policy of encouraging higher education. This policy, which began mainly in the early 1990s, resulted from the expansion of the supply of academic institutions throughout the country, and also as a result of a significant increase in allocating budgets of the various academic institutions.

According to the findings of a new study conducted by the Bank of Israel in collaboration with the Central Bureau of Statistics in 2022, it appears that 14% of bachelor's degree holders in Israel are in a state of excess education, that is, their number of years of study is higher than the average among those engaged in their professions. This situation was revealed in a study conducted by Idan Lipiner, Noam Sussman and Dror Rosenfeld from the Bank of Israel's research division, which examined bachelor's degree graduates born in 1990-1995 [18]. According to Romanov et al [16, P.2563-2578], excess education stems from the massive increase in the supply of higher education graduates in Israel due to the expansion of public and private colleges since the 1990s. The number of bachelor's degree graduates has increased fourfold since then. The expansion of colleges also led to a considerable

increase in the supply of social science and law graduates, which increased the proportion of workers engaged in trades that do not match their education. A comparative study conducted in 2021 examined the entire population, and found that Israel leads in the proportion of those with excess education: 32% compared to 22% in OECD countries. Workers with excess education earn 27% less than other workers with the same level of education, compared to 14% in OECD countries [13].

Israel vis-a-vis other countries. According to OECD data [13], the percentage of Israelis aged 25-64 with an academic education in 2020 was approximately 49%, which places Israel in third place among all OECD countries (after Canada and Japan). According to Romanov et al [16], this high education does not seem to help the State of Israel particularly, at least in the narrow economic sense: the average Israeli worker produces much less value during work than the Swiss, Danish, German or Dutch worker, even though he/she has studied for many more years. According to the OECD graduate skills survey, which examined questions such as understanding the meaning of tables and numerical data, solving practical problems, dealing with a technological environment, and more, the level of human capital in Israel is one of the lowest among the organization's member countries. Only the citizens of Turkey and Chile did less well than the Israelis in these tests, and Israel's low ranking is repeated in all age groups including among those with higher education. When considering only non-ultra-Orthodox Jews, Israel gets closer to the OECD average, but still far from excelling. Even the glorified Israeli hi-tech sector is largely built on young people who acquired their education in short courses in the army and not in universities [8].

There are naturally other goals for the higher education system besides increasing labor productivity, such as research and technological advancement, or the creation of an educated, western and democratic civil society. But try to think for a moment: does the State of Israel achieve these goals better than countries with a much lower rate of academic degree holders, such as Germany or Switzerland? **Is it not possible that a significant part of the higher education of the country's citizens, which costs the Israeli public a great deal of money, is simply unnecessary?**

The assumption of decision makers and the creators of this policy in Israel was that the encouragement of higher education within the population would encourage economic growth, and would also help reduce economic and social gaps between different strata and between the residents of the periphery and those of the center of the country. This policy did bear fruit in terms of the increase in the level of education in Israel, but it did not contribute as much to growth as had been hoped in advance. The State of Israel has indeed become one of the most educated countries in the Western world and in the world in general, but despite this - the country's productivity as a result of work is not as high [17, P.113-114]. Part of this process was caused by the fact that, in parallel to the growth in the level of education, there was no corresponding growth in the level of demand for academic workers in the labor market. Therefore, a situation has arisen in which there are many academia graduates who work in fields that do not at all require the level of education they possess.

Personal consequences of excess education phenomenon in Israel. The phenomenon of excess higher education has many consequences on both the personal level and the national levels. Personally, many young people feel an obligation to take higher education studies, even if they have other areas of interest, or could have entered the labor market at an earlier stage in their lives. These studies cost them quite a bit, and take several years. Considering the fact that many young people have to work before their study period so as to finance their degree - there is actually a several years' delay in the date of their integration into the labor market. If there were no social necessity to study for a degree, many young people would be able to integrate into the labor market at a much earlier stage. Another consequence of the phenomenon is that many of those higher education graduates encounter difficulty in finding a job that suits them, after their academic studies. This situation creates considerable frustration, some of which was dragged back from the time of studying for a degree that perhaps did not interest them and studied because studied under 'social pressure'. Even when they do find a job, in many cases they find that they did not at all need an academic degree for it.

The public consequences of the phenomenon in Israel of 2023. According to Sussman et al [17, P.113-114] on the public level as well, there are many consequences to the fact that there is a great excess of higher education in Israel. First, the government policy of encouraging higher education costs the taxpayers a considerable amount of money, and very large budgets were dedicated to this purpose. Since, in practice, the growth in the level of education did not contribute much to the growth in the country or to the reduction of disparities, it can be said that this large allocation of funds was not profitable and was not necessarily essential. The budgets dedicated to encouraging education by diverting funds to the higher education system could have been used in many other ways. Ehadot et al [12] added and clarified the issue that perhaps it was possible to cause additional growth in the economy through budgeting of other projects, and not through excess budgeting of the higher education system. Furthermore, a situation has arisen, on the public and national level, where many young people are looking for work in fields that are not sufficiently required, while required fields that do not require an academic degree benefit from less supply of quality personnel. This is because there is no balance between the level of education required for a certain occupation, and the number of graduates of academia who are looking for work.

Solutions for the economy and education in Israel. There is a great deal of concern about the phenomenon of excess higher education. Various published studies have addressed this phenomenon, and quite a few experts made recommendations to the planning authorities in the country regarding how to reduce the phenomenon. The recommendations mainly deal with reducing the budgets intended for higher education institutions, especially in fields of study where the salary for academic graduates will not be significantly higher after graduation. In addition, there are suggestions that information about the expected salary levels in certain professions be open and available to young people, before they start studying. Moreover, there is a recommendation to direct more budgets to areas of non-academic professional training. These recommendations can lead to a situation where there is a greater match between the percentage of academics in the labor market and the number of actual jobs that do require a relevant

academic education. In this way, the phenomenon of excess higher education will be reduced at least partially, which has advantages both on the individual level and on the national social and economic level in the country.

Strengthening the professional - tertiary - technological education. According to government publications at the beginning of 2021, the Israeli government determined that it needs 15,000 graduate engineers each year who will integrate into the labor market. Therefore, the state has committed that by the end of 2023 the number of engineering certificate recipients will reach the quota in question. As of 2021, the number was about 10,000, 66% of the government's target. As far as the technology industry is concerned, this country is in a state of emergency. According to the data of the Israel Central Bureau of Statistics [18], the number of vacancies for practical engineers has increased in recent years by approximately 21%. Thousands of workers are missing in the field. The serious shortage of practical engineers will have serious consequences for the productivity of the economy and for the future of the country. Beyond the need to strengthen technological education, a government that respects itself must meet its obligations, including those set by a previous government. In 2018, Israel introduced a reform in the technological education system, but it is far from implementing the goals. Thus, for example, the state committed to increase the budget for college technology student to NIS 19,500 per student. As of today, the budgeting for a student at a technological college is the same as the budgeting for a child in kindergarten - NIS 16,284, while an engineer trained by the Ministry of Economy receives a budget of only NIS 15,104. If a bachelor's degree student in a college's engineering faculty is budgeted by NIS 30-35 thousand, it is impossible for a student for advanced technological studies to be budgeted by only NIS 15,000 shekels per year. This figure is the result of continuous discrimination [18].

Technology students receive a much lower budget than students in other subjects even though their contribution to society and the productivity of the economy is no less and maybe even higher. This discrimination is a consequence of incorrect branding and the preference of academic degrees in any field over a practical engineering degree which

gives its holder professionalism, earning capacity and tools to make a significant contribution to the economy and society. The poor branding and low budgeting lead to a reality where 10% of applicants for higher education choose to study at technological colleges for technological degrees, while 50% prefer the academia benches. We see an excess of academic education in the face of a severe shortage of practical engineers, whose existence is necessary for the economy and society.

The relationship between occupational productivity and excess education in Israel. Productivity, or labor productivity, is measured by dividing the product (gross domestic product) by the number of working hours. Israelis work about 100 hours more than the OECD average and 500 hours more than the Germans [13]. **Nevertheless, the wages of Israeli workers are lower.**

One of the main reasons for this is the low productivity of Israeli workers. The productivity of workers in Israel has been increasing in recent decades, but at a low rate so that the gap between Israel and the developed countries is not reduced and is about 25% lower than the average in recent years. The reasons for this are varied, but the main ones are investment in human capital, lack of professional training, the volume of black economy, insufficient investment in infrastructure and the dual economy in which the high-tech sector is highly productive but most of the economy lags behind.

Productivity has become a hot topic in all OECD economies because the most important indicator of economic growth is not progressing at the desired rate, is regressing in some countries and is usually stagnant in most Western countries. This creates the 'productivity paradox' because innovation exists and technology is advancing at a dizzying pace, yet the effect on productivity seems to be too small. The OECD places this issue at the top of its priorities because without growth in productivity, wages will not rise and in fact the Western way of life is at risk. OECD studies reveal that the productivity problem is not related to innovation but to the incorrect distribution of resources what is known as the 'hollow problem' because there are companies where productivity is high and even increases, especially the large companies that are international, but too many businesses are lagging behind and where productivity does not increase or even decreases.

Conclusions. In order to ensure that academic graduates do not suffer from excess education, the universities and colleges must increase their activity in the field of **practical training and the utilization of education**. As of today, activity in the field is limited to job fairs on campus lawns or resume writing workshops. But that is not enough. The academia must provide students with practical tools and skills, practical experiences and training as part of the curriculum. For example, the faculties of humanities and social sciences must initiate the integration of students in internships among organizations, associations and companies in exchange for credit points for the degree (accreditation). Occupational direction should be involved in the selection and admission stage in order to maximally adapt the field of study to the student's professional skills and aspirations, and academic institutions should expand offered programs to outstanding high school students as well in order to help as early as possible the students' integration into the employment cycle. If the Israeli academia is able to deal with the problem of excess education today, the net benefit tomorrow will be for the students, the workers and the entire Israeli economy.

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