THE IMPORTANCE OF TRANSPORT TECHNOLOGY PROFESSIONALS` TRAINING THROUGH THE PRISM OF THEIR STATUS IN THE UKRAINIAN LABOUR MARKET

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Abstract

The article is focused on the rationale behind transport technology professionals` training evaluating the current workforce situation in the market for transport and logistics services in Ukraine. The aim of the paper is to assess economic reasons for transport technology professionals` training through the analysis of these specialists` status in Ukraine`s labour market according to the following parameters: the average number of employees by the lines of business per quarter, workforce movement, the number of workers who were forcedly put on short time, full-time employees` average monthly wages in 2019. The methods used are the system-structural analysis, systematization, comparison and generalization of the relevant sources. The obtained results lie in the fact that in Ukraine there is a controversy between the actual needs of the economy for transport professionals, the economic potential the transport sector is characterized by, and the actual number of professionals, negative labour movement tendencies and low compensation received in the transport sector. The discussion points are centered around the reasons for this happening – the overall level of Ukraine`s economic development, a lack of interest in the field or a lack of awareness of prospects of the industry as well as transportation and logistics functions. A conclusion is made on a number of important steps to be taken to improve the situation.

Keywords: education, transport technology, economic justification, workforce situation, number of workers, labour movement, average monthly salary

1. Introduction

One of the central functions of the higher education system is to generate highly qualified professionals to satisfy a country`s socio-economic demand and needs. Basically, higher education acts as a provider of educational services to the population with the final product being professionally important knowledge and skills as well as personal qualities and values. Society acts as a customer and an ultimate consumer of this education product. In this way, a number of education functions are realized – socio-economic related to the formation and development of intellectual, technical, and human resources; socio-political connected with ensuring social security, social control, social mobility, the sustainable development of society, and its relationship with pan-civilization processes; socio-cultural aimed at the development, preservation and passing down of spiritual heritage, and shaping civic awareness [1, p.11; 2, p.65]. Thus, in order to effectively perform these functions higher education should be highly receptive to current social, economic, and cultural needs and processes, innovations and changes, priorities and strategies necessary to achieve a country`s economic well-being. In other words, education, economy, and society have to cooperate, in particular, in terms of such issues as what professionals to generate, what to teach, and how to teach as well as what outcomes to expect.

However, nowadays, there are many cases when university graduates cannot find employment because their professions are not in demand in the economy or the level of qualification does not meet the requirements of the employer. Conversely, in the context of the revival of many sectors of the economy, employers, especially in large industrial cities, are in dire need of staff. The paradox of the modern labor market in Ukraine is that despite the fact that the unemployment rate in Ukraine as of the fourth quarter of 2019 was 8.70 percent [3], the country experiences a significant shortage of human resources, mainly workers. There is an opinion that in the labor market, there is a surplus of lawyers, economists, accountants and that the system of professional education lags behind employers` needs [4].

According to the public employment service`s information on the needs of the labour market, as of June 1, 2015, in Kyiv, the load factor for the vacancies of an accountant was 17.5; in the Kyiv
region this figure was 16.2. [5, p. 38-39; 43]. This indicates the inexpediency of such professions’ training in the nearest future, as the supply of the unemployed representatives of this profession in the registered segment of the labor market is quite high. However, according to the same source, during 2014, the largest number of vacancies was found for, among other professions, a driver of motor vehicles (1533 vacancies with a load factor of 0.69) [5, p.85]. Such figures certify that transport professionals are in demand and there is a rationale behind such professionals’ training at higher education institutions.

2. Analysis of recent research and publications

The theoretical framework for research is made up of the works dedicated to the theoretical and applied aspects of the role of education in the context of the information society and knowledge economy formation of such famous scientists as F. Brodel, J. K. Galbraith, R. Darendorf, P. Drucker, R. Inglehart, V. Inozemtsev, G. Kann, M Castells, R. Katz, G. Marcuse, J. Masuda, F. Machlup, B. Milner, M. Porat, V. Savchuk, T. Sakaya, G. Stigler, T. Stoneier, A. Toffler, L. Tourrow, T. Forrester, F. Fukuyama, A. Chukhna, O. Shkurupii and others. The important issues of the essence and role of higher education in the institutional system of society are addressed in the papers by D. Bell, T. Veblen, A. Gorts, J. Commons, R. Coase, A. Lewis, K. Menard, D. Nort, R. Nureev.

The basis for studying and solving the issues of theoretical and methodological foundations underlying “Transport technology” professionals’ training (specialty 275) are the findings and outcomes of famous scientists’ studies in different education directions: new technology development and introduction (A. Vorkut, R. Khabutdinov, H. Prokudin, L. Zaiouchky, D. Benson, J. Whitehead, etc.), formation of transport systems and transport support (V. Beliaiev, A. Vorkut, M. Dmytrychenko, V. Dolia, D. Zerkalov, O. Liubashov, A. Pasichnyk, L. Yatskivskyi, etc.); theoretical and methodological training content integration in professional education (V. Bezrukov, M. Berulava, A. Beliaieva, R. Hurevych, B. Kaminskyy, D. Kolomiets, M. Mahmutov, etc.); integration of methods, forms, techniques and content (O. Bilyk, B. Budnyi, V. Ilchenko, O. Dzhulyk, L. Vychorova, T. Horzii, M. Korets, O. Prokaza, Ye. Romanenko, A. Stepaniuk, E. Yavorskyi, and others). However, the problem of transport technology education prospects and such professionals’ status in the Ukrainian labour market has not been adequately considered by domestic and foreign scholars.

3. Articulation of the research objectives

The aim of the research is to find economic justification for transport technology professionals’ training through the analysis of these specialists’ position in Ukraine’s labour market and prospects for this profession further development in the future.

4. Statement of basic materials

It is an admitted fact that in countries all over the world, transport and logistics play a significant role in the health of their economies contributing to economic growth. It is one of the largest economic sectors. For instance, as of 2007, in the UK, the transport and logistics sector employed 1.7 million people working for 194,100 companies totaling to 8% of the UK’s workforce [6]. The sector comprises 5% of the UK’s GDP [7].

According to the Future of Jobs Report prepared by the World Economic Forum and analyzing the data from 15 major developed and emerging economies and regional economic areas (including Australia, Brazil, China, France, Germany, India, Italy, Japan, Mexico, South Africa, Turkey, the UK, and the USA, etc.), the industry is anticipating the growth due to its traditional role of connecting countries and industries in the twain of increasing globalization as well as ‘catering to travelers from rising middle classes in emerging markets’ [8, p.15].

“Global trade in goods and services is likely to increase more than threefold to US$ 27 trillion in 2030. That’s putting pressure on the industry to keep goods flowing. In 2010, the profession of a driver already belonged to the top 10 jobs that employers are having difficulty hiring among 36 countries worldwide” [9, p.9].

In developing countries, the transport sector is expected to change dramatically in the next decade due to the continued large-scale expansion of metro stations, high-speed transit systems, roads and ports, along with the ever-increasing pace of the introduction of high technology, including artificial intelligence.

According to PWC, it is expected that in the period 2016-2025 total transport infrastructure costs worldwide will exceed $ 14 trillion [10]. Investing in this sector will not only increase economic opportunities and boost business development, but will also bring in job opportunities.
For instance, in India, there is a national highways project Bharatmala, its worth is over $100 billion. This project is expected to generate over 100 million man-days of work in the country. According to the Ministry of Road Transport and Highways’ estimates, it is expected that there will arise a need for over 350,000 workers to be trained in 2-3 years [10].

“According to the National Skill Development Organization in India, the transportation and logistics sector employed around 7.3 million professionals in 2011. But the number is expected to increase to about 25 million by 2022. Transportation and logistics companies will need to find more than 17 million more workers in the next 10 years. That’s an enormous challenge, particularly considering that the logistics sector is already struggling to find specialists with the appropriate skills to handle the entire supply chain” [9, p.10 ].

For Ukraine, the transportation and logistics industry is of no less importance. Given the current economic relations of Ukraine with other countries, the transport technology sector is expected to contribute to increasing the competitiveness of domestic goods, services, and human capital in the global, European, domestic, and local regional markets.

The economic breakthrough in the labor markets in the post-industrial, information knowledge society is provided today by human capital, which should be effectively prepared in domestic educational institutions to be efficiently used for the intensive development of the export-oriented Ukrainian economy and, in particular, for the distribution of domestic goods and services using modern export-oriented transport logistics means. Thus, qualified transport technology workforce training should be a priority for Ukraine.

For the first time the specialty “Transport technologies” is mentioned in the Resolution of the Cabinet of Ministers of Ukraine “On the list of directions and specialties for training specialists in higher educational institutions at the relevant educational and qualification levels” No. 507 of May 24, 1997. According to the current legislation, this specialty belongs to the field of knowledge 27 “Transport”. Besides, in accordance with the Order of the Ministry of Education "On the approval of the list of higher education specializations in specialty 275 “Transport technologies (by type)” according to which the state order is formed and placed" No. 507 of 12.05.2016, it is distinguished the following 4 specializations: 275.01 Transport technologies (in sea and river transport), 275.02 Transport technologies (in the rail sector), 275.03 Transport technologies (in the automobile transport), 275.04 Transport technologies (in the air transport).

Educational and professional programs, as a rule, are formulated as follows: "Organization of transportation and management by the types of transport", "Freight forwarding and logistics", "Transport systems (by the types of transport)", "Automatics and automation in transport", "Transport technologies (by the types of transport)", "Transport safety", "Customs and the transport sector" [11, p.85].

We will analyze the position of these specialists in Ukraine’s labour market considering the following criteria and indicators: the average number of employees by the lines of business per quarter, workforce movement by the lines of business, the number of workers who were forcibly put on short time by the lines of business, full-time employees’ average monthly wages of by the lines of business.

So, the statistical data on the fist parameter are summarized in table 1.

As seen in table 1, the first line summarizes the figures for all the modes of transport. Comparing the total data on each quarter it can be clearly traced a downward trend. In the second quarter there was a decrease of 6.3 thousand workers as compared to the first quarter. This figure was subsequently reduced by 18.3 thousand and 9.4 thousand in the third and fourth quarters respectively with the third quarter illustrating the most negative dynamics.

However, if to take a closer look at the breakdown by the lines of business, we can conclude that not all of the transport industry branches were characterized by certain volatility and a declining trend. Water and air transportation were the most stable as for the number of workers with their figures being mostly unchanged (in water transport there was an increase of 0.3 thousand in the second quarter and a slight lowering of 0.1 thousand in the fourth quarter – overall, this is the only line of business showing an upward trend; for aviation there was a slight decrease of 0.1 thousand workers in both third and fourth quarter).
Such indicators could be connected with the occupational prestige of aviation and the shipping industry, as well as relatively high entry barriers to the profession and comparatively higher social security.

The third most stable branch was postal and courier services with the number of its workers steadily going down by 0.7 thousand per second, third and fourth quarters.

The figures for the number of employees were changing the most dramatically for land and pipeline transport together with warehousing and supporting services in the field of transport with the latter being an “anti-leader” (-15.2 thousand and -16.6 thousand workers annually).

Let’s take a look at the workforce movement in the same lines of business summarized in table 2.

<table>
<thead>
<tr>
<th>Line of business</th>
<th>Recruited, thousand people</th>
<th>Total</th>
<th>Reasons for leaving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport, warehousing, postal and courier services</td>
<td>180.3</td>
<td>211.0</td>
<td>labour turnover</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lay-off</td>
</tr>
<tr>
<td>Land And Pipeline Transport</td>
<td>81.4</td>
<td>92.7</td>
<td>63.3</td>
</tr>
<tr>
<td>Water Transport</td>
<td>1.6</td>
<td>1.5</td>
<td>1.3</td>
</tr>
<tr>
<td>Air Transport</td>
<td>2.2</td>
<td>2.7</td>
<td>2.6</td>
</tr>
<tr>
<td>Warehousing And Supporting Services In the field of</td>
<td>68.9</td>
<td>84.4</td>
<td>70.5</td>
</tr>
<tr>
<td>Transport</td>
<td></td>
<td></td>
<td>3.4</td>
</tr>
<tr>
<td>Postal And Courier Services</td>
<td>26.3</td>
<td>29.5</td>
<td>22.7</td>
</tr>
</tbody>
</table>

The data in table 2 indicate that in all the analyzed lines of business there was a shortfall in the number of professionals joining a job and those who quitted. The only exception to this is water transport – in this field there was 0.1 thousand newly hired workers more than those who left. The transportation field where such an imbalance was not severe is aviation (-0.5 thousand workers), followed by postal and courier services (-3.2 thousand), land and pipeline transport (-11.3 thousand), and, with the biggest disproportion, warehousing and supporting services in the field of transport (-15.5 thousand).

An interesting point to be mentioned is that while in the shipping industry and aviation, relatively satisfactory indicators were achieved due to high entry barriers into the profession – strict requirements for qualification, knowledge, and skills, postal and courier services required workers for comparatively low-skill roles. Therefore, the third-best position on the lines of transportation business list according to labour movement can possibly be achieved due to the fact that there was a constant influx of potential workers from students, people working in the specialty they had not been trained in, etc. The highest labour turnover was registered in warehousing and supporting services and land and pipeline transport. It could indicate the
need for better employment conditions.

A positive tendency is that there were relatively small figures for laying-off workers just stopping their employment because there was not enough work for them to do. Overall, lay-off as a reason for leaving a job was approximately 20 times less frequent than labour turnover. Predictably, the branches with zero lay-offs, as of 2019, were water and air transport.

The highest lay-off indicators were in warehousing and supporting services.

Let us now consider the next criterion which is closely connected with the problem of making workers redundant – the number of workers who were forcibly put on short time (table 3)

<table>
<thead>
<tr>
<th>Line of business</th>
<th>On unpaid leave, thousand people</th>
<th>Short hours/weeks, thousand people</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport, warehousing, postal and courier services</td>
<td>2.9</td>
<td>43.7</td>
</tr>
<tr>
<td>Land And Pipeline Transport</td>
<td>1.4</td>
<td>7.2</td>
</tr>
<tr>
<td>Water Transport</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Air Transport</td>
<td>0.0</td>
<td>0.4</td>
</tr>
<tr>
<td>Warehousing And Supporting Services In the field of Transport</td>
<td>1.7</td>
<td>36.1</td>
</tr>
<tr>
<td>Postal And Courier Services</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Despite being seemingly a negative tendency, short hours and weeks as well as unpaid leaves can be used to retain workers during an economic downturn. These forms of employment in the conditions of the economic crisis are an alternative to unemployment, which gives companies the opportunity to significantly reduce the cost of labour during a difficult economic period. In 2008-2009, due to the use of such options by employers, it was possible to save more than 900 thousand jobs, which employed 10% of all employees [15, p. 138].

In the transportation and logistics industry in 2019, there were branches where such forms of flexible employment were not used at all – postal and courier services and water transportation. In the transportation and logistics industry in 2019, there were branches where such forms of flexible employment were not used at all – postal and courier services and water transportation. We assume that it was due to the fact that there was a high demand for their services generated by the population or the state. Relatively low figures were found for air transport and land and pipeline transport.

The highest figures for short hours and short weeks were registered in warehousing and supporting services comprising approximately 82% of the total number of employees put on short time. The number of people on unpaid leave was also the highest. It could also be indicative of some sort of a recession in the field.

It should also be mentioned that in the second quarter of 2020, in Ukraine, the Corona crisis and nationwide lockdown closed lots of enterprises, facilities, and business operations resulting in a sudden transport suspension. So, for this period a significantly greater number of transport professionals was forced to work short weeks or were put on unpaid leave.

The next criterion to be analyzed is salary received by full-time workers by the lines of business in 2019 (table 4).

<table>
<thead>
<tr>
<th>Line of business</th>
<th>2019, per full-time employee, UAH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land And Pipeline Transport</td>
<td>10705</td>
</tr>
<tr>
<td>Water Transport</td>
<td>13057</td>
</tr>
<tr>
<td>Air Transport</td>
<td>27300</td>
</tr>
<tr>
<td>Warehousing And Supporting Services In the field of Transport</td>
<td>12954</td>
</tr>
<tr>
<td>Postal And Courier Services</td>
<td>5993</td>
</tr>
</tbody>
</table>

So, in Ukraine, in the transportation industry, the most well-paid jobs were in the aviation sector. Taken into account that the average exchange rate of the US dollar to the Ukrainian hryvnia was 25.8 hryvnias per one US dollar, then, in dollar terms, the average aviation professionals’ monthly salary was 1058 US dollars, for water transport workers it was 506 US dollars, for jobs in warehousing and supporting services the average monthly salary was 490 US dollars, for land and pipeline transport these figures were 415 US dollars, and, finally, in Postal And Courier Services sector, workers received approximately just 232 US dollars.

Of course, the amount of the salary depends on the required qualification, the functions performed by professions, duties involved as well as the accumulated period of work. However, Ukrainian professionals still get less money than their foreign colleagues.
For instance, according to the 2019 StepStone salary annual report, in Europe “regardless of the occupational group, the aviation is in sixth place with an average gross annual salary of €66,188 (£5,515 or $6,531 a month). Engineers come seventh in the industry comparison with €66,840 (£5,570 or $6,596 a month), in purchasing and logistics third with €59,178 (€4 931 € or $5,839). The industry is particularly attractive in the technical professions, where employees earn a proud €52,507 (£4 375 or $5,181) gross annual average” [17].

5. Conclusions

The successful development and formation of market mechanisms in Ukraine significantly depend on the dynamic development of the transportation and logistics industry, the purpose of which is to create favorable conditions for the functioning of all the sectors of the country’s economy. One of the main factors contributing to this sector growth, along with the country’s general social and economic development level, is human capital.

In Ukraine, the transportation and logistics market is developing. The biggest branches with the highest number of employees are warehousing and supporting services and land and pipeline transport with courier and postal services, air and water transport being the third-, fourth- and fifth-largest sectors of the industry. However, the analysis of the labour movement data shows that the transportation field is already experiencing an imbalance of newly hired workers as compared to those leaving their jobs potentially leading to transport professionals’ shortage. This tendency can be indicative of the need to attract more candidates, especially skilled young people.

The basic reason for the described imbalance can be that the compensation package, in most cases, is not competitive; there is a lack of interest in the field or the lack of awareness of prospects of the industry as well as transportation and logistics functions.

In order to address this issues, it has to be undertaken a wise state strategic, financial, educational, and promotion policy, since transport technology and highly skilled and qualified transport professionals are one of the key resources for Ukraine to become a full member of the global community and a country with an advanced economy.

References

Важливість підготовки фахівців з транспортних технологій з огляду на статус професії на українському ринку праці

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Стаття присвячена обґрунтуванню важливості підготовки фахівців з транспортних технологій з огляду на оцінку поточної ситуації з робочою силою на ринку транспортних та логістичних послуг в Україні. Метою статті є оцінка економічних причин підготовки фахівців транспортних технологій шляхом аналізу статусу цих фахівців на ринку праці України за такими параметрами: середня кількість працівників за напрямами діяльності за квартал, рух кадрів, середньомісячна заробітна плата штатних працівників за напрямами діяльності за квартал у 2019 рік. Використовуються методи системно-структурного аналізу, систематизації, порівняння та узагальнення відповідних джерел. Отримані результати полягають у виявленні суперечностей в Україні між фактичними потребами економіки у професіоналах транспортної галузі, економічним потенціалом, який характеризується транспортним сектором, та фактичною кількістю фахівців, негативними тенденціями руху робочої сили та низьким рівнем компенсації за трудову діяльність у транспортному секторі. Дискусія зосереджена навколо причин такого стану речей – загального рівня економічного розвитку України, відсутності інтересу до галузі чи недостатньої обізнаності щодо її перспектив. Зроблено висновок щодо ряду важливих кроків, які слід вжити для покращення ситуації.

Ключові слова: освіта, транспортні технології, економічне обґрунтування, стан робочої сили, кількість робітників, рух кадрів, середньомісячна заробітна плата
I. Lebid. The Importance of Transport Technology Professionals’ Training through the Prism of their Status in the Ukrainian Labour Market

И. Г. Лебедь

Важность подготовки специалистов по транспортным технологиям исходя из статуса профессии на украинском рынке труда

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Статья посвящена обоснованию важности подготовки специалистов по транспортным технологиям, учитывая оценку текущей ситуации с рабочей силой на рынке транспортных и логистических услуг в Украине. Целью статьи является оценка экономических причин подготовки специалистов по транспортным технологиям путем анализа статуса этих специалистов на рынке труда Украины по следующим параметрам: среднее количество работников по направлениям деятельности за квартал, движение кадров, количество работников, которые находились в условиях вынужденной неполной занятости, среднемесячная заработная плата штатных работников за 2019 год. Используются методы системно-структурного анализа, систематизации, сравнения и обобщения соответствующих источников. Полученные результаты заключаются в выявлении противоречий в Украине между фактическими потребностями экономики в профессионалах транспортной отрасли, экономическим потенциалом, которым характеризуется транспортный сектор, и фактическим количеством специалистов, негативными тенденциями движения рабочей силы и низким уровнем компенсации за трудовую деятельность в транспортном секторе. Дискуссия сосредоточена вокруг причин такого положения вещей – общего уровня экономического развития Украины, отсутствие интереса к отрасли или недостаточной осведомленности о ее перспективах. Сделан вывод о ряде важных шагов, которые следует предпринять для улучшения ситуации.

Ключевые слова: образование, транспортные технологии, экономическое обоснование, состояние рабочей силы, количество рабочих, движение кадров, среднемесячная заработная плата

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