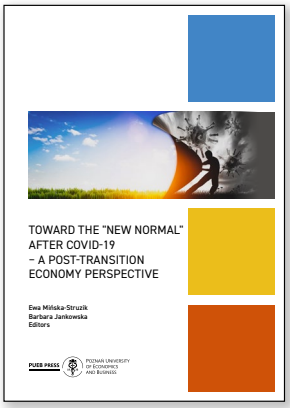

TOWARD THE "NEW NORMAL" AFTER COVID-19 – A POST-TRANSITION ECONOMY PERSPECTIVE

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2. Future competences in times of an economic crisis

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Abstract

Purpose: The aim of the chapter is to present the competence patterns before and during the economic crisis and to determine the importance of individual competences for doing business in a turbulent environment. In many sectors of the economy, global changes triggered by Covid-19 called into question the use of existing sets of competences needed to run businesses effectively in supply chains. The continuous improvement of supply chains – or lean and agile management – will no longer work in current conditions. Faced with an increasingly unstable economy triggered by a global pandemic, many economists ask whether the existing competence patterns in companies or supply chains remain appropriate and proper for the current economic situation.

Design/methodology/approach: In 2017, a survey was conducted among selected experts in the pharmaceutical sector. The same questionnaire distributed in September 2020, during the Covid-19 pandemic. The experts were highly qualified managers employed in transnational companies. The 10 respondents were asked to indicate selected competencies. The choice of the pharmaceutical sector was motivated primarily by its specific characteristics as it is particularly important not only economically but also socially, by providing life-saving medicines.

Findings: Technical competences are becoming the necessary ones. This is due to the need for self-sufficiency in lockdown situations, when it is difficult to find external employees and the possibility of outsourcing skills. In the case of managerial competence, it is clear that creativity and entrepreneurial thinking have increased in importance. When analyzing social competences, what comes to the fore is diversity of intercultural skills: foreign language skills, the ability to compromise, the ability to transfer knowledge, and finally, the ability to adapt to change.

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Originality and value: This chapter answer what competences seem necessary for future managers in the pharmaceutical industry in a turbulent environment, which is crucial for research and teaching centers who seek to educate future managers at the highest level of specific competences and skills. Due to the dynamic development of the industry, the text identifies the needs in the areas of technical, managerial, and social skills.

Keywords: future competences, economic crisis, technical, managerial and social skills.

2.1. Introduction

In many sectors of the economy, the global changes triggered by the Covid-19 pandemic have called into question the use of existing sets of competences needed to effectively run businesses in supply chains. The continuous improvement of supply chains or lean and agile management no longer work under the current conditions. The trends of shortening supply chains, keeping security stocks as low as possible, and optimizing costs for all links have led to an economic disaster in the face of the global pandemic. Currently, changes are becoming faster and more unpredictable. Businesses must respond very quickly to the challenges and opportunities of the business world. Despite the enormous progress in the industry, managers constantly face new challenges. In addition, the upheavals and crises of the last decade have made it clear that companies, sectors, and economies cannot assume the sustainability of a stable, long-term economic environment. Forecasts of future developments, based on an analysis of historical patterns, are currently unlikely and inadequate within the rapidly changing situation on local, international or global markets. Uncertainty and market distortions require decision-makers to rethink potential business or supply chain management alternatives in such a turbulent environment.

Faced with an increasingly unstable economy triggered by the global pandemic, many economists ask today whether the existing competence patterns in companies or supply chains are still appropriate in the current economic situation. The qualifications and skills of the skilled labor, which are required to fulfil the tasks occurring in a factory of the future, will differ as well (Kowalski & Juszczyński, 2013; Kłosowski, Gola, & Świć, 2016; Hirsch-Kreinsen, 2014). In Industry 4.0 and uncertain environment, dynamic business and engineering processes enable last-minute changes to production and deliver the ability to respond flexibly to disruptions (Jasiulewicz-Kaczmarek, Saniuk & Nowicki, 2016; Waszkowski, Kiedrowicz, Nowicki, Wesolowski, & Worwa, 2016). The aim of this chapter is to present competence patterns before and during economic crises so as to determine the importance of individual competences for doing business in a turbulent environment.

This chapter is to answer the following question: what competences seem necessary for future managers in the industry in a turbulent environment, during the Covid-19 pandemic? The answer to this question is crucial for research and teaching centers, whose aim is to educate future managers at the highest level of the specific competences and skills. Due to the dynamic development of the industry, what is necessary is the identification of needs in the areas of technical, managerial, and social skills. The chapter is divided into two main parts. The first part is a theoretical introduction to the identification of key competences, which presents and discusses three basic categories of competence: technical, managerial, and social. The second part presents the methodology of the research conducted and then shows and interprets the results.

2.2. Future competencies identification

Knowledge is considered to be the most precious asset of modern organizations. It constitutes specific cultural capital which presents much higher value than material goods. Currently, managers' knowledge is decisive for outstanding (key) competencies of a company. We understand competence as a multifaceted phenomenon. Research on competences has mainly followed three approaches developed independently: behavioral, functional, and holistic/multi-dimensional. Knowledge becomes a key determinant of the development potential of enterprises (Łupicka & Grzybowska, 2016). A competency is more than just knowledge and skills. It involves the ability to meet complex demands, by drawing on and mobilizing psychosocial resources (including skills and attitudes) in a particular context. Depending on the degree of diversity and complexity of the specific conditions encountered in the work, the acquisition of relevant competences requires more or less time. According to the literature, I identified three main categories to classify core managerial competences. First, technical competences comprise all job-related knowledge and skills, e.g. media skills, coding skills, and statistical command. Technical skills are abilities an individual acquires through practice and learning (Technical Job Skills). Second, managerial competences include all skills and abilities for general problem-solving and decision-making, e.g. analytical abilities, and research skills, and conflict- and problem-solving. Third, social competencies include an individual's social values and motivations, e.g. the ability to transfer knowledge, leadership skills, the ability to work in a team. Social competence is the foundation upon which expectations for future interaction with others are built, and upon which individuals develop perceptions of their own behavior (Łupicka, Konecka, & Grzybowska, 2018). Individuals need a wide range of competences in order to face the complex challenges of the modern world. This study focuses

on exploring the technical, managerial, and social competences of future managers. Based on existing studies and analyses, a total of eight competences were identified (Koeffer, 2015; Nelson & Horvath, 2017; Relich, 2015; Stoermer, et al., 2014; Grzybowska & Łupicka, 2017; Shirani, 2016) Competences, discussed and selected for analysis, are presented below.

Table 1. Technical, managerial, and social competences, indispensable in the pharmaceutical sector

Technical competences		
1	IT knowledge and abilities	Information technology is a growing field. Commonly referred to as IT, there are many job titles in the field.
2	Knowledge management	Good knowledge management does not just happen. To ensure that organizations can acquire, create, organize, share, use, and build on the knowledge that is needed for their successful performance requires the right skills.
3	Computer programming/coding abilities	One of the basic skillsets an employer will seek is the ability to write code. Writing code takes more than just proficiency with the coding language, it requires logical thinking, problem-solving, integrating different technologies, and having a broad understanding of information systems.
4	Data and information processing and analytics	Data science and analytics are among the most demanded and fast-growing disciplines. However, because the field straddles boundaries of many disciplines and its skillset continues to evolve, it is often difficult to delineate its specific skillset and competencies.
5	Specialized knowledge of manufacturing activities and processes	Specialized knowledge must be expressed in terms of "common knowledge."
6	Organizational and processual understanding	Important competences include a strong command of business workflow, knowledge management, feasibility assessment, data-driven change leadership, and business impact assessment.
7	Interdisciplinary / generic knowledge about technologies	Expert performance draws on knowledge that is hard to express and structure explicitly. Information and knowledge have dimensions which are never recorded but which are powerful determinants of organizational behavior.
8	Statistical knowledge	Statistical analysis refers to the core capability of analyzing data for insights and solutions that address business challenges. Typically, this is done using advanced knowledge of statistics, data visualization, and some algorithmic programming.

Table 1 cont.

Managerial competences		
1	Creativity	Creativity is becoming key focus area for employers looking for twenty-first-century employees. Creativity is characterized by the ability to perceive the world in new ways, find hidden patterns, make connections between seemingly unrelated phenomena, and generate solutions.
2	Entrepreneurial thinking	Entrepreneurial thinking skills refer to the ability to identify marketplace opportunities and discover the most appropriate ways and time to capitalize on them. It is more like a state of mind that opens your eyes to new opportunities.
3	Problem solving	Solving problems involves both analytical and creative skills. Analytical or logical thinking includes skills such as comparing, evaluating and selecting. It provides a logical framework for problem solving.
4	Conflict solving	Resolving conflicts is a key part of a manager's role. Managing and resolving conflict requires emotional maturity, self control, and empathy. Resolving conflict in a positive manner is a skill than can be developed and practiced.
5	Decision making	Decision making is the process of making choices by identifying a decision, gathering information, and assessing alternative resolutions. Decision-making is an integral part of modern management.
6	Analytical skills	Analytical skills are the thought processes required to evaluate information effectively. Analytical skills are the ability to visualize, gather information, articulate, analyze, solve complex problems, and make decisions.
7	Research skills	Research skills can be from need to be able to use reliable sources for continuous learning in changing environments. Being able to provide in depth information and advice on a given topic is an important skill.
8	Efficiency orientation	An "efficiency" approach is one that stresses the efficient use of resources as the main determinant decision and action. Efficiency orientation is inevitable.
Social competences		
1	Intercultural skills	Intercultural competences are response to the existence of cultural diversity; can be understood as resources put to work during intercultural dialog (to use various forms of communication). Knowledge of many cultures allows for effective negotiations.

Table 1 cont.

2	Language skills	Language skills allow for establishing cooperation with foreign partners, which increases the possibilities for company growth through internationalization.
3	Communication skills	Communication skills belong to the most important competencies. It is the ability to listen without prejudice and send convincing messages. Especially important thing here is so-called emotional intelligence, which every manager should develop.
4	Leadership skills	Leadership skills focus on inspiring employees, directing them, and mastering methods of effective persuasion.
5	Ability to be compromising and cooperative	The ability to be compromising and cooperative means experiencing feelings from the point of view of other employees and trade partners.
6	Ability to work in a team	The ability to work in a team is primarily the ability to secure cooperation between all members of the group to achieve a collective goal.
7	Ability to transfer knowledge	The ability to transfer knowledge is one of the most difficult ones to achieve. It is also the ability to sense the need for growth in other people and to develop abilities in employees.
8	Accepting change	Accepting change is related to the ability to initiate changes or to manage them. It also means mediating in the implementation of changes in a way that does not cause disputes.

Source: (Grzybowska & Łupicka, 2017b).

2.3. Research methodology

In 2017, a questionnaire survey was conducted among selected experts in pharmaceutical sector (Grzybowska & Łupicka, 2017b). The same questionnaire survey was carried out in September 2020, during the pandemic. These experts were high qualified managers employed in transnational companies. Respondents were asked to indicate selected competences. Ten experts filled the questionnaire. For the purpose of study, I selected the pharmaceutical sector. The choice was motivated primarily by its specific characteristics. The pharmaceutical sector is important not only economically but also socially, as it provides life-saving drugs. This is particularly important in view of the changes to Poland's demographic structure; the proportion of people aged over 60 increased from 19% in 2014 to around 30% in 2030). There are about 100 manufacturers of pharmaceutical products in

the country. The Polish pharmaceutical market is characterized by a traditionally high share of generic drugs. Nevertheless, this sector is one of the main industries providing innovation in the Polish economy. Research and development projects concerning the pharmaceutical industry – including biotechnology – are conducted in over 100 scientific institutions. Most of the R&D projects, including over 70% of all biotechnological R&D projects, concern the development of innovative products (DELab UW, PZPPF, 2015).

In the face of the pandemic, the pharmaceutical sector has been confronted with a huge number of disruptions to the proper functioning and breaking of global supply chains. One of the many problems is the availability of containers for shipping; some of the containers that arrived in China could not return from that country, which reduced their availability for subsequent shipments. Another threat was the limited availability of aircraft for air shipments, including increased transport costs. To this day, many suppliers still report the inability to supply raw materials and components for production. The closure of country borders, e.g. in India, where there is a large number of Active Pharmaceutical Ingredients (API) suppliers, meant that none of the factories received the necessary raw materials, which meant rationing the existing amount of raw material that already is in the supply chain. Table 2 shows the results of the survey in 2017 and 2020 carried out among respondents-practitioners who were asked to assess the future technical, managerial, and social competences, indispensable in the pharmaceutical sector.

Table 2. Comparative analysis

		2017		2020	
	Technical competencies	**Arithmetic mean**	**Standard deviation**	**Arithmetic mean**	**Standard deviation**
1	IT knowledge and abilities	1.43	0.53	3.00	0
2	Knowledge Management	3.57	0.98	1.83	0.98
3	Computer programming/ coding abilities	1.14	0.38	1.00	0
4	Data and information processing and analytics	4.14	0.69	4.66	0.51
5	Specialized knowledge of manufacturing activities and processes	1.71	0.48	2.66	0.51
6	Organizational and processual understanding	4.14	0.90	2.83	0.75

Table 2 cont.

		2017		2020	
7	Interdisciplinary / generic knowledge about technologies	3.14	1.00	2.16	0.40
8	Statistical knowledge	1.71	0.76	2.00	1.09
	Managerial competences	**Arithmetic mean**	**Standard deviation**	**Arithmetic mean**	**Standard deviation**
1	Creativity	2.57	0.53	4.05	0.81
2	Entrepreneurial thinking	3.57	0.79	4.50	0.54
3	Problem solving	4.86	0.38	4.66	0.40
4	Conflict solving	4.71	0.49	4.50	0.54
5	Decision making	5.00	0.00	5.00	0.00
6	Analytical skills	4.14	0.90	3.83	0.40
7	Research skills	2.29	1.38	1.50	0.83
8	Efficiency orientation	2.29	1.38	3.33	0.75
	Social competences	**Arithmetic mean**	**Standard deviation**	**Arithmetic mean**	**Standard deviation**
1	Intercultural skills	1.86	0.90	3.93	0.40
2	Language skills	4.57	0.53	5.00	0.54
3	Communication skills	4.86	0.38	4.83	0.40
4	Leadership skills	5.00	0.00	5.00	0.00
5	Ability to be compromising and cooperative	4.57	0.53	3.83	0.40
6	Ability to work in a team	4.86	0.37	4.50	0.54
7	Ability to transfer knowledge	4.86	0.38	2.33	0.51
8	Accepting change	4.86	0.38	5.00	0.00

Source: Own elaboration based on (Grzybowska & Łupicka, 2017b).

As far as technical competence is concerned, there is a big change: IT knowledge and abilities, specialized knowledge of manufacturing activities and processes, knowledge management, and organizational and processual understanding.

In the case of the first two, the importance of these competences in the pandemic has doubled. IT skills and general knowledge of technologies are becoming necessary competences. This is due to the need for self-sufficiency in lockdown situations, when it is difficult to find external employees and the possibility of outsourcing these skills. The results of two consecutive competences are surprising. In the case of knowledge management and general knowledge of organizations, we have a significant decrease in 2020 compared to 2017. This may be due to the focus on other much more important competences in a pandemic. Knowledge management is a competence that is constantly developed in a stable economic environment. When the environment becomes turbulent and unstable, it is difficult to talk about developing knowledge, employees focus primarily on the competences they have now, and they must fill the gaps caused by the crisis in production or transport. In the case of managerial competence, it is clear that creativity and entrepreneurial thinking have increased in importance. At the time of interruptions to the continuity of logistics processes caused by an economic crisis, it is very important to react quickly through creativity and fast analytical thinking and decision-making. Other competences such as conflict or problem-solving and research skills are slightly different from those of the years under examination. It is invariably important to make decisions, about which managers were unanimous in both 2017 (Grzybowska & Łupicka, 2017b) and 2020, as the result of the standard deviation indicates. Analyzing social competences, we can see a diversity of intercultural skills, foreign language skills, the ability to compromise, the ability to transfer knowledge, and finally the ability to adapt to change. Intercultural skills play an important role during the pandemic. Among other things, this may be due to the impossibility of meeting face-to-face during negotiations. In this case, the knowledge of individual cultures and customs allows the negotiation process to run smoothly without direct contact with trade partners. The same applies to knowledge of foreign languages when you must communicate online at any given time with a trader on the other hemisphere and there is no time to hire interpreters. The importance of adaptability to change also increased, which is obvious when companies must operate in an unstable economic environment. In the case of knowledge transfer, the importance of this competence has decreased significantly. Studies conducted in 2016 on knowledge conversion indicate the low level of knowledge transfer. If market or sociopolitical changes are more dynamic than the competences and capabilities of the participants in the system built, they will not survive in a turbulent market; hence the need for continuous development and learning of participants in supply chains (Grzybowska & Łupicka, 2017a). Earlier studies only confirm the results of the 2020 study, while the unchanging importance of leadership skills is also confirmed here in the unanimous response of managers.

2.4. Conclusions

The current situation on the global market indicates huge distortions in global supply chains. For example, the lack of availability of many drugs is only the so-called visible effect of the global disruption of supply chains caused by the pandemic. In addition, we have hidden effects with costs that have not yet been quantified. Certainly, one possible solution in the pharmaceutical sector will be the diversification of supply, and the existing single sourcing strategies will be replaced by multiple sourcing solutions. A good solution will be to monitor global supply chains, making greater use of blockchain technology, which allows real-time control of supplies, or artificial intelligence. With up-to-date knowledge of disruption, companies will control the allocation of stock. Another solution is to rewrite existing contracts with suppliers, save the possibility to terminate a contract in the case of unpredictable effects, e.g. force majeure, which gives the possibility to reduce costs and search for another supplier. This type of action will allow businesses to respond faster and more effectively in times of crises such as the covid-19 pandemic. In the past, there have been similar disruptions in supply chains such as earthquakes or volcanic eruptions, which caused many companies to realize that the disruption in one link of the supply chain affects the inability to deliver finished products to the final customer. Therefore, e.g. the automotive and pharmaceutical industries value risk management. In order to be able to meet such requirements, it is necessary to redefine the importance of technical, managerial, and social competences. Many companies created a new position of risk manager or creative manager. After the pandemic, pharmaceutical companies will face the challenge of how to expand their list of strategic raw material suppliers to reduce the risk of shortages in times of crisis. Research on the use of substitutes for raw materials that can be produced by local suppliers is likely to start, indicating the need for more creativity and entrepreneurial thinking.

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CONTENTS