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## **SKILLS INDEX AS AN INNOVATIVE APPROACH TO MANAGING SPECIALIST QUALIFICATIONS**

During the years of the COVID-19 pandemic and martial law, there have been fundamental changes in the role and perception of skills, both in society of countries and in their economy. Digital technologies have played a pivotal role in accelerating skill development across various domains such as education, the workplace, entertainment, communication, retail, and consumer services. Consequently, there arises an urgent need to research and adapt skills and competencies to these changing landscapes. Today, providing up-to-date education and professional (re)training for individuals of all ages, genders, and functional responsibilities is more crucial than ever. In order to make effective proposals in the field of education and training, there is a need to assess the real state of skills inherent in modern workers.

The article is devoted to the study of an innovative approach to managing the skills of a specialist. The calculation of the skills index allows to determine the level of soft, hard, self and digital skills of a specialist and group them into three conditional sectors: blue, yellow and pink. The expert survey found that the skills index of a specialist serves as a coefficient indicator enabling a clear assessment of the level of skills in four groups of skills (soft, hard, self and digital skills) and set a value from 0 to 1. The study found that the experts generally fell into the favorable range, as none of them received a value lower than 0.5. If a specialist falls into the pink sector, it indicates that the person has minimal skills, is monotonous and unable to make effective decisions. This study proved that it is advisable to evaluate a specialist's skills not only using qualitative but also quantitative methods, which allows identifying problems and developing hypotheses for their elimination. In addition, the study confirmed the relationship between different groups of specialist skills and the need for their synergy. The findings of this study can be used by business

managers to analyze and build models of staff competence. This, in turn, can aid in establishing cooperation between enterprises and stakeholders and building consumer confidence.

**Keywords:** *knowledge, coaching, management, personnel, potential, development, self-management*

**JEL classification:** *L20, M 12, M14, O32*

За роки пандемії COVID-19 і військового стану відбулися докорінні зміни ролі та сприйняття навичок, як у суспільстві країн, так і в їх економіці. Цифрові технології набули прискореного розвитку у навчанні, робочому середовищі, сфері розваг та спілкування, у ритейлі і обслуговуванні споживачів. Саме тому виникає потреба у дослідженні та зміні навичок і компетенцій, і сьогодні як ніколи раніше важливо забезпечувати актуальну освіту і професійну (пере)підготовку для всіх незалежно від віку, статі чи функціональних обов'язків. Для внесення дієвих пропозицій в галузі освіти та підготовки кадрів виникає потреба в оцінюванні реального стану навичок, які притаманні сучасному працівнику. Представлена стаття присвячена дослідженню інноваційного підходу в управлінні кваліфікацією фахівця. Розрахунок skills індексу дозволяє визначити рівень soft, hard, self і digital skills фахівця та згрупувати їх на три умовні сектори: блакитний, жовтий та рожевий. За допомогою експертного опитування було встановлено, що skills індекс фахівця – це показник у вигляді коефіцієнту, який дозволить чітко оцінити рівень навичок за чотирма групами навичок (soft, hard, self і digital skills) та встановити значення від 0 до 1. За результатами проведеного дослідження встановлено, що експерти потрапили до сприятливого діапазону, оскільки жоден із них не отримав значення даного індексу менше ніж 0,5. Потрапляння фахівця до рожевого сектору свідчить про мінімальне володіння особою будь якими навичками, одноманітність й неможливість приймати ефективні рішення. Це дослідження довело, що навички фахівця доцільно оцінювати не лише за допомогою якісних, але й кількісних методів, що дозволяє визначити проблеми і розробити гіпотези стосовно їх усунення. Крім того, дослідження підтвердило взаємозв'язок між різними групами навичок фахівця та необхідності їх синергії. Отримані результати можуть бути використані керівниками підприємств для аналізу і побудови моделей щодо компетентності персоналу. Це сприятиме налагодженню співпраці підприємств зі стейкхолдерами та формуванню довіри споживачів.

**Ключові слова:** *знання, коучинг, менеджмент, персонал, потенціал, розвиток, самоменеджмент*

**JEL classification:** *L20, M 12, M14, O32*

**Introduction.** The rapid changes in the external environment necessitate adapting to new business conditions to maintain a leading position in the personnel market. One such approach involves professional development, training, continuous learning, and seeking ways to enhance and optimize management processes. Whether it's the long-term operation of an enterprise in the market or a revolutionary startup, both scenarios demand professional competencies and relevant skills from the workforce. The development of soft skills, improvement of hard skills, and the acquisition and application of digital skills among specialists through online courses, gamification, team building, and various team activities are becoming increasingly important. There are ample opportunities to actively develop effective skills necessary for engaging with stakeholders, consumers, and

other participants in the internal and external environment in which the company operates.

In today's conditions, distinct features of soft and hard skills are observed, tailored for specialists in various professions. The definition of the content, categories, and requirements for soft and hard skills in terms of cultivating the necessary skills of a professional accountant is outlined in Kroon N et al. [1]. The study examines the balance between soft and hard skills needed for the successful performance of accountants at different stages of their professional journey. Specifically, the study is focused on issues related to career management and the development of social intelligence among accountants.

**The purpose of the article** is to develop an innovative approach to managing specialist qualifications by introducing a

skills index. Based on this goal, the paper addresses the following research tasks:

- summarizing research findings to substantiate the characteristics and components of soft, hard, self, and digital skills of a specialist;

- establishing the conceptual foundations of the specialist skills index to determine the level of knowledge and skills.

This will help in ranking the staff into distinct groups and developing a program to enhance the professional skills of each specialist within their respective group. In doing so, it becomes feasible to consider not only soft, hard, self, and digital skills but also pay attention to professional differences based on job descriptions or job maps.

**Literature review.** In the late 1950s of the twentieth century, the concepts of soft and hard skills were developed in military affairs when the US Army initiated a scientifically based approach to military training. Through this endeavor, it became evident that professional skills (hard skills) were paramount, but their execution required the application of universal competencies (soft skills). The distinction between soft and hard skills was articulated in the 1968 doctrine of the Military Training Design System, defining hard skills as those primarily related to working with machines and soft skills as those related to working with people and papers, as described by Parlamis J. et al. [2].

In the context of psychological research, in 1982, C. Harter proposed the concept of self-competence, which later transformed into the formation of skills for self-improvement and development, creative construction of one's own life are convinced that skill development and new technologies have the potential to transform the work of an accountant [3]. Given the multitude of tasks and technologies involved in the field of accounting, it is important to change and develop professional skills, especially digital skills.

The paper by Marrone M. et al. [4] discusses emerging technologies and their influence on the evolution of professional skills within the accounting domain. Financial technologies, such as blockchain, serve as the

foundation for digital currency. Presently, innovative approaches and expertise are applied in utilizing decentralized distributed ledgers to record transactions involving digital assets, as described by Munevar K et al. [5].

Chaudhari T [6] defines the role and approaches to the formation of soft skills in the training and professional activities of service professionals. It has been found that employers are placing growing emphasis on the acquisition of soft skills by prospective employees, valuing not only their professional knowledge, skills, and competencies but also their soft skills.

Romat Y and Biliavska Y [7] mention the skills required of a category manager in their study, as the primary objective of his role is to expand the reach of the customer base, optimize customer satisfaction, and enhance the efficiency of supplier-consumer interactions, thus boosting labor productivity through cost reduction. These objectives can be attained by focusing on the soft, hard, self, and digital skills of a specialist.

The Fourth Industrial Revolution and the transition to Society 5.0 have led to the formation of digital skills. The virtualization of processes and systems, digitization of documents, expansion of cybersecurity and cyberhygiene regulations, expansion of opportunities for sectoral cooperation through rapid information processing, and the use of flexible and integrated networks in enterprise operations require proficiency in digital literacy and relevant competencies. Table 1 summarizes the components of soft, hard, self, and digital skills of a specialist.

Currently, the education system is set up in such a way that future specialists can exhibit skills across various domains and adeptly integrate them when required.

The trend towards narrow specialization and delineation between individual professions and specialties has become less pertinent. There is a growing need to acquire specific knowledge, skills, and abilities that extend beyond core professional competencies (hard skills) to encompass essential competencies of today. These include critical and creative thinking, talent

Table 1

## Components of soft, hard, self and digital skills of a specialist

	Hard skills	Soft skills	
Professionalism	<ul style="list-style-type: none"> <li>- professionalism;</li> <li>- knowledge of foreign languages;</li> <li>- data-driven decision-making;</li> <li>- machine control;</li> <li>- work with software;</li> <li>- clear calculation;</li> <li>- work for the result.</li> </ul>	<ul style="list-style-type: none"> <li>- creativity;</li> <li>- adaptability;</li> <li>- systematic and analytical thinking;</li> <li>- conflict management;</li> <li>- project management;</li> <li>- communication process;</li> <li>- customer focus;</li> <li>- leadership;</li> <li>- time management,</li> <li>- flexibility.</li> </ul>	Universality
	Self skills	Digital skills	
Self-improvement	<ul style="list-style-type: none"> <li>- deep understanding of oneself;</li> <li>- ability to develop;</li> <li>- emotion management;</li> <li>- talent development;</li> <li>- training and development.</li> </ul>	<ul style="list-style-type: none"> <li>- compliance with the rules of cyber hygiene;</li> <li>- development of knowledge in the field of cybersecurity;</li> <li>- knowledge and mastery of digital descriptors - orientation in the digital space;</li> <li>- ability to work in the digital space;</li> <li>- work in social networks, digital systems, educational and business portals.</li> </ul>	Digitalization

Sources: compiled by the authors

and emotion management, initiative and responsibility, digital literacy, adaptability, innovation, flexibility, and adaptability.

For instance, in 2020, the World Economic Forum released a report titled “Future Jobs 2025,” which projected that by 2025, nearly 52% of all tasks would be executed by robots and artificial intelligence, compared to just 29% in 2018. The report also provided an analytical forecast of the skills anticipated to be in demand by 2025. These include: analytical thinking and innovation; active learning and learning strategies; complex problem solving; critical thinking and analysis; creativity, originality and initiative; leadership and social inclusion (influence); technology: use, monitoring and control; technology: development and programming; resilience, stress resistance and flexibility; reasoning, problem solving and idea generation [8]. Sona K. Jasani and Norma S. Saks [9] investigate the importance of forming and developing soft skills in medical students in higher education. The authors analyze individual, communication and managerial characteristics and identify the most popular ones. They propose integrating various training sessions and seminars on soft skills development into the educational curriculum.

Douglas K. and Johnson B. [10] describe the essence and theoretical foundations of this concept as “...professionally important characteristics of a future legal professional”, taking into account modern professional requirements for future professionals.

Karataş K. and Arpacı I. [11] analyze the concepts of “hard” and “soft” skills, as well as self-skills of individuals that have evolved in the context of the COVID-19 pandemic. It is noted that self-skills form the inner core of all competencies, upon which all others are built. Self-skills encompass the ability to independently cultivate personal and professional traits; these are the competencies of one’s own potential and development, as well as the creative construction of one’s own life. Key self skills for a teacher include: the ability to self-reflect and conduct independent research; the ability to set goals and plan work; the ability to prioritize; the ability to manage emotions and desires; openness to new things and adaptability to constant change; the ability to inspire students. An interesting perspective on skills development has been provided by Ester van Laar et al. [12], who note that innovation starts with people, and in the fast-

changing knowledge economy, 21st century digital skills determine the competitiveness and innovation capacity of organizations. The study's primary objectives were: (1) to explore the relationship between 21st century skills and digital skills; and (2) to create a 21st century digital skills framework with conceptual dimensions and key operational components focused on the knowledge worker.

However, despite the relevance of the above issue, there is a scarcity of studies presenting research on digital skills. Digital literacy contributes to accelerating economic growth and attracting investment, fostering digitalization in production and entrepreneurship, modernizing and creating high-tech industries, increasing competitiveness, and providing access to the opportunities offered by the digital world.

In a few years, the list of the most sought-after professions in the market may change completely, and entire sectors of the economy may emerge, reach their peak, or disappear. The traditional Japanese management system is also undergoing changes, and longstanding model of lifetime employment is diminishing in relevance [13]. Professionals across various industries often wonder what essential skills are needed to grow and prosper in business. Debates continue about the choice between collaboration, adaptability, or professionalism with technical skills. Digital technology is evolving at an incredible pace, continuous management innovations and global hypercompetition have created an environment in which any field of activity or business model can undergo significant changes. It is the influence of these factors that reshapes the list of competencies required of a specialist.

**Research results.** The development of personal and professional skills through education, training and meaningful work are key factors in the economic success of a state, individual well-being and social cohesion. The impact of new technologies, the formation of innovative sectors and markets, and the development of economic subsystems increasingly demand new

skills from personnel. The last decade of technological progress has been characterized by the possibility of massive job displacement, an unbearable shortage of skilled personnel, and competition spurred by artificial intelligence. The next decade will require rethinking the key elements of human resources management and finding opportunities to realize human potential under the influence of digitalization and globalization changes.

The methodological foundation of this study relies on a systematic approach, enabling the examination of a specialist's skills index. To calculate this index, it's imperative to construct a questionnaire comprising four skill groups: soft, hard, self, and digital. This will allow us to summarize the results (Table 2) and make calculations. Skills enumerated in the questionnaire are appraised for their importance via expert evaluation method ( $P_{emp}$ ). The list of skills and the weighting criterion should be adjusted for a particular study. In accordance with Table 2, each group is tasked with assessing personal skills from the provided list and assigning them a score ranging from 1 to 7 ( $N_i$ ).

The empirical score is a derivative of the skill's importance and is calculated using formula 1:

$$P_{emp} = C_i N_i, \quad (1);$$

where  $P_{emp}$  – empirical evaluation;  
 $C_i$  – importance of the skill;  
 $N_i$  – respondent's score, point.

The number of skills assessed can be any number, but should cover skills of different directions. It is necessary to determine the ratio of the empirical assessment obtained from the survey to the ideal capability score, which is defined as the product of the importance of the skill and the maximum possible score (the maximum possible score is 7) and is calculated using formula 2:

$$S_{ideal} = \tilde{N}_i \times B_{max}, \quad (2);$$

Table 2

Calculation of the skills index of a specialist

Skills	The importance of the skill $C_i$	Respondent's score, points $N_i$	Empirical evaluation $P_{emp}$	The maximum possible score $B_{max}$	Perfect opportunity assessment $S_{ideal}$
Group 1. <i>Hard skills</i>					
<i>Hs 1</i>	The weighting of each skill is determined by expert evaluation or ranking (Delphi method), taking into account that the total weighting factor = 1 for skills with of all four groups	Each component is assigned a score ranging from 1 to 7. 1 point is the least important statement, while 7 points is the most important statement	Calculated by the formula	The maximum possible score is 7 in the proposed answer options	Calculated by the formula
<i>Hs 2</i>					
<i>Hs 3</i>					
The choice of skills is made from Table 1.					
Group 2. <i>Soft skills</i>					
Group 3. <i>Self skills</i>					
Group 4. <i>Digital skills</i>					
Total	-	-	$\sum P_{emp}$	-	$\sum S_{ideal}$
<i>Skills index</i> ( $\sum P_{emp} / \sum S_{ideal}$ )					

Note. To evaluate the skills, respondents are offered seven possible answers, namely: I do not have this skill - 1 point; this skill is not needed in my life and work - 2 points; I am learning it - 3 points; I rather have this skill - 4 points; I sometimes use it - 5 points; I am completely impressed - 6 points; this is a trend of my present and future - 7 points.

Sources: developed by the authors

where  $S_{ideal}$  – perfect opportunity assessment;

$N_i$  – importance of the skill;

$B_{max}$  – maximum possible score.

The resulting ratio is the skills index. This index shows how the empirical assessment differs from the ideal assessment of capabilities; it is calculated as a ratio of the total number of assessments and characterizes the readiness of employees to

develop their abilities, skills, and knowledge. The calculation is based on formula 3:

$$I_{skils} = \frac{\sum P_{emp}}{\sum S_{ideal}}, \quad (3);$$

where  $P_{emp}$  – skills index;

$I_{skils}$  – empirical evaluation;

$S_{ideal}$  – perfect opportunity assessment.

The skills index of a specialist will range from a minimum of 0.5 to a maximum of 1. Lower values of this index indicate a lack of necessary skills, and it is also possible to see in which group of skills there are “bottlenecks”. However, a high index value doesn’t necessarily imply that a person is prepared to develop and adapt their skills. The creative and innovative abilities of employees, coupled with their awareness of the necessity for improvement, merely lay the basis for further changes. The possibility of realizing the innovative potential of employees depends on the competitiveness of the enterprise (its financial health, management policies, and the overall social and psychological microclimate within the team).

Based on the results of assessing the specialist’s skills index, Table 2 summarizes the final result, which is used to rank the staff or experts who participated in the survey (Fig. 1).

After assessing the skills index, specialists, experts, or employees are divided into three conventional sectors: blue,

yellow, and pink. The Blue sector includes people who have a wide range of skills (the index is greater than 0.5). Once in this sector, employees receive many benefits, such as bonuses, social packages, gifts, etc. This area continues to be actively developed. The “pink sector” encompasses people with an index value below 0.5, typically representing critical limits due to minimal skill levels. The intermediate sector consists of “promising employees” who constitute potential reserves and are actively engaged in developing their personal talents and abilities.

To test the presented methodology in the form of an expert survey, seven respondents (experts) with different social statuses were involved. Table 3 summarizes their data. In order to compare different skills, the classification criterion included people of different genders aged 25 to 55, with different professional skills and areas of interest, as well as with the purpose of interest. This approach will allow us to comprehensively assess the level of skills of representatives of different segments.

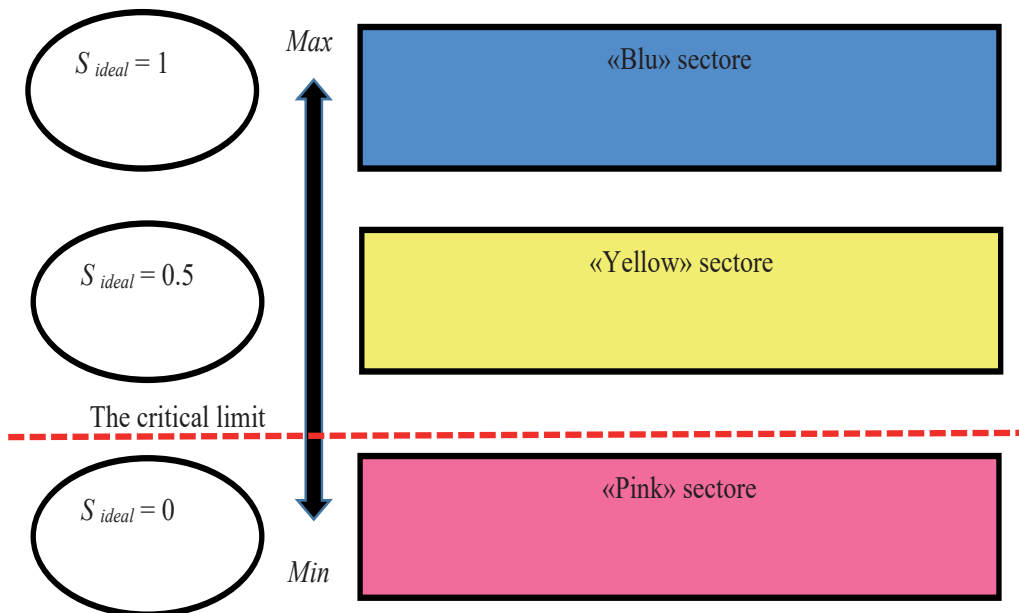


Fig. 1. The concept of ranking people by the skills index

Sources: developed by the authors

Portrait of the experts who took part in the skills index research

Classification features of a person	Age and income level	Characteristics of the person
Top manager, <i>CEO</i> <i>Expert 1</i>	Age 45, above average income	Spends a lot of time working or developing her business, looking for new stakeholders, and working on improving the range of goods or services. She does not participate in household chores. Considers management skills to be key and adheres to them without question on a daily basis
Office manager <i>Expert 2</i>	Age 34, above average income	Focused on online procurement, studies tenders, and mostly buys household goods online. Despite the pandemic and martial law, he mostly works in the office, not at home, and helps the Ukrainian armed forces with goods and donations. His dreams include the end of the war and the development of the country and its economy
MBA student <i>Expert 3</i>	Age 27, no stable income, no family and no children	Mostly visits regular grocery stores offline and only occasionally buys clothes and shoes through online platforms. He does not save much money: he is a wealthy person. From time to time, he works outside his specialty. Her dreams include developing her professional skills and traveling around the country
Volunteer <i>Expert 4</i>	Age 25, minimum income	During the pandemic and the war, self-interest is at a minimum. Mostly buys basic necessities offline. Almost never buys clothes or household appliances, but knows how to use a smartphone and laptop. His daily work is to help the Armed Forces of Ukraine. His dream is to return to life without the pandemic and war
An employee on parental leave <i>Expert 5</i>	Age 25, average income level	Confident online user to order goods or receive services. This allows them to save time and combine this work with household chores and raising children. Has a university degree and some experience in a non-managerial position. Her dreams include a well-organized life and healthy family members
Worker <i>Expert 6</i>	Age 55, income at the minimum wage level	Insecure laptop and smartphone user. Work schedule – scheduled shifts and no online work from home. Dreams of spending time with children, grandchildren and friends
A woman is a «multifaceted personality» <i>Expert 7</i>	Age 40, above average income	Manages to keep up on all life's «fronts». Prefers to purchase goods or services online. When choosing goods, they are guided by the criteria of quality, functionality and practicality. Takes care of the health and safety of family members, manages to perform functional job duties. He is also an active, conscious member of society: he donates and does his best to bring Ukraine's victory closer. Her dream is to reduce her level of multitasking and find a balance between work and leisure

Sources: developed by the authors

Given the likelihood that in the near future there will be significant changes in professions, whereby some may disappear or undergo transformation at the level of entire industries, experts have reached a consensus regarding the cognitive-psychological group of competencies. These competencies are regarded as personal internal skills that facilitate adaptation to a complex and unstable reality, thereby fostering success under such conditions. Critical thinking and the ability to learn and unlearn are prioritized

at the top of the list of essential industry competencies.

Socio-economic competencies involve communicating effectively with individuals contributing to successful teamwork, maintaining relationships within communities and networks, social cohesion, and stimulating the formation of different groups. Skills within this category, such as facilitation, co-creation, socio-emotional skills, and user-centered approaches are currently prioritized in most industries and



are projected to retain their status in the future. Technical knowledge is closely related to and driven by technological development, enabling maximum utilization of workplace digitalization potential. At a broader level, digital competence is gaining importance, with cybersecurity emerging as a prominent contemporary trend. Thus, we can conclude that rapid globalization processes and ongoing changes necessitate the continuous improvement and development of both personal and professional skills. Taking into account changes in organizational processes, consumer needs, technology, as well as professional knowledge and skills, it becomes evident that these skills become pertinent at all levels of an organizational structure of any organization.

Analysts agree that rapid changes anticipated by 2030 will require future specialists to possess additional knowledge and skills that cannot be substituted solely by professionalism or software. Consequently, self and digital skills are poised to become increasingly important. However, it is worth noting that, “soft” and “hard” skills have already proven to be key elements of management, without which effective enterprise management is hardly possible.

Cedefop once created the European Skills Index (ESI), which aims to measure the effectiveness of EU skills systems. However, the index measures the “distance to the ideal” of countries’ performance against each other. The ESI consists of three components: skills development, activation, and relevance, each assessing a distinct aspect of the skills system. The ideal score is scaled from 0 to 100, and then the result is determined as the EU Skills Index [14] using a comparative method and taking into account 15 indicators. While this method of assessing skills is convenient, it primarily assesses skills at the global level, enabling the assessment of the development and activation of skills at the level of education and the country’s labor market as a whole. However, the ESI does not allow to characterize and assess the skills of a specialist as a separate individual person.

In their work Mukarromah et al. [15] explore the possibility of determining the

impact of the principal’s managerial skills on the effectiveness of an Islamic high school. The research employs a quantitative approach utilizing the questionnaire survey method. The findings indicate that the principal’s managerial skills influence school performance. The results of significance tests for individual parameters reveal those managerial skills (conceptual, human and technical) impact school effectiveness by 72%, 75% and 62%, respectively. At the same time, managerial skills influence school performance by 77%. While the proposed method proves effective in assessing the skills of managerial staff, specifically the principal, it overlooks other important skill groups such as self and digital skills.

Carlton [16] provides an interesting perspective on the calculation of the cybersecurity skills index for non-IT professionals. The study used scenarios with practical tasks to measure and quantify the cybersecurity skills of non-IT professionals. The proposed method allows assessing digital skills of individual consumers who may not specialize in cybersecurity and cyber hygiene.

However, the existing methods fall short of providing a comprehensive evaluation of a specialist’s skill level. Therefore, it is pertinent to formulate a conceptual framework for calculating the skills index of a specialist.

Thus, the skills index of a specialist serves as a coefficient indicator enabling a clear assessment of the level of skills across various groups including soft, hard, self, and digital skills, derived from expert surveys. This approach helps in identifying skill levels and devising requisite training and development program. The method used to calculate the specialist skills index adopts a mixed approach integrating expert interviews, questionnaires and comparisons. The study requires a sample of expert respondents who possess a minimum of five years of experience and can work in any position and field of activity. In our view, talent management primarily encompasses HR management tasks related to recruiting highly qualified employees, integrating new

hires, and retaining staff to achieve current and future business objectives. Additionally, it involves identifying and nurturing specialists who exhibit professionally valuable qualities and skills, demonstrating high efficiency in their work activities. That is why effective knowledge and skills management at the enterprise entails creating conducive working conditions wherein employees' useful abilities, knowledge, and skills can be developed and effectively utilized. Modifying the corporate culture

and integrating specialist skills as a pivotal element plays a crucial role in this context. The experts selected for the study are convinced that their professional activities typically overlook the assessment and development of professional skills. Hence, they were keen to participate in the experiment. The processed questionnaires are summarized in Table 4.

The results allowed us to calculate an empirical estimate of ( $P_{emp}$ ) answers of each expert and calculate the skills index of the specialist (Fig. 2).

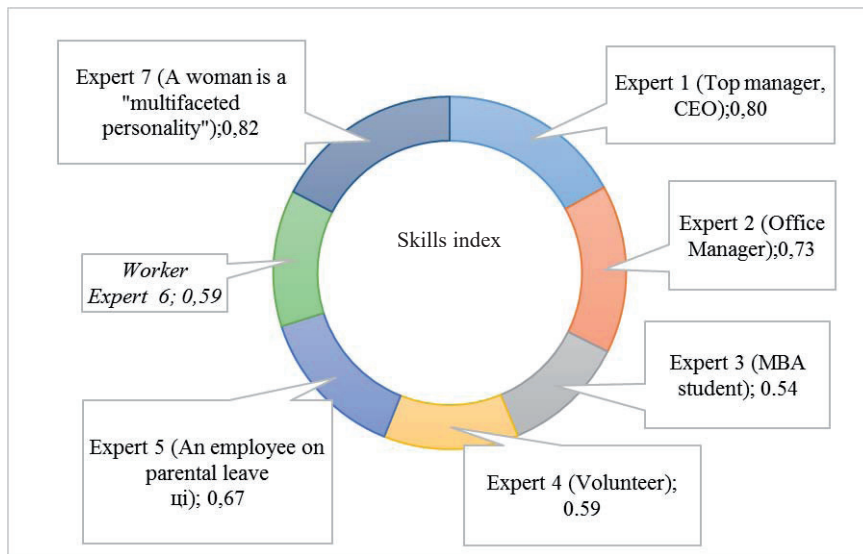
Table 4

**Generalized estimates of respondents/experts in the calculation of the specialist skills index**

Skills	$C_i$	Respondent's score. points $N_i$							Empirical evaluation $P_{emp}$							$S_{ideal}$
		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
<b>Group 1. Hard skills</b>																
Professionalism	0.1	7	6	3	6	2	6	7	0.60	0.30	0.60	0.20	0.60	0.70	0.60	0.7
Data-driven decision making	0.08	7	6	4	6	5	6	7	0.48	0.32	0.48	0.40	0.48	0.56	0.48	0.56
Working with the software	0.08	7	6	2	4	5	5	7	0.48	0.16	0.32	0.40	0.40	0.56	0.48	0.56
<b>Group 2. Soft skills</b>																
Creativity	0.1	7	6	4	2	5	2	7	0.60	0.40	0.20	0.50	0.20	0.70	0.60	0.7
Time management	0.08	7	5	4	7	6	5	7	0.40	0.32	0.56	0.48	0.40	0.56	0.40	0.56
Systematic and analytical thinking	0.07	7	6	4	5	6	4	6	0.42	0.28	0.35	0.42	0.28	0.42	0.42	0.49
<b>Group 3. Self skills</b>																
Managing emotions	0.1	5	5	5	5	5	5	4	0.50	0.50	0.50	0.50	0.50	0.40	0.50	0.7
Deep understanding of yourself	0.06	4	4	4	5	5	6	4	0.24	0.24	0.30	0.30	0.36	0.24	0.24	0.42
Talent management	0.07	4	4	5	5	5	6	5	0.28	0.35	0.35	0.35	0.42	0.35	0.28	0.49
<b>Group 4. Digital skills</b>																
Compliance with the rules of cyber hygiene	0.1	4	4	3	2	4	2	4	0.56	0.42	0.3	0.56	0.28	0.56	0.56	0.7
Work in social networks. digital systems. educational and business portals	0.08	3	5	5	1	6	2	6	0.40	0.40	0.08	0.48	0.16	0.48	0.40	0.56
Knowledge and mastery of digital descriptors	0.08	3	2	1	1	1	1	3	0.16	0.08	0.08	0.08	0.08	0.24	0.16	0.56
Total	-	-	-	-	-	-	-	-	5.63	5.12	3.8	4.1	4.7	4.16	5.77	Max=7

Note: In the table header, numbers 1-7 indicate the expert respondents selected for the study and described in Table 3.

Sources: calculated and summarized by the authors based on an expert survey of respondents



**Fig. 2. Generalized indicator of ideal opportunity assessment ( $S_{ideal}$ ) experts who participated in the study, skills index**

Sources: calculated and summarized by the authors based on an expert survey of respondents

Thus, the results of the skills index can be distributed according to the ranking of the three identified zones. Based on the study findings, it was found that the respondents were distributed between the “blue” and “yellow” sectors. This suggests that none of them obtained a low value for this index. Conversely, the “pink” sector does not allow for the consideration of an individual as a more or less competent specialist. This sector signifies minimal possession of any skills, suggesting monotony and an inability to make effective decisions. Fig. 4 shows that the “blue” sector includes a top manager (CEO), an office manager, and a woman described as a “multifaceted personality”, all of whom attained relatively high values in the specialist skills index. This can be attributed to their elevated levels of responsibility, mid-career age with accumulated experience, and ongoing professional development. They received the highest scores for their soft and hard skills.

For example, an employee on maternity leave falls within the intermediate zone with a value of 0.67. This is attributed to

the relevance of self skills tools for such individuals, since they are geared towards self-improvement and development of personal talents. While their soft and hard skills may also be at a relatively high level, the temporary professional disability renders these capabilities less relevant. The “yellow” sector, characterized by an average level of skills in the Specialist Index includes an MBA student, a volunteer, and an ordinary worker. This is due to the insufficient level of skills demonstrated by the aforementioned categories of workers. While an MBA candidate is still in the process of improving the and developing his/her skills, Generation Xers have not had ample exposure to technology and innovation to update the skills that are currently in trend. Additionally, there is a noticeable trend wherein all respondents exhibit the lowest scores in the development of their digital skills. Therefore, it is imperative to place greater emphasis on enhancing digital literacy and ensuring compliance with digital descriptors for both young and middle-aged professionals.

Skill development is a lengthy and dynamic process achieved through certain

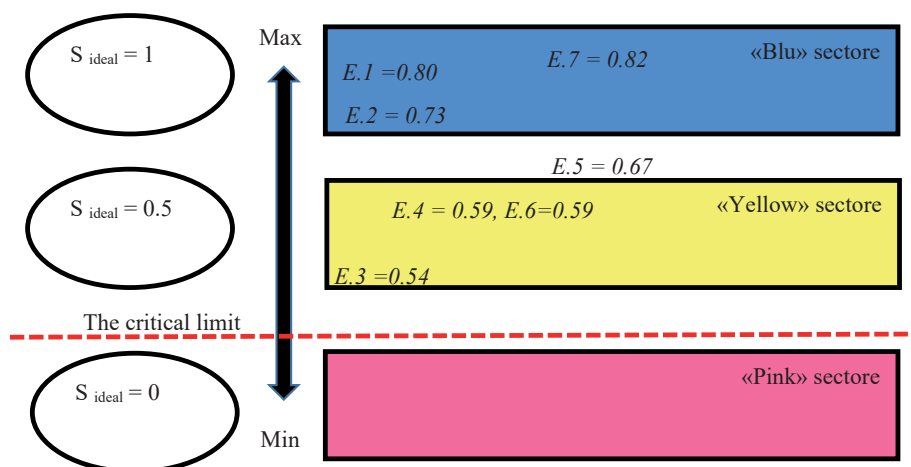


Fig. 3. Generalized results of the respondents' answers by skills index

Notes. Marks E.1-E.7 indicate respondents who participated in the survey and received a skills index in the range from 0 to 1 (provided that 1 is the perfect mastery of soft, hard, self and digital skills)

Sources: developed by the authors

exercises (targeted and specially organized and repeated business processes). These exercises help to improve and consolidate the actions of the staff members, signifying the formation of particular skills. An employee's proficiency can be gauged by his/her ability to perform any business process without thinking in advance about how to act in a particular situation and automatically follow the sequence of these processes. As skills are honed, business processes are performed quickly and accurately, enabling to concentrate on the development and acquisition of new knowledge, skills and abilities. Since the dawn of the first Industrial Revolution, hierarchies within individual firms have played a pivotal role in organizing economic activity and directing productive and entrepreneurial efforts within societies, complementing the invisible hand of market exchange [17].

**Discussion.** In every field of activity, as well as in every enterprise, specialists need certain skills depending on the specifics of business management. For example, if an enterprise is at the stage of formation or decline, it is crucial to be as innovative as possible, while crisis stages require strong risk management skills. Scientific literature

reveals the essence of various models of HR management, yet often overlooks practical applications of skills, focusing instead on aspects like communication or time management. There is an emphasis on the role and evaluation of time management as a key skill for specialists [18]. However, a notable drawback is that these methods are typically discussed in an educational context rather than being implemented in practical settings.

The study [19] discusses the moderating role of a leader's professional and managerial skills, particularly task-oriented skills, in the indirect relationship between leadership and effectiveness in the service sector, facilitated through work engagement. Similarly, Carey J. et al. [20] elaborates on communication process skills. Of course, patient-doctor communication is an important element of the relationship, and a set of soft and self skills, such as emotion management, talent utilization, and flexibility, will be relevant (Table 1). Thanks to the specialist skills index proposed in this study (Table 2), it becomes possible to accurately assess the skills of a specialist and obtain a quantitative result (formulas 1-3), ranging up to one. The ranking of the participants (Fig. 1, Fig. 4)

allows us to clearly visualize the segments the specialists selected for the survey will fall into and make a decision in case of non-compliance with a certain group of skills. It is undeniable that a well-formed set of soft, hard, self, and digital skills in professional activities will ensure competitiveness in the labor market, not only presently but also in the future.

**Conclusions.** In today's world, it is widely believed that human skills can be distinctly categorized into so-called skills. Primarily, these encompass soft and hard skills collectively referred to as professional skills. The category of "skills" itself is extremely conditional, and in many cases does not stand up to criticism, as any humanitarian term is inherently abstract, and therefore necessitating an individualized approach. Therefore, supplementing quantitative assessment methods such as the skills index proves

invaluable in yielding effective results, identifying bottlenecks, and guiding areas for further study.

Self-skills represent the progressive skills within the broader doctrine of skills, as they emphasize attention to the individual, not just to the profession. These skills teach you to take care of yourself, pay attention to your own self, regardless of any external factors. The word "self" implies turning to one's inner world, where key issues of self-identification are resolved. Digitalization, robotization, and the era of the intellectual economy are pushing the world to move to a new level of life, where innovations and creative achievements of people become the driving factors of production. Consequently, there arises a pressing need for the development of digital skills, which emerge as the defining direction for future specialists and the concept of Society 5.0.

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## SKILLS INDEX AS AN INNOVATIVE APPROACH TO MANAGING SPECIALIST QUALIFICATIONS

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In today's conditions, we can observe distinctive features of soft and hard skills, which are presented for specialists of different professions.

The purpose of the article is to develop an innovative approach to managing specialist qualifications by defining a skills index. Based on this goal, the paper solves the following research tasks of the article:

- generalization of research to substantiate the characteristics and components of soft, hard, self and digital skills of a specialist;
- substantiation of the conceptual foundations of the specialist skills index to determine the level of knowledge and skills.

Professionals across various industries often wonder what essential skills are needed to grow and prosper in business. Debates continue about the choice between collaboration, adaptability, or professionalism with technical skills.

The development of personal and professional skills through education, training and meaningful work are key factors in the economic success of the state, individual well-being and social cohesion.

The methodological foundation of this study relies on a systematic approach, enabling the examination of a specialist's skills index. To calculate this index, it's imperative to construct a questionnaire comprising four skill groups: soft, hard, self, and digital. This will allow us to summarize the results and make calculations. Skills enumerated in the questionnaire are appraised for their importance via expert evaluation method. The list of skills and the weighting criterion should be adjusted for a particular study.

The skills index of a specialist will range from a minimum of 0.5 to a maximum of 1. Lower values of this index indicate a lack of necessary skills, and it is also possible to see in which group of skills there are «bottlenecks».

After assessing the skills index, specialists, experts, or employees are divided into three conventional sectors: blue, yellow, and pink. The Blue sector includes people who have a wide range of skills (the index is greater than 0.5). Once in this sector, employees receive many benefits, such as bonuses, social packages, gifts, etc. This area continues to be actively developed. The «pink sector» encompasses people with an index value below 0.5, typically representing critical limits due to minimal skill levels. The intermediate sector consists of «promising employees» who constitute potential reserves and are actively engaged in developing their personal talents and abilities.

It is undeniable that a well-formed set of soft, hard, self, and digital skills in a professional activity will ensure competitiveness in the labor market not only presently but also in the future.

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