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# Employee's Competence Profile for Adaptive Organization Management

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**Background and purpose**: Employees with their knowledge, skills and values are a connecting link between the deep organizational transformations and new technologies. In this regard, the human resource management system needs new approaches and tools for the diagnostics, training and personnel development based on the synchronization of the organization and the employee's values. The study aim is to develop a comprehensive methodology for building an employee's soft skills profile in order to form personalized educational trajectory and an adaptive management system creation.
**Methodology**: An approach to the soft skills profile's formation through broadcasting of the description of personality's behavioral indicators into actual supra-professional competencies is considered. Modeling and automation of the employee profile's soft skills was carried out. Statistical observation and empirical confirmation were used to evaluate the developed methodology. 115 respondents from different fields of science and technology from Reshetnev University took part in the diagnostic.
**Results:** The results show that the proposed complex automated personality diagnostics is valid. And it allows you to visualize the soft skills profile, determine the level of competencies' expression and identify the directions of the employee's individual development.
**Conclusion:** The study offers a comprehensive integrated methodology which allows you to assess the formation level of representatives' soft skills of various fields of activity. This development can be used both in the educational environment to form an education ecosystem in accordance with the requirements of the innovative economy development and in the enterprise management system to increase the production potential of both employees themselves and enterprises.

***Keywords:*** *Soft skills; Employee competency profile, Education and development, Human resource management*

## 1 Introduction

Today, the economy is undergoing a digital transformation. It is a revolutionary process of transforming an organization's business model, not only by using digital technologies, but also by introducing fundamental organizational changes in technology, culture, operations and the new products' principles creating.

The connecting link between the integration of deep organizational transformations and new technologies are

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people - employees with their knowledge, skills and values (Boutetière et al., 2018). The key barriers to digital transformation are, first of all, a lack of qualified personnel, competencies and knowledge, as well as internal resistance in organizations (Harvard business review, 2017). On the one hand, it can be explained by the employees's concern about the possible job losses due to the automation of up to 50% of work processes by 2055 (Manyika et al., 2017). On the other hand, there is a staff involvement's low level. According to an ADP Research Institute study, only about 16 percent of employees are fully engaged (Hayes et al., 2019). To ensure a high level of employee engagement, it is necessary to develop a corporate culture, instilling the organization's value system in the employee through the areas of common interest with his values (Peček & Ovsenik, 2018).

Organizations are created by people with their value system's investment in the structure being created. An employee who comes to an organization at a certain life cycle stage doesn't realize what is happening. He also doesn't know what happened. He has no idea what will happen. There is a desynchronization of the employees and the organization values. According to this, it is necessary to find contact's points between the employee and the organization's values, for example, through the competence profiles' correlation of using the adaptive management system organization using artificial intelligence.

The employee profile's creation and implementation in the human resource management system in accordance with the competence model is a significant task for developing organizations. The formation of an employee's competence profile allows you to solve many organizational problems. For example: personnel recruitment and selection, adaptation, personnel audit, its assessment, comprehensive development, management reserve formation, etc. The competence profile, as a rule, consists of soft and hard skills.

Hard skills represent the professional competencies required to perform labor operations. They are reflected in job descriptions, regulations, professional standards; they can be clearly demonstrated, evaluated and verified.

Soft skills are supra-professional competencies. It is a set of socio-psychological qualities that do not depend on the professional activity sphere, but have a direct impact on the individual success. A person possesses them from birth or acquires them in the development and gaining experience process.

The skills' change occurs due to automation, robotization and the artificial intelligence using in organizational processes (Bughin et al., 2018). Increasingly, organizations are focusing on supra-professional skills, which are much more difficult to reproduce with the help of digital transformation tools and that are underlie of the changes taking place.

The personal qualities' value in comparison with knowledge in the engineering sciences' field was identify in the Charles Riborg Mann's work "A Study of Engineering Education" in 1918 (Mann, 1918). The study by scientists from Harvard University, the Carnegie Endowment and the Stanford Research Center showed that "flexible skills" have almost 7 times more influence on a person's success in the profession.

Moreover, Google, as part of an internal study by Project Aristotle, revealed that the most productive teams have a wide range of soft skills (Strauss, 2017).

Studies by various scientists and companies at different times show that soft skills are the key to success not only in interpersonal relationships, but also to a large extent in professional activities (Kareem & Mijbas, 2019). They are the basis for the effective development of hard skills.

Today, the scientific community shows an active interest in the soft skills' study. The scientific articles consider competencies in the higher education system (Azasu et al., 2018; Diaconu et al., 2014; Gani et al., 2018), the emotional, social and cognitive competencies' influence on entrepreneurial intentions (Bonesso et al., 2018; Chien-Chi et al., 2020), the relationship between the personal power of the CEO, CEO competencies and company efficiency (Amedu and Dulevich, 2018), the impact of soft skills on project effectiveness (Gruden and Stare, 2018; Makbu et al., 2017), etc.

These studies show only the impact of the certain skills' development on the individual and companies' success. In this regard, it is necessary to focus on the assessment of the person development's soft skills.

Modern researchers propose methods for evaluating soft skills within a certain class (Liang et al., 2017; Wu et al., 2015). At the same time, the tools used are subjective, which does not guarantee the results obtained quality.

Despite the expansion of research in the field of soft skills development assessment and their impact on various performance indicators, it is the first article, the purpose of which is to develop a methodology for building a comprehensive soft skills profile. This profile combines cross-specific competencies. The methodology is universal and is intended for a wide range of users in various branches of science and technology. It is aimed at the practical application of integrated theoretical approaches in the human resource management system.

## 2 Problem

Today, supra-professional competencies' skill level is assessed in various ways. The most common of them are verbal and communicative methods (questionnaires, interviews), psychological testing, case methods and expert assessments methods (Strauss, 2017).

Such methods as competency interviews conducted in Russia using Western methods STAR (Situation - Target - Action - Result) (Swain, 2019), PARLA (Problem - Action - Result - Learned — Applied), CARE (Content,

Action, Role, Effect) (Klimenko, 2020), and expert assessments' methods according to the type of assessment "360 degrees" and its modifications ("90/180/270/540/720 degrees"), with all their advantages (high degree of objectivity (speaking of competency interviews), the ability to manage the structure of the collected data and their completeness), have a number of disadvantages that force the use of other methods of personality diagnosis:

1) Require significant labour, financial and time re sources, both for the study preparation (elaboration of competency framework and questions), and for the data collection and processing, results' interpretation;
2) Develop a competency framework in the Russian market is carried out on the basis of expert opinions, without the using of quantitative data processing methods laid down by the founders of the competency-based approach (TalentCode, 2016);
3) Can be carried out only by qualified specialists, and in their absence, the involvement of external experts is required;
4) Give an incomplete idea of the employee's potential, limited by the organization's interests through the competence model;
5) The evaluation of "360 degrees" is characterized by subjectivity;
6) Inability to adequately assess all competencies with such methods creates the need for the application of additional ones.

Therefore, psychological testing methods are more popular (Carlson, 2020). The application's fields, as well as the research directions of this method are extensive. In this connection, many methods have been created, including those aimed at assessing competencies. They include such techniques as SHL personality questionnaires, Talent Q tests, Ontarget tests, Cattell multivariate personality questionnaires, FPI, MMPI, SMIL, MMIL, etc. (Carlson, 2020). Using the testing method simplifies the evaluation procedure due to the possibility of using ready-made techniques and automating the data collection process, interpreting the results, respectively, significantly less financial, labor, and time resources are required for the entire testing procedure. In addition, it guarantees a certain degree of objectivity, standardization, validity and reliability (statistically provable) (Philips, 2016). Despite all the advantages, the psychological testing existing methods have some disadvantages: the study focus, i.e. they do not reveal the full picture of the employee / applicant personality; they become obsolete, not responding to the demands of the modern labor market; the inability to interpret correctly without a highly qualified specialist, which makes testing methods in the classical form inapplicable.

Thus, all these methods can be classified as traditional, and in most cases, they have their own limitations (for example, the resources' cost for data collection and processing, interpretation of results, as well as the interpretation's complexity, insufficient adequacy and reliability of results), which demonstrates the need to find new, alternative approaches or to modernize and combine existing ones to obtain a complete a person's soft skills profile.

## 3 Research question

An adaptive organization management system's development using artificial intelligence, aimed at expanding the employee competence profile within the framework of synchronizing his values and the organization's values, will eliminate the shortage of personnel, skills and knowledge to move to the next stages of digital transformation. It can be possible through the development of T-shaped specialists with a proactive position and capable of self-organization, and ensure the global competitiveness of the organization. The developed competencies should correspond to trends in management approaches. That is why one of the digital transformation's success factors is the development not only professional competencies, but also personal ones.

The main study issue is the employee soft skills profile's formation through the text description of personality behavioral indicators broadcasting into supra-professional competencies demand in the labor market. Personality behavioral indicators and their manifestation degree can be determined within the framework of complex automated diagnostics with the application of statements' quantitative assessment to question-situations. It will allow you to visually represent the level of competencies' expression and identify the directions of the employee's personal development in accordance with the organization's needs, which will lead to their common development trajectory's formation.

## 4 Methods

### 4.1 Analysis of psychodiagnostic personality research methods

As part of the study, an analysis of existing diagnostic techniques that reveal employee soft skills was carried out. The main criteria for choosing methods were: soft skills diagnostic test material; clarity, comprehensibility and accessibility of the test material for respondents: ease of processing empirical data; consistency of diagnostic tools.

During the diagnostic material's selection, the emphasis was placed methods which allow us to determine the most popular and relevant soft skills in the labor market. The analysis showed that on the part of employers in the personnel's selection, the reserve's formation, the personnel's promotion, the request goes to such soft skills as: leadership, ability to work in a team, responsibility for decision-making, emotional intelligence, flexibility, striv-

ing for self-development, focus on quality work, as well as competencies describing the employee's personality's psychotype.

Thus, the following tools were included in the process of building a soft skills profile: the DISC model, Alan Rowe's "Decision-making Style" methodology, Honey and Mumford's determining activity styles method, a psychotype test.

The DISC model is used to determine individual behavioral characteristics, namely, to identify the employee's strengths that form his behavior model. The methodology identifies 4 behavior's types which have a number of psychological differences that significantly affect the performance of tasks. Each behavior model has distinct features, the knowledge of which makes it possible to build constructive interaction in the organizational system (Kolesnikova et al., 2017).

Alan Rowe's methodology identifies 4 decision-making styles depending on the individual attitudes. The nature of making decisions depends on the completeness and reliability of the available information. Deterministic solutions (under conditions of certainty) and probabilistic solutions (under conditions of uncertainty and risk) are distinguished (Bayburin et al., 2018).

As the following methodology, D. Kolb's cyclic learning model (Kolb, A.Y. & Kolb, D.A., 2009) and Honey and Mumford's theory of 4 activity styles are used. According to these theories, an employee learns in one of four ways through conscious activity and thinking (Honey & Mumford, 1992).

Usually, in the determine personality psychotype's methods, attention is focused on the dominant personality psychotype with pronounced character traits. K. Jung became the first scientist who created a classification according to 4 psychotypes. The group of authors modified this technique, taking into account the various diagnostics' test tasks, for example, "Strategies of self-affirmation of personality" E. Nikitin, N. Kharlamenkova). Taking into account the individual employee typological characteristics allows HR services to get an idea of his emotional and volitional sphere, attitudes, motivation and values, that is, about the main components of individuality.

Thus, a comprehensive questionnaire of employee psychodiagnostic research was formed. The selected original methods consist of question-situations. However, there are different scales for evaluating judgments, one of which is the scale of attitudes. In this connection, it was necessary to modify the question-situations and introduce a single scale for evaluating judgments.

## 4.2 Scaling

The developed questionnaire presents questions-situations for which there are 4 statements in each (which corresponds to the characteristics of the personality studied in four different projections - psychotype, activity style, decision-making style, behavior style). For each statement, an assessment of the respondent's attitude to the situation is recommended - how much it corresponds to the respondent's life attitudes. On the basis of which the assessment should be made using a scale of attitudes used to measure respondents' attitudes to the subject of the study. It should be combined with a strict ordering procedure, in which the statements' equivalence is not allowed. It is not allowed to assign the same ranks to two or more answer options. This is due to the need to identify the prevailing personality characteristics. For this purpose, it is important to assess the degree of respondents' agreement with statements describing different characteristics.

The study analyzes standard installation scales, such as the Likert scale and the Stapel scale (Hrabrova, 2018). The existing installation scales do not include a ranking procedure, which means that they need to be modified.

A comprehensive questionnaire's pilot study showed that the most suitable scale is the Likert scale, proposed in 1932 by Francis Likert, an American specialist in the fields of organizational psychology and management. Working with this scale involves evaluating statements from one critical point to the opposite critical point, in this case, the respondent is supposed to assess the degree of their agreement or disagreement with each statement on a scale of assessments containing 3, 4, 5, 6, 7 or more points. In this case, the scale may or may not contain a neutral value.

Thus, a modified 4-point Likert scale was used for the questionnaire to rank respondents' statements:

- 1 point - strongly disagree;
- 2 points - partially disagree;
- 3 points - partially agree;
- 4 points – strongly agree.

The presented scale has a symmetrical character. In addition to the rejection of the neutral value in the scale, its modification consisted in the application of the ranking statements' principles related to a single issue.

The test results' interpretation is possible by summing the ranks of statements relating to the same personality trait, both in absolute and relative terms.

The advantages of using this scale are that it provides relative reliability with a limited number of statements, and the data obtained is easy to process. In addition, the application of the same principle in all questions simplifies the survey procedure. And the imposition of ranking principles on the Likert scale makes it possible to determine the prevailing personality characteristics.

So, a comprehensive questionnaire was formed for employees' psychodiagnostic testing. The next step in the development of the soft skills profile was the creation of clusters competencies' model corresponding to the behavioral indicators of the selected techniques.

### 4.3 Modeling and automating soft skills profile

The authors' group identified the main supra-professional competencies corresponding to them, as part of the behavioral indicators' analysis for personality psychotype, behavior style, activity style and decision-making style. At the first stage of the analysis, about 20-30 competencies were formed for each personality type according to all 4 methods.

For convenience and ease of employee profile's interpretation developed by soft skills, it is necessary to reduce the competencies' list in each cluster. On average, it is recommend allocating up to 10 key competencies applicable to all positions (Parkinson, 1999).

Today, in the human resource management system, it is possible to identify the main soft skills that should be developed by employees to improve production efficiency. They were mentioned earlier. After conducting a comparative analysis of behavioral indicators interpreted in soft skills relevant in the labor market, and combining similar ones in meaning, the most popular competencies were selected, taking into account the possibility of their development or adjustment. The formed clusters of competencies are shown in Figure 1.

Further, the techniques were integrated into the employee profile's soft skills model. So, the model formed can be represented in the form of a 16-vector petal diagram (Figure 1). As a questionnaire's result, the data is processed by sum-

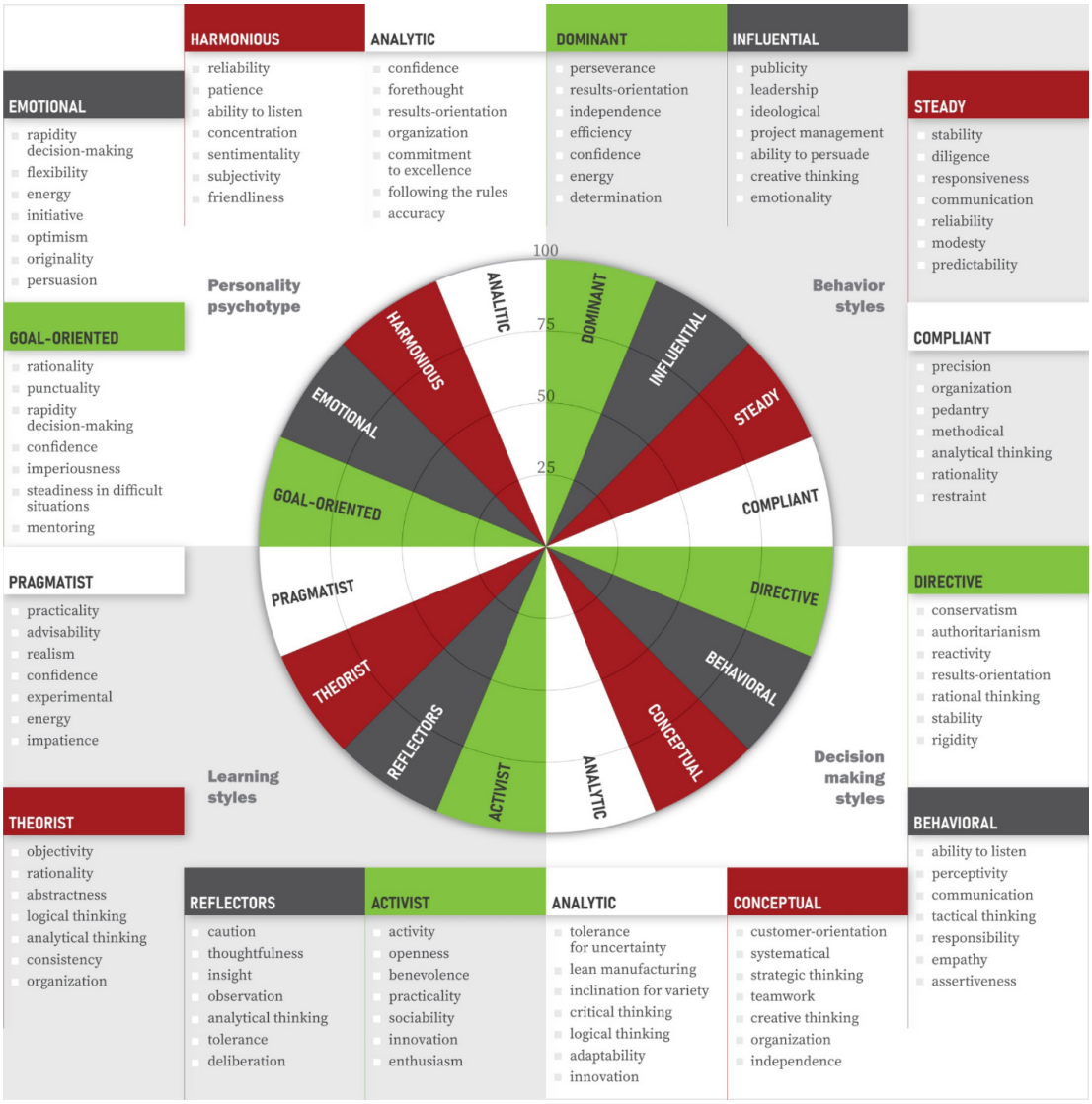



*Figure 1: Model of the employee soft skills profile*

ming ranks by groups of answers which characterize a particular type of personality. This amount demonstrates the degree of certain personality characteristics' manifestation in a person. The levels at which personality characteristics are manifested in each of the 16 sectors were taken as competence's levels.

In the literature, there are such stages of competence development as: insufficient level, developing, experienced, advanced, mastery (Shipilov, 2015). For the gradation of personal competence levels due to the complexity and ambiguity of the higher-level competencies' assessment, the proposed gradation was modified to 4 levels:

1) insufficient level (0-25%) - poor knowledge of competencies, infrequent use in practice;
2) developing level (26-50%) - the mastering competencies' process has been launched, but it is not always possible to effectively apply it in practice;
3) experienced level (51-75%) - competencies are fully mastered, effectively applied in standard practical situations;
4) mastery level (76-100%) - competencies are mastered at the expert level, applied in complex non-standard situations.

The formed soft skills profile model was automated. An electronic profile is a web server application that allows you to register, take a survey (Figure 2) and get acquainted with the data on the degree of development of a person's soft skills. JavaScript, HTML5, CSS were used to design the client side of the user interface to the software and hardware part of the service. The survey results are stored in the organization's database using the comprehensive questionnaire for as long as requires. The survey can be completed repeatedly in different time periods. In this connection, it is possible to track the development of the soft skills level.

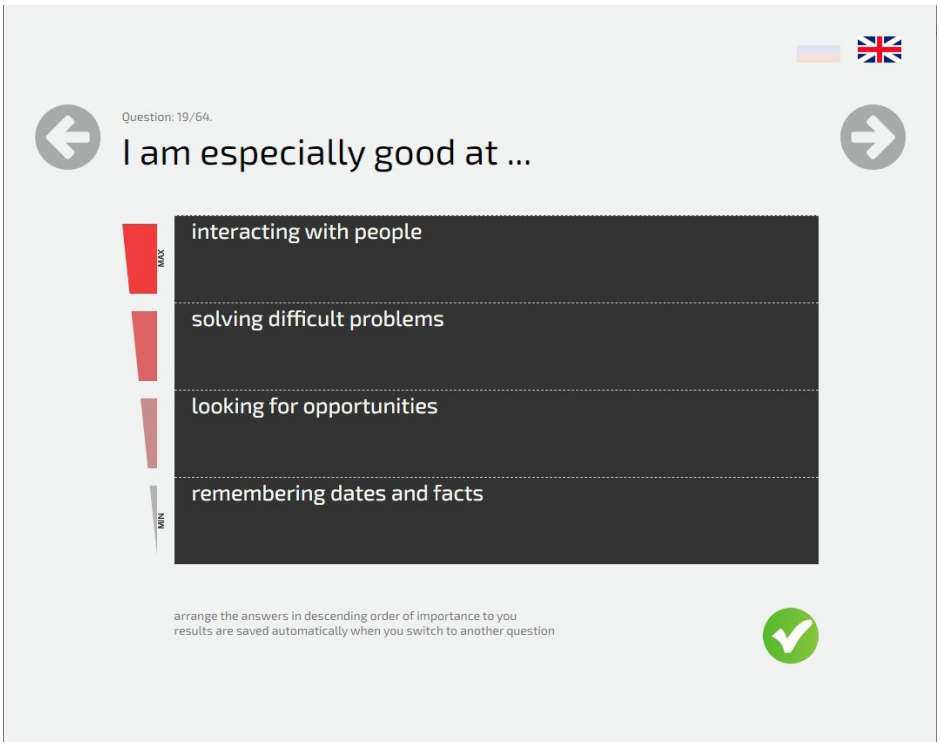



*Figure 2: Part of the questionnaire for respondents*

The main advantage of the electronic questionnaire is that the competencies' assessment for each of the 16 sectors is visualized in the form of a colored petal diagram. The resulting diagram shows the degree of manifestation of a personality particular type in a person and the corresponding soft skills, not limited to the dominant one. It gives the most complete soft skills profile of an employee. In addition, due to automation, the time spent on completing the survey, processing and interpreting data was reduced by an average of 80%, which was revealed during the timing as part of the initial assessment of the employee profile reliability developed by soft skills.

## 5 Results

To assess the validity of the developed soft skills profile diagnostic methodology, a focus group consisting of 115 respondents was formed. The respondents included the students of Reshetnev Siberian State University of Science and Technology from various fields of science and technology: psychological, engineering, information and chemical industries.

Requirements' analysis for their representatives' competencies in scientific research, as well as the world databases of vacancies was carried out for each field of science and technology.

The petal diagram's construction for each field of science and technology with the superimposition of respondents' soft skills profiles obtained by passing the developed automated diagnostics was made. It made it possible to identify the representatives' key competencies of the fields of science and technology. Further, a comparative analysis of global trends and the results of the soft skills survey of respondents' profiles were carried out.

According to the results of research in New Zealand, specialists in the field of psychology are distinguished by methodicality, restraint, listening ability, observation, stability, caution, analytical thinking (New Zealand Psychologists Board, 2018).

Within the diagnostics' framework carried out according to the developed methodology, the soft skills profiles of psychologists are dominated by such competencies as: reliability, patience, listening ability, friendliness, organization, pedantry, methodicality, analytical thinking, rationality, restraint, listening ability, communication, responsibility, empathy, assertiveness, practicality, expediency, realism, confidence, experimentation, energy (Figure 3).

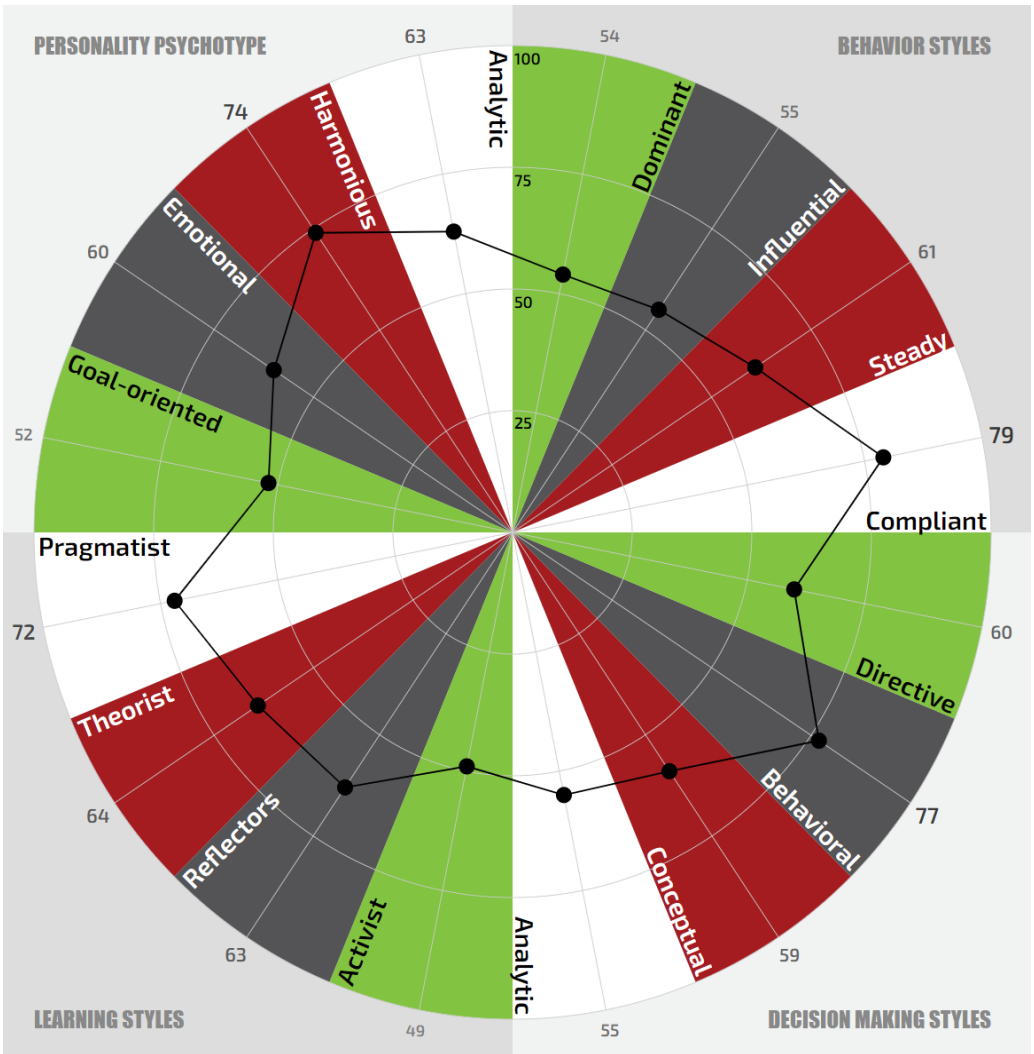



*Figure 3: Average soft skills profile of psychological students (based on results of 23 respondents)*

National Aeronautics and Space Administration puts forward such requirements for IT specialists as analytical thinking, tactical thinking, listening skills, restraint, organization, result orientation, following the rules (Hirshorn et al., 2017). Researchers from the Management Studies Department, Indian Institute of Information Technology focus on responsibility, methodicality, practicality, confidence, experimentality (Dubey & Tiwari, 2020).

The analysis of IT respondents' soft skills profiles showed that such competencies as organization, methodicality, analytical thinking, restraint, listening ability, receptivity, communication, tactical thinking, responsibility, practicality, expediency, realism, confidence, experimentation, energy is more prevail (Figure 4).

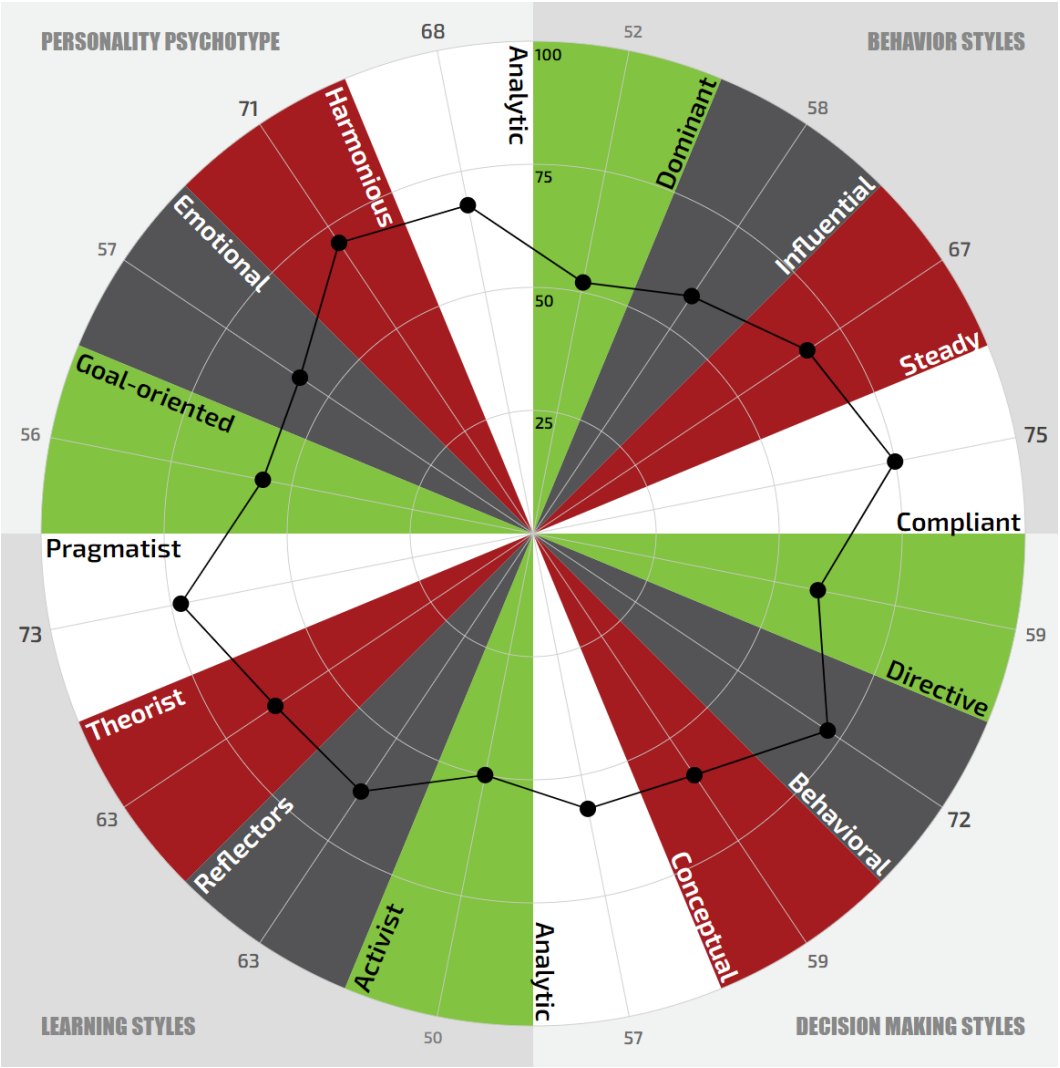



*Figure 4: Average soft skills profile of IT students (based on results of 30 respondents)*

Chemical industry specialists are distinguished by the presence of responsibility, accuracy, confidence, methodicality, experimentation, concentration, restraint, communication. It can be traced in the works of scientists from the University of Helsinki (Pernaa & Aksela, 2009) and researchers from China (Zhou et al., 2013).

The analysis of soft skills profiles of respondents in the chemical industry showed that such competencies as confidence, balance, organization, accuracy, accuracy, pedantry, methodicality, analytical thinking, caution, observation, adaptability, innovation are more prevail (Figure 5).

Malaysian scientists recommend that engineers should possess such soft skills as rational thinking, analytical thinking and organization (Adnan et al., 2014).

Within the framework of the soft skills diagnostics of the engineers' profiles, confidence, result orientation, organization, striving for perfection, accuracy, reliability, patience, conceptuality, organization, methodicality, analytical thinking, rationality, tactical thinking, responsibility, practicality, experimentation, energy are more prevail (Figure 6). The competencies' development depending on the specifics of labor activity can be traced in the comparative analysis of respondents' soft skills profiles. According to the results, we can make a preliminary conclusion that the assessment of the soft skills profile according to the developed methodology is valid, since the key competencies of specialists in the fields of science and technology under consideration allocated by the world community correspond to the respondents' soft skills profiles.

## 6 Discussion and conclusion

There is an active interest in soft skills research in the literature. The main research is aimed at studying the impact of certain skills' development on the personal's and companies' effectiveness. There are no studies in the development of a methodology for the soft skills integrated assessment. In the literature, methods of subjective assessment of soft skills within a certain class are only rarely traced.

The study aim was to develop a methodology for building a complex soft skills profile. The result of the study showed that the soft skills profile can combine relevant cross-specific competencies.

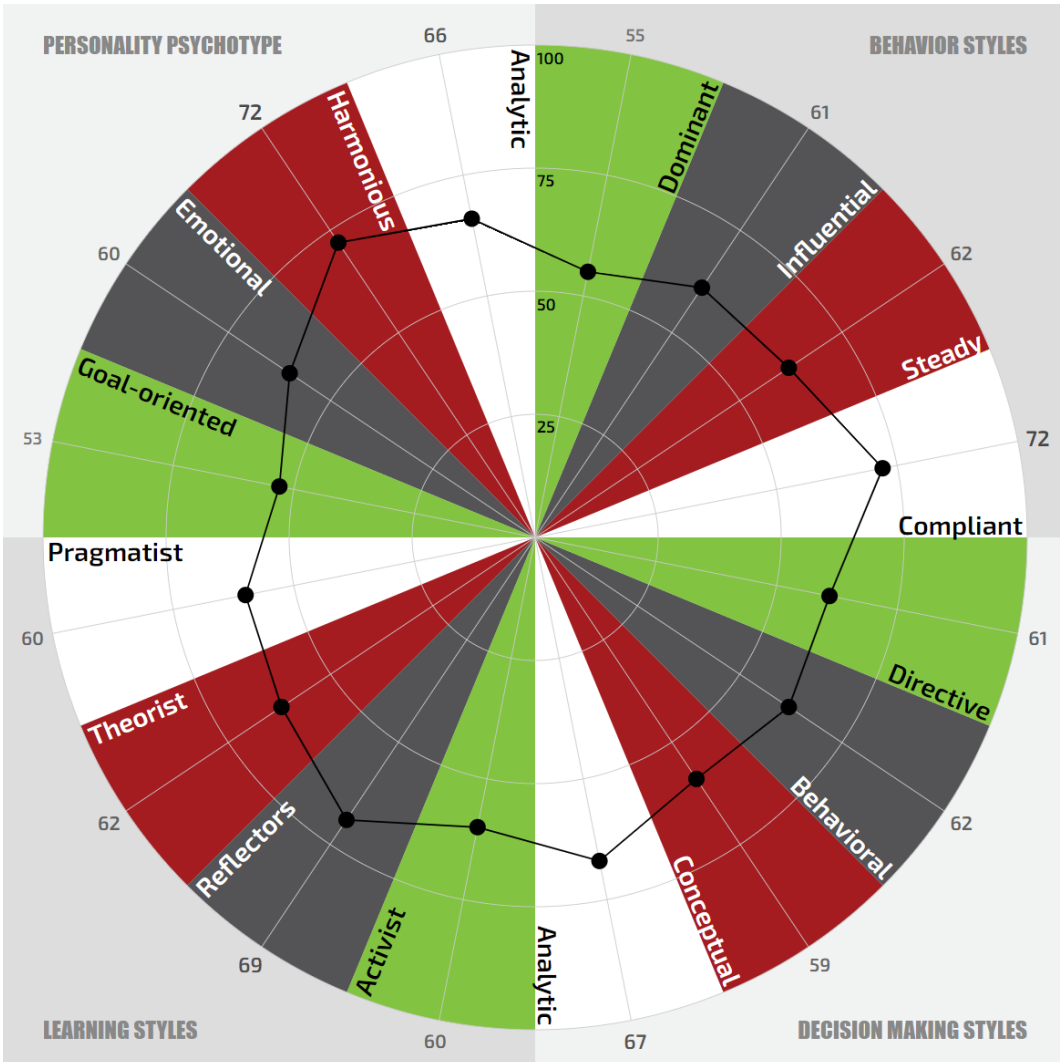



*Figure 5: Average soft skills profile of chemistry students (based on results of 28 respondents)*

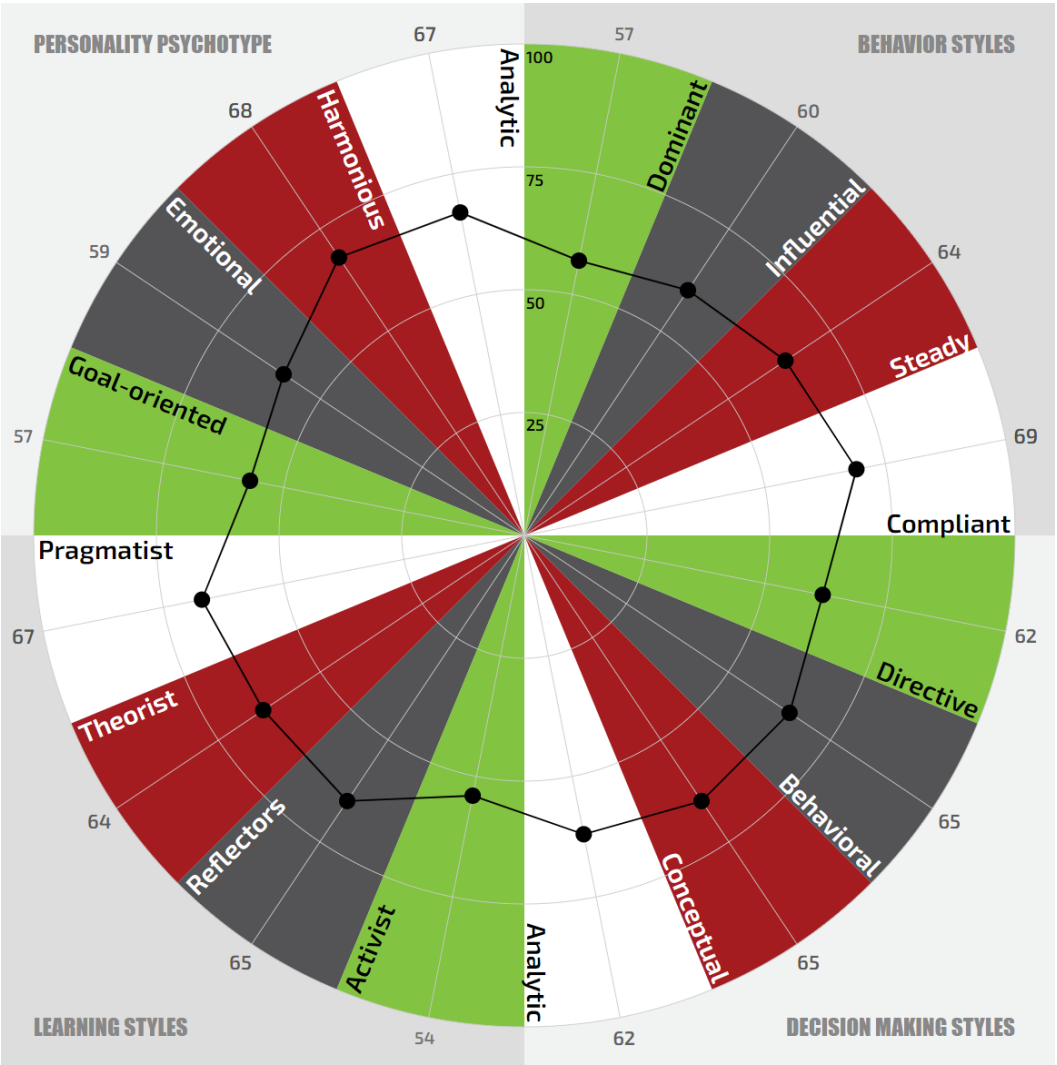



*Figure 6: Average soft skills profile of engineering students (based on results of 34 respondents)*

The study results showed that it is possible to form an employee's soft skills profile by broadcasting a text description of personality behavioral indicators into supra-professional competencies. Psychometric testing can be used to determine personality behavioral indicators.

As part of the research analysis, it was found that the assessment of soft skills is mainly carried out through behavioral interviews and psychometric assessments (Baron et al., 2020; Jardim et al., 2020). Traditional psychometric examinations are unidirectional, expensive and time-consuming (Amarpreet, 2019). In this article, a modified toolkit is used. It allows you to evaluate various specific groups of soft skills (the DISK model, Alan Rowe's "Decision Style" method, Honey and Mumford's method of determining learning styles, and a psychological type test) and contains a small number of questions.

Identification of soft skills relevant to the labor market is based on research of the global employers needs. In the scientific community, this topic has been raised quite often and for a long time. For example, in the article "Building a soft skill taxonomy from job openings", a search was conducted for terms related to various soft skills in global job databases using DBpedia and Word2Vec (Khaouja et al., 2019). Based on the proposed methodology, the researchers identified 10 basic interpersonal communication skills. The study "Responsible team players wanted: an analysis of soft skill requirements in job advertisements" describes a semi-automatic approach for extracting interpersonal skills from job advertisements (Calanca et al., 2019). It is shown how interpersonal skills affect the labor market's results.

After conducting a comparative analysis of behavio-

ral indicators interpreted in soft skills relevant in the labor market, the most popular competencies for measuring and building a profile were selected.

The developed methodology formed the basis for the complex automated diagnostics of the soft skills profile, which corresponds to the trends of the world community in the framework of the global digital transformation of all spheres of activity.

The application's universal nature in various fields of activity is a distinctive feature of the developed soft skills profile and the methodology for its determination comprehensive diagnostics does not require using of additional techniques and allows you to significantly reduce time and financial costs.

## 6.1 Managerial implications of the study

This study offers an alternative way to assess the level of an employee profile's soft skills formation, which can be used both in the educational environment to form an education ecosystem in accordance with the requirements of innovative economic development, and in the enterprise management system to increase the production potential of both employees and enterprises.

The modern market economy poses a number of fundamental tasks to enterprises, the most important of which is the most effective human resources using, where one of the main tools is the competence approach. Accelerating changes in the environment, new business needs and opportunities emergence, changing consumer positions, the development of information technology and changing the role of human resources are aimed at developing a long-term and competitive enterprise HR strategy. Building an employee soft skills profile with the help of complex automated diagnostics will allow you to visually make the trajectory of an employee's personal development. Employee competencies' coordination with labor functionality in the strategic perspective will contribute to meeting the enterprise's needs and will directly affect productivity growth and increase the HR system efficiency.

One of the costly procedures in the traditional approach to human resource management is the personnel competence assessment, both at the recruitment stage and within the framework of the current competence assessment. Data processing and results interpretation take a large part of the time. Building an employee profile using the automated methodology proposed in the study framework makes it possible to eliminate this problem.

The employee competencies are dynamic, therefore, amenable to development. So, it is necessary for the organization to constantly update an employee data. Our integrated methodology for evaluating the soft skills of an employee's profile allows you to understand the vector of development of certain competencies, which in the future will lead to organizational values with employee values' synchronization both from the employment moment and in the process of work.

The main strategic resource of the enterprise and the basis of its competitiveness are the organization's personnel. The effective personnel competencies using are largely ensured by the development of a measures' system aimed at increasing the level of labor productivity. The main labor productivity management goal at the enterprise is to find and implement possible reserves for its growth while ensuring a high level of employment. The social effectiveness of developing soft skills of an employee's profile is manifested in the possibility of achieving socially positive changes in labor activity indicators. The application's positive results of the developed methodology include: the development of personal and professional competencies of staff; the creation of a certain degree of freedom and independence (the ability to make decisions, determine the methodology of tasks, the intensity of activities, etc.); maintaining a favorable socio-psychological climate.

Automated diagnostics of employee's profile soft skills can be used as a self-sufficient product in HR procedures, as a tool for harmonizing the key competencies of an enterprise and the competencies of its employees.

An individual approach to learning as a global trend increases the value of building individual educational trajectories. In the education system, the results of the study can be used to identify the strengths and weaknesses of students in the construction of individual educational trajectories. These educational trajectories can be formed by superimposing profiles of highly qualified representatives of advanced enterprises in the region and profiles of students in the relevant areas of training. Thus, educational institutions will be able to train highly qualified personnel within the framework of orientation to the values of the market and the values of students with the formation of individual educational trajectories.

## 6.2 Limitations and future research

According to the authors, the approbation of the study results on 115 respondents is a key limiting factor in their assessment and the generalized conclusions' formation. Therefore, as noted earlier, the conclusions formed are preliminary. The complex methodology was verified on respondents from four fields of knowledge. The pilot model launch of automated diagnostics has shown good results in determining the leading competencies of their representatives and consistency with the research of the scientific community.

This limitation is easily resolved by conducting further research on the automated diagnostics testing on a larger number of respondents who are representatives of a wide range of fields of science and technology, as well as an additional analysis of world research on soft skills that are in demand in a particular field. It will be possible to

completely resolve it when launching diagnostics in real production practices. In other words, it is required to implement the introduction of a diagnostic tool as an element of the human resource management system of enterprises in various industries.

Based on the data obtained, researchers can conclude about the suitability of the formed models of representatives' soft skills profiles of various fields of science and technology and their use as standard for building soft skills profiles of certain professions.

This study does not consider the cost component of such system introduction, its maintenance and use in the current enterprise management system, which again requires the use of research results in production practice. Based on the research results, it will be possible to make a conclusion about reducing the costs of enterprise's forming and supporting the human resource management system, as well as to suggest further directions for improving the study results.

To increase the developed soft skills profile's adaptability for specific organizations, it is possible to continue the research within the integrating soft skills' framework in demand in the labor market and soft skills based on the company organizational values.

The developed methodology, as well as the automated soft skills profile diagnostic system, are the first stage of research work and require further development to the adaptive management system of the organization using artificial intelligence. The developed intellectual guide is a software module which based on the characteristics of the employee's and an organization's profiles. It compares their values and using the artificial intelligence, determines the educational trajectory and offers tasks for its development, taking into account the ways in which the employee perceives information. The development of new competencies will lead to the expansion of the employee's profile and the ability to perform new tasks in the area of interest, thereby obtaining a high-quality result. The organization, in turn, will receive new opportunities for development in the market and rapid adaptation to changing conditions. Thus, by investing in the employees' development, the organization receives T-shaped specialists with a proactive position and capable of self-organization. It directly leads to the potentials' realization of both the employee and the organization.

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