

# Competences of career counsellors in conditions of uncertain future - context of 4th industrial revolution

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*Abstract:* Current labour market is influenced by uncertainty posed by challenges of occurring trends. Those trends are on the one hand shaped by demographic changes influencing labour supply and on the other hand transformations provided by 4th industrial revolution. Emerging innovative technological development, in addition to demographics and rising inequality, brings widespread automation and irreversible shifts in the structure of jobs giving rise to new opportunities but also creating new areas of uncertainty. The unpredictability of the labour market sets new tasks for the institutions supporting better adjustment of labour supply to demand needs. Crucial institution realizing those tasks are career counsellors who provide their service for different groups of clients. Effective career guidance is determined by comprehensive competences of counsellors. It should be noted that with regard to competences in the context of Industry 4.0, most of the research to date has focused on the analysis of employees' competences rather than on the competences of career counsellors. The development of the future labour market is subject to a hitherto unknown transformation. These premises, as well as the originality and validity of the research, both in the national and European dimension, prompted the authors to conduct innovative qualitative study. The aim of the article is to identify future competences of career counsellors in line with the ongoing trends on the labour market.

*Key-Words:* competences, career counsellor, labour market trends, 4th industrial revolution, uncertain future

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## 1 Introduction

Living on the threshold of the next industrial revolution influences the labour market trends. Emerging innovative technological development, in addition to demographics and rising inequality, brings widespread automation and irreversible shifts in the structure of jobs giving rise to new opportunities but also creating new areas of uncertainty [24, 18]. On the one hand, it is referred to potential risks to working conditions such as e.g.: flexibility in hours and location, short-term and casual contracts, longer working hours, low pay and payment uncertainty, reduced OSH policies, dissolution of workers' organisation and bargaining power, limited legal protection, informality [3]. On the other hand according to World Economic Forum the main technological drivers that positively affect business growth (and consequently the labour market) in the next years are: 1) ubiquitous highspeed mobile internet; 2) artificial intelligence; 3) widespread adoption of big data analytics; and 4) cloud technology [36].

Today's employers who want to implement the elements of the 4th industrial revolution should try to strengthen their companies with carefully selected employees with appropriate knowledge and competences [16]. This is due to the fact that Industry 4.0 requires basic research, new solutions implemented in the economy, monitoring the practical effects of such realizations and identifying the potential of new accomplishments [12]. Moreover, it will be necessary to train employees to integrate digital and physical technologies [15].

Progressive automation and digitisation do not necessarily have to generate unemployment. On the contrary – it can even positively influence the development of society by creating new professions and professional roles [26, 5], in which the human worker can remain the "key information processor and decision maker" [37]. This in turn requires qualified human resources today and in the future by modifying not only the working conditions but also the profiles of requirements in such areas as [1]: autonomous robots, simulations, vertical/horizontal

software integration, machine-to-machine communication (M2M), industrial internet of things, internet of services, big data and analytics, clouds, additive manufacturing, augmented reality, virtual reality, cyberphysical systems, digital twin, artificial intelligence, neural networks, cybersecurity and mass customisation.

In order to effectively respond to above enumerated changing requirements of labour market, it seems essential to build an effective system of education for current and future employees, in which the role of career counsellors will be significant [14].

The variety of clients of career counsellors (e.g. different groups of the unemployed, students, working adults, employers) enforces comprehensive qualifications and competences of that position. The specificity of profession of career counsellor has been evolving depending on the needs of clients, reflecting the current situation on the labour market [31].

It has been rising the major challenges for career counsellors on the one hand to predict, in the proactive way, future trends on the uncertain and changeable labour market and on the other hand to provide the effective counselling service adjusted to the client profile, based on the creation and proposal of alternative pathways for professional career development. They should reflect new perspectives, and consider the complexities of social change [31]. Uncertainty and changeability of the future labour market influence the need to develop new competences of vocational counsellors.

The literature emphasizes the importance of competence development in the era of progressive digitalization of production processes, products and business models [25].

Basically, competencies are the characteristics of people that differentiate performance in a specific job or role [39]. Furthermore, competencies encompass clusters of skills, knowledge, abilities, and behaviours required for people to succeed [40].

A competency is a holistic concept that includes the mobilisation of knowledge, skills, attitudes and values to meet complex demands in situations of uncertainty. According to OECD competency is more than just “skills”. Skills are a prerequisite for exercising a competency [34].

## 2 Problem Formulation

In literature there is a loophole of analysis of competences of career counsellors in terms of ongoing labour market trends which relate to the 4th industrial revolution. The results of qualitative study, conducted by authors of this publication proved that the competences of career counsellors should be

complex and came from social, personal, integration and technological spheres. Those competences should support counsellors to provide guidance service which relates to alternative paths of professional development, is directed toward different groups of clients and meets current employer’s needs.

The purpose of the article is to identify future competences of career counsellors in line with the ongoing trends on the labour market. The research question is “what competences of career counsellors are needed in conditions of the uncertainty and changeability of the labour market, resulting from the assumptions of the 4th industrial revolution?”.

The study included two research areas related to: identification of desirable competences of career counsellors as well as determinants of the educational offer of career counselling in times of the 4th industrial revolution.

## 3 Literature review

On the basis of literature, the most important factor influencing the future labour market is the 4th industrial revolution. The main trends shaping this field are: internet of things, cyber-security, artificial intelligence, robotics, virtual reality, bots-humans collaboration, cloud manufacturing, big data science [32, 36, 47, 48]. Other important factors are megatrends such as technology development, climate change, globalisation, and demography [3]. According to the authors of this publication, the awareness and understanding of the relation between the above determinants and the functioning of the future working environment seems to be one of the key skills of the future career counsellors.

Simultaneously, educational systems appear not to be adapting fast enough to respond to future labour demand imposed by Industry 4.0. This challenge may result in the required skills being undersupplied, thereby fueling disparities between labour supply and demand, which consequently may cause structural unemployment [9].

According to Hiebert and Neault, there are two main approaches used to define and validate the competent characteristics of career counsellors. The first approach, called the inclusive approach, focuses on general knowledge, skills, and attitudes (KSA) which practitioners need, regardless of their professional affiliation. The second attitude – called excluding approach – focuses on specific KSA not required for practitioners from other fields [21]. In case of this article, the most adequate approach in the era of high pace of economic, professional and social changes and dynamic, interdisciplinary development

of Industry 4.0 is a mixed (hybrid) approach, which requires additional training of consultants.

Białoń and Werner regard cognitive competences as crucial in the era of 4th industrial revolution development [41]. The first important component of cognitive competences are cognitive skills in their narrow meaning, that is, the ability to perceive the reality with senses, using a language, thus also categorizing sensual perception; the ability to think, in particular to think creatively; finally, remembering [42]. Moreover, among cognitive competences there are such skills as imaginations or feeling emotions [41].

According to Gudanowska, all actions aimed at searching for competences, which in the future will be necessary attributes of production employees in order to react faster and earlier to future changes, seem justified [14].

Many authors classify employee competences in the context of Industry 4.0 by calling them: a) competences of employees/engineers of Industry 4.0; b) the competence of managers in Industry 4.0; c) competences of the future; d) "transformative" competences; e) qualifications and skills of workers in factory of the future.

Prifti et al. developed the competency model for "Industrie 4.0" consisting of 64 competences – most of them are behavioral ones [29]. This model is based on the concept of "Great Eight" competencies developed by SHL Universal Competency Framework [4]: 1) leading and deciding; 2) supporting and cooperating; 3) interacting and presenting; 4) analyzing and interpreting; 5) creating and conceptualizing; 6) organizing and executing; 7) adapting and coping; 8) enterprising and performing. Gudanowska also proposed a numerically rich model (48 competences), in which four classes of competences were distinguished [14]: social, technical, personal, integration. A similar groups of competences were identified by the Hecklau et al. [19]: technical, methodological, social, personal. Prinz et al. (based on the research by Dombrowski and Wagner) identified a set of four soft competence groups [30]: professional, social, methodical and personal. Simons, Abé, & Naser examined a similar set of competences in relation to crucial technologies and aspects of Production 4.0 [35]. According to Erol et al., the set of competences required for future production can be divided into four groups [8]: personal, social/interpersonal, action-related, domain-related. Grzelczak et al. distinguished a set of ten employees' competences for Industry 4.0 without any division into types or classes [11]: interdisciplinary thinking and action; process's knowledge growth; participation in innovative

processes; problem solving; personal responsibility for decision-making; social skills and communication; leadership; ability to work processes coordination; scope of work complex control; ability to cooperate/interact with machines. The Association of Internet Industry Employers in Poland points to the following competences related to the industrial revolution 4.0: technological skills; IT skills; ability to acquire and analyze information. Moreover, the Employee 4.0 should be a person focused on the lifelong learning process [28].

Grzybowska and Łupicka [12] identified three main categories to classify core managerial competencies: technical, managerial, social. Gracel and Makowiec created a typology of necessary managerial skills in relation to the most important components of Industry 4.0, i.e.: interoperability, virtualization, decentralization, decision making capabilities in real time, service orientation and modularity [17].

According to McKinsey's analysts, future competences of growing importance on the labour market can be divided into five groups [6]: physical and manual, basic cognitive, higher cognitive, social and emotional, and technological.

"Transformative" competences are a variety of competences that give young people the feeling of being innovative, responsible and conscious. According to OECD, these are [34]: competence to create new values; competence to reconcile tensions and solve dilemmas; competence to take responsibility.

Gehrke et al. on the basis of the rich literature of the subject distinguish qualifications and skills of workers in factory of the future in a horizontal (personal and technical) and vertical position (according to the "MuShCo" prioritization technique: must, should, could) [10].

There is a common part of the set of competences identified by many authors for all groups of workers – from qualified workers to engineers and managers, i.e. soft skills class such as social and communication skills, ability to work in interdisciplinary groups, self-management, holistic view of complex production systems [10, 35].

Literature on the competences of career counsellors who are oriented towards the latest research developments in the area of the 4th industrial revolution is very scarce. One of the most valuable publication in this area is article of Hirschi, according to which career advisers will play an increasingly important role in helping people understand "revolutionary changes 4.0" and in obtaining, evaluating and applying information



The size and clarity of the label of a given element suggests its frequency in the analyzed set. In turn, the proximity of the elements indicates their more frequent co-occurrence in specific sets than in relation to more distant ones. Elements that are distant from each other do not appear together at all or it happens very rarely. If a given element appears in the center of the map it can be concluded that it is related to a larger and more diverse group of other elements. The elements located on the edges of the visualization are characterized by a small number of connections, they often belong to isolated fields. In the color version of the created visualizations, the label view form also allows to distinguish clusters formed by the most common elements (marked in color) [49].

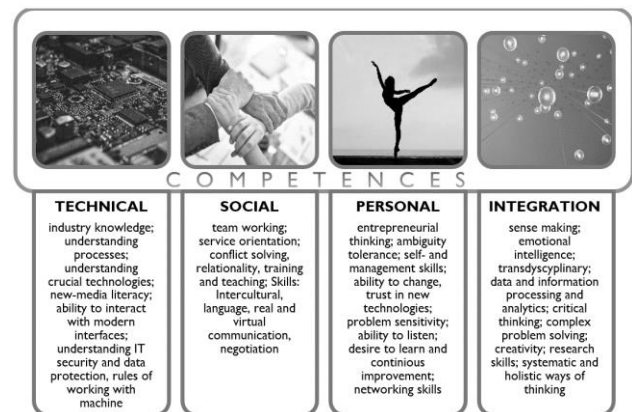
As the primary research the qualitative study (in depth interviews among 13 experts representing a diverse professional environment in 8 large cities in Poland) was carried out within the project "Horizons of the Future". The project has been realized in period of 2018-2020 and implemented under the "Dialogue" programme of the Ministry of Science and Higher Education of Poland. The qualitative research was conducted among career counsellors, representatives of both public organizations (higher education institutions, public employment services, vocational schools) as well as private sector counselling organisations.

Following the bibliometric analysis of the publications collected in the WoS database there can be identified nine clusters of keywords connected with the subject of competences of career counsellors. The element which appears in the center of the map is counsellor education as the crucial issue associated with competences of career counsellors. The main research areas refer to multicultural and communication competences, counselling directed toward disadvantaged groups – i.e. disabled and counselling aimed at professional development including school counselling. However, there is lack of research areas which refer to competences of counsellors related to the 4th industrial revolution.

The respondents of qualitative studies pointed out the desirable competences and qualifications of career counsellors. Those features relate to current trends in the labour market connected with the dissemination of Industry 4.0.

Following the model presented by Gudanowska [14] which identifies the competences' categories as well as necessary skills in the context of Industry 4.0, it can be stated that the competences of career counsellors should be grouped in four areas: technical, social, personal and integration – figure 2.

Gudanowska in her model emphasizes the significance of technical competences but also the soft skills in the era of shaping the employees of the future. The model presented in figure 2 resulting from qualitative research also shows a great importance of soft competences next to technical ones.



**Figure 2. Competences of career counsellors**

Source: own study based on Gudanowska, A. E.

(2017). Transformation towards Industry 4.0 –

identification of research trends and aspect of necessary competences in the light of selected publications.

Research in Logistics & Production, 7. Photographs were downloaded from unsplash.com

The identified technical competences of career counsellors assure recognition of the industry specificity on the labour market. Thanks to new-media literacy, ability to interact with modern interfaces counsellors have wider access toward information. Industry knowledge, understanding business, production processes and business models as well as crucial technologies and rules of working with machine make the counselling service more directed toward needs of employers.

Social competences of career counsellors are important to conduct individual and group professional guidance also in multicultural surrounding. The basis are communication skills (also in foreign languages) and good relationality, followed by negotiation skills, training and teaching abilities, conflict solving and teamworking. Counsellors should also represent service orientation by active approach of helping people.

Personal competences ensure good contact with the client and they are crucial for counselling process. Counsellors should be equipped not only in the soft personal skills as ability to listen or problems solving but they should also represent a set of good managerial skills (i.e. entrepreneurial thinking or self- and time management skills).

Integration competences of career counsellors support them in problem solving by integrating hard skills (like analytical competences and research skills enabling the identification of trends on the labour market) and soft skills (i.e. creativity, emotional intelligence). Integration competences allow for adjusting the social and professional profile of client to identified labour market trends.

Experts of qualitative study also pointed two factors which have an impact on the future career counselling: 1) technological changes, which may also make the counselling "automate"; 2) socio-demographic: life expectancy – the return of older people to the labour market; the return of economic emigrants, the need for lifelong training; the return of women to the labour market after a break related to the childbirth, general advice for adults, in accordance with the concept of lifelong learning, which translates into the so-called "lifelong guidance".

Participants of qualitative research also believe that it is becoming more important to approach career counselling for such groups as disabled people and foreigners. The respondents' opinions also suggest that there will be further "personalization" of counselling to adjust the service toward needs of certain groups of clients and closer contact in the process of career counselling with practitioners as well as with employers and representatives of the business sphere.

Some respondents mentioned possible specialization in terms of selected target groups (children, adolescents, adults), especially in the context of specific competencies of the career counsellors. It was also underlined the necessity of a systemic approach (a new work organization based on comprehensive knowledge) for career counselling, especially at schools at the early stages of education (primary and secondary schools).

## 5 Discussion and Conclusion

Other studies on the competences of counsellors indicate that they are important for the effectiveness of public policy. The study conducted among employment counsellors in public employment services (PES) in Europe proved that the skills and competences of counsellors were identified as being critical to achieving successful placement outcomes [33]. In relation to the core tasks for employment counsellors specializing in services for jobseekers in Europe, the adequate job profile includes: communication and interviewing skills, as well as client orientation (tasks focused on placement); counselling, assessment and matching skills, the

ability to motivate and inspire clients, stress resistance, patience, understanding and the ability to listen nonjudgmentally (tasks focused on counselling); knowledge of the current labour market situation and trends, communication skills and client orientation (tasks focused on information provision); communication and cooperation skills, and service-specific knowledge (tasks focused on administration and monitoring). In addition, "soft skills" are increasingly important to facilitate not only contact with clients, but also other stakeholders linked to employment service delivery.

According to the authors, one of the key competences of career counsellors is foreknowledge of social and technological trends. It is worth considering reliable research results in this context. For example in one of the European Union project – beFORE – there were recognized 12 main competences (identified by academics, students and entrepreneurs) divided in three main types, that will be needed in the future working environment: 1) more functional, task oriented approaches (e.g. analytical thinking); 2) original thinking and acting (e.g. thinking creatively); 3) psychological traits and relations with others (e.g. reflexive capacity) [20].

Many of the competencies required to deliver quality career services are likely also important to deliver quality services in other areas, not necessarily related to career guidance such as good communication skills, strengths and limitations analysis, demonstrating ethical behavior, ability to integrate theory into practice. However, there are some competencies typical for career counsellors. There can be included labour market information, knowledge of lifelong career development or work search strategies [21].

The 4th industrial revolution is causing a process of change for people working in many areas. People will have to be able to adapt to new technologies and related innovative organisational changes [10]. The support of that adaptation provided by career counsellors is determined by having complex competences.

The article presents the results of a study on the competences characteristic for Polish career counsellors in the spirit of a new idea – the 4th industrial revolution. The identified model of competences covers four areas – social, personal, integration and technological. Those competences should support counsellors to provide guidance service which relates to alternative paths of professional development, is directed toward different groups of clients and meets current employer's needs.

In conclusion, it should be stated that today's changes, both economic and social, are much faster and more dynamic and difficult to predict than in previous decades. Moreover, the phenomenon of qualification mismatch is becoming more and more common when employees have qualifications significantly exceeding or, on the contrary, inadequate to those required for a given job [43]. Therefore, vocational guidance institutions, operating in the modern reality of Industry 4.0 [44], should proactively anticipate future trends in the uncertain and volatile labour market and on this basis create and propose alternative career paths. In this context adaptation of trends analysis, and the scenarios of career path development can be very helpful in career counseling practice [45]. Taking into account the challenges of Industry 4.0 other interesting idea seems to be to build a broad and innovative non-educational and flexible consultative eco-system, whose primary objective should be to identify and promote future competences. These kinds of competences are very important due to the fact that most of them relate to professions that have not existed yet [38, 27].

Results of qualitative study poses practical implications for adjustment of educational offer for career counsellors which should be complex and develop not only social and personal but also integration and technological competences.

There has to be mentioned limitation of qualitative research in the form of the problem of competences identification by analysis from the point of view of one side of the consultancy service. However, considering the opinions of various stakeholders is important for full analysis of the problem what determines the perspective for future research. In addition, it is also worth expanding the spectrum of analyzes with other research directions in the context of modern career counseling in the era of uncertain future. In the authors' opinion, such areas with great potential are foresight, prediction and anticipation research [45, 46].

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