

Article

Formation of Professional Competences and Soft Skills of Public Administration Employees for Sustainable Professional Development

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Abstract: (1) Background: The current situation is bringing about changes manifested in the digitalisation of management processes, the aspects of knowledge management, and the transmission of global risks. Demands in the area of soft skills are increasing. Therefore, this study aims to identify the requirements for competences necessary for the effective performance of job positions in public administration in the Czech Republic, including the mapping of interest in further training. (2) Methods: The data were collected in 2020 via questionnaires from 245 employees in relevant positions. The data were analysed using the correlation analysis method for establishing relationships between variables applying the Pearson correlation coefficient. Gender differences and differences between rank-and-file and executive employees were subjected to the Mann–Whitney U-test. (3) Results: The more competence is required by the employer, the more frequently it is used by employees and the more favourably the workers assess themselves in this competence. At the same time, they have a greater need and are willing to train this particular competence. A significant trend has been identified in the case of executives. Soft skills are used most frequently and the employees would like to further train them. The least interest is shown in project management training. As to professional competences, digital systems are the most frequently used and required. (4) Conclusions: The research suggests trends in the development of modern technologies, digitalisation, and information systems that will contribute to effective work in public administration. Soft skill development in rank-and-file and executive employees will also be needed.

Keywords: public administration; professional competences; soft skills; project management; knowledge management; digital systems; professional training; questionnaire method



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1. Introduction

These turbulent times are characterised by a growing dynamic of changes and the rapid digitalisation and automation of management processes as well as the transmission of global threats and risks, resulting in the need to adapt the training system in public administration to growing, qualitatively new, sustainability requirements and to the prospective development of staff competence structures. An ever-increasing proportion of work of public administration staff will be creative, interdisciplinary, and based on teamwork, flexibility, and systematic thinking. Future public administration specialists must be able to work in a state of high uncertainty, permanent dynamic change in the conditions of the

tasks addressed, and the fast flow of information, including the ability to share data, knowledge, and work online [1]. The authors recommend the formation of supra-professional competences and universal knowledge aimed at the professional activities of specialists in various fields. They further document the impact of the transfer of Industry 4.0 requirements on the sphere of employee competence profiles while reflecting the need for combining technical know-how with soft skills for the 21st century [2]. According to [3], the implementation of Industry 4.0 will bring new approaches, as well as methodologies and technologies, with their transmission being gradual due to high financial costs and a lack of qualified employees. Concerning these issues, other studies point to the increased demands on educational institutions whose long-term objectives must be the satisfaction of employers' requirements for the competences of new graduates [4].

1.1. Explanation of Research Motivations and Study Objectives

The traditional knowledge-based paradigm does not meet the requirements for the practical experience expected by the decision-making sphere. The effort to shape supra-professional competences, cross-cutting knowledge, and digital literacy, usable for interdisciplinary comprehensive decision making, comes to the fore. In practice, competence model analyses lead to a change in priorities in the projection of educational objectives and teaching management models, stemming from competence-based learning and teaching. However, competence-based management requires an individual approach, taking into account the current needs of the target group and the implementation of related competence models, reflecting current aspects of the world of work always for specific job positions, environments, and time periods. The integration of a balanced competence spectrum into professional training can significantly streamline the functioning of the public administration system, in which the human factor is of key importance.

This article aims to identify the requirements for competences necessary for the effective performance of job positions of public administration staff including the mapping of interest in further training with regard to digitalisation, which has become inevitable for society during the COVID-19 pandemic. It examines strengths and weaknesses of the professional development of public administration employees in the Czech Republic in various job positions, i.e., at the level of local government employees (towns and villages) and employees of regional authorities as well as gender differences. Professional development is defined at the level of soft skills and professional competences, as well as through the self-reflection of these workers. Proceeding from this analysis, recommendations for the sustainable professional development of public administration staff have been formulated, using several aspects as follows:

- Required levels of professional competences and soft skills on the part of employees;
- Usability of professional competences and soft skills in public administration;
- Self-assessment of the employees' level of professional competences and soft skills;
- Need for further training professional competences and soft skills from the point of view of employees;
- The willingness of employees to further train professional competences and soft skills;
- Feedback of employees on professional training at the workplace (comments and preferred areas of further professional training).

This sphere has been chosen because of the lesser attention it has received for the time being in the Czech Republic, and therefore, the authors want to bring new findings relating to the professional development of public administration staff into this area.

1.2. Literature Review

The professional capability component is determined by the specific work activity of the individual, while the social and conceptual components of competence represent more general prerequisites for integration into society. According to these authors [5], the successful development of strategic individual competences is based on rudimentary attitudes, integration of perception of the need for the development of individual com-

petences, internal motivation for education, readiness for change, methods of modelling the guidelines for strategic competence development, and the level of support for the application of competence development methods. In this context, it is suitable to take into account older but still relevant research studies [6], highlighting the risks of the education system having been focused mainly on the formation of professional competences, referred to as 'hard', with not always adequate attention having been paid to 'soft' competences (social, conceptual).

Moreover, there is a study demonstrating a positive relationship between organisational culture and leadership style of top management on one side and the perceived benefits of knowledge management on the other. This is important for setting up incentive mechanisms and benefits in an organisation [7]. The findings in [8] confirmed that quality professional training can establish a solid system of professional values, set expectations and requirements for the performance of the profession appropriately, and equip HR managers with competences to solve ethical problems and strengthen their sense of responsibility. Another study has proven that if the competence model is strictly integrated into HR functions, it will strengthen individual performance and the overall organisational culture in the long term [9]. The results of the recent research carried out by [10] have shown that both the leadership style and the perceived development of skills significantly influence employees' work commitment in public administration. In line with the above, it has been established that a group of qualified and motivated managers showed a higher level of conscientiousness, openness, and positive personality traits in relation to employee training and management [11]. At the same time, the authors emphasise the importance of managerial tacit (silent) knowledge. The statistically based results of the study [12] demonstrate that there is a negative relationship between the ambiguity of goals and commitment and, on the other hand, a positive relationship between social capital and commitment. The authors conclude that public sector organisations can increase the work commitment and motivation of top managers by evaluating the progress of goal achievement and by declaring the required performance standards.

Modern trends in e-government and digitalisation of public administration place increased demands on employee competences and training in the field of information and communication technologies. A competence-based leadership style requires an individual approach and implementation of such competence models that capture all aspects of work in the digital world. Under the conditions of The Russian Federation, the authors [13] developed guidelines for improving official regulations for public administration staff in terms of competence requirements in information and communication technologies. The study shows the positive effects of projecting digital literacy into the subsequent styles of work of public administration employees. An extensive survey of the competence concept was carried out by [14] on a sample of 2292 civil servants, applying a spectrum of 248 different competences, where similar importance was confirmed in the groups of professional competences and soft skills. Interestingly, digital competences were underestimated by civil servants, with only 38 respondents (out of 2292) classifying them as necessary and important. The authors [15] examined the competences of public administration staff in a sample of 365 respondents ranging from the position of independent specialists to the heads of the departments; their research highlighted shortcomings in the unclear strategy of knowledge storage and development of employees' competence potential.

An interesting addition to the examination of specific competences in the judiciary is a study [16] that draws attention to the relationship between workload and the development of competences and to the fact that it is advisable to differentiate this development according to the type of job position. Another noteworthy approach is presented in the survey of job-related, demographic, and managerial variables of the regional police force in Great Britain [17]. Its findings demonstrate the importance of organisational engagement and managerial competences, which strongly support the claim that the opportunity to participate in decision making, to predict the support of superiors, and communicate the results of the work has a substantial impact on the organisational culture and motivation at

all levels of the service hierarchy. This has also been validated by the authors [18], who have examined competences in public administration in Russia and have declared that the possibility of using and developing employee competences depends on opportunities created by the employer, including working conditions and employee satisfaction.

An important attribute of the researched issue is sustainability, which in Portuguese conditions has been examined by the authors [19], who conclude that it is positively and directly impacted by intellectual capital. Three comprehensive inventories have been developed within the Expanded Student Engagement Project (ESE), aimed at raising students' awareness of the content of sustainability courses and the possibility of participating in sustainability projects at the University of Toronto [20]. A relationship between sustainability and intellectual capital has been examined under Pakistani conditions using the structural equation modelling (SEM), demonstrating that intellectual capital helps managers to acquire and use information resources in a qualified way, which affects competitiveness [21]. At the same time, this implicitly assumes a high level of digital literacy. The digitalisation of public services is a priority for many governments around the world, which is reflected by research studies into these issues. They show that the level of digital administration is associated with knowledge management quality and that knowledge management is a decisive factor in the successful digital transformation in public administration [22]. These findings complement the results of a study [23] demonstrating that a culture of compliance with IT (information technology) regulations has a provable connection with the quality of services, accountability, and transparency through ITG (IT governance). The authors show that effective ITG application is a precondition for the successful introduction and development of e-government in Indonesian local governments.

Current public administration and sustainability challenges in the context of education and digitalisation lead to a change in the management and operational principle concepts of public sector organisations and support the need for innovation. The development and implementation of innovations are based on collective interaction and promote creativity, knowledge, and resource sharing as well as education implementation, thus providing an opportunity to find solutions to the extremely difficult and complex problems of modern public administration [24].

The research objective has produced the following hypotheses:

Hypothesis 1 (H1). *Attitudes of public administration staff towards competences vary by gender and job title.*

Hypothesis 2 (H2). *There is a positive correlation between the required and usable levels of competences.*

Hypothesis 3 (H3). *There is a positive correlation between the level of competences subjectively assessed by employees and the level required by the employer.*

Hypothesis 4 (H4). *There is a positive correlation between the usable level of competences and the level subjectively assessed by employees.*

Hypothesis 5 (H5). *There is a negative correlation between the need for further training and the assessment of the level of professional competences and soft skills by employees.*

Hypothesis 6 (H6). *There is a positive correlation between the need and willingness to further train competences.*

2. Materials and Methods

2.1. Data and Procedure

The research was carried out under the conditions of the Czech Republic at the level of public administration positions, with a focus on the professional level of rank-and-file

employees and executives. The research has been designed as quantitative since it allows generalising results at the level of this professional group. The survey took place in 2020.

The object of the research was the level of professional competences and soft skills of public administration employees used by them to effectively perform their job positions. Soft skills have been defined as the competences that each employee should have regardless of their profession [25,26]. The following soft skills have been examined:

- Effective communication, negotiation;
- Planning and organising work;
- Leadership;
- Teamwork.

The professional competences have been defined in close connection with the relevant profession. In the case of this research, specific professional competences for the performance of job positions in public administration have been selected. These include, but are not limited to, economic competences, smart city competences—knowledge of objectives, basic concepts, knowledge of solutions in individual areas, knowledge of good practice examples, project management, digital skills, etc. [27]. The following professional competences have been researched:

- Project management;
- E-government (e.g., Czech POINT);
- Preparation of strategic documents;
- Electronic communication (e-mails, reservation system, electronic forms, etc.);
- Working with aid schemes (application and subsequent project);
- Working with internal information systems;
- Smart mobility (smart transport—parking systems, smart stops, etc.);
- Smart environment (energy, public lighting, waste).

Competences have been arranged in the following groups according to material conformity and common elements:

1. Soft skills;
2. Project (project management, preparation of strategic documents, working with aid schemes);
3. System (E-government, electronic communication, working with internal information systems, smart mobility, smart environment).

The research sample consisted of 245 public administration employees of various job titles from five regions in the Czech Republic. The response rate amounted to 52%. Authorities from other regions of the Czech Republic were also approached. However, their employees did not participate in the research. Respondents have been divided by gender and job titles for hypothesis verification purposes. The job titles are categorised into rank-and-file employees and executives.

The research was carried out at the level of local governments (i.e., towns and villages) and regional authorities. The sample was created by purposive sampling based on direct contacts and collaboration by the authors of this article. However, this selection method does not fully ensure the representativeness of the sample. The survey was not anonymous. Respondents agreed to the processing of personal data and their use for other purposes. For the needs of this research, all data by which the respondent could be identified were encrypted or deleted.

2.2. Research Sample

A total of 245 respondents from five regions of the Czech Republic participated in the research. The Vysočina Region (over 95% of the 245 respondents) had the largest number of participants, followed by the neighbouring Pardubice Region, with significantly fewer respondents. The Vysočina Region is the fifth largest region of the Czech Republic, which is divided into 14 regions in total. The other regions included the Capital City of Prague, the South Moravian Region, and the Hradec Králové Region. Since the representation of

respondents is not even from the point of view of regions, the responses of the participants have not been analysed by this characteristic. Employees have been divided by gender and job titles (Table 1).

Table 1. Profiles of respondents ($n = 245$).

Variable	Frequency	Percentage
Gender		
Male	65	26.5
Female	180	73.5
Job title		
Rank-and-File Employee	188	71.8
Executive	57	28.2

Public administration is represented by local government (i.e., towns and villages) and regional authorities. As to other departments and offices that participated in the survey, they included the Regional Development Department, Department of Culture and Heritage Care, Department of the Governor and Mayor Secretariat, Department of Regional Human Resources, Department of Human Resources and Salaries of the Jihlava City Council, Internal Audit, Crisis and Security Management Section, Municipal Trade Licensing Office, E-government and File Services, Deputy Mayor's Office, Department of Real Estate Management, Town Development and Taxes and Fees as well as Project and Marketing Section.

2.3. Methods

Quantitative research employed a survey method in the form of a web-based questionnaire that was sent to the e-mail addresses of public administration staff. The survey was not conducted anonymously; however, all sensitive data were deleted or encrypted in the final report.

Hypotheses H1–H6 were tested using quantitative research methods. Methodologically and from a design point of view, the research has been inspired by a study [28], which focuses on evaluating the level of competences of internal audit employees using the survey method. The questionnaire was designed as non-standardised and was prepared in the Czech language for Czech respondents to increase its validity. The questionnaire was not taken from the original English language; therefore, it was not necessary to verify its comprehensibility and consequently the validity of the questionnaire.

The questionnaire concentrated on the following issues:

- Factual data (characteristics) of respondents;
- Employees' subjective assessment focused on the required levels of professional competences and soft skills for the performance of a job position in public administration, and the level used for the job position;
- Assessment of the level of professional competences and soft skills (self-reflection of employees' abilities);
- Need and willingness of employees to further train professional competences and soft skills for professional performance in public administration;
- Feedback from public administration staff on professional training at the workplace—based on open questions, employees had the opportunity to comment on the workplace training system and their preferences in terms of training specialisation;
- The four-point Likert scale of 1–4 was used to assess the competences. This rating is based on the Methodology of the European Framework for the Digital Competence of Educators: DigCompEdu [29];
- In order to assess the usability of competence in the given job position by an employee, a scale of 1—least usable to 4—most usable was adopted;
- A scale of 1—the lowest level to 4—the highest level was used to assess the required level of competences for the performance of the job position in question;

- The following scaling was employed to evaluate the knowledge and skills of public administration staff in the given competence: 1—basic level of knowledge/skill; 4—professional level of knowledge/skill in the given competence;
- The scaling below was adopted to reflect the need for further training of public administration staff in professional competences and soft skills: 1—the least important competence; 4—the most important competence.

In order to express employees' willingness to train professional competences and soft skills, the following scale was produced: 1—I am not willing to train; 4—Yes, I want to train in this area (competence).

The validity of the questionnaire was subjected to the pilot survey before sharp data collection. The survey was attended by 10 respondents from the relevant job positions. Based on their comments on the wording of the questionnaire items, validity was ensured. Internal consistency (reliability of the questionnaire) was measured for the total questionnaire by computing the Cronbach's alpha. The questionnaire was evaluated as reliable since the Cronbach's alpha is 0.933. The value is between 0 and 1, and the recommended value is 0.7. The questionnaire meets this condition.

2.4. Data and Statistical Analyses

The original data obtained from the questionnaire include ordinal variables, expressing the rating by means of the four-point Likert scale of 1-4. They concern 12 competences of a soft and professional nature. Three groups of competences (variables) have been derived from these, according to the material conformity and common elements, namely, Soft skills, Project, System, using the arithmetic mean for each respondent's competence group. In this way, the numerical variables have been obtained and further analysed.

Each competence group has been studied for five different areas—usability at the job position, level required by the employer, employee self-assessment, and the need and willingness to train the competence. For analysing purposes, the following abbreviations for the variables that appear in the illustrations in the Results Section have been introduced:

- USAB usable level of competence;
- REQU required level of competence;
- SELF self-assessment of one's own knowledge and skills in the competence;
- NEED for further training the competence;
- WILL willingness to further train the competence;
- SOFT group of soft skills;
- PROJ group of professional competences in project management;
- SYST group of professional competences in the area of systems.

The variables expressing the characteristics of respondents, i.e., gender and job title (rank-and-file employees and executives) are dichotomous and nominal. A correlation matrix has been compiled to measure the dependence of derived variables. The tables in the Results Section show only a part of it. The field inside the table always contains the value of the Pearson correlation coefficient r , which is used for numerical characters. Applying Spearman's rho for ordinal data, similar results have been obtained. A Scatter Plot has been used to depict the degree of mutual interdependence between two variables. The non-parametric Mann–Whitney U-test has been applied to determine statistically significant differences in responses and opinions of respondents by gender and job title. The data did not meet the normality requirement, which has been examined by the Shapiro–Wilk test. The homogeneity of variances has been verified by Levene's test. The statistical analysis has been carried out in the SPSS program.

Null hypotheses tested at the significance level of 5% include the following:

- H_{0-1} : The attitudes of public administration staff relating to competences are the same in the case of gender and job title;
- H_{0-2} : There is no correlation between the required and usable levels of competences;

- **H₀₋₃**: There is no correlation between the level of competences subjectively assessed by employees and the level required by the employer;
- **H₀₋₄**: There is no correlation between the usable level of competences and the level subjectively assessed by employees;
- **H₀₋₅**: There is no correlation between the need for further training and the assessment of the level of professional competences and soft skills by employees;
- **H₀₋₆**: There is no correlation between the need and willingness to further train competences.

3. Results

3.1. Differences in the Attitudes of Public Administration Staff by Gender and Job Title

Firstly, descriptive statistics methods were used to establish the opinions of public administration staff in terms of characteristics examined (gender, job title) and in terms of the overall sample. For each competence group, the employees' attitudes relating to the competence usability, the level required by the employer, self-assessment of the level for the competence group in question, and the need and willingness to train the given competences were assessed. The values were obtained by using averages. The results are shown in Table 2.

Table 2. Employees' attitudes relating to competences in terms of researched areas.

Competence Group	Total (<i>n</i> = 245)	Male (<i>n</i> = 65)	Female (<i>n</i> = 180)	Rank-and-File Employees (<i>n</i> = 188)	Executives (<i>n</i> = 57)
Level of usability					
Soft Skills	3.20	3.23	3.19	3.08	3.59
Project	2.08	2.26	2.01	2.00	2.32
System	2.41	2.50	2.38	2.38	2.52
Required Level					
Soft Skills	3.18	3.30	3.13	2.99	3.79
Project	1.96	2.26	1.86	1.85	2.36
System	2.29	2.38	2.26	2.25	2.45
Self-Assessment					
Soft Skills	3.04	3.16	3.00	2.93	3.43
Project	1.95	2.32	1.82	1.85	2.30
System	2.25	2.46	2.18	2.20	2.44
Need to Train					
Soft Skills	2.79	2.73	2.81	2.73	2.36
Project	2.08	2.17	2.04	1.99	2.07
System	2.08	2.12	2.07	2.08	2.45
Willingness to Train					
Soft Skills	3.18	3.07	3.21	3.12	3.36
Project	2.43	2.39	2.39	2.37	2.60
System	2.49	2.48	2.70	2.49	2.48

The overall sample shows that the area of soft skills comes under the category most frequently used by public administration staff in their job positions, as well as the category most required by the employer in the recruitment procedure for the given job position. At the same time, the results demonstrate that employees assess themselves most favourably in this area during the self-reflection on their knowledge and skills (3.04 of the total possible 4 levels). In addition, the results suggest, in terms of average values, that with respect to competences most frequently used by employees, most favourably self-assessed by them, and most required by the employer, employees also feel the need and willingness to train these. The less they use a given group of competences in their profession, and if simultaneously this is not significantly required by the employer, the lower they assess their level in this competence. Similarly, the need and willingness to train this competence

further is smaller. This trend is evident at the level of the overall sample for the professional competence group, namely, in this order—the System group (E-government, electronic communication, working with internal information systems, smart mobility, smart environment) and the Project group (i.e., project management, preparation of strategic documents, working with aid schemes). There are no differences between the two groups of professional competences in terms of average values. The differences are apparent between the groups of soft skills and professional competences.

These trends have also been analysed by gender and job position within the given job title, i.e., on the level of rank-and-file employees and executives. From a gender perspective, the same development trend of assessment across all five areas has been identified as that for the overall sample. Therefore, the more frequently men and women use a specific competence in their jobs, the more required it is by the employer. In terms of self-reflection on their knowledge and skills, they assess themselves more favourably and thus feel a greater need and willingness to further train this competence. The men rate competences in the five researched areas at a higher level than women, while both men and women assess themselves more favourably in the area of soft skills, which significantly surpasses the area of professional competences. From a job-related point of view, the development trend in perception of soft skills and professional competences is the same as that of the overall sample and from a gender perspective. Executives used higher assessments for all five areas for which competences were analysed. The difference between rank-and-file employees and executives has been identified in the group of soft skills, namely, at the level required by the employer, use of competences in the job, self-assessment of the competence level, and the need and willingness to further train soft skills.

In addition, statistical differences in the respondents' attitudes to competences in terms of the five areas examined by gender and job title (i.e., rank-and-file employees and executives) were evaluated at the significance level of 5% (Table 3).

Table 3. Differences in attitudes by respondent characteristics (H1 verification).

Competence Group	Gender (<i>p</i>)	Job Title (<i>p</i>)
Level of Usability		
Soft skills	0.513	<0.001
Project	0.030	0.009
System	0.048	0.055
Required Level		
Soft skills	0.021	<0.001
Project	0.002	<0.001
System	0.062	0.005
Self-Assessment		
Soft Skills	0.148	<0.001
Project	<0.001	<0.001
System	<0.001	<0.001
Need to Train		
Soft skills	0.768	0.061
Project	0.288	0.012
System	0.533	0.897
Willingness to Train		
Soft skills	0.346	0.010
Project	0.296	0.131
System	0.671	0.861

Statistically significant gender differences have been established at the level of these groups of professional competences Project and System in the case of their use at the given job position. In the instance of the required level at the time of employment commencement differences have been found for Soft skills, Project, and System. In the case of self-assessment of one's own knowledge and skills, differences have been identified for the

Project and System groups. There have been no significant differences between men and women in terms of the need and willingness to train the given competence. Statistically significant differences between rank-and-file employees and executives have been found at the level of the Soft skills group in all five areas studied, in the Project group apart from the area of willingness to train the given competence, and in the System group, except for the area of need and willingness to train.

The hypothesis H_{0-1} is rejected at a 95% confidence level in the case of gender and job title.

Figure 1 illustrates the most significant statistical differences at the level of this group of respondents by job title. Figure 1a shows the differences between the rank-and-file employees and the executives in the willingness to train in the Soft skills group. Figure 1b illustrates the differences between both groups of respondents in the need for further training in the group of professional competences Project.

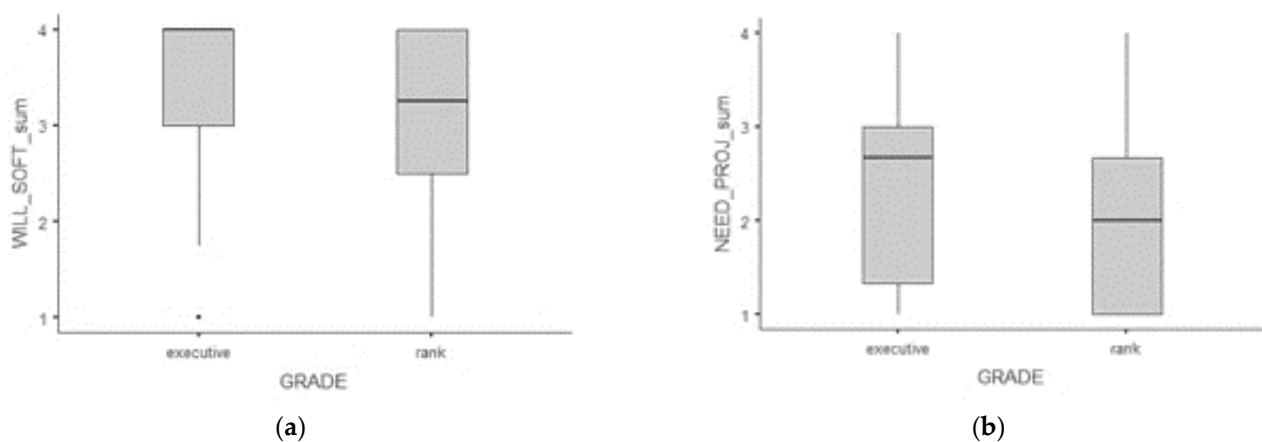


Figure 1. (a) Willingness to train in the Soft skills group by job title and (b) need for further training in the group of professional competences Project by job title.

3.2. Employees' Feedback on Professional Training at the Workplace (Open Responses)

Employees were able to comment on training in public administration through open questions. They most often said that there was a need to increase the possibilities of learning foreign languages. A frequently recurring comment referred to a lower level of development of digital literacy through employee training. The increase in the further training of public administration staff is also connected with the willingness of the employer to support such training. Rank-and-file employees said that such willingness was low at the time being and it was necessary to keep persuading their employers to promote further training for public administration staff. Opinions on e-learning education were also voiced. Respondents consider that its current form does not allow for relevant assessment of the knowledge acquired by training participants. The final tests should be more complex and should check whether the course participant has actually read and understood the text. The respondents also named the specific specialisations of training that they lacked at the workplace. The most frequently occurring answers of respondents are given in the following list:

- Effective communication, teamwork, time management;
- Communication with problematic clients;
- Specific computer programs such as Tagra;
- Environmental education;
- Drawdown of finances from European funds;
- Project management, preparation of strategic documents, current trends in project management;
- Systematic thinking and meaningfulness of work;

- Czech language in official practice, English language with native speakers, MS Office—especially Excel, PowerPoint, project manager certification.

3.3. Verification of Hypotheses H2–H6 by Correlation Analysis

Hypotheses H2–H6 have focused on establishing correlations between variables at the level of the overall sample ($n = 245$). The method of correlation analysis has been used for this procedure. According to the Pearson coefficient r , the degree of dependence has been evaluated and the correlation matrix has been prepared. Table 4 illustrates a part of the correlation matrix and presents the results of the correlations between the variables for hypotheses H2–H4.

Table 4. Correlation analysis—verification of hypotheses H2–H4.

H2	USAB			H3	REQU			H4	SELF		
REQU	SOFT	PROJ	SYST	SELF	SOFT	PROJ	SYST	USAB	SOFT	PROJ	SYST
SOFT	0.699	0.246	0.272	SOFT	0.531	0.116	0.174	SOFT	0.416	0.125	0.149
	<0.001	<0.001	<0.001		<0.001	0.069	<0.001		<0.001	0.050	0.020
PROJ	0.232	0.795	0.297	PROJ	0.269	0.758	0.197	PROJ	0.016	0.617	0.132
	<0.001	<0.001	<0.001		<0.001	<0.001	0.002		0.800	<0.001	0.039
SYST	0.253	0.290	0.723	SYST	0.262	0.147	0.579	NEED	0.097	0.219	0.523
	<0.001	<0.001	<0.001		<0.001	0.021	<0.001		0.129	<0.001	<0.001

It has been proven that there is a positive correlation between the required and usable levels of competences for all competence groups. The null hypothesis H_{0-2} on the absence of correlation is rejected at the significance level of 5%. The strongest degree of dependence ($r = 0.795$) has been identified for the group of professional competences *Project*, in which it applies that employers' requirements are strongly reflected at the extent to which public administration staff use the competence. Figure 2a presents the Scatter Plot, which shows the degree of mutual interdependence between two variables, i.e., between the required and usable levels for all the competences studied. It concerns a direct (positive) dependence ($r = 0.728$).

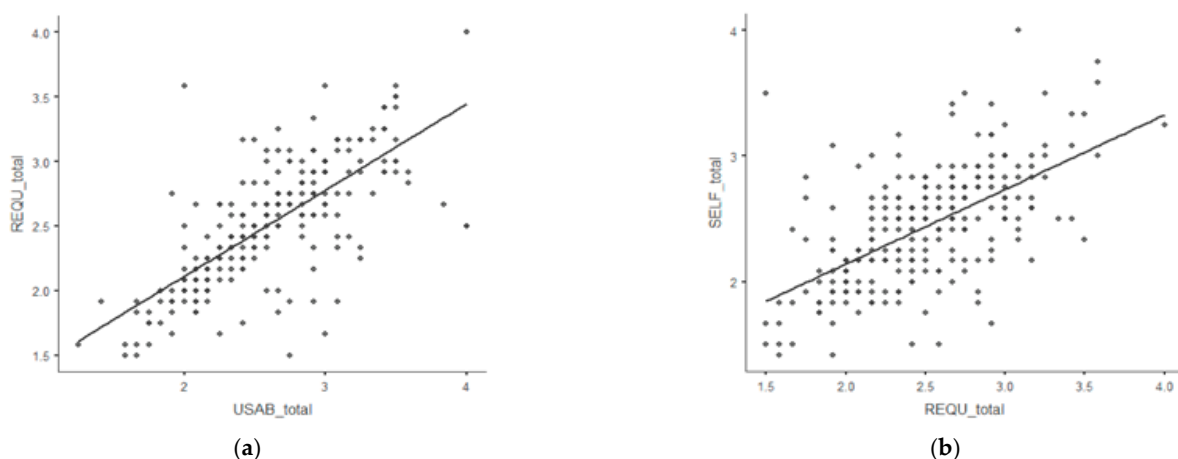


Figure 2. (a) The degree of interdependence between the required and usable levels of competences and (b) the degree of interdependence between the level of subjectively assessed competences and the requirements of the employer.

In addition, the correlation analysis has demonstrated a positive relationship (Table 3) between the level of competences subjectively assessed by employees and the level required by the employer at the point of employment commencement for all competence groups, with the highest degree of interdependence found again in the group of professional

competences Project ($r = 0.758$). Figure 2b shows a direct (positive) interdependence between variables ($r = 0.601$). The null hypothesis H_{0-3} on the absence of correlation is rejected at the significance level of 5%.

Moreover, the correlation analysis has established a positive relationship (Table 3) between the level of competences subjectively assessed by employees and the actual level of competence used in the given job position. The strongest degree of interdependence has been found again for the group of professional competences Project ($r = 0.617$). Figure 3 illustrates the positive interdependence between variables ($r = 0.443$). The null hypothesis H_{0-4} on the absence of correlation is rejected at the significance level of 5%.

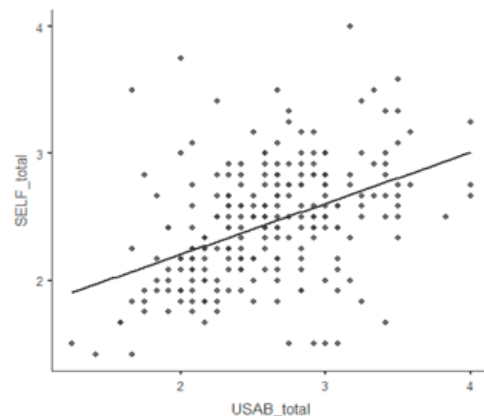


Figure 3. The degree of interdependence between the level of competences subjectively assessed by employees and the level required by the employer.

Table 5 shows a part of the correlation matrix and presents the results of correlations between variables for hypotheses H5 and H6.

Table 5. Correlation analysis—verification of hypotheses H5 and H6.

H5				H6			
	NEED				NEED		
SELF	SOFT	PROJ	SYST	WILL	SOFT	PROJ	SYST
SOFT	0.108	0.061	0.026	SOFT	0.654	0.300	0.333
	0.092	0.345	0.690		<0.001	<0.001	<0.001
PROJ	0.050	0.605	0.080	PROJ	0.213	0.690	0.272
	0.437	<0.001	0.216		<0.001	<0.001	<0.001
SYST	0.062	0.045	0.412	SYST	0.256	0.231	0.608
	0.336	0.482	<0.001		<0.001	<0.001	<0.001

The results show that there is a positive mutual correlation between the need for further training and the assessment of the level of professional competences and soft skills by employees (Table 5). This means that the more favourably the employees assess their own level of competences, the greater the need for training this competence is felt by them. The null hypothesis H_{0-5} on the absence of correlation is rejected at the significance level of 5%. However, we assumed that there would be a negative correlation between the variables, that is, the more favourably the employees assess themselves in competences, the lower their need for training the competence will be and vice versa. This assumption has not been validated. The strongest degree of positive dependence ($r = 0.605$) has been found for the professional competences Project. The degree of mutual interdependence between the two variables examined for the groups of competences in question is $r = 0.267$.

At the end of the analysis, hypothesis H6 was tested, i.e., establishing whether there was a positive correlation between the need and willingness to learn. This relationship

has been validated for all competence groups (Table 5), with the *Project* group showing the strongest degree of positive interdependence. This degree of dependence is demonstrated in Figure 4.

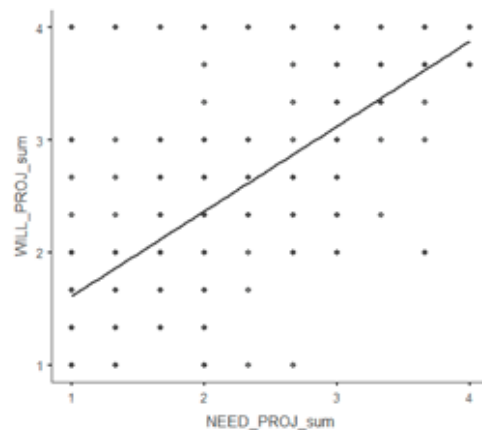


Figure 4. The degree of interdependence between the need and willingness to train professional competences in the Project group.

The null hypothesis H_{0-6} on the absence of correlation is rejected at the significance level of 5%. The degree of mutual interdependence between the two variables examined for all groups of competences is $r = 0.612$.

4. Discussion

Focused on public administration employees in the Czech Republic, the research dealt with identifying strengths and weaknesses in soft skills and professional competences required for the performance of given job positions. The study examined the relationships in the area of the level of soft skills and professional competences used, and further, at what level employees assess their own knowledge and skills, and whether they perceive a need and are willing to further train the competences in question.

A summary of the verification of substantive hypotheses is presented as follows:

Hypothesis 1 (H1). *Attitudes of public administration staff towards competences vary by gender and job title.* Validated.

Hypothesis 2 (H2). *There is a positive correlation between the required and usable levels of competences.* Validated.

Hypothesis 3 (H3). *There is a positive correlation between the level of competences subjectively assessed by employees and the level required by the employer.* Validated.

Hypothesis 4 (H4). *There is a positive correlation between the usable level of competences and the level subjectively assessed by employees.* Validated.

Hypothesis 5 (H5). *There is a negative correlation between the need for further training and the assessment of the level of professional competences and soft skills by employees.* Not proven. A positive correlation has been validated.

Hypothesis 6 (H6). *There is a positive correlation between the need and willingness to further train competences.* Validated.

4.1. Professional Development in the Area of Soft Skills

At the level of the research sample, it has been established that it is soft skills that are most frequently used by employees and required by an employer at the time of employment commencement. This outcome is in line with international trends since creativity, teamwork, and flexibility, which are aspects of soft skills, are at the forefront of public administration [1]. Our research focused on effective communication, negotiation, planning and organising work, leadership, and teamwork. There is considerable consistency with other studies that document requirements of Industry 4.0 for employee competences associated with the soft skills for the 21st century [2,3]. The effort to shape supra-professional competences, cross-cutting knowledge, and digital literacy, usable for interdisciplinary comprehensive decision making, comes to the fore. This trend also complies with the established positive correlation between the required and used levels of soft skills. In addition, public administration employees assess themselves most favourably in soft skills, which again relate to the high requirements of employers and the degree of use of the given competences at the workplace.

Executives, in particular, use soft skills in their positions most frequently and also feel the greatest need and willingness to train in this area. At the level of the overall sample, a positive relationship between the need and willingness to train soft skills has been established. Respondents were given the opportunity to express openly in what areas they felt the need for further training. As to soft skills, they most frequently stated effective communication, communication with problematic clients, teamwork, time management, the meaningfulness of work, which is related to job motivation. Concerning these areas, the research identified the greatest weaknesses in the professional development of soft skills of public administration employees. The limits of soft skill development are also pointed out by other authors [6,7], who deal with motivation at the workplace. In connection with increasing motivation, it is appropriate to offer employees various forms of further training [8], an important prerequisite is to equip HR managers with competences to address ethical issues and to strengthen their sense of responsibility in the context of sustainability, thereby positively influencing job satisfaction of rank-and-file employees. It has also been found that men assessed employers' requirements for soft skills more strictly than women, which may be due to the fact that it was mainly men who held executive positions in our research sample.

4.2. Professional Development in the Area of Professional Competences with a Focus on Project Management

The competences used at the workplace least frequently, yet required by the employer, are professional competences, namely, from the Project group, which are the competences focused on project management, preparation of strategic documents, and working with aid schemes. This trend has been identified both for the overall sample and at the level of the researched characteristics of the respondents. From the point of view of the five areas for which the competences were studied, the Project group has produced the strongest degree of correlation in terms of employers' requirements, competences used by employees, their self-assessment of competence, as well as the need and willingness to train. In a broader context, this outcome can be explained, for example, by the impact of Industry 4.0 on the sphere of competence profiles of employees. This implementation is designed to bring new approaches and methodologies, and therefore, it will be necessary to prepare employees for these trends, which workers may become aware of [2,3]. A typical feature of modern didactic approaches of vocational pregraduate and postgraduate training for professions in public law administration is a shift in the educational paradigm in targeting the balanced development of hard and soft elements of education. Even though this group of competences is perceived as the least needed in the given job position, the employees have reported professional areas, albeit on a smaller scale, in which they have a need and are willing to train further. These cover aid schemes from European funds, project management in general, preparation of strategic documents, and current trends

in project management. These issues were raised particularly by executives. In this aspect, statistically significant differences have been identified between executives and rank-and-file employees (Figure 1b). Therefore, it will be suitable to target professional training especially on executives and concentrate on project management. From a gender perspective, it has been found that men assess this area of competence more strictly within their job positions than women. Only in the case of willingness to train in the *Project* competences no significant differences have been established since in this respect men and women are equally willing.

4.3. Professional Development in the Area of Professional Competences with a Focus on Information and Digital Systems

Information and digital systems are important for public administration work. However, workers' responses show that they are less necessary than soft skills, yet required by the employer. In our research, information and digital systems have been understood as e-government, electronic communication, working with internal information systems, smart mobility, smart environment. Digitalisation and information systems are more important at work for men than women, except for the willingness to train in this area, where statistical gender differences have not been discovered. Men see technologies and digitalisation as more significant for their occupation, and they also feel a greater need to educate themselves in this area. This may be in line with the fact that executives in our research sample were primarily men who responded that these competences were more important to them than to rank-and-file employees, except for the willingness and need to educate themselves in these, in which statistical differences have not been found. It will therefore be necessary to focus on digitalisation and modern, smart, information systems in the context of sustainable professional development of staff, also in view of the current COVID-19 pandemic. This outcome can be matched to modern trends of e-government and the digitalisation of public administration in the international arena. Requirements for the staff competences and training in the field of information and communication technologies keep increasing [13,14,30]. The result corresponds to open answers, in which respondents could indicate which type of training and what specialisation they would be interested in, or which they lack and would like to participate in. These included computer programs, systematic thinking, and current trends in project management. For the System competences, it has been validated that there is a positive correlation between the variables in all five areas, meaning that the competences required by the employer are also used by the employees, and a positive trend has been established in the self-assessment of knowledge and skills in the given competence and in the need and willingness to further train the competence. The digitalisation of public services is a priority for many governments around the world, which is reflected by research studies into these issues. They show that the level of digital administration correlates to the knowledge management quality and that knowledge management is a decisive factor in the successful digital transformation in public administration [23,24]. At the same time, acceptance of learning style preferences of learners is an important component of knowledge management and the formation of competence profiles [31].

4.4. Limitations and Future Direction of Research

The research was carried out in 2020, at a time that preceded the pandemic crisis and the significant development of digitalisation. In this respect, we see limitations in terms of the most recent events in the area of public administration. Another limitation lies in the selection of the region where the research was carried out. Therefore, the conclusions cannot be generalised, and an extended study will have to be conducted with the inclusion of other regions. Despite this limitation, research suggests trends in the development of modern technologies, digitalisation, and information systems that will contribute to effective work in public administration. For the future, it will be necessary to expand the range of soft skills and professional competences with additional knowledge and skills reflecting the needs of the current COVID-19 pandemic, thus responding to rapidly changing conditions within

the public administration professions. However, competence-based management requires an individual approach, taking into account the current needs of the target group and the implementation of related competence models, reflecting current aspects of the world of work always for specific job positions, environments, and time periods. The integration of a balanced competence spectrum into professional training can significantly streamline the functioning of the public administration system, in which the human factor is of key importance. At the same time, it will be vital to focus on professional training systems within the culture of the organisations concerned and pay attention to the professional development of managers in particular, which contributes to employee satisfaction and improves the quality of public administration services. Further research will be directed in this way.

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