

## Article

# Human Resource Management in Environmental Protection in Serbia

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**Abstract:** Starting from the fact that the units of local self-government of the Republic of Serbia are not sufficiently oriented towards innovations related to human resources and the environment, the application of quantitative research tradition examines the positioning and understanding of certain procedures and decisions of human resources management regarding the functioning of the environmental protection system, on the one hand, and future strategies for changing the given system, on the other. A series of 105 face-to-face interviews were conducted during the whole of 2016 in 105 of the 191 municipalities in the Republic of Serbia. Examination of the attitudes of the local self-government was carried out using a specially designed closed electronic questionnaire. The results of the multivariate regressions show that the most important predictor of the possible improvement of the environment is the size of the municipality. The remaining variables (e.g., human resources policy, human resources service) did not have significant effects on the ability to improve the environment. In more than half of local self-governments, there was no clearly defined human resources strategy in the field of environmental protection, an environmental protection service, an Environmental Action Plan, as well as an employment plan for waste management in local governments, etc. The research has shown that top managers of local governments agree that the management of human resources in environmental protection represents a significant opportunity to improve the quality of the environment. The results of the research can be used to improve the organization of human resource competence in environmental protection and the quality of a working and sustainable environment in the area of local self-government.

**Keywords:** human resource; management; environmental protection; Serbia

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## 1. Introduction

Globalization brings new challenges and imposes increasing demands on the quality of the environment. Human resources management involves the initiation of quality improvement initiatives, expressed through an adequate allocation and maximization of human resources. The complexity of determining coordination and subordination in the functioning of the environment with other systems is determined by the strategic conflict, conditioned from an old economic needs of local self-governments, and on the other, by the sustainability of the environment. Human resources management is an important link in overcoming this conflict.

Human resources are a critical factor that influences the successful implementation of the concept of sustainable development, that is, the strategy of achieving sustainable development of local self-governments. It is precisely the formulation, implementation, and control of the strategy of

sustainable development of local self-governments, in particular the strategies of a sustainable environmental protection system, requiring the knowledge and analysis of available human resources. Environmental protection of local governments implies a clearly defined local governance orientation, based on external environmental analysis and an internal analysis of local government (SWOT analysis), in order to formulate a successful strategy. In the overall strategic process, human resources are a factor of great importance for all phases of the process.

The selection of staff in environmental protection in local self-government units is conditioned by the need to exploit internal human resources and the Employment Ban on Employment in February 2014, which stipulates that state institutions must seek the approval of the Government to recruit candidates. In addition to other environmental issues, local governments significantly reduced the number of employees in these workplaces, resulting in a narrow choice and thus poor selection. The lack of a human resources management sector further complicates the situation. Due to the correlation between each step of the human resources management process, it leads further to the problem of retraining, poor training or lack of training and, of course, the lack of motivation, because in the affairs of environmental protection very often people who are not qualified for these jobs are selected and therefore they do their jobs reluctantly. Human resources management in local governments has been perceived as a development factor in recent years. For this reason, a pilot study was conducted on the basis of which a study was conducted "Analysis of needs in the field of human resources development in 6 pilot municipalities". The research was carried out in 2010 and was implemented by the joint EU, Council of Europe and the Ministry of Public Administration and Local Self-Government in the so-called Phase 2 project entitled "Strengthening Local Self-Government in Serbia" (Press Release of the Ministry of Public Administration and Local Self-Government, Strengthening Local Government in Serbia, Belgrade, 2010.)

Human Resource Management is a series of activities that enable both employees and organization to reach an agreement that will allow them mutual benefit [1]. Starting from the previous practice in the Republic of Serbia, in the affairs of environmental protection in a large number of local self-governments are not employed professionals. Unusually, these jobs are performed by legal persons, economists or persons with inadequate educational qualifications, on the pretext that they are temporarily assigned to these tasks. The knowledge of such human resources is not adequate or sufficient for the adequate implementation of a sustainable development strategy. The Law on Labor Relations in Public Authorities (Official Gazette of RS, 83/2005) does not regulate the basic internal training of employees in local self-government units. Capacity building of human resources cannot be realized without professional training. In addition to strengthening individuals, the quality and success of local self-government are strengthened. Additional ecological education is also necessary due to previous failures in the system of value of JLS which caused the environment to be neglected. A significant number of employees until the decade ago were not interested in preserving the environment, let alone imperative. When making decisions on environmental protection, the local self-government must look at the sustainability of decisions and their impact on all stakeholders, both in local self-government and in the wider environment.

Part of the process of attaining higher impact reflects the important of organizational size. Traditional organizational theory asserts that organizations emerge, develop and survive in response to their organizational environment [2]. Successful organizations develop organizational strategies consistent with their environment and consolidate organizational routines and policies of their human resources to cope and realign with the demands from the internal as well as the external environment [2]. For this reason, it is necessary to carry out a valid assessment of progress and local tendencies towards sustainable development, considering the centrality of organizational size as well as a whole set of alternatives that may be at the local level in the form of some new options conditioned by the consequences of human activities, may be the result of a local specific practice of non-market activities (which can ultimately contribute to social welfare), and they can make a complete set of decisions that are interconnected.

## 2. Literary review

Human resource management in environmental protection, in addition to having a direct impact on environmental improvements, has a significant impact on the overall performance of the organization. By exploring cause-related relationships between strategy and performance [3-5], the conclusion is drawn that the MLJR has a positive impact on the performance through the impact on human and social capital local governments. For this reason, the process of human resource management in environmental protection of the local self-government implies maximization of human capacities with the central tendency of creating the capacity of local self-governments by strengthening human and social capital. It is very important to emphasize that the local governments of RS in large numbers represent the sleepy and sluggish organizations with a significant percentage of unused capacity of human resources, which requires a revision of human resources. Harrington (2003) has produced evidence that many organizations use only 20% of their human resources capacity. This means that in many companies there are 80% of formal potentials, which are costly for the company, which are inactive or insufficiently active in the realization of strategic goals. The implication that can be very real to us is that there is a significant place for improving human resources. By a series of derived data, Huselid [5] argued that the improvement of human resources can positively affect the performance. Human resources and human resource management are of strategic importance because they have potential value and have a central position in creating the organizational capabilities responsible for their competitive advantage in a market game [6, 7].

Human resources and their management are more likely to flourish in large settings because organizational size is an elementary control mechanism that indicates the magnitude of tasks to be coordinated and controlled. Organizational size manifests itself in several ways including the size of the employee and volunteer workforce, the number of service recipients, the number of branches, the administrative/professional ratio and the budgetary level [8]. The size of human resources enables the development of elaborate regulations and formalities [9] that sustain formalized human resource practices. These practices are typical of "complex" organizations [10] and this manifest in the organizational size: Large organizational size is often associated with the potential to attain resources and benefit from greater access to economic, political and social resources [11]. Large organizations are more likely to focus on the uniqueness of organizational oals and to support a strong formal organizational culture that fosters collectivist behavior [12]. Due to their size large organizations are (a) are less crisis-prone [8, 12, 13] and (b) more valued in terms of reputation and social legitimacy [14]. Hence, larger settings are more likely to adopt processes and practices better suited to capitalize on human resources [15]. These practices, in turn, enhance organizational identification among employees and managers alike [16].

## 2. Materials and Methods

The subject of the research is the analysis of the relation of organizational characteristics and characteristics of the competence of human resources engaged in the tasks of managing the environment and working environment in the local self-governments on the level of preservation and quality of living conditions in them. Starting from such a defined subject of research, the paper starts from the hypothesis that the organization and competence of human resources engaged in the management of environmental and work environment in local governments influences (the correlate) to the level of quality and development of the environment in their local communities. Conscious of the fact that the units of local self-government of the Republic of Serbia are not sufficiently oriented towards innovations related to human resources and the environment, the application of scientific methods examines the positioning and understanding of certain procedures and decisions of human resources management in relation to the functioning of environmental protection systems on the one hand and future strategy related to changing the given system, on the other. The scientific goal of the research is to describe and explain the useful organizational models of environmental protection, as well as the role of human resources in them. On the other hand, the social goal of the research is reflected in the creation of the preconditions for developing an adequate human resource management model engaged in the protection of the living and working environment in the local

self-government units contributing to the preservation and development of the qualities of their performances. For the needs of the research, the organizational structure was operationalized using six indicators related to: the adaptability of the systematization of jobs to the structure of existing staff; the existence of a human resources development service at the level of local self-government; periodic harmonization of the real state and real needs for human resources; planned means for training and improvement of employees in the field of environmental protection; introduction of planning, development and environmental protection service; the introduction of a waste management post,

Due to the transparency of the results of the research, the characteristics of the work related to human resource management activities in the field of environment protection and those specific work related to the additional ecological education of the employees and the promotion of environmental awareness of the population were separately analyzed.

## 2.1. Sample

A series of 105 face-to-face interviews were conducted during the whole of 2015 in 105 of the 191 municipalities in the Republic of Serbia: Beograd, Novi Sad, Kragujevac, Niš, Leskovac, Novi Pazar, Subotica, Valjevo, Čačak, Rakovica, Subotica, Čačak, Kraljevo, Zrenjanin, Kruševac, Pančevo, Smederevo, Užice, Šabac, Vranje, Lozniča, Stara Pazova, Vranje, Jagodina, Sremska Mitrovica, Požega, Gorni Milanovac, Bajina Bašta, Senta, Ivanjica, Ub, Barajevo, Paraćin, Bećej, Bačka Topola, Vlasotince, Bogatić, Velika Plana, Vrnjačka banja, Indija, Kladovo, Kanjiža, Kovačica, Vršac, Bačka Palanka, Varvarin, Mladenovac, Petrovac na Mlavi, Zaječar, Odžaci, Apatin, Aleksandrovac, Raška, Topola, Temerin, Kovin, Negotin, Žabalj, Novi Bećej, Sopot, Lučani, Čajetina, Kosjerić, Arilje, Bojnik, Boljevac, Beočin, Bački Petrovac, Bosilegrad, Bela crkva, Žagubica, Batočina, Žitište, Gadžin Han, Knić, Žabari, Brus, Bela Palanka, Krupanj, Doljevac, Žitorađa, Babušnica, Golubac, Lapovo, Ljubovija, Mali Iđoš, Malo Crnice, Opovo, Medveđa, Plandište, Rača, Plandište, Mali Zvornik, Dimitrovgrad, Ada, Kuršumlija, Sečanj, Novi Kneževac, Sjenica, Ćićevac, Titel, Ljig, Bač, Osečina, Kučovo, Mionica. (Figure 1). The sample covered most of the local self-governments with less than 20,000 inhabitants (44.8%) and at least with more than 150,000 inhabitants (4.8%). The HR department is the most prominent (66.7%) with local governments with between 100,000 and 150,000 inhabitants, and to the least extent, there are local self-governments with fewer than 20,000 inhabitants. In relation to the Planning, Development, and Environmental Protection Service, it is important to point out that all local governments from 60,000 to 100,000 inhabitants (100%) have formed such a service. By contrast, at least (40%) have local governments with more than 150,000 inhabitants.

Table 1. Display of the characteristics of local self-governments covered by the sample.

| Local self-governments              | Personnel strategy |      |              | Human Resources Service |              |              | Service for planning, development and protection of the environment |              |              | Local environmental action plan |    |
|-------------------------------------|--------------------|------|--------------|-------------------------|--------------|--------------|---|--------------|--------------|---------------------------------|----|
|                                     | Size               | N    | %            | Yes                     | No           | Yes          | No  | Yes          | No           | Yes                             | No |
| Less than 20,000 inhabitants        | 47                 | 44,8 | 21<br>(44.7) | 26<br>(55.3)            | 14<br>(29.8) | 33<br>(70.2) | 3 (6.4)   | 44<br>(93.6) | 14<br>(29.8) | 33<br>(70.2)                    |    |
| From 20,000 to 60,000 inhabitants   | 36                 | 34,3 | 17<br>(47.2) | 19<br>(52.8)            | 18<br>(51.4) | 17<br>(48.6) | 5<br>(14.7)   | 29<br>(85.3) | 13<br>(36.1) | 23<br>(63.9)                    |    |
| From 60,000 to 100,000 inhabitants  | 7                  | 6,7  | 3 (42.9)     | 4 (57.1)                | 4 (57.1)     | 3 (42.9)     | /   | 7 (100)      | 3 (42.9)     | 4 (57.1)                        |    |
| From 100,000 to 150,000 inhabitants | 10                 | 9,5  | 6 (60)       | 4 (40)                  | 6 (66.7)     | 3 (33.3)     | 3<br>(33.3)   | 6 (66.7)     | 9 (90)       | 1 (10)                          |    |

|                               |   |     |        |        |        |        |        |        |        |        |
|-------------------------------|---|-----|--------|--------|--------|--------|--------|--------|--------|--------|
| More than 150,000 inhabitants | 5 | 4,8 | 4 (80) | 1 (20) | 3 (60) | 2 (40) | 3 (60) | 2 (40) | 4 (80) | 1 (20) |
|-------------------------------|---|-----|--------|--------|--------|--------|--------|--------|--------|--------|

### 2.3. Questionnaire design

The questionnaire was created using the Likert five-scale system and serves as an instrument for measuring the attitudes of top-management of local self-governments on the characteristics of employees and the work related to environmental protection and human resource management. Examination of the attitudes of the local self-government management regarding internal characteristics and human resources management factors of local self-government units was carried out using a specially constructed closed electronic questionnaire. The questions were divided into groups, focusing on the top management positions on the importance of human resources for the environment, their ecological knowledge and the necessity of improving it among employees and the population, the possibilities of improving the environment to new strategic concepts related to human resources, methods and techniques efficient human resource management in the environment, etc. The first group of questions ( $N = 10$ ) includes the characteristics of the organization: business strategy and personnel development in local self-government units; organizational austerity in units of local self-government; organizational culture in units of local self-government; the action plan and the technical-technological system of local self-government units. The second group of questions ( $N = 10$ , Likert scale) included the characteristics of employees, while the third group of issues (Likert scale) related to human resource management activities in environmental protection, as well as to additional environmental education of employees and awakening the ecological awareness of the population.

### 2.4. Analyses

The reliability of the entire questionnaire according to Cronbach's alpha coefficient is 0.867. The consistency of the response to items within the separate scales is somewhat lower, but Cronbach's alpha also there has values between 0.722 and 0.793, which is considered satisfactory reliability coefficients.

## 3. Results

In order to examine whether the size of the local community is a significant predictor of our research, the multivariate regression analysis was used to identify the extent to which three independent variables (size of the municipality, human resources, human resources) were associated with three variables: the ability to improve the environment, resource management as an opportunity for improvement, contributing to the sustainable development of the municipality). Based on the assumptions on which the analysis is based, variables such as larger local self-government, there is a staff policy and there is a human resources service have been coded as 1; 0 has been assigned otherwise. The assumptions of normality, linearity, multicollinearity, and homogeneity of variance have not been violated. The results of multivariate regressions show that the most important predictor of the possibility of improving the environment is the size of the municipality ( $\beta = -0.143$ ), and it explains 14.3% variance. The remaining variables (e.g., human resources policy, human resources service) did not have significant effects on the ability to improve the environment. This model ( $R^2 = 0.106$ ,  $Adj. R^2 = .069$ ,  $F = 2.82$ ,  $t = 12.14$ ,  $p = 0.029$ ) with all mentioned independent variables explains the 10.6% variance of the possibility of improving the environment. Further analyses showed that the mentioned variables (size of the municipality, human resources, HR) did not have significant effects on resource management as an opportunity for improvement of the environment. The results of the multivariate regressions of contribution to the sustainable development of the municipality showed that the most important predictor is the size of the municipality ( $\beta = .378$ ) explaining the 37.8% of the variance. The remaining variables (e.g., human

resources policy, human resources service) did not have significant effects on the ability to improve the environment (Table 2).

Table 2. Multivariate regression analysis results in predicting the possibility of improving the environment, managing resources as an opportunity for improvement and contributing to the sustainable development of the municipality (N = 105).

| Predictor variable  | Size of municipality |      |        | Personnel policy |      |      | Human Resources Service |      |       |
|---|----------------------|------|--------|------------------|------|------|-------------------------|------|-------|
|   | B                    | SE   | β      | B                | SE   | β    | B                       | SE   | β     |
| Q13 - Possibility of improving the environment                        | .181                 | .056 | .336** | -.121            | .113 | .114 | .078                    | .168 | .051  |
| Q14 - Resource management as an option for improvement                | -.057                | .068 | -.088  | .137             | .159 | .092 | -.238                   | .242 | -.110 |
| Q15 - Contribution to the sustainable development of the municipality | .159                 | .064 | .378*  | .134             | .148 | .085 | -.167                   | .242 | -.078 |

\*p=.05. \*\*p ≤ .01

The obtained results of the survey show that 51.4% of local self-governments do not have a clearly defined HR strategy, while the remaining 48% think that it has a satisfactory business strategy and development of staff in the field of environmental protection. Such an outcome is an important indicator for further consideration of causes and factors, due to which half of the local self-governments have no fundamentally defined personnel strategy. Starting from the importance of strategic human resource management planning and careful recruitment and selection of internal staff, it can be said that the benefits of internal recruitment should not limit the planning of personnel by adjusting the staff structure to existing staff. Certainly, this further leads to a worse selection, which results in the deployment of staff to jobs where their contribution can be questioned (Table 2).

The obtained results of the survey show in 92% of local self-governments the systematization of jobs is adapted to the existing staff. This data points to the possible cause of mistakes in the management of human resources of local self-governments. The improvement and development of personnel as the basis for successful human resources management has been significantly neglected in local self-governments. In addition, it was found that 86.3% of local self-governments of the RS do not have a service dealing with environmental issues, which indicates that educational processes and training of employees are mostly natural. When it comes to environmental protection, the results show that only 17.3% of local self-governments adequately plan resources for training and improvement of employees in the field of environmental protection, while 82.6% do not plan to improve staff in this area. Also, it is significant that 56% of local governments do not perform periodic reconciliation of the real state and real needs for human resources (Table 2). Out of the total number of observed local governments, 47.1% do not have a service for planning, development, and protection of the environment, while in almost 58.7% of local self-governments there is no workplan dedicated to waste management in local self-governments. Such results unambiguously indicate the lack of an adequate environmental protection strategy in almost half of the local governments. The awareness of local government management must be based on the premise that strategic commitment to environmental and labor and environmental standards is a privilege, not sacrificing.

When it comes to top management positions of local self-governments on the development of a culture of environmental protection among employees in the local self-government unit, the results of the survey show that 41.18% of local governments do not exist, which is a significant problem in the orientation of these local self-government units towards a sustainable development. This fact justifies the need for introducing additional ecological education and strengthening the environmental awareness of employees and citizens of local self-governments as a necessary condition for sustainable development. In relation to the environmental protection system in the local self-government, the results indicated point to the fact that more than half of local self-government

units (59%) do not have an Environmental Action Plan. This is another of the presented characteristics of the organization, which indicates that the importance and improvement of environmental protection in local self-governments must be understood differently (Table 2). The results of the testing show that there is a statistically significant link between the size of the local self-government and the following variables: the human resources development department ( $p = 0.004$ ); Planning, Development and Environmental Protection Service ( $p = 0.000$ ); workplace - waste management ( $p = 0.001$ ); and local ecological plan ( $p = 0.003$ ). With other variables (personnel strategy, systematization of jobs, harmonization of human resources needs, etc.), statistically significant association was not established (Table 2). Further analyzes show that the largest local governments (more than 150,000 inhabitants) have the largest human resources development services (60%). By contrast, in the smallest local self-governments (less than 20,000) there is at least a service for planning, development and protection of the environment (Table 2). It is a very interesting fact that no local self-government with the size of 60,000 to 100,000 inhabitants does not have a human resources development service. Analyzing the obtained results, there is a tendency to increase the need for introducing a job in waste management with the growth of the size of local self-government. The connection of these variables could be conditioned by increasing the amount of generated waste due to the increase in the number of inhabitants, which conditioned the greater need for its organized management.

**Table 3.** Chi-square test results between size of municipality and examined variables.

| Number of<br>question<br>from<br>questionnaire | Variable  | Yes       | No        | Sig. (2-<br>Tailed) | $\chi^2$ |
|--|---|-----------|-----------|---------------------|----------|
| Q2   | Personnel strategy  | 50 (48.1) | 54 (51.4) | .636                | 2.54     |
| Q3   | Systematization of jobs   | 92 (91.1) | 9 (8.9)   | .438                | 7.95     |
| Q4   | Human Resources<br>Development Service                                    | 14 (13.7) | 88 (86.3) | .004*               | 15.24    |
| Q5   | Adjustment of human<br>resources needs                                    | 45 (43.7) | 58 (56.3) | .110                | 7.53     |
| Q6   | Planned funds for training  | 18 (17.3) | 86 (82.7) | .238                | 10.39    |
| Q7   | Service for planning,<br>development and protection<br>of the environment | 55 (52.9) | 49 (47.1) | .000**              | 20.95    |
| Q8   | Workplace - waste<br>management   | 43 (41.3) | 61 (58.7) | .001**              | 17.20    |
| Q9   | Culture of environmental<br>protection                                    | 60 (58.8) | 42 (41.2) | .172                | 6.39     |
| Q10  | Local environmental action<br>plan  | 43 (41)   | 62 (59)   | .003*               | 15.88    |

\* Correlation is significant at the 0.05 level (2-tailed),

\*\* Correlation is significant at the 0.01 level (2-tailed).

The obtained survey results show that 87.6% of local government managers express the view that it is necessary to improve the management of human resources in environmental affairs ( $M = 2.78$ ,  $SD = 1.00$ ). In addition, 98.1% of managers express the view that it is necessary to improve environmental protection in local self-government ( $M = 2.78$ ,  $SD = 1.00$ ). The bearers of the development process from idea to implementation are human resources. Their role in the whole process is irreplaceable.

For this reason, the results of this research indicate the importance and understanding of the importance of continuous education of local communities in the field of environmental protection and their impact on improving the quality level and development of environmental characteristics of their communities.

Further analyzes show that 88.6% of managers point out that human resources management in environmental protection represents a significant opportunity for improving the environment ( $M = 4.26$ ,  $SD = 0.74$ ). It is interesting to note that 84.5% of managers express the view that human resources management in environmental protection will contribute to the sustainable development of the municipality ( $M = 4.21$ ,  $SD = 0.63$ ). In contrast, 82.8% of the managers express the view that human resource management in environmental protection would contribute to more efficient environmental protection ( $M = 4.22$ ,  $SD = 0.7$ ). It is interesting to point out that 68.6% of managers think that their local self-government will gladly include human resources management in environmental protection in the Local Environmental Action Plan - LEAP ( $M = 4.00$ ,  $SD = 0.82$ ). Also, 96.7% of managers express the view that their local self-government should, within the LEAP, plan to raise the expertise in creating a local environmental policy ( $M = 4.16$ ,  $SD = 0.72$ ). In addition to the very strong awareness of the need for introducing change in human resources management, fewer local governments think they are willing and able to accept changes in human resources management in order to improve the environment. Consequently, compared to the previous paragraphs and expressed needs, 57.1% of managers express the view that their local self-government is ready to accept changes in human resources management in order to improve the environment ( $M = 3.74$ ,  $SD = 0.87$ ). On the other hand, only 11.4% of managers express the view that their local self-government does not have enough financial resources to implement and improve human resources management in environmental protection. This is in favor of the assumed fact that additional ecological education and motivation can significantly contribute to the protection of the environment and its sustainable development. For this reason, the reasons for underdeveloped human resources management should not be sought in financial circumstances. It is interesting to note that 85.6% of the managers express the view that the current knowledge of the population about problems, significance and the way of environmental protection is not enough to preserve and improve the environment ( $M = 4.16$ ,  $SD = 0.81$ ).

Looking at the average mean values of the response related to the tasks of additional ecological education of employees and the awakening of the ecological awareness of the population, very high arithmetic environments are observed. In addition, the vast majority of 98.1% of the managers emphasize that the development of environmental awareness of the population will contribute to raising the efficiency of the management and environmental management system ( $M = 4.65$ ,  $SD = 0.51$ ). Also, slightly more than half of the managers 64.7% point out that their local governments would gladly support and organize additional education of employees on environmental protection ( $M = 3.91$ ,  $SD = 0.84$ ). It is interesting that 84.7% of managers would organize additional education of employees on environmental protection if such education would be free ( $M = 4.42$ ,  $SD = 0.74$ ). Most managers 91.4% agree that permanently informing and training the population about environmental protection will help in solving environmental problems ( $M = 4.35$ ,  $SD = 0.64$ ). Also, a slightly smaller number of managers 89.5% agree that such information and training of the population will contribute to solving the problem of excessive waste and its inadequate disposal. Such results indicate the importance and understanding of the importance of continuous education of local communities in the area of environmental protection and their impact on improving the quality level and development of environmental characteristics of their communities.

In accordance with previous research findings, 98.1% of the managers expressed the view that it is impossible to implement the strategy of environmental protection as a sustainable development without education and active involvement of human resources in the process ( $M = 4.65$ ,  $SD = 0.58$ ). Then, 97.1% emphasize that the practical integration of pre-school and school-age children into environmental protection actions would be a wise move to strengthen their awareness of the importance of preserving the environment ( $M = 4.65$ ,  $SD = 0.60$ ). Finally, it was established that 78.1% of the managers emphasize that the education of the population on environmental protection is sufficiently implemented ( $M = 3.96$ ,  $SD = 1.01$ ) within their mode of work or within the LEAP (Table 3).

Further analyses show that there is a statistically significant influence on the size of the local community on the following variables: resource management as an option for improving the environment  $F(4, 105) = 2.99, p = .022$ ; contribution to efficient protection of the environment  $F(4, 105) = 3.64, p = .008$ ; additional education of employees  $F(4, 105) = 2.48, p = .048$ ; free additional education  $F(4, 105) = 2.89, p = .026$ ; solving environmental problems  $F(4, 105) = 5.12, p = .001$ ; solving the problem of excessive waste  $F(4, 105) = 2.64, p = .038$ . In relation to the other observed variables, the statistically significant influence of the size of local self-government was not determined (Table 4). In larger local self-governments (more than 150,000 inhabitants), the attitude is expressed that human resource management in environmental protection represents a significant opportunity for improving the environment. Also, by analyzing the obtained results, there is a tendency to increase with the growth of the size of local self-government and the need for introducing a job in waste management activities. The connection of these variables could be conditioned by increasing the amount of generated waste due to the increase in the number of inhabitants, which conditioned the greater need for its organized management. It was then established that medium-sized local governments (up to 100,000 inhabitants) mostly support and organize additional educations of employees on environmental protection. On the other hand, the largest (over 150,000) and at least (under 20,000) local governments support and organize such training to the minimum extent. It can be assumed that managers in large, very small local governments do not have enough time and resources to address these issues due to other circumstances. On the other hand, it was found that the largest local self-governments would support and organize the additional education of employees on environmental protection to the least extent, although such education would be free. Also, larger local self-governments have been established in relation to smaller ones to a greater extent support the view that permanently informing and training of the population on the protection of life will help solve the problems of environmental protection.

Table 4. Results of ANOVA test between size of municipality and each independent variable. Likert scales means are shown, and standard deviations are presented.

| Number of question from questionnaire | Variable  | Yes        | Not sure  | No        | M    | SD   | Sig. (2-Tailed) | F    |
|---------------------------------------|---|------------|-----------|-----------|------|------|-----------------|------|
| Q11                                   | Legislation   | 19 (18.1)  | 50 (47.6) | 36 (18.1) | 2.78 | 1.00 | .226            | 1.44 |
| Q12                                   | Improve Human Resource Management                               | 92 (87.6)  | 7 (6.7)   | 6 (5.75)  | 4.11 | 0.80 | .288            | 1.26 |
| Q13                                   | Possibility of improving the environment                        | 103 (98.1) | 2 (1.9)   | /         | 4.58 | 0.53 | .433            | .960 |
| Q14                                   | Resource management as an option for improvement                | 93 (88.6)  | 10 (9.5)  | 1 (0.9)   | 4.26 | 0.74 | .022*           | 2.99 |
| Q15                                   | Contribution to the sustainable development of the municipality | 89 (84.5)  | 14 (13.3) | 2 (1.9)   | 4.21 | 0.74 | .117            | 1.89 |
| Q16                                   | Contribution to more effective protection of the environment    | 87 (82.8)  | 16 (15.2) | 2 (1.9)   | 4.22 | 0.77 | .008*           | 3.64 |
| Q17                                   | Local environmental action plan                                 | 72 (68.6)  | 32 (30.5) | 1 (0.9)   | 4.00 | 0.82 | .076            | 2.18 |
| Q18                                   | Raising expertise   | 91 (96.7)  | 12 (11.4) | 2 (1.9)   | 4.26 | 0.73 | .105            | 1.97 |

|     |  |            |           |           |      |      |        |      |
|-----|--|------------|-----------|-----------|------|------|--------|------|
| Q19 | Accepting changes                            | 60 (57.1)  | 42 (40)   | 3 (2.9)   | 3.74 | 0.87 | .438   | .951 |
| Q20 | Lack of financial resources                  | 12 (11.4)  | 25 (23.8) | 68 (64.7) | 3.85 | 1.10 | .236   | 1.41 |
| Q21 | Insufficient knowledge                       | 90 (85.6)  | 9 (8.6)   | 6 (5.7)   | 4.16 | 0.81 | .238   | 1.40 |
| Q22 | Development of ecological awareness          | 103 (98.1) | 2 (1.90)  | /         | 4.65 | 0.51 | .384   | 1.05 |
| Q23 | Additional education for employees           | 68 (64.7)  | 36 (34.3) | 1 (1)     | 3.91 | 0.84 | .048*  | 2.48 |
| Q24 | Free additional education                    | 89 (84.7)  | 16 (15.2) | /         | 4.42 | 0.74 | .026*  | 2.89 |
| Q25 | Solving environmental issues                 | 96 (91.4)  | 9 (8.6)   | /         | 4.35 | 0.64 | .001** | 5.12 |
| Q26 | Solving the problem of oversized waste       | 94 (89.5)  | 9 (8.6)   | 2 (1.9)   | 4.39 | 0.72 | .038*  | 2.64 |
| Q27 | Active inclusion of human resources          | 103 (98.1) | /         | 2 (1.9)   | 4.65 | 0.58 | .134   | 1.80 |
| Q28 | Practical involvement of children            | 102 (97.1) | 2 (1.9)   | 1 (0.9)   | 4.8  | 0.50 | .869   | .313 |
| Q29 | Additional education for children            | 98 (93.3)  | 7 (6.6)   | /         | 4.65 | 0.60 | .211   | 1.49 |
| Q30 | The education of the population is conducted | 82 (78.1)  | 11 (10.5) | 12 (11.4) | 3.96 | 1.01 | .065   | 2.29 |

\* Correlation is significant at the 0.05 level (2-tailed),

\*\* Correlation is significant at the 0.01 level (2-tailed).

#### 4. Discussion

By showing the results of research related to the organizational structure of the local self-government unit, as the characteristics of the organization, it is clear that there are evident failures in the area of human resources management and environmental protection. Starting from the results of the empirical research according to which the majority of local self-governments in the territory of the Republic of Serbia do not have in their organizational structure the service, that is, the human resources sector causes a number of problems because the whole process of human resources planning has been transferred to a top-management that has neither the capacity nor the expertise to put human resources in function that will generate successful responses to existing and upcoming changes emitted by the environment. Certainly, there are alternative ways of overcoming such problems of local governments by engaging external teams that would create a human resource plan in accordance with the top management vision, and whose services would cost significantly less than the cost of sustained maintenance and the existence of the human resource sector. Experts who deal with this are generally very knowledgeable about their work and factors that affect the human resources needs (global flows, ecological situation, economic situation, technological changes, trends, education system, etc.). This, in some municipalities of the Republic of Serbia, proved in practice as a useful solution. However, the business climate and attitudes of most local self-government units, in addition to the declarative position that there are omissions in this business segment and that the changes are necessary, are to use internal human resources and find an adequate internal reorganization model, adapting the planning of human resources to internal resources. It is not uncommon for a local self-government to engage human resources, if necessary, to carry out a particular job, due to a temporary increase in the volume of work, only when it is not done, or occasionally hired by experts until it has internalized its potential. However, their durable needs are mainly addressed by local self-government units through recruitment and contracting.

In that sense the study results show the importance of organizational size [17, 18]. Organisational size is a key variable in technical analysis of all organizational types, and a valid proxy for such features for organizational resources, efficiency and survivability. In Serbia organizations as well as in most organizations worldwide the size of the organizations examined here indicates the extent that these organisations can usually grapple effectively with various environmental disturbances

because they can expand their activities by adding new products or services and seeking new markets.

The informal attitude of employees was mainly an expression of dissatisfaction and lack of faith in order to change something in the near future. This is certainly one of the reasons for the poor implementation of the strategy of local and regional authorities in the field of environmental protection [18, 19]. Of course, this does not mean that the internal mobility strategy is not a good strategy, but that such a strategy must be implemented by the human resource management sector so that existing employees become operational in the new post as soon as possible. Assessing their affinities in the right way, with the advantage of internal candidates already possessing knowledge of the working environment, an internal mobility strategy can be very useful. It would be desirable to establish a Service for assessing the necessary competencies of employees in the field of environmental protection, if not at the local level, then at the district level. This would, to a certain extent, motivate employees [20, 21] to make an effort because at the district level the performance of employees in the area of environmental protection of local self-government with the rest. When it comes to measuring the effect at the level of the local community [22, 23], the effect of not only employees but also the level of knowledge transfer and the participation of the population is considered. At the level of the local self-government unit, the impact is compared with the impact of other local governments in environmental protection. At the department level, performance measurement [23, 24] makes sense if there is a department for environmental protection. This mainly depends on the size of local government. At the individual level, it is necessary to clearly define the performance of the employees who are valued.

Unfortunately, the majority of employees in local self-governments work in the field of environmental protection acting indefinitely and demotivated, justifying such a situation by poor top management, lack of financial resources and professional development. The autonomy of the local self-government unit in the wage system that would allow for stimulating performance by performance would be of great benefit. Also, the possibility of financing continuous improvement of employees in the field of environmental protection would significantly contribute to the success. We are not talking here about increasing the number of employees in these jobs, but we emphasize the additional education of employees assigned to these jobs. If we do not already have the quantity, then we must do everything to replace the quality of those employees. This, of course, is in line with the goal of the policy of optimizing the number of employees.

The research has shown that top managers of local governments agree that the management of human resources in environmental protection represents a significant opportunity to improve the quality of the environment. It can be emphasized that the organization and competence of human resources in the environment protection of the substrate is the one that opens the possibility for human resources to effectively step into sustainable development, that is, quality working and sustainable environment in the area of local self-government. The development of environmental protection and human resources management system in environmental protection must be supported by an educational emission on environmental knowledge, as only formal teaching contents are not enough. Non-formal education with an emphasis on practical training shows significant achievements. The given development conditioned the formation of the concept of the ecological knowledge chain, as a tool relevant to understanding the trends of knowledge development and movement within each individual sector of the environment.

The need to improve human resources management is more pronounced in local governments where there is no human resources development service. On the other hand, the results show that the attitude of the management of local governments to the need for improvement of human resources management depends on the planned material investments in the training and improvement of the employees in the field of environmental protection: in local self-governments, where material investment is planned for the ecological improvement of employees, there is a much smaller need for changes and improvement of human resources management. Due to this, the level of quality, primarily the working environment and then the ecological characteristics of their communities, is at a higher level. For these reasons, on the basis of the obtained results, measures can be taken to improve human resources management and environmental protection.

## 5. Conclusions

The management of human resources in environmental protection is the management of local self-government activities, used to alleviate or completely eliminate external environment and to support the improvement of the quality level and the creation of sustainable development with people as the most important factor. That is precisely the reason why human resources management is upgraded to an educational one, that is, the dimension that teaches how every local government employee and each individual will give their maximum, how to initiate motivation factors for environmental benefits, how to rationally use natural resources, reduce pollution, manage actions to achieve the level of sustainability of manipulation of natural resources and waste, etc. The concluding views perceived by this research unambiguously speak about the need for management-access to human resources in the service of the environment. Transforming the human resources of local self-government units in accordance with the symbiotic ecological, social and economic development, and within the real constraints of these local self-governments, a new, better quality and more effective working and living environment is created.

The protection of the environment of local self-government in today's modern conditions of human resources management requires a new way of thinking and working, that is, a way that leads to a high individual, group (team) and organizational work performance. For human resources, ownership and sustainability of knowledge are relevant, because there is no strategic consideration without mastering the use of knowledge management. Human resource planning implies a clear definition of hierarchy and the level of employee responsibility. It also involves defining the necessary human resources on the basis of the adopted environmental protection strategy based on sustainable development and, consequently, the analysis of the tasks to be performed. It is necessary to strengthen the local self-government with human resources engaged in the tasks of implantation of laws and by-laws related to environmental protection and the orientation of the Republic of Serbia towards the EU. Harmonization of regulations in this area with EU requirements is not easy. This, in addition to the normative work at the level of the line ministry and the revision of the complete legislative framework in line with EU regulations, implies an adequate local-professional platform. Depending on the size and capabilities of the JLS, it is necessary to plan a work plan intended for normative-legal affairs in the field of environmental protection or better training of the existing staff of the legal profession for performing these tasks. It is necessary to present a clear description of the work of employees in environmental protection, which must include: the exact job title; compulsory qualifications (knowledge, skills, experience and preferences); belonging to the department or sector (a large number of local self-government units do not have a department for environmental protection); hierarchy (superior and subordinate to the defined position); defining internal and external collaborators to preserve the environment; defining responsibilities; time dimension of employment.

Bearing in mind the current practice in the Republic of Serbia, in the affairs of environmental protection in a large number of local self-governments there are no professionals. Unusually these jobs are performed by legal persons, economists or persons with inadequate educational qualifications, on the pretext that they are temporarily assigned to these jobs. The knowledge of such human resources is not adequate or sufficient for the adequate implementation of a sustainable development strategy. The Law on Labor Relations in State Authorities does not regulate the basic internal training of employees in local self-government units. Capacity building of human resources cannot be realized without professional training. Apart from strengthening individuals, the quality and success of local self-government are also strengthened. Additional ecological education is also necessary due to previous failures in the value system of the unit of local self-government where the environment was neglected. A significant number of employees until the decade ago were not interested in preserving the environment, let alone imperative. Since the local self-government is a team that contributes to the quality of life of its citizens and their environment, each employee must

have wider knowledge in the field of ecology. It would be desirable to establish a Service for assessing the necessary competencies if not at the local level, then at the district level. This would, to a certain extent, motivate the employees to make an effort because at the district level the performance of the employees in the field of environmental protection of one JLS with the rest would be compared. The limitation of the conducted research represented extremely large differences in the size of local self-government units. In future research, it is necessary to evaluate the results and significance of the implementation of the proposed strategic concept in the form of a human resource management model for the protection of the environment of local self-governments.

#### Appendix A

The questionnaire in front of you was created for research purposes. The results of this questionnaire will be used exclusively for scientific research purposes of a doctoral dissertation. Please honestly answer all of the following questions regarding the characteristics of your local government, human resources management and environmental protection.

1. Your local self-government has:
  - a) less than 20.000 inhabitants,
  - b) more than 20.000 and less than 60.000 inhabitants,
  - c) more than 60.000 and less than 100.000 inhabitants,
  - d) more than 100.000 and less than 150.000 inhabitants,
  - e) more than 150.000 inhabitants.
2. Do you have a clearly defined HR strategy?
  - a) Yes
  - b) No
3. Does the existing systematization of jobs show real needs or is it adapted to the structure of existing staff?
  - a) Yes
  - b) No
4. Is there a human resource development set up at the local self-government level??
  - a) Yes
  - b) No
5. Does the local self-government level perform periodic harmonization of the actual situation and real needs for human resources?
  - a) Yes
  - b) No
6. Are there funds for training and improvement of employees in the field of environmental protection planned in your local self-government?
  - a) Yes
  - b) No
7. Is there a department for planning, development and protection at the local self-government level??
  - a) Yes

b) No

8. Is there a workplace dedicated to waste management at the level of the local self-government unit according to the existing systematization?

a) Yes

b) No

9. Is there a built culture of environmental protection at the local self-government level?

a) Yes

b) No

10. Has your local government developed a Local Environmental Action Plan - LEAP?

a) Yes

b) No

Please circle the number that best suits your degree of agreement with the claimed statement. The meaning of the numbers is as follows:

1. I do not agree at all.
2. I mostly disagree.
3. I am not sure.
4. I mostly agree.
5. I totally agree.

|    |  |   |   |   |   |   |
|----|--|---|---|---|---|---|
| 1. | <b>Employees in local self-government do not possess sufficient knowledge in the field of environmental protection.</b>                                    | 1 | 2 | 3 | 4 | 5 |
| 2. | <b>Knowledge of the protection of the environment of employees in local self-government should be improved by additional education.</b>                    | 1 | 2 | 3 | 4 | 5 |
| 3. | <b>Local self-government employees would be pleased to improve their knowledge of environmental protection.</b>  | 1 | 2 | 3 | 4 | 5 |
| 4. | <b>Employees in the local self-government will improve their knowledge of environmental protection with additional education if they were paid for it.</b> | 1 | 2 | 3 | 4 | 5 |
| 5. | <b>Local self-government employees are not sufficiently motivated to improve environmental protection.</b>   | 1 | 2 | 3 | 4 | 5 |

|     |  |   |   |   |   |   |
|-----|--|---|---|---|---|---|
| 6.  | The cooperation of municipal and inhabitants in the area of environmental protection is not satisfactory.                              | 1 | 2 | 3 | 4 | 5 |
| 7.  | Transferring knowledge of employees in the area of environmental protection to the population would be valuable.                       | 1 | 2 | 3 | 4 | 5 |
| 8.  | Transferring knowledge of environmental staff to the population should help local self-government to improve its environmental impact. | 1 | 2 | 3 | 4 | 5 |
| 9.  | The recent environmental impacts are not satisfactory due to the lack of expert staff in the field of ecology.                         | 1 | 2 | 3 | 4 | 5 |
| 10. | The environmental impacts so far are not satisfactory due to the lack of professional development.                                     | 1 | 2 | 3 | 4 | 5 |
| 11. | Legislation has well regulated human resource management issues in environmental protection.   | 1 | 2 | 3 | 4 | 5 |

|     |   |   |   |   |   |   |
|-----|---|---|---|---|---|---|
| 12. | It is necessary to improve the management of human resources in our local self-government.  | 1 | 2 | 3 | 4 | 5 |
| 13. | It is necessary to improve the protection of the environment in our local self-government.  | 1 | 2 | 3 | 4 | 5 |
| 14. | Human resource management in environmental protection represents a significant opportunity for improving the environment.                           | 1 | 2 | 3 | 4 | 5 |
| 15. | Human resources management in environmental protection will contribute to the sustainable development of the municipality.                          | 1 | 2 | 3 | 4 | 5 |
| 16. | Human resource management in environmental protection would contribute to more effective environmental protection.                                  | 1 | 2 | 3 | 4 | 5 |
| 17. | Our local self-government is eager to include human resources management in environmental protection in the Local Environmental Action Plan - LEAP. | 1 | 2 | 3 | 4 | 5 |
| 18. | Our local self-government should plan within the LEAP to raise expertise in creating a local environmental policy.                                  | 1 | 2 | 3 | 4 | 5 |
| 19. | Our local government is ready to accept changes in the management of human resources in order   | 1 | 2 | 3 | 4 | 5 |

|     |   |   |   |   |   |
|-----|---|---|---|---|---|
|     | to improve the environment.   |   |   |   |   |
| 20. | Our local self-government does not have enough financial resources to implement and improve human resources management in environmental protection.   | 1 | 2 | 3 | 4 |
| 21. | Previous population knowledge about problems, importance, and way of environmental protection is not enough to preserve and improve the environment.  | 1 | 2 | 3 | 4 |
| 22. | The development of the environmental awareness of the population will contribute to raising the efficiency of the management and environmental protection system.                                   | 1 | 2 | 3 | 4 |
| 23. | Our local self-government would gladly support and organize additional education of employees on environmental protection.  | 1 | 2 | 3 | 5 |
| 24. | Our local self-government would like to support and organize additional education of employees on environmental protection, if that education were free.  | 1 | 2 | 3 | 4 |
| 25. | Permanent awareness and training of the population on environmental protection will help to solve the problems of environmental protection.   | 1 | 2 | 3 | 4 |
| 26. | Permanent awareness and training of the population on environmental protection would help to solve the problem of excessive waste and its inadequate disposal.                                      | 1 | 2 | 3 | 5 |
| 27. | It is impossible to implement the strategy of environmental protection as a sustainable development without education and active involvement of human resources in the process.                     | 1 | 2 | 3 | 4 |
| 28. | The practical involvement of pre-school and school children in environmental protection actions would be a wise move to strengthen their awareness of the importance of preserving the environment. | 1 | 2 | 3 | 5 |
| 29. | Additional education of pre-school and school-age children at municipal level will contribute to the sustainable development of the local self-government unit.                                     | 1 | 2 | 3 | 4 |
| 30. | In the framework of our current work or within the LEAP, the education of the population on   | 1 | 2 | 3 | 5 |

|  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|
|  | <b>environmental protection is carried out to a sufficient extent.</b> |  |  |  |  |  |
|--|--|--|--|--|--|--|

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