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The European Proceedings of
Social & Behavioural Sciences
EpSBS

eISSN: 2357-1330

ICEEPSY 2016 : 7th International Conference on Education and Educational Psychology

Research Management Competencies: Croatian Academics' Perspective

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Abstract

http://dx.doi.org/10.15405/epsbs.2016.11.18

The research on the academics' competencies, primarily teaching competencies, has been present for many years now. On the other hand, studies on academics' research management competencies have been almost completely absent. The main research question of this study was: *How do the academics in Croatia assess the importance of the research management competencies?* The purpose of this paper is to explore and analyse the assessment of importance of the research management competencies on a sample of Croatian academics. The applied research method was an on-line survey, and the research instrument used was a survey questionnaire. The research included 1130 participants from seven public universities in Croatia. This paper will further analyse the differences in assessment with respect to the independent variables of sex, academic rank and research field of the research participants. The results indicate that the junior academics assess the research management competencies as statistically significantly less important in comparison with the senior academics. Additionally, men assess these competencies as more important compared with women. It should also be noted that there are differences between the academics from different research field (humanities, social sciences and arts versus natural and technical sciences). The data obtained are indicative and interesting particularly in the context of current higher education policies in Croatia, which among other issues, discuss the promotion procedures within the academic profession. In this context, it seems that research management competencies are going to be one of the important promotion criteria.

Keywords: Academics' competencies; research management competencies; Croatian academics.

1. Introduction

For a number of years, research, the recommendations of educational policies, and international discussions on the academics' competencies have been present in the academic community (Elton, 1986, Knight, 1995; Rychen, & Salganik, 2003; Koster, & Dengerink, 2008; Turk, & Ledić, 2016b). All of them have predominantly focused on the question of competencies related to the basic academic activities, teaching and research, and somewhat less on the question of competencies that emerged from the demand for the development of the university third mission (Boyer, 1996; Macfarlane, 2007; Cantor, 2010), as well as those directed toward leadership in science and higher education (Hoff, 1999; Kovač, 2004; Crosthwaite, 2010). However, during the last decade, as a result of significant changes in the higher education systems, academics have been faced with new demands and challenges which require the redefinition of existing competencies, and the development of new ones (Turk, 2015, 2016).

1.1. Problem statement

Studies on the changes in higher education (Musselin, 2007; Rončević, & Rafajac, 2012; Kehm, & Teichler, 2013; Turk, 2015, 2016) point out that during the last two decades, and especially during the last several years, the European educational policy has gradually highlighted the development of research management as the *sine qua non* direction of the researchers' career development in the future. A special emphasis has been placed on the project/ programme management, which in a wider context encompasses the knowledge and skills related to strategic planning, management of teams and individuals, the recognition of needs present in the wider social environment/ local community, the formation of predominantly international research networks, and the financial management on different project and/or institutional levels (Probst, & Goastellec, 2013; Kwiek, & Antonowisc, 2013).

Similarly, McDermott and Braver (2010), in their discussion on the academics' research skills, highlight the following skills as the most significant: the ability to initiate and manage the scientific and research projects, and the development of the various forms of cooperation and idea generation. Additionally, Deem (2001) in her discussion on different approaches to higher education presents a new syntagm of the manager-academic as the bearer of changes, initiator of reforms and new activities. The author points out that exceptionally turbulent times require a turnaround in the academic community which would transform it from sluggish and closed into a community ready for changes and acceptance of the new. In that context, the author advocates for the adoption of the corpus of behaviour and skills belonging to the business (managerial) sector – "the speed, productivity, efficacy, strategic planning, and the ability to manage individuals and time" (Deem, 2001, 59), which she sees as indispensable in the academic environment, along with the traditional competencies of teaching and academic writing. Therefore, she advocates for the new manager-academic who would successfully face different challenges and activities - teaching and research, as well as the community service, while incorporating the specific knowledge and skills of the (research) management in the process.

1.2. Research question

The main research question of this study was: *How do the academics in Croatia assess the importance of the research management competencies?*

http://dx.doi.org/10.15405/epsbs.2016.11.18
eISSN: 2357-1330 / Corresponding Author: Marko Turk
Selection and peer-review under responsibility of the Organizing Committee of the conference

1.3. Purpose of the study

The purpose of this paper is: a) to explore the assessment of importance of the research management competencies on a sample of academics from seven public universities in Croatia, and b) to analyze the differences in the assessment of the importance of the research management competencies according to the defined independent variables.[1] In the research we started from the research hypothesis, H1 - there is a statistically significant difference considering the independent variables of research field, academic rank and sex.[2]

1.4. Research methods

The research was conducted through the application of the descriptive method, while the empirical data were collected through the on-line survey questionnaire. All the academics (the senior and junior academics) in the Republic of Croatia formed the research population. The survey questionnaire was conducted on the representative (accidental) sample. The valid survey questionnaires were completed by 1130 academics[3].

The assessment scale was made on the classic Likert-type scale, according to the following distribution: 1- very little, 2 – little, 3 – average, 4 – large, 5 – exceptional importance of competency.

For the requirements of data processing, some of the independent variables were recoded. On the independent variable of research field, the participants were categorised according to the research field

[1]The results presented in this paper are part of a wider research on the academic competencies that is conducted within the framework of the project *"Academic Profession Competence Framework: Between New Requirements and Possibilities (APROFRAME),* which is financed by the Croatian Science Foundation on the basis of the Contract I-2148-2014. The basic research question was the following – *Which are the required competencies for academics at the beginning of their academic careers?* In order to answer the posed research question, the research was conducted on the representative national sample of participants (academics), and it focused on the assessment of the importance, and the assessment of the personal acquisition of academic competencies. Based on the literature analysis, the competencies were grouped into five thematic groups – teaching competencies, research competencies, competencies related to the contribution to society and community, leadership competencies in higher education, and general academic competencies. Even though the competencies and groups of competencies were developed in accordance with the results of previous studies, during the processing and analysis of the research results, the factor analysis of the competencies was conducted, with the goal of examining the correlation between the previously defined groups of competencies and the factor analysis results; that is, in order to determine the existence of latent dimensions in the structure of attitudes on the instrument of the perception of the competencies' importance. The factor analysis under the component model resulted in the extraction of five factors that were retained as statistically significant along with the GK criterion for limiting factor extraction (higher than 1). The five factors are the following – teaching competencies, research management competencies, competencies related to the contribution to society and community, advisor and innovation competencies, and research development competencies. The basic solution was transformed into the orthogonal varimax position, and the obtained factors explain 58.63% of the total variance. The competencies which describe the research management factor are – *Management of teams and individuals; Implementation of projects significant for the community needs; Familiarity with the strategic planning principles; Familiarity with the programme / project management (writing, applying for and managing the programmes / projects); Familiarity with the possibilities of financing the projects of personal research interests; Forming and maintaining (international) research networks; Financial resources management of the institution/ department/ chair.* For the requirements of this paper, a new detailed data analysis was conducted on the variables which saturated the factor of research management competencies.

[2] The research hypothesis is defined according to the previous research results in the higher education (Kovač, 2004; Rončević, & Rafajac, 2010; Turk, & Ledić, 2016a) as well as independent variables which have emerged as significant for the conclusion forming in the results of the previous higher education research (Gilligan, 1993; Noddings, 2003; Kovač, 2004; Karlsson, 2007).

[3] In the research, 11.6% (f=131) of the participants work in the field of natural sciences, 26.3% (f=297) in the field of technical and biotechnical sciences, 13.3% (f=131) in the field of biomedicine and medicine, 42.6% (f=481) in the humanities and social sciences, 3.7% (f=42) in the arts and interdisciplinary arts, and 2.2% (f=25) in the interdisciplinary sciences. From the total number of participants, 60% (f= 682) were senior academics, and 40% (f=448) were junior academics, while 40.4% (f=456) of the participants were male and 59.6% (f=674) female.

of their most recent academic rank.[4] During data processing, the participants were categorised in correspondence with the research field into six categories – natural sciences, technical and biotechnical sciences, biomedicine and medicine, humanities and social sciences, arts and interdisciplinary arts, and interdisciplinary sciences. According to the independent variable of academic rank, the participants were categorised into four groups. The first three groups consisted of the senior academics (tenured full professor, full professor, associate professor and assistant professor), while the fourth group consisted of the junior academics (postdoctoral researcher, junior researcher – senior teaching assistant, junior researcher – teaching assistant, senior teaching assistant and teaching assistant). The variable of sex was categorised into two groups, male and female.

Data processing was conducted through the Statistical Package for the Social Sciences (IBM SPSS, 23.0.). For data processing, the methods of univariate statistics were applied (percentages, measures of central tendency, and measures of variation), as well as the methods of bivariate statistics (the T-test, and simple analysis of variance), in order to determine the differences with regard to the defined independent variables. The tests for statistical significance of the groups' average results were conducted through the analysis of variance with the appropriate post-hoc tests (Hochberg GT2 test for the homogeneous variance, and the Games-Howell for the heterogeneous variance). All the tests were conducted at the risk level of 5%. A statistically significant difference was evaluated from the effect size aspect, from 0.01 to 0.05 being a small effect size, from 0.06 to 0.13 a medium effect size, and from 0.14 a large effect size (Cohen, 1988; Miles, & Shevlin, 2001).[5]

2. Findings

In accordance with the aforementioned, seven variables loaded highly onto the obtained factor of research management competency. In the paper's continuation, the results of the assessment of importance will be presented (Table 1) for every individual competency, as well as the differences in the assessment of importance with regard to the defined independent variables of research field (Table 2), academic rank (Table 3) and sex (Table 4). The results will be presented in tables based on the assessment of the importance of the individual competency, starting with the competency that has the highest average of importance, and ending with the one that has the lowest average of importance (Table 1).

Table 1 shows the results of the assessment of importance on the variables which describe the factor of research management competency.

[4]The applied categorisation is based on the Regulation of scientific and artistic areas, fields and branches from 2009, which classifies the scientific and artistic areas as follows: natural sciences, technical sciences, biomedicine and medicine, biotechnical sciences, social sciences, humanities, field of arts, interdisciplinary sciences, and interdisciplinary arts.

[5]The effect size is an objective and standardised measure of the observed influence's size and it assists in interpretation of the obtained statistical significance, especially in the cases of large samples when even the negligible difference can often prove to be statistically significant. In the instances when the difference is statistically significant, but the effect size is less than 0.01, the results will not be interpreted; that is, in the paper it will be noted that there is a statistically significant difference with regard to the independent variable, but the effect size will be shown only in tables

http://dx.doi.org/10.15405/epsbs.2016.11.18
eISSN: 2357-1330 / Corresponding Author: Marko Turk
Selection and peer-review under responsibility of the Organizing Committee of the conference

Table 1. Assessment of the importance of research management competencies

Competency	1+2	3	4+5	M	SD
Management of teams and individuals	5.9	21.2	73.0	3.94	0.875
Implementation of projects significant for the community needs	16.4	28.8	54.8	3.54	1.064
Familiarity with the strategic planning principles	8.0	32.7	43.1	3.23	1.058
Familiarity with the programme / project management (writing, applying for and managing the programmes / projects)	25.2	32.0	42.7	3.24	1.157
Familiarity with the possibility of financing the projects of personal research interests	24.5	34.0	41.6	3.23	1.101
Forming and maintaining (international) research networks	29.9	29.2	40.9	3.16	1.212
Financial resources management of the institution/ department/ chair	34.5	26.2	39.3	3.04	1.276

Legend: 1 – very little, 2 – little, 3 – average, 4 – large, 5 – exceptional importance of competency; M – arithmetic mean; SD – standard deviation

Taking into account the arithmetic means of individual variables, it can be concluded that the participants assess the importance of the research management competencies as average or large. The arithmetic means range from the lowest (M=3.04) to the largest (M=3.94). When compared to the results of the research on the importance of teaching competencies (Turk, & Ledić, 2016a), these results point to the conclusion that the participants consider the group of competencies related to the research management to be less important. This is not surprising because the research management knowledge and skills have become important in the context of everyday academic activities and have been intensely discussed during the last several years, while they had not been previously considered as the basic academic activities, in comparison to teaching and research (Turk, & Ledić, 2016b).

Table 2 shows the assessment of the importance of the research management competencies with regard to the independent variable of research field.

Table 2. Differences in the assessment of the importance of the research management competencies with regard to the independent variable of research field

Competency	RF	M	SD	F/FW*	df, df	p	η^2	Differences
Management of teams and individuals	1	3.85	0.904	1.030	5 1120	0.399	/	/
	2	3.95	0.916					
	3	4.02	0.823					
	4	3.93	0.857					
	5	4.07	0.867					
	6	3.72	0.891					
Implementation of projects significant for the community needs	1	3.43	1.150	3.019	5 1120	0.010	0,013	5 > 1, 2, 3 ,4
	2	3.63	1.038					
	3	3.51	1.060					
	4	3.48	1.074					
	5	4.05	0.764					
	6	3.48	0.963					
Familiarity with the strategic planning principles	1	3.05	1.018	2.421	5 1120	0.034	0,011	1 < 5
	2	3.23	1.065					
	3	3.12	1.135					
	4	3.30	1.048					
	5	3.55	0.832					
	6	3.04	1.136					
Familiarity with the programme / project management (writing,	1	3.27	1.103	1.426	5 1120	0.212	/	/
	2	3.38	1.121					
	3	3.22	1.225					

applying for and managing the programmes / projects)	4	3.16	1.171					
	5	3.21	1.159					
	6	3.12	1.130					
Familiarity with the possibility of financing the projects of personal research interests	1	3.37	1.018	4.545	5 1120	0.000	0,02	2 > 4
	2	3.43	1.057					
	3	3.21	1.168					
	4	3.07	1.123					
	5	3.17	1.034					
	6	3.12	0.971					
Forming and maintaining (international) research networks	1	3.34	1.187	1.923	5 1120	0.088	/	/
	2	3.26	1.235					
	3	3.21	1.239					
	4	3.05	1.183					
	5	3.10	1.322					
	6	3.04	1.207					
Financial resources management of the institution/ department/ chair	1	3.07	1.320	2.266	5 1120	0.046	0,01	2 > 4
	2	3.19	1.286					
	3	3.17	1.261					
	4	2.90	1.264					
	5	3.02	1.220					
	6	2.96	1.207					

Legend: RF (Research field, 1- natural sciences, 2 – technical and biotechnical sciences, 3 – biomedicine and medicine, 4 – humanities and social sciences, 5 – arts and interdisciplinary arts, 6 – interdisciplinary sciences); M=arithmetic mean; SD=standard deviation; F/Fw =F-ratio; that is, Welch's statistics; df=degrees of freedom; p= probability; η^2= effect size

The variable of academic rank is the next independent variable on which the assessment of the difference in the assessment of importance was conducted. The results of the obtained differences are shown in Table 3.

Table 3. Differences in the assessment of the importance of the research management competencies with regard to the independent variable of academic rank

Competency	**AR**	**M**	**SD**	**F/FW***	**df, df**	**p**	**η^2**	**Differences**
Management of teams and individuals	1	4.38	0.683	47.652	3 1126	0.000	0,113	4 < 3 < 2 < 1
	2	4.17	0.736					
	3	3.89	0.866					
	4	3.64	0.897					
Implementation of projects significant for the community needs	1	4.16	0.802	58.120	3 1126	0.000	0,134	4 < 3 < 2 < 1
	2	3.83	0.959					
	3	3.44	1.007					
	4	3.16	1.081					
Familiarity with the strategic planning principles	1	3.68	0.944	42.699	3 1126	0.000	0,102	3,4 < 1,2 4 < 3
	2	3.55	0.931					
	3	3.27	1.044					
	4	2.85	1.037					
Familiarity with the programme / project management (writing, applying for and managing the programmes / projects)	1	3.81	1.021	39.144	3 1126	0.000	0,094	3,4 < 1,2 4 < 3
	2	3.45	1.105					
	3	3.22	1.087					
	4	2.88	1.152					
Familiarity with the possibility of financing the projects of personal research interests	1	3.72	0.976	40.464	3 1126	0.000	0,097	3,4 < 1,2 4 < 3
	2	3.56	1.007					
	3	3.18	1.069					
	4	2.87	1.085					
Forming and maintaining (international) research networks	1	3.56	1.186	26.140	3 1126	0.000	0,065	3,4 < 1,2 4 < 3
	2	3.53	1.090					
	3	3.11	1.156					
	4	2.84	1.209					
Financial resources management of the	1	3.82	1.058	88.423	3 1126	0.000	0,191	3,4 < 1,2 4 < 3
	2	3.58	1.113					

http://dx.doi.org/10.15405/epsbs.2016.11.18
eISSN: 2357-1330 / Corresponding Author: Marko Turk
Selection and peer-review under responsibility of the Organizing Committee of the conference

institution/ department/ chair	3	2.99	1.195
	4	2.45	1.180

Legend: AR (Academic rank, 1 – tenured full professors and full professors, 2 - associate professors, 3 - assistant professors, 4 - postdoctoral researchers, junior researchers – senior teaching assistants, junior researchers – teaching assistants, senior teaching assistants and teaching assistants); M=arithmetic mean; SD=standard deviation; F/Fw =F-ratio; that is, Welch's statistics; df=degrees of freedom; p= probability; $\acute{\eta}^2$= effect size

Table 4 shows the results based on the assessment of importance on the independent variable of sex.

Table 4. Differences in the assessment of the importance of teaching competencies with regard to the independent variable of sex

Competency	**Sex**	**M**	**SD**	**t**	**df**	**p**	**Differences**	**$\acute{\eta}^2$**
Management of teams and individuals	M	3.93	0.899	-0.343	1128	0.732	/	/
	M	3.93	0.899					
Implementation of projects significant for the community needs	M	3.61	1.026	1.793	1128	0.073	/	/
	F	3.49	1.088					
Familiarity with the strategic planning principles	M	3.27	1.040	0.967	1128	0.334	/	/
	F	3.21	1.070					
Familiarity with the programme / project management (writing, applying for and managing the programmes / projects)	M	3.34	1.108	2.375	1128	0.018	M > F	< 0,01
	F	3.17	1.186					
Familiarity with the possibility of financing the projects of personal research interests	M	3.31	1.041	2.057	1128	0.040	M > F	< 0,01
	F	3.17	1.137					
Forming and maintaining (international) research networks	M	3.25	1.201	1.931	1128	0.054	/	/
	F	3.10	1.217					
Financial resources management of the institution/ department/ chair	M	3.20	1.253	3.431	1128	0.001	M > F	0,01
	F	2.93	1.281					

Legend: M=arithmetic mean; SD= standard deviation; t=t-ratio; df=degrees of freedom; p= probability; $\acute{\eta}^2$= effect size

As can be seen in Table 1, the variable *Management of teams and individuals* was perceived as the most important (73%), while the statistically significant difference with regard to the independent variables of research field and sex was not observed. The difference was detected among all four groups of participants with regard to the independent variable of academic rank. The junior academics demonstrate a statistically significant lower perception of the stated competency's importance, while the perception of importance rises with the academic rank. The effect size is medium ($\acute{\eta}^2$=0.113); that is, it amounts to 11.3% of the stated competency's variability.

The competency *Implementation of projects significant for the community needs* is perceived as important by 54.8% of the participants, while 16.4% do not assess it as important. A statistically significant difference was observed on the independent variables of research field and academic rank.

The participants who work in the field of arts make a statistically significant assessment of the stated competency as important more often than the participants who work in the field of natural, technical and biotechnical sciences, biomedicine and medicine, and humanities and social sciences. The difference between the remaining groups was not observed, while the effect size is small ($ή^2$=0,013). The junior academics demonstrate a perception of the stated competency's importance that is lower and statistically significant, while the perception of importance rises with the academic rank. The effect size is medium ($ή^2$=0.134); that is, 13.4% of this competency's variability can be explained with the effect of academic rank.

Familiarity with the strategic planning principles is perceived as an important competency by 43.1% of the participants, while 24.2% do not consider it to be important. A statistically significant difference was observed on the independent variables of research field and academic rank. In the context of the variable of research field, there is a difference between the participants who work in the field of natural sciences and the field of arts. The participants from the field of natural sciences perceive the stated competency as less important. However, it should be noted that the effect size is small in that case ($ή^2$=0.011). Statistically significant differences between the remaining groups of research fields were not observed. The differences on the independent variable of academic rank show that the junior academics and assistant professors perceive the stated competency as less important than the associate professors and full professors. Additionally, a statistically significant difference was observed between the junior academics and assistant professors, with the junior academics assessing the stated competency as less important than the assistant professors. The effect size is medium ($ή^2$=0.102); that is, 10.2% of the competency's variability can be explained by the effect of academic rank.

Familiarity with the programme / project management (writing, applying for and managing the programmes / projects) was recognised as important by only 42.7% of the participants. Statistically significant differences were observed on the independent variables of academic rank and sex. The junior academics perceive this competency as less important in comparison to the assistant professors. Additionally, the assistant professors assess the stated competency as less important in comparison to the associate professors and full professors. The effect size is medium ($ή^2$=0.094); that is, 9.4% of the competency's variability can be explained by the effect of academic rank. Statistically significant differences between the remaining groups within the variable of academic rank were not observed. The assessment of differences based on the independent variable of sex points to the conclusion that male participants perceive the stated competency as more important than female participants.

The competency *Familiarity with the possibility of financing the projects of personal research interests* is perceived as important by 41.6% of the participants, while 24.5% have the opposite opinion. Statistically significant differences were observed on all three independent variables. When it comes to the variable of research field, the difference was observed between the participants who work in the field of technical and biotechnical sciences, and the participants who work in the field of humanities and social sciences. The first group manifested a higher level of importance than the second group. However, the effect size is small ($ή^2$=0.02). Differences between the remaining groups were not observed. The differences observed on the independent variable of academic rank point to a conclusion that the junior academics and assistant professors perceive the stated competency as less important

http://dx.doi.org/10.15405/epsbs.2016.11.18
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when compared to the associate professors and full professors. The junior academics additionally differ from the assistant professors, since they express a lower level of importance in comparison with the other group. The effect size is medium ($ή^2$=0.097); that is, 9.7% of the competency's variability can be explained by the effect of academic rank. The differences on the variable of sex show that the male participants perceive the stated competency as more important than the female participants.

The competency *Forming and maintaining (international) research networks* is considered as important by only 40.9% of the participants, while 29.9% of the participants do not assess it as important. A difference was observed on the variable of academic rank with regard to the independent variables. The junior academics and assistant professors attribute a lower level of importance to the stated competency when compared to the associate and full professors. The junior academics also differ from the assistant professors by expressing a lower level of importance in comparison to the other group. The effect size is medium ($ή^2$=0.065); that is, 6.5% of the competency's variability can be explained by the effect of academic rank. Differences between the remaining groups were not observed.

Financial resources management of the institution/ department/ chair perceived as important by only 39.3% of the participants. This variable was rated as the least important by the participants in the context of the variables employed for measuring the research management competencies. The difference was observed on all three independent variables. When it comes to the variable of research field, the difference was determined between the participants who work in the field of technical and biotechnical sciences, and the participants who work in the field of humanities and social sciences. The first group demonstrated a higher level of importance when compared to the second group; however, the effect size is small ($ή^2$=0.01). Differences between the remaining groups were not observed. The differences on the variable of academic rank point to a conclusion that the junior academics and assistant professors attribute a lower level of importance to the stated competency in comparison to the associate and full professors. The effect size is large ($ή^2$=0.191); that is, 19.1% of the competency's variability can be explained by the effect of academic rank. On the independent variable of sex, the results of difference assessment point to a conclusion that the male participants perceive the stated competency as more important than the female participants.

In the context of the obtained results related to the differences on the independent variables, it should be noted that the small effect size on the variables of research field and sex advises caution when it comes to forming conclusions. To elaborate, in large samples even the small differences often demonstrate statistical significance, but are devoid of practical importance. Additionally, it is important to note that when it comes to the methodological approach to social phenomena which involve self-evaluation and attitudes, a large effect size is not to be expected since bivariate statistics is applied during data processing. However, it should be noted that, on the independent variable of academic rank, the statistically significant differences were observed on all the variables, with the medium effect size. When it comes to the competency *Financial resources management of the institution / section / department / division,* the obtained effect size is almost large.

Based on the presented results, three key groups of differences can be highlighted. The first group concerns the differences on the independent variable of research field which were observed on four out of seven variables and point to the diversity in the participants' perceptions. However, it can be noted

that the participants from the field of technical and biotechnical sciences assess the competencies related to the financial aspect of research management as more important than the participants from the field of humanities and social sciences. On the other hand, *Implementation of projects significant for the community needs* emerged as the most important competency for the participants from the field of arts in comparison to all the other research fields. Additionally, the participants from the field of arts consider the strategic planning principles as more important than the participants from the field of natural sciences. These data partly confirm the results of the previous national research (Turk, 2015), which point to a larger project activity of the representatives of the natural, technical and biotechnical sciences when compared to other scientific fields. Furthermore, the data can in part be connected to the results of the research on the characteristics of the national scientific production (Jokić, Zauder, & Letina, 2012) which point to a similar trend of differences among the research fields in Croatia, with a special emphasis on the differences between the natural, technical and biotechnical sciences, and the humanities and social sciences, in which the latter were detected as less productive and less internationally recognisable.

The second group regards the differences related to the independent variable of academic rank, which point to an interesting phenomenon in research according to which the junior academics and assistant professors make a statistically significant assessment of all the competencies as notably less important than the senior academics. Moreover, there are statistically significant differences between junior academics and assistant professors, since junior academics consider the studied competencies to be less important. Furthermore, it should be noted that the assessment rank of the specific competency's importance rises proportionally to academic rank. These results confirm the existing trend in higher education research in Croatia, in the context of the academic rank differences. The conducted studies point to the conclusion that young researchers have a predominantly negative orientation toward the changes within the academic community and are not prepared to accept them (Ćulum, & Ledić, 2011), that they mostly assess the academic competencies as less important or are sometimes contradictory in their assessments (Turk, 2015), and that they are mostly indifferent toward the (acquisition) of teaching competencies or consider them to be less important, and in some cases even unnecessary (Rončević, Turk, & Vignjević, 2016).

The third group of differences is related to the variable of sex. The obtained differences were observed on only three competencies, and the results of the obtained differences show that male participants make a statistically significant assessment of the stated research management competencies as more important than female participants. In that context, it could be interesting for the research that the differences on the independent variable of sex predominantly manifest in relation to the competencies connected to the financial aspect of research management, in a similar manner to the variable of research field. The results could be compared with the results of the research on the educational management in Croatia (Vrcelj, 2014). The author in her research strives to find an answer to the question: *Is educational management a male-dominated job?* In the theoretical discussion on the role and position of women in education, and referring to all the educational levels, Vrcelj (2014, 24) points out that "...women teach while men manage." Taking into account the period when the research was conducted, it would seem that Vrcelj (2014) almost made a visionary prediction of the obtained

results analysed in this paper, which confirm the conclusions of the author's study on the level of theoretical discourse.

3. Conclusions

The research results presented in this paper confirm the existence of the differences in the perception of the research management competencies' importance in different research fields, and they reveal the differences in the perception of the importance of teaching with regard to sex. Nevertheless, it appears that it is especially important to focus on junior academics in the national higher education research, especially in the context of the challenges it faces. In this research, junior academics have made a statistically significant assessment of all the competencies as less important when compared to senior academics. This result can be considered as challenging, especially in the context of the future development of the academic profession on the national level, and the growing importance of the activities that include some of the project management aspects from the very beginning of the academic career.

It is evident that these results open some new research questions; for example, *What are the reasons for the differences in the assessment of the research management competencies between the junior and senior academics? Does the lower assessment of the importance of these competencies point to a weaker motivation for their acquisition?*. Taking into account the possibility of applying different research approaches for obtaining responses to these questions, they remain open for the future higher education researchers working in different research fields who will be able to reach for other methodological paradigms and information sources, and in that way provide a different dimension of content and interpretation.

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